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PROGRESS REPORT FOR 1982:

PINUS BANKSIANA-DOMINATED PERMANENT PLOTS IN THE ATHABASCA OIL SANDS [a]

by

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June 1983

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ABSTRACT

Of the 16 permanent plots established in 1981, four of these, Nos. 1,6,11, and 13 were destroyed by fire shortly after they were surveyed. In 1982, four new plots were established to replace the burned ones. They were selected to represent the same impingement zones as the burned plots. Other criteria used in selecting the new stands were the same as used in the original establishment of the permanent plot array in 1981.

The new stands are statistically and subjectively within the range of variation found in *Pinus banksiana*-dominated forest and woodland growing on light textured soils in the Athabasca Oil Sands area.

Comparisons of 1981 and 1982 data reveal no obvious trends in relation to the impingement zones. Differences between the two years could in the main be attributed to the more favorable growing conditions in 1982. Stand No. 16 shows an anomalous bryophyte cover change which may be related to successional change and may point to an area of considerable significance in the interpretation of large or sudden changes in the flora of a community.

ACKNOWLEDGEMENTS

We wish to thank Mr. Robert Ellis, Mr. Manfred Bichlmaier, Mr. Larry Flanagan and Mrs. Nanci La Roi for their capable assistance and pleasant company in the field.

Again, it is a pleasure to acknowledge the assistance provided by the Research Management Division, particularly Dr. Percy Sims for scientific supervision and Mr. Barry Munson for administrative supervision.

Mr. Bill Lee is responsible for the computer output which made it much easier to handle the data.

Mrs. Evelyn Jamha's care and attention to detail in typing the manuscript are appreciated.

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1. INTRODUCTION

The objectives in this study were: (1) to resurvey the vegetation in the plots established and initially surveyed in August 1981; and (2) to establish four new permanent plots to replace and match as closely as possible the four permanent plots burned in August 1981.

The rationale remains as stated in the First Report, La Roi and Ostafichuk 1982. The first part of this report, which deals with the four new plots, follows closely the format used in the First Report to provide a common descriptive base for all reference stands. Dominance hierarchy data do not appear in the text of this report but are included as part of the computer print-out in the Appendix.

In the second part some comparisons are made between 1981 and 1982 data. These are intended as a sample of some ways in which the data coming from the reference stand surveys might be approached.

The third part, Discussion and References Cited (sections 5 and 6), needs no comment here.

The final part, the Appendix, is a computer print-out using the data storage and retrieval system which has been created for use with both the Oil Sands Monitoring Project and the SEADYN Project at Hondo. The print-out includes data as recorded in the field for individual 5 x 5 m plots in all the reference stands as well as statistics pertaining to reference stands, groupings of species, etc., and synthesis of species structure and dominance hierarchy.

2. STUDY AREA

The study area is unchanged. The map of the area (Figure 1) has been revised to show the permanent plots burned in 1981 and their replacements added in 1982.

3. METHODS

The methods used in selecting and establishing the four new permanent plots and establishing reference stands within these were the same as those used in 1981.

The vegetation survey methods, which are the same for the initial and subsequent surveys, are also those used in 1981.

4. RESULTS

4.1 LOCATIONS OF PERMANENT PLOTS ADDED IN 1982

4.1.1 Geographic Position

Table 1 gives the geographic coordinates, legal subdivisions, and airphoto coordinates of the four permanent plots added to the system in 1982. Figure 1 shows the approximate positions of all permanent plots in the study area.

Plots 01N - 04N are the new plots established in 1982. Those plot numbers with the suffix B are the 1981 plots which burned.

The geographic groups recognized in the First Report remain essentially unchanged except that four of the plots in the northeast group burned and were replaced.

4.1.2 Impingement Zones and Age-Classes

Table 2 is a combined atmospheric emission impingement-stand age classification which shows the relationships of each plot to the two parameters. Table 2 differs from the one given in the First Report in that a very young age class has been added to accommodate the four burned plots.

4.2 AGES AND ORIGINS OF NEW REFERENCE STANDS

Reference stand 01N is noteworthy in that the dominant cohort is widely spaced creating a park-like physiognomy. There is, however, an abundant second wave of colonizers which will result in full closure of the canopy in less than 30 years. Number 02N is overstocked resulting in the 'dog-hair' type of forest.

Table 3 summarizes age and origin characteristics of the four new stands.

Table 1. Locations of four new Permanent Plots 1982.

Permanent Plot Number	Geographic Coordinates		Legal Subdivision	Airphoto Coordinates			
	Latitude (N)	Longitude (W)	Sect-Twnp-Range (W of 4th Mer)	Line #	Number	X (mm)	Y (mm)
New-1N	57°39'35"	111°10'	SE & SW 12-100-8	23	A23869-31	150	109
New-2N	57°39'25"	111°10'20"	NW1, SW12-100-8	23	A23869-31	145	108
New-3N	57°33'10"	111°20'20"	NE35-98-9	21	A23888-136	42	172
New-4N	57°33'	111°21'25"	NW35-98-9	21	A23888-136	24	163

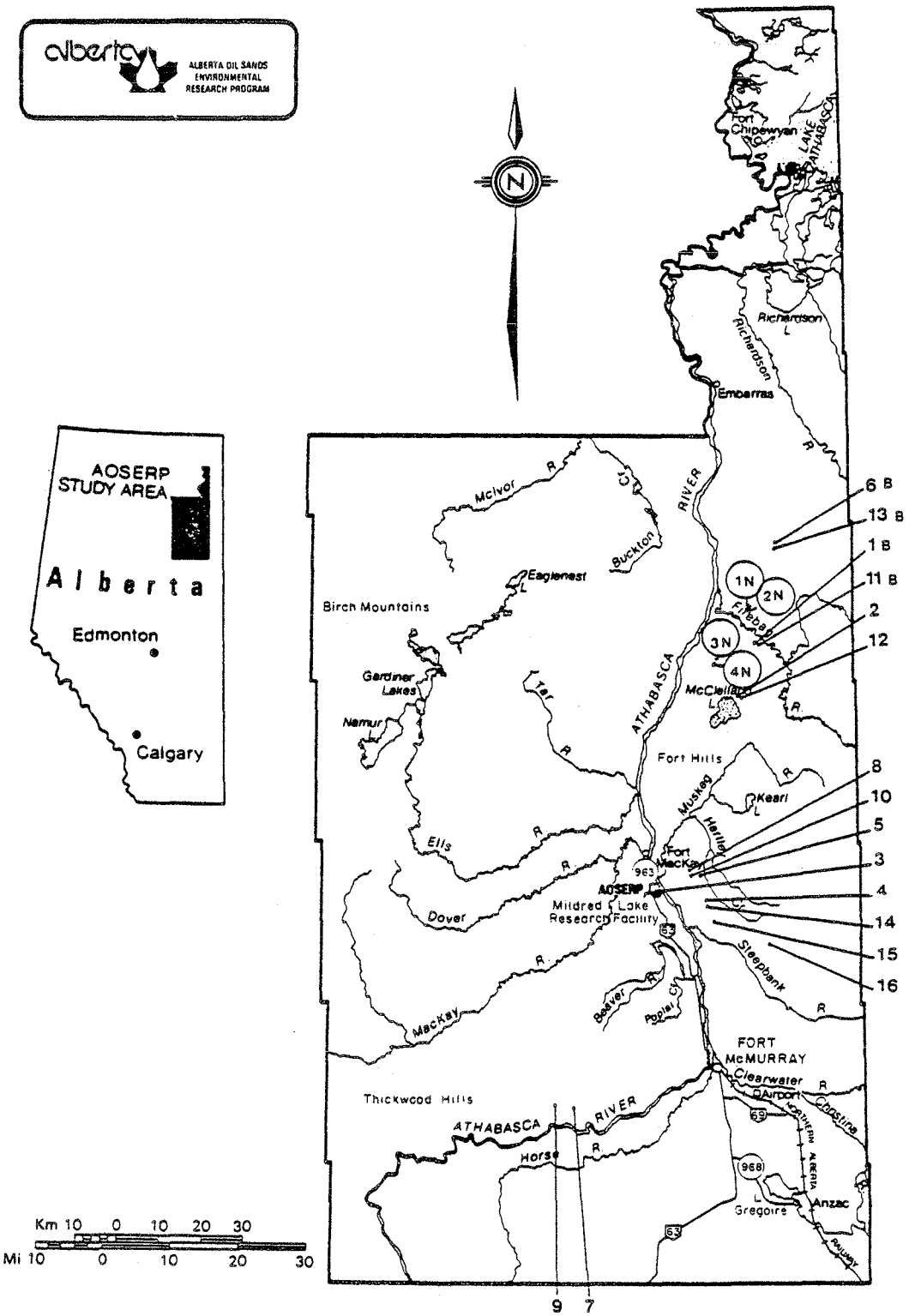


Figure 1. Approximate Locations of 20 *Pinus banksiana*-dominated Permanent Plots in the Athabasca Oil Sand Area. B = burned in 1981; N = established in 1982.

Table 2. Combined atmospheric emission impingement-stand age classification of the 20 *Pinus banksiana*-dominated permanent plots in the Athabasca Oil Sands area. Stands classified as they existed at the end of August, 1982. The impingement zones are based on Thomson (1981).

Impingement Zone (ppb)	Stand Age-Class: Very Young (1 to 10 yrs)	Young (11 to 50 yrs)	Middle (51 to 110 yrs)	Total Plots
0. Control (*ca* 0)	6B[b], 13B	.	.	2
1. Very Low (0 to 2.5)	1B, 11B	1N[a], 7	2N,9	6
2. Low (2.6 to 5.0)	.	3N,2, 3, 8	4N,10, 12	7
3. Medium (5.1 to 7.5)	.	5, 16[c]	.	2
4. High (7.6 to 10.0)	.	4, 14	.	2
5. Very High (> 10.0)	.	15[c]	.	1
Total Plots	4	11	5	20

[a] Permanent plots established in August, 1982.

[b] Permanent plots burned shortly after establishment in August, 1981. Nos. 6 and 13 were not visited in 1982.

[c] Nos. 15 and 16 are located on clay-rich, stoney till parent material. The other 18 permanent plots are on sands.

Table 3. Ages and origin dates of reference stands added to the *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area in northern Alberta. Tree ages are from ring counts of increment cores taken 35 cm above ground and from discs sawed 5 cm above ground in the case of very small trees. Stand origin dates are obtained from wedges sawn from fire-scarred trees, following Tande (1979).

Reference Stand Number	Ages of Trees (years)	Stand Origin Date
1N	35, 26, 33, <u>37</u>[a]	.
2N	52, 53, 47, <u>55</u>	.
3N	33, 31, <u>34</u>	.
4N[b]	70, <u>73</u>	1909

[a] Stand ages determined from oldest trees of dominant age-class (cohort), underlined.

[b] This stand experienced a ground fire about 35 years ago and its understory originated in 1947, not in 1909.

4.3 PHOTOGRAPHS OF VEGETATION IN NEW PERMANENT PLOTS

An annotated set of 20 color slides is included in the Appendix (section 7) of this report. Only slides of the four new stands are included and they have been selected to illustrate the same features pointed out in the First Report.

4.4. DESCRIPTIONS OF THE PLANT COMMUNITY COMPONENTS OF THE FOUR NEW REFERENCE STANDS

4.4.1 Quantitative Data for Four New Reference Stands

Table 4 gives the results of the August 1982 survey of the four new reference stands. The reference stands are given in order of increasing age. The data for the four new stands can be used to make the same statistical inferences as was suggested in the First Report (section 4.4.1).

Table 4. Quantitative plant community data for the four new reference stands located in *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area in northern Alberta as they existed at the time of their establishment, August 1982. Each reference stand is treated as a five-page data-set, with stands arranged in order of increasing age resulting in the sequence: 01N, 03N, 02N, 04N. For details of survey methods see section 3.4 First Report ; for details on statistical aspects see section 4.4.1 First Report .

[see next 20 pages]

[text resumes on page 30]

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 01N — Permanent Plot No.

Survey Date 4 August 1982 — Stand Age 32 yrs

Vascular Plants	Species Richness = 36	Cover = 18.5%
Bryophytes	Species Richness = 5	Cover = 7.02%
Terrestrial Lichens	Species Richness = 22	Cover = 19.6%
Plant Community	Species Richness = 72	Cover = 45.2%

CODE	Species	Frequency %	Plant Cover %		
		5x5 m Plots	Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	5.8240	4.801	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 5.8240%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	96	1.8760	2.139	4
VAVI	*Vaccinium vitis-idaea*	84	1.3924	2.262	5
ARUV	*Arctostaphylos uva-ursi*	100	5.0600	4.940	2
ROAC	*Rosa acicularis*	4	0.0040	0.020	32
PRPE	*Prunus pensylvanica*	12	0.2044	0.999	10
AMAL	*Amelanchier alnifolia*	8	0.0080	0.028	27
RUST	*Rubus strigosus*	4	0.0400	0.200	20
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Rudsonia tomentosa*	.	.	.	.
SABE	*Salix bebbiana*	.	.	.	.
ALCR	*Alnus crispa*	8	2.0800	9.991	3
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 10.8888%				

continued ...

Reference Stand No. 01N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	96	0.2132	0.204	9
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	76	0.2404	0.300	7
CXFO	*Carex foenea*	96	0.0688	0.101	16
ORAS	*Oryzopsis asperifolia*	4	0.0004	0.002	35
AGSC	*Agrostis scabra*	4	0.0040	0.020	31
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	12	0.0244	0.101	24
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	8	0.0044	0.020	30
	Total Graminoid Cover = 0.5556%				
Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	4	0.0004	0.002	36
	Total Pteridophyte Cover = 0.0004%				

continued ...

Reference Stand No. 01N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	80	0.1464	0.276	12
ASLA	*Aster laevis*	84	0.1336	0.169	13
ANMU	*Anemone multifida*	68	0.0248	0.039	23
GABO	*Galium boreale*	64	0.0656	0.103	17
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	56	0.2240	0.310	8
CARO	*Campanula rotundifolia*	48	0.0048	0.005	28
SODE	*Solidago decumbens*	92	0.3204	0.291	6
VIAD	*Viola adunca*	24	0.0096	0.027	26
APAN	*Apocynum androsaemifolium*	88	0.0932	0.094	15
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	72	0.1004	0.129	14
POTRI	*Potentilla tridentata*	52	0.1616	0.003	11
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	8	0.0008	0.003	34
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	16	0.0448	0.200	18
ARCA	*Artemisia campestris*	12	0.0048	0.020	29
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	40	0.0292	0.045	22
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	4	0.0040	0.020	33
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	68	0.0212	0.035	25
ANRA	*Antennaria racemosa*	20	0.0324	0.103	21
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	32	0.0408	0.104	19

Total Forb Cover = 1.2384%

continued ...

Reference Stand No. 01N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	7	0.0007	0.0026	30
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	7	0.0007	0.0026	31
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	7	0.0007	0.0026	32
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	20	0.002	0.004	26
POL PIL	*Polytrichum piliferum*	100	7.02	10.22	2
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	.	.	.	.
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 7.0241%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	67	0.0366	0.0465	13
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	.	.	.	.
CLA MIT	*Cladina mitis*	100	14.61	13.40	1
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	7	0.0007	0.0026	33
CLA AMA	*Cladonia amaurocraea*	13	0.0013	0.0035	28
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	34
CLA CHL	*Cladonia chlorophaea*	47	0.0107	0.0252	18
CLA COC	*Cladonia coccifera*	93	0.370	0.597	7
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	73	0.441	0.715	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	80	0.696	1.382	5
CLA GON	*Cladonia gonecha*	20	0.002	0.004	23
CLA GRA	*Cladonia gracilis*	87	0.363	0.601	8

continued ...

Reference Stand No. 01N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	67	0.0366	0.0465	14
CLA PHY	*Cladonia phyllophora*	100	1.021	0.819	4
CLA PYX	*Cladonia pyxidata*	33	0.027	0.045	15
CLA SUB	*Cladonia subulata*	27	0.0027	0.0046	21
CLA UNC	*Cladonia uncialis*	20	0.068	0.258	11
CLA VER	*Cladonia verticillata*	20	0.002	0.004	24
PEL APH	*Peltigera aphthosa*	20	0.037	0.547	12
PEL MAL	*Peltigera malacea*	100	1.674	1.280	3
PEL RUF	*Peltigera rufescens*	20	0.002	0.004	25
STE ALP	*Stereocaulon alpinum*	13	0.0013	0.0035	29
LEC GRA	*Lecidea granulosa*	47	0.155	0.346	9

Total Terrestrial Lichen Cover = 19.5586%

Epiphytic Lichens

BRY SPP	*Bryoria species*	7	0.0007	0.0026	35
CET HAL	*Cetraria halei*	13	0.0013	0.0035	27
CET PIN	*Cetraria pinastri*	100	0.022	0.032	16
EVE MES	*Evernia mesomorpha*	7	0.0007	0.0026	36
HYP PHY	*Hypogymnia physodes*	33	0.087	0.256	10
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	20	0.008	0.026	20
PAR AMB	*Parmeliopsis ambigua*	53	0.011	0.025	17
PAR HYP	*Parmeliopsis hyperopta*	27	0.0027	0.0046	22
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	33	0.0093	0.025	19

Total Epiphytic Lichen Cover = 0.1427%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 03N — Permanent Plot No.

Survey Date 5 Aug 1982 — Stand Age 33 yrs

Vascular Plants	Species Richness = 30	Cover = 15.4%
Bryophytes	Species Richness = 2	Cover = 11.9%
Terrestrial Lichens	Species Richness = 20	Cover = 7.1%
Plant Community	Species Richness = 49	Cover = 34.5%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	96	11.0400	6.471	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	4	0.0040	0.020	22
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*				
	Total Tree Cover = 11.0440%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	8	0.1000	0.408	6
VAVI	*Vaccinium vitis-idaea*	.	.	.	.
ARUV	*Arctostaphylos uva-ursi*	96	2.8440	2.960	2
ROAC	*Rosa acicularis*	.	.	.	.
PRPE	*Prunus pensylvanica*	4	0.0800	0.400	7
AMAL	*Amelanchier alnifolia*	4	0.0004	0.002	29
RUST	*Rubus strigosus*	12	0.0048	0.020	17
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	12	0.0048	0.020	18
SABE	*Salix bebbiana*	.	.	.	.
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
SASP	*Salix* sp.	4	0.6000	3.000	3
	Total Shrub Cover = 3.6380%				

continued ...

Reference Stand No. 03N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	84	0.2216	0.297	4
ASLA	*Aster laevis*	32	0.0336	0.103	11
ANMU	*Anemone multifida*	4	0.0040	0.020	23
GABO	*Galium boreale*	.	.	.	.
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	4	0.0040	0.020	25
CARO	*Campanula rotundifolia*	76	0.0272	0.099	14
SODE	*Solidago decumbens*	96	0.1848	0.183	5
VIAD	*Viola adunca*	8	0.0044	0.020	20
APAN	*Apocynum androsaemifolium*	20	0.0288	0.102	13
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	20	0.0324	0.103	12
POTRI	*Potentilla tridentata*	4	0.0004	0.002	27
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	20	0.0092	0.028	15
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	64	0.0388	0.047	10
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	20	0.0092	0.028	16
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	8	0.0008	0.003	26
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	.	.	.	.
SECY	*Senecio cymbalarioides*	4	0.0004	0.002	28

Total Forb Cover = 0.5956%

continued ...

Reference Stand No. 03N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	80	0.0512	0.048	8
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	4	0.0004	0.002	30
CXFO	*Carex foenea*	100	0.0460	0.045	9
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	12	0.0048	0.020	19
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*				
CAIN	*Calamagrostis inexpansa*	4	0.0040	0.020	24
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	8	0.0044	0.020	21

Total Graminoid Cover = 0.1108%

Pteridophytes

EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.

Total Pteridophyte Cover = 0.0

continued ...

Reference Stand No. 03N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	.	.	.	.
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	.	.	.	.
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	.	.	.	.
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	13	0.0073	0.0258	20
POL PIL	*Polytrichum piliferum*	100	11.87	14.78	1
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	.	.	.	.
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 11.88%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	87	0.183	0.335	7
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	7	0.0007	0.0026	28
CLA MIT	*Cladina mitis*	100	2.13	1.25	3
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	.	.	.	.
CLA AMA	*Cladonia amaurocraea*	.	.	.	.
CLA CAP	*Cladonia capitata*	7	0.0007	0.0026	29
CLA CEN	*Cladonia cenotea*	13	0.0013	0.0035	27
CLA CHL	*Cladonia chlorophaea*	33	0.003	0.005	23
CLA COC	*Cladonia coccifera*	100	0.088	0.032	8
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	100	0.275	0.533	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	80	0.026	0.039	13
CLA GON	*Cladonia gonecha*	20	0.002	0.004	25
CLA GRA	*Cladonia gracilis*	100	0.281	0.784	5

continued ...

Reference Stand No. 03N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	47	0.083	0.256	9
CLA PHY	*Cladonia phyllophora*	93	0.460	0.593	4
CLA PYX	*Cladonia pyxidata*	47	0.0047	0.0052	21
CLA SUB	*Cladonia subulata*	7	0.0007	0.0026	30
CLA UNC	*Cladonia uncialis*	47	0.023	0.040	14
CLA VER	*Cladonia verticillata*	27	0.0026	0.0046	24
PEL APH	*Peltigera aphthosa*	47	0.035	0.048	11
PEL MAL	*Peltigera malacea*	93	3.53	4.02	2
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.
LEC GRA	*Lecidea granulosa*	20	0.002	0.004	26

Total Terrestrial Lichen Cover = 7.132%

Epiphytic Lichens

BRY SPP	*Bryoria species*	93	0.0093	0.0026	17
CET HAL	*Cetraria halei*	87	0.0087	0.0035	18
CET PIN	*Cetraria pinastri*	100	0.028	0.037	12
EVE MES	*Evernia mesomorpha*	33	0.0038	0.0048	22
HYP PHY	*Hypogymnia physodes*	73	0.013	0.024	15
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	.	.	.	.
PAR AMB	*Parmeliopsis ambigua*	100	0.052	0.046	10
PAR HYP	*Parmeliopsis hyperopta*	87	0.0087	0.0035	19
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	100	0.010	0.0	16

Total Epiphytic Lichen Cover = 0.1335%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 02N — Permanent Plot No.

Survey Date 4 Aug 1982 — Stand Age 51 yrs

Vascular Plants	Species Richness = 19	Cover = 16.2%
Bryophytes	Species Richness = 7	Cover = 0.55%
Terrestrial Lichens	Species Richness = 18	Cover = 87.2%
Plant Community	Species Richness = 53	Cover = 103.8%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	13.9200	3.978	1
PIGL	*Picea glauca*	.	.	.	.
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 13.9200%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	60	0.8084	1.424	2
VAVI	*Vaccinium vitis-idaea*	56	0.5880	0.832	3
ARUV	*Arctostaphylos uva-ursi*	88	0.4560	0.485	4
ROAC	*Rosa acicularis*	.	.	.	.
PRPE	*Prunus pensylvanica*	.	.	.	.
AMAL	*Amelanchier alnifolia*	.	.	.	.
RUST	*Rubus strigosus*	.	.	.	.
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	.	.	.	.
SABE	*Salix bebbiana*	4	0.0040	0.020	15
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 1.9084%				

continued ...

Reference Stand No. 02N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	64	0.2284	0.307	5
ASLA	*Aster laevis*	12	0.0244	0.101	9
ANMU	*Anemone multifida*	4	0.0004	0.002	18
GABO	*Galium boreale*	20	0.0056	0.020	14
MELI	*Melampyrum lineare*	.	.	.	.
LIBO	*Linnaea borealis*	20	0.0520	0.139	6
CARO	*Campanula rotundifolia*	8	0.0008	0.003	17
SODE	*Solidago decumbens*	20	0.0092	0.028	12
VIAD	*Viola adunca*	.	.	.	.
APAN	*Apocynum androsaemifolium*	4	0.0004	0.002	19
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	.	.	.	.
POTRI	*Potentilla tridentata*	.	.	.	.
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	32	0.0212	0.040	10
HICA	*Hieracium canadense*	.	.	.	.
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	.	.	.	.
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	24	0.0168	0.037	11
TRBO	*Trientalis borealis*	.	.	.	.
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	.	.	.	.
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	.	.	.	.
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	8	0.0080	0.028	13
SECY	*Senecio cymbalariodes*	4	0.0040	0.020	16

Total Forb Cover = 0.3192%

continued ...

Reference Stand No. 02N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	64	0.0280	0.042	7
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	36	0.0252	0.043	8
CXFO	*Carex foenea*	.	.	.	.
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	.	.	.	.
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	.	.	.	.
CXSP	*Carex* sp.	.	.	.	.
	Total Graminoid Cover = 0.0532%				
Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.
	Total Pteridophyte Cover = 0.0				

continued ...

Reference Stand No. 02N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacommium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	71	0.085	0.255	11
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	27	0.015	0.035	20
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	13	0.0013	0.0035	31
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	93	0.435	0.479	5
POL PIL	*Polytrichum piliferum*	13	0.0073	0.0258	28
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	20	0.002	0.004	30
PTI C-C	*Ptilium crista-castrensis*	7	0.0007	0.0026	32
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 0.5463%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	100	0.088	0.032	10
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	40	0.010	0.025	23
CLA MIT	*Cladina mitis*	100	77.00	7.27	1
CLA RAN	*Cladina rangiferina*	20	0.020	0.041	17
CLA STE	*Cladina stellaris*	100	0.907	0.875	4
CLA AMA	*Cladonia amaurocraea*	60	0.012	0.025	22
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	33
CLA CHL	*Cladonia chlorophaea*	73	0.031	0.048	15
CLA COC	*Cladonia coccifera*	.	.	.	.
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	100	0.40	0.44	6
CLA CRP	*Cladonia crispata*	.	.	.	.
CLA CRT	*Cladonia cristatella*	20	0.002	0.004	29
CLA GON	*Cladonia gonecha*	67	0.0426	0.0486	14
CLA GRA	*Cladonia gracilis*	93	0.388	0.587	7

continued ...

Reference Stand No. 02N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	53	0.029	0.044	16
CLA PHY	*Cladonia phyllophora*	80	0.062	0.048	12
CLA PYX	*Cladonia pyxidata*	.	.	.	.
CLA SUB	*Cladonia subulata*	.	.	.	.
CLA UNC	*Cladonia uncialis*	87	4.28	7.60	2
CLA VER	*Cladonia verticillata*	7	0.0007	0.0026	34
PEL APH	*Peltigera aphthosa*	13	0.013	0.035	21
PEL MAL	*Peltigera malacea*	93	1.89	1.86	3
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.

Total Terrestrial Lichen Cover = 85.176%

Epiphytic Lichens

BRY SPP	*Bryoria species*	100	0.016	0.023	18
CET HAL	*Cetraria halei*	100	0.208	0.323	8
CET PIN	*Cetraria pinastri*	100	0.010	0.0	24
EVE MES	*Evernia mesomorpha*	100	0.016	0.023	19
HYP PHY	*Hypogymnia physodes*	100	0.052	0.046	13
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	40	0.010	0.025	25
PAR AMB	*Parmeliopsis ambigua*	100	0.010	0.0	26
PAR HYP	*Parmeliopsis hyperopta*	100	0.010	0.0	27
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	100	0.10	0.245	9

Total Epiphytic Lichen Cover = 0.462%

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Reference Stand No. 04N — Permanent Plot No.

Survey Date 5 Aug 1982 — Stand Age 72 yrs

Vascular Plants	Species Richness = 32	Cover = 14.5%
Bryophytes	Species Richness = 6	Cover = 0.89%
Terrestrial Lichens	Species Richness = 17	Cover = 23.5%
Plant Community	Species Richness = 64	Cover = 39.3%

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Trees					
PIBA	*Pinus banksiana*	100	10.1240	9.189	1
PIGL	*Picea glauca*	4	0.0040	0.020	26
PIMA	*Picea mariana*	.	.	.	.
POTR	*Populus tremuloides*	.	.	.	.
POBA	*Populus balsamifera*	.	.	.	.
LALA	*Larix laricina*	.	.	.	.
	Total Tree Cover = 10.1280%				
Shrubs					
VAMY	*Vaccinium myrtilloides*	60	1.0720	1.696	3
VAVI	*Vaccinium vitis-idaea*	.	.	.	.
ARUV	*Arctostaphylos uva-ursi*	96	1.9600	1.258	2
ROAC	*Rosa acicularis*	8	0.0080	0.028	19
PRPE	*Prunus pensylvanica*	16	0.0088	0.028	16
AMAL	*Amelanchier alnifolia*	4	0.0040	0.020	24
RUST	*Rubus strigosus*	.	.	.	.
LODI	*Lonicera dioica*	.	.	.	.
VIED	*Viburnum edule*	.	.	.	.
HUTO	*Hudsonia tomentosa*	4	0.0004	0.002	30
SABE	*Salix bebbiana*	4	0.0200	0.100	14
ALCR	*Alnus crispa*	.	.	.	.
LEGR	*Ledum groenlandicum*	.	.	.	.
RIGL	*Ribes glandulosum*	.	.	.	.
SHCA	*Shepherdia canadensis*	.	.	.	.
SAPS	*Salix pseudomonticola*	.	.	.	.
SYAL	*Symphoricarpos albus*	.	.	.	.
VACA	*Vaccinium caespitosum*	.	.	.	.
BEPU	*Betula pumila*	.	.	.	.
SAMY	*Salix myrtillifolia*	.	.	.	.
	Total Shrub Cover = 3.0732%				

continued ...

Reference Stand No. 04N Continued.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Forbs					
MACA	*Maianthemum canadense*	100	0.4464	0.493	4
ASLA	*Aster laevis*	56	0.1044	0.213	8
ANMU	*Anemone multifida*	24	0.0096	0.027	15
GABO	*Galium boreale*	.	.	.	.
MELI	*Melampyrum lineare*	24	0.0328	0.103	11
LIBO	*Linnaea borealis*	.	.	.	.
CARO	*Campanula rotundifolia*	52	0.0052	0.005	21
SODE	*Solidago decumbens*	84	0.1140	0.152	7
VIAD	*Viola adunca*	8	0.0080	0.028	18
APAN	*Apocynum androsaemifolium*	64	0.2776	0.473	5
COPA	*Comandra pallida*	.	.	.	.
FRVI	*Fragaria virginiana*	44	0.0456	0.104	9
POTRI	*Potentilla tridentata*	16	0.0088	0.028	17
GELI	*Geocaulon lividum*	.	.	.	.
PYVI	*Pyrola virens*	52	0.0376	0.048	10
HICA	*Hieracium canadense*	20	0.0288	0.102	12
PYSE	*Pyrola secunda*	.	.	.	.
EPAN	*Epilobium angustifolium*	.	.	.	.
ARCA	*Artemisia campestris*	8	0.0044	0.020	22
ARNU	*Aralia nudicaulis*	.	.	.	.
COCA	*Cornus canadensis*	.	.	.	.
LIPH	*Lilium philadelphicum*	.	.	.	.
ANPA	*Anemone patens*	4	0.0040	0.020	25
TRBO	*Trientalis borealis*	4	0.0004	0.002	31
VIRE	*Viola renifolia*	.	.	.	.
GORE	*Goodyera repens*	4	0.0004	0.002	29
LAOC	*Lathyrus ochroleucus*	.	.	.	.
VIAM	*Vicia americana*	.	.	.	.
PEPA	*Petasites palmatus*	.	.	.	.
ASCI	*Aster ciliolatus*	.	.	.	.
CYAC	*Cypripedium acaule*	.	.	.	.
ACMI	*Achillea millefolium*	32	0.0068	0.020	20
ANRA	*Antennaria racemosa*	.	.	.	.
GEAM	*Gentianella amarella*	.	.	.	.
RUAC	*Rubus acaulis*	.	.	.	.
PYAS	*Pyrola asarifolia*	.	.	.	.
MINU	*Mitella nuda*	.	.	.	.
DRSP	*Draba* sp.	.	.	.	.
SESP	*Senecio* sp.	.	.	.	.
SECY	*Senecio cymbalarioides*	8	0.0044	0.020	23
STLO	*Stellaria longipes*	4	0.0004	0.002	28
ARLY	*Arabis lyalii*	12	0.0012	0.003	27

Total Forb Cover = 1.1408%

continued ...

Reference Stand No. 04N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Bryophytes					
AUL PAL	*Aulacomnium palustre*	.	.	.	.
BRA SAL	*Brachythecium salebrosum*	.	.	.	.
CER PUR	*Ceratodon purpureus*	.	.	.	.
DIC POL	*Dicranum polysetum*	53	0.017	0.033	17
DIC SCO	*Dicranum scoparium*	.	.	.	.
DIT FLE	*Ditrichum flexicaule*	.	.	.	.
DRE UNC	*Drepanocladus uncinatus*	.	.	.	.
HYL SPL	*Hylocomium splendens*	7	0.0007	0.0026	29
ORT FLA	*Orthodicranum flagellare*	.	.	.	.
PLE SCH	*Pleurozium schreberi*	13	0.007	0.0026	20
POH NUT	*Pohlia nutans*	.	.	.	.
POL JUN	*Polytrichum juniperinum*	53	0.348	0.610	8
POL PIL	*Polytrichum piliferum*	87	0.507	0.609	7
PTI CIL	*Ptilidium ciliare*	.	.	.	.
PTI PUL	*Ptilidium pulcherrimum*	13	0.007	0.026	21
PTI C-C	*Ptilium crista-castrensis*	.	.	.	.
TET ANG	*Tetraplodon angustatus*	.	.	.	.
TOM NIT	*Tomenthypnum nitens*	.	.	.	.
	Total Bryophyte Cover = 0.8867%				
Terrestrial Lichens					
CET ERI	*Cetraria ericetorum*	53	0.035	0.047	12
CET CUC	*Cetraria cucullata*	.	.	.	.
CET NIV	*Cetraria nivalis*	.	.	.	.
CLA MIT	*Cladina mitis*	100	15.41	23.89	1
CLA RAN	*Cladina rangiferina*	.	.	.	.
CLA STE	*Cladina stellaris*	7	0.0007	0.0026	30
CLA AMA	*Cladonia amaurocraea*	.	.	.	.
CLA CAP	*Cladonia capitata*	.	.	.	.
CLA CEN	*Cladonia cenotea*	7	0.0007	0.0026	31
CLA CHL	*Cladonia chlorophaea*	73	0.085	0.255	11
CLA COC	*Cladonia coccifera*	93	0.033	0.042	13
CLA CON	*Cladonia coniocraea*	.	.	.	.
CLA COR	*Cladonia cornuta*	80	0.822	1.065	6
CLA CRP	*Cladonia crispata*	20	0.002	0.004	26
CLA CRT	*Cladonia cristatella*	33	0.003	0.005	25
CLA GON	*Cladonia gonecha*	47	0.0047	0.0051	24
CLA GRA	*Cladonia gracilis*	93	1.56	2.15	4

continued ...

Reference Stand No. 04N Continued

CODE	Species	Frequency % 5x5 m Plots	Plant Cover % Mean	S.D.	Rank
Graminoids					
ORPU	*Oryzopsis pungens*	88	0.1488	0.289	6
ELIN	*Elymus innovatus*	.	.	.	.
CXUM	*Carex umbellata*	.	.	.	.
CXFO	*Carex foenea*	16	0.0212	0.100	13
ORAS	*Oryzopsis asperifolia*	.	.	.	.
AGSC	*Agrostis scabra*	.	.	.	.
BRCI	*Bromus ciliatus*	.	.	.	.
SCPU	*Schizachne purpurascens*	.	.	.	.
JUBA	*Juncus balticus*	.	.	.	.
ELGL	*Elymus glaucus*	.	.	.	.
CACA	*Calamagrostis canadensis*	.	.	.	.
CAIN	*Calamagrostis inexpansa*	.	.	.	.
CXSP	*Carex* sp.	.	.	.	.
FESA	*Festuca saximontana*	4	0.0004	0.002	32
	Total Graminoid Cover = 0.1704%				
Pteridophytes					
EQVA	*Equisetum variegatum*	.	.	.	.
LYTR	*Lycopodium tristachyum*	.	.	.	.
LYAN	*Lycopodium annotinum*	.	.	.	.
EQSY	*Equisetum sylvaticum*	.	.	.	.
EQSC	*Equisetum scirpoides*	.	.	.	.
EQPR	*Equisetum pratense*	.	.	.	.
LYCL	*Lycopodium clavatum*	.	.	.	.
EQAR	*Equisetum arvense*	.	.	.	.
SEDE	*Selaginella densa*	.	.	.	.
	Total Pteridophyte Cover = 0.0				

continued ...

Reference Stand No. 04N Concluded.

CODE	Species	Frequency % 5x5 m Plots	Plant Cover Mean	S.D.	Rank
CLA MUL	*Cladonia multiformis*	47	0.023	0.040	14
CLA PHY	*Cladonia phyllophora*	93	1.85	2.35	3
CLA PYX	*Cladonia pyxidata*	13	0.001	0.004	28
CLA SUB	*Cladonia subulata*	.	.	.	.
CLA UNC	*Cladonia uncialis*	80	2.49	3.47	2
CLA VER	*Cladonia verticillata*	.	.	.	.
PEL APH	*Peltigera aphthosa*	.	.	.	.
PEL MAL	*Peltigera malacea*	73	1.15	1.34	5
PEL RUF	*Peltigera rufescens*	.	.	.	.
STE ALP	*Stereocaulon alpinum*	.	.	.	.
CLA CAR	*Cladonia cariosa*	7	0.0007	0.0026	32

Total Terrestrial Lichen Cover = 23.47%

Epiphytic Lichens

BRY SPP	*Bryoria species*	73	0.007	0.005	22
CET HAL	*Cetraria halei*	73	0.013	0.024	19
CET PIN	*Cetraria pinastri*	100	0.022	0.032	15
EVE MES	*Evernia mesomorpha*	33	0.015	0.035	18
HYP PHY	*Hypogymnia physodes*	73	0.007	0.005	23
PAR ELE	*Parmelia elegantula*	.	.	.	.
PAR SUL	*Parmelia sulcata*	20	0.002	0.004	27
PAR AMB	*Parmeliopsis ambigua*	93	0.087	0.254	10
PAR HYP	*Parmeliopsis hyperopta*	60	0.018	0.034	16
PLA GLA	*Platismatia glauca*	.	.	.	.
USN SPP	*Usnea species*	87	0.213	0.556	9

Total Epiphytic Lichen Cover = 0.384%

4.4.2 Synthesis Table for Stands Established in 1982

The synthesis table in this report, Table 5, is similar to Table 5 in the First Report. The similarity is to facilitate comparison and integration of the four new stands into the total permanent plot array. The four new stands are arranged in order of increasing age.

It should be noted that constancy percent in this table is based on the four new stands only.

4.4.3 Species Structure and Dominance Hierarchy of Reference Stands

For a discussion of this community characteristic, See section 4.4.3 First Report.

Graphic plots of species structure and dominance hierarchy for all stands are included in the Appendix as part of the computer output.

4.4.3.1 Vascular Plant Community

The four new stands established and surveyed in 1982 are typical of the *Pinus banksiana* forests and woodlands on light textured soils in the Oil Sands area. The general comments regarding this type of plant community (See section 4.4.3.1 First Report) hold for the four new stands.

4.4.3.2 Bryophyte and Lichen Community

Here, too, the general discussion given in the First Report is applicable. In addition, the occurrence of the crustose lichen *Lecidea granulosa* in stands 01N and 03N is perhaps noteworthy. This species grows as a crust on soil and particularly in 01N it probably has been an important soil stabilizing factor. Also, in stand 01N the epiphytic community is absent on tree bases and branches. In this stand the epiphytes are associated only with twigs and fallen wood on the ground.

[text resumes on page 36]

Table 5. Synthesis table showing the estimated % cover of major plant growth-forms[a]; the % Constancy of occurrence of species[b], and the cover-class[c] of species in the four new reference stands established in 1982 in the *Pinus banksiana* dominated permanent plots of the Athabasca Oil Sands area in northern Alberta.

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Tree		*6*	*11*	*14*	*10*
Pinus banksiana	100	5	6	6	6
Picea glauca	25	.	.	.	2
Picea mariana	.	.	.	.	.
Populus tremuloides	25	.	2	.	.
Populus balsamifera	.	.	.	.	.
Larix laricina	.	.	.	.	.
Shrub		*11*	*4*	*2*	*3*
Vaccinium myrtilloides	100	5	4	4	5
Vaccinium vitis-idaea	50	5	.	4	.
Arctostaphylos uva-ursi	100	5	5	4	5
Rosa acicularis	50	2	.	.	2
Prunus pensylvanica	75	4	3	.	2
Amelanchier alnifolia	75	2	1	.	2
Rubus strigosus	50	3	2	.	.
Lonicera dioica	.	.	.	.	.
Viburnum edule	.	.	.	.	.
Hudsonia tomentosa	50	.	2	.	1
Salix bebbiana	50	.	.	2	3
Alnus crispa	25	5	.	.	.
Ledum groenlandicum	.	.	.	.	.
Shepherdia canadensis	.	.	.	.	.
Salix pseudomonticola	.	.	.	.	.
Symphoricarpos albus	.	.	.	.	.
Vaccinium caespitosum	.	.	.	.	.
Betula pumila	.	.	.	.	.
Salix myrtillifolia	.	.	.	.	.
Salix sp.	25	.	4	.	.
Forb		*1*	*1*	*t*	*1*
Maianthemum canadense	100	4	4	4	4
Aster laevis	100	4	3	3	4
Anemone multifida	100	3	2	1	2

continued...

Table 5. Continued

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Galium boreale	50	3	.	2	.
Melampyrum lineare	25				3
Linnaea borealis	75	4	2	3	.
Campanula rotundifolia	100	2	3	1	2
Solidago decumbens	100	4	4	2	4
Viola adunca	75	2	2	.	2
Apocynum androsaemifolium	100	3	3	1	4
Comandra pallida	.	.	.	.	.
Fragaria virginiana	75	4	3	.	3
Potentilla tridentata	75	4	1	.	2
Geocaulon lividum	.	.	.	.	.
Pyrola virens	100	1	2	3	3
Hieracium canadense	25	.	.	.	3
Pyrola secunda	.	.	.	.	.
Epilobium angustifolium	25	3	.	.	.
Artemisia campestris	75	2	3	.	2
Aralia nudicaulis	.	.	.	.	.
Cornus canadensis	.	.	.	.	.
Lilium philadelphicum	.	.	.	.	.
Anemone patens	100	3	2	3	2
Trientalis borealis	25	.	.	.	1
Viola renifolia	.	.	.	.	.
Goodyera repens	25	.	.	.	1
Lathyrus ochroleucus	.	.	.	.	.
Vicia americana	.	.	.	.	.
Petasites palmatus	.	.	.	.	.
Aster ciliolatus	25	2	.	.	.
Achillea millefolium	75	3	1	.	2
Antennaria racemosa	25	3	.	.	.
Gentianella amarella	.	.	.	.	.
Rubus acaulis	.	.	.	.	.
Pyrola asarifolia	.	.	.	.	.
Mitella nuda	.	.	.	.	.
Draba sp.	.	.	.	.	.
Senecio sp.	50	3	.	2	.
Senecio cymbalarioides	75	.	1	2	2
Stellaria longipes	25	.	.	.	1
Arabis lyallii	25	.	.	.	2

Table 5. Continued

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	031	02N	04N
Graminoid		*1*	*t*	*t*	*t*
Oryzopsis pungens	100	4	3	3	4
Elymus innovatus	.	.	.	.	.
Carex umbellata	75	4	1	3	.
Carex foenea	75	3	3	.	3
Oryzopsis asperifolia	25	1	.	.	.
Agrostis scabra	50	2	2	.	.
Bromus ciliatus	.	.	.	.	.
Schizachne purpurascens	.	.	.	.	.
Juncus balticus	.	.	.	.	.
Elymus glaucus	.	.	.	.	.
Calamagrostis canadensis	.	.	.	.	.
Calamagrostis inexpansa	50	3	3	.	.
Carex sp.	.	.	.	.	.
Festuca saximontana	75	2	2	.	2
Pteridophyte		*t*	*o*	*o*	*o*
Equisetum variegatum	.	.	.	.	.
Lycopodium tristachyum	.	.	.	.	.
Lycopodium annotinum	.	.	.	.	.
Equisetum sylvaticum	.	.	.	.	.
Equisetum scirpoides	.	.	.	.	.
Equisetum pratense	.	.	.	.	.
Lycopodium clavatum	.	.	.	.	.
Equisetum arvense	.	.	.	.	.
Selaginella densa	25	1	.	.	.
Bryophyte		*7*	*12*	*1*	*1*
Aulacomnium palustre	.	.	.	.	.
Brachythecium salebrosum	.	.	.	.	.
Ceratodon purpureus	.	.	.	.	.
Dicranum polysetum	75	1	.	3	3
Dicranum scoparium	.	.	.	.	.
Ditrichum flexicaule	.	.	.	.	.
Drepanocladus uncinatus	.	.	.	.	.
Hylocomium splendens	75	1	.	3	1
Orthodicranum flagellare	.	.	.	.	.
Pleurozium schreberi	75	1	.	2	2
Pohlia nutans	.	.	.	.	.

continued...

Table 5. Continued

Growth-Form	Constancy	Reference Stand Number			
Speices	(%)	01N	03N	02N	04N
Polytrichum juniperinum	100	2	2	4	4
Polytrichum piliferum	100	5	6	2	4
Ptilidium ciliare	.	.	.	.	.
Ptilidium pulcherrimum	50	.	.	2	2
Ptilium crista-castrensis	25	.	.	1	.
Tetraplodon angustatus	.	.	.	.	.
Tomenthypnum nitens	.	.	.	.	.
Terrestrial Lichen		*20*	*7*	*85*	*23*
Cettaria ericetorum	100	3	4	3	3
Cetraria cucullata	.	.	.	.	.
Cetraria nivalis	50	.	.	3	.
Cladina mitis	100	6	5	6	6
Cladina rangiferina	25	.	.	3	.
Cladina stellaris	75	1	.	4	1
Cladonia amaurocraea	50	2	.	3	.
Cladonia capitate	25	.	1	.	.
Cladonia cariosa	.	.	.	.	1
Cladonia cenotea	100	1	2	1	1
Cladonia chlorophaea	100	3	2	3	3
Cladonia coccifera	75	4	3	.	3
Cladonia coniocraea	.	.	.	.	.
Cladonia cornuta	100	4	4	4	4
Cladonia crispata	25	.	.	.	2
Cladonia creitatella	100	4	3	2	2
Cladonia gonecha	100	2	2	3	2
Cladonia gracilis	100	4	4	4	5
Cladonia multiformis	100	3	3	3	3
Cladonia phyllophora	100	5	4	3	5
Cladonia pyxidata	75	3	2	.	2
Cladonia subulata	50	3	3	5	5
Cladonia uncialis	100	3	3	5	5
Cladonia verticillata	75	2	2	1	.
Lecidea granulosa	50	4	2	.	.
Peltigera aphthosa	75	3	3	3	.
Peltigera malacea	100	5	5	5	5
Peltigera rufescens	25	2	.	.	.
Stereocaulon alpinum	25	2	.	.	.

continued...

Table 5. Concluded

Growth-Form / Species	Constancy (%)	Reference Stand Number 01N	03N	02N	04N
Epiphytic Lichen		*t*	*t*	*t*	*t*
Bryoria spp.	100	1	2	3	2
Cetraria halei	100	2	2	4	3
Cetraria pinastri	100	3	3	3	3
Evernia mesomorpha	100	1	2	3	3
Hypogymnia physodes	100	3	3	3	2
Parmelia elegantula	.	.	.	.	.
Parmelia sulcata	75	2	.	3	2
Parmeliopois ambigua	100	3	3	3	3
Parmeliopsis hyperopta	100	2	2	3	3
Platismatia glauca	.	.	.	.	.
Usnea spp.	100	2	3	4	4

[a] % Cover of growth-forms was calculated as the sum of the mean % cover values of component species from Table 4, and printed in italicized numbers; *t* = less than 0.5% cover, i.e., 'trace'.

[b] Constancy values expressed as % occurrence of a species in reference stand nos. 01N-04N, all of which occur on Dystric Brunisolic sand soils.

[c] Cover-classes are logarithmic: 1 = 0.0001 to 0.001%; 2 = > 0.001 to 0.01%; 3 = > 0.01 to 0.1%; 4 = > 0.1 to 1.0%; 5 = > 1.0 to 10%; 6 = > 10 to 100%. (see section 4.4.2, First Report).

4.5 SOME COMPARISONS OF 1981 AND 1982 SURVEY DATA

4.5.1 Total Plant Cover in 12 Reference Stands

Figure 2 shows the relationship between total cover % for 1981 and 1982 for three major plant groups: Vascular plants, Bryophytes and Terrestrial Lichens. Neither the four new reference stands nor the four which burned in 1981 are considered here.

The range and mean value for Cover % change between 1981 and 1982 for the 12 reference stands are:

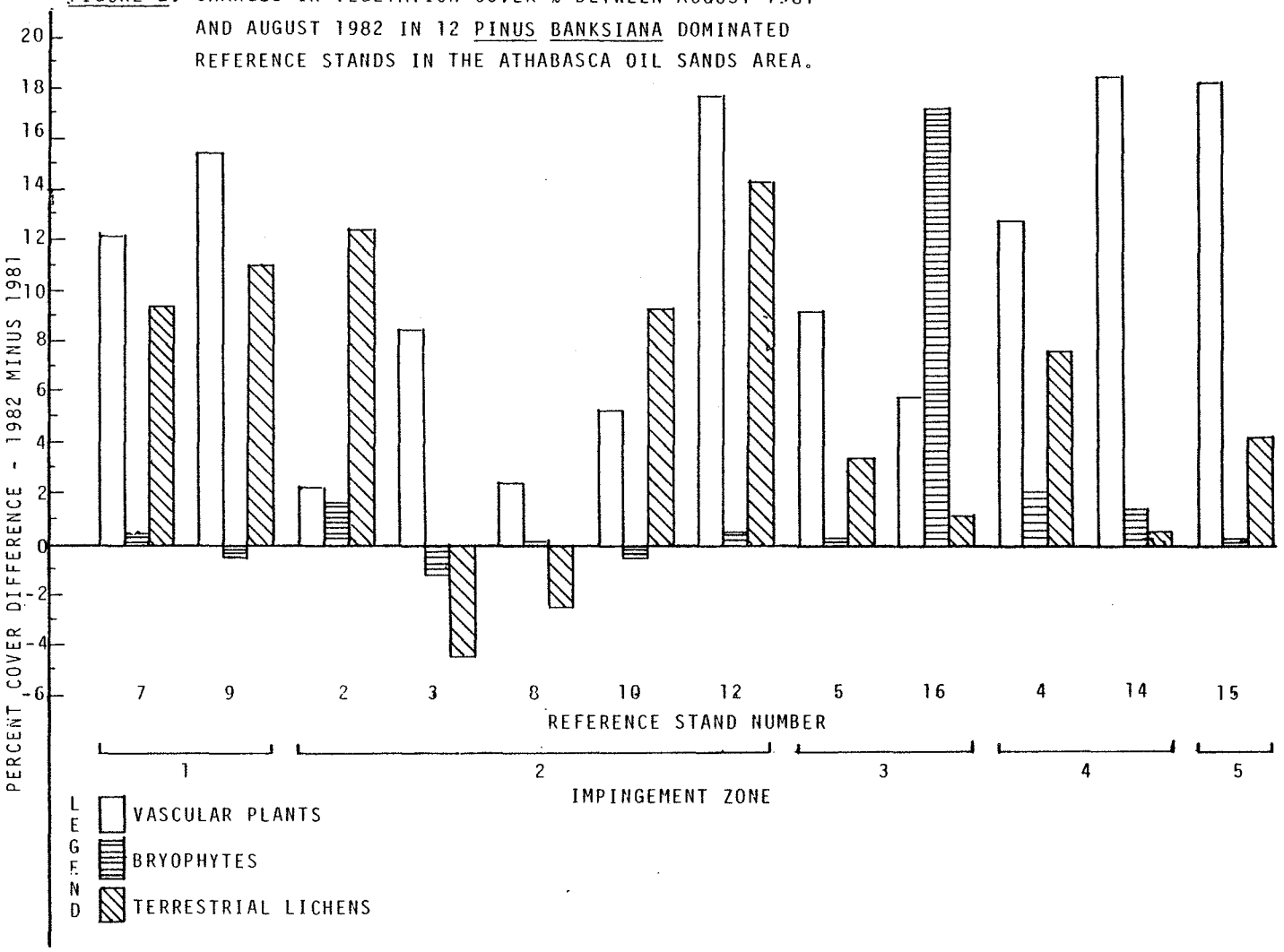
Vascular plants	+2.5 to + 18.6; mean + 10.7
Bryophytes	-1.0 to + 17.2; mean + 1.9
Lichens	-4.2 to + 14.3; mean + 6.0

From the above and from Fig. 2 it is evident that there was a notable over-all increase in cover between August 1981 and August 1982. What part of the increase is due to the presumably more favourable moisture and temperature conditions in 1982 as compared to 1981 and what part of the increase may be due to other factors is not clear at present.

Moisture conditions are probably the key factor responsible for the increased vascular plant cover but microhabitat changes related to successional change, particularly tree canopy height and density, are without a doubt involved. The quantitative aspects and rates of change in microhabitats beneath the dominant vegetation canopy and the corresponding responses in subordinate communities are not yet known.

If only the brophyte cover data are considered (see Fig. 2) it can be seen that departures from no change between 1981 and 1982 are small except for Reference Stand 16. If Stand 16 is deleted the mean change in Cover % 1981 to 1982 for the remaining 11 stands becomes + 0.5 %; essentially no change. It is unlikely that growing conditions related to macroclimate are responsible for the anomalous increase in bryophyte cover in Stand 16. It seems possible, based on observations made in connection with the SEADYN project at Hondo and elsewhere, that the successional transition from a lichen-dominated to a bryophyte-dominated non-vascular flora can occur relatively quickly (5 y $\pm$,?). It may be that we are looking at Stand 16 during

FIGURE 2. CHANGES IN VEGETATION COVER % BETWEEN AUGUST 1981 AND AUGUST 1982 IN 12 PINUS BANKSIANA DOMINATED REFERENCE STANDS IN THE ATHABASCA OIL SANDS AREA.



such a transition. If the hypothesis is valid a surge in bryophyte cover should occur in Stand 15 before too many years. Although cover of bryophytes in Stand 15 is under 6% the frequency of the feather mosses is high: *Pleurozium schreberi* 100%, *Hylocomium splendens* 87%, *Ptilium crista-castrensis* 87%. Stand 15 (in Impingement Zone 5) is, in effect, fully colonized by the feather mosses but the area is as yet not fully exploited.

The significance of the foregoing is that rather dramatic changes in cover of bryophytes or lichens might be part of a normal sequence of change. Until normal successional changes in the Oil Sands Area are better understood interpretations of changes in the flora which implicate factors extrinsic to the plant community should be made with considerable reserve.

4.5.2 Comparison of Selected Community Statistics

Table 6 provides comparative data for all stands surveyed in 1981 and 1982. Vascular plants, bryophytes, and terrestrial lichens are each treated separately. Community attributes included are: Species Richness (R), Dominance Index (D), Diversity Index (H'), Total Cover (%) and change in cover between the two years (Δ), where applicable.

Vascular Plants, R: A few more species were recorded present in 1982 compared to 1981. Six stands showed an increase, three a decrease and three no change. This is probably due to better moisture conditions and greater visibility of rare or ephemeral species. No trend related to impingement zones is evident.

Vascular Plants, D: Of the 12 unburned stands surveyed in both 1981 and 1982, eight decreased in D, three increased and one remained unchanged. The inference is that the better growing conditions in 1982 compared to 1981 led to a more even distribution of cover among vascular species in the stands.

Vascular Plants, H': Of the 12 unburned stands surveyed in both 1981 and 1982, nine increased in H' and three decreased. This increase in vascular plant diversity in 1982 compared to 1981 is due to increases in both R and D of the stands.

Vascular Plants, Total Cover %: There was an over-all increase in vascular plant cover from 1981 to 1982. (See Fig. 2 and section 4.5.1 of this report).

In summary, the summer of 1982 was much more favorable for vascular plants than that of 1981 with regard to species richness, species evenness, species diversity and total plant cover. The vascular plant community shows no evidence of pollution-induced or -correlated trends in community indices or total cover at this time.

Bryophytes, *R*: There were no significant changes in number of species per stand between 1981 and 1982.

Bryophytes, *D*: of the 12 unburned stands surveyed in 1981 and 1982, five increased in *D*, six decreased, one remained the same from 1981 to 1982. There is no apparent trend in the dominance indices.

Bryophytes, *H'*: Six stands increased in *H'* and six decreased from 1981 to 1982. No trend is shown.

Bryophytes, Total Cover %: (See Fig. 2 and section 4.5.1 of this report).

In summary, of the four community indices monitored, only Total Bryophyte Cover % showed a significant change which was mainly confined to Reference Stand 16. Otherwise there was little observable change between 1981 and 1982.

Terrestrial Lichens, *R*: The number of lichen species recorded per stand increased in eight, decreased in two and remained the same in two of the 12 unburned stands surveyed in both 1981 and 1982. The increase may be attributed to (a) better visibility of lichens because of more moist conditions in 1982, (b) better growing conditions in 1982, and (c) increased knowledge of the lichen flora.

Terrestrial Lichens, *D*: *D* increased in seven, decreased in five of the stands between 1981 and 1982. No significant trend is apparent.

Terrestrial Lichens, *H'*: *H'* increased in eight, decreased in four of the 12 unburned stands surveyed in 1981 and 1982. The increase in *H'* between 1981 and 1982 is probably due to an increase in both *R* and evenness.

Table 6. Vascular plant species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of north-eastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement Zone	Reference Stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	16	.	0.661	.	0.710	.	10.8	.	.
	13B	12	.	0.916	.	0.212	.	12.8	.	.
	N1	.	36	.	0.204	.	1.991	.	18.51	.
	N2	.	19	.	0.743	.	0.642	.	16.20	.
1	1B	32	36	0.219	0.081	1.994	2.769	11.7	3.92	- 7.78
	11B	36	26	0.196	0.164	2.077	2.161	34.1	4.64	-29.46
	7	32	32	0.443	0.274	1.398	1.751	21.2	33.31	+12.11
	9	42	42	0.220	0.181	1.973	2.037	25.3	40.68	+15.38
	N3	.	30	.	0.551	.	0.983	.	15.39	.
	N4	.	32	.	0.512	.	1.138	.	14.51	.
2	2	10	10	0.951	0.902	0.121	0.208	28.3	30.37	+ 2.07
	3	35	43	0.198	0.230	1.057	1.966	42.0	50.46	+ 8.46
	8	20	19	0.255	0.347	1.776	1.544	11.2	13.71	+ 2.51
	10	18	19	0.286	0.270	1.443	1.465	20.7	25.99	+ 5.29
	12	17	16	0.372	0.338	1.302	1.253	15.9	33.69	+17.79
3	5	22	25	0.418	0.303	1.266	1.455	26.0	35.19	+ 9.19
	16*	46	50	0.166	0.138	2.266	2.440	45.3	51.26	+ 5.96
4	4	26	24	0.201	0.202	1.855	1.874	20.7	33.46	+12.76
	14	23	24	0.178	0.243	1.999	1.809	23.5	42.05	+18.55
5	15*	43	44	0.201	0.184	2.028	2.106	42.1	60.39	+18.29

B burned over in autumn 1981
N newly established in summer 1982
* on heavy-textured soil.

Table 6. Bryophyte species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of northeastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement Zone	Reference Stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Total Cover Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	1	.	1.000	.	0.000	.	0.4	.	.
	13B	2	.	0.625	.	0.562	.	0.03	.	.
	N1	.	5	.	0.999	.	0.006	.	7.03	.
	N2	.	7	.	0.659	.	0.670	.	0.547	.
1	1B	2	.	0.980	.	0.057	.	2.7	.	.
	11B	6	.	0.864	.	0.310	.	68.7	.	.
	7	10	10	0.264	0.329	1.525	1.349	0.4	0.77	+ 0.37
	9	10	9	0.888	0.637	0.302	0.719	16.0	19.06	+ 3.06
	N3	.	2	.	0.999	.	0.005	.	11.87	.
	N4	.	6	.	0.481	.	0.848	.	0.89	.
2	2	2	3	0.998	0.995	0.007	0.019	1.2	2.81	+ 1.71
	3	11	9	0.659	0.668	0.697	0.625	3.8	1.79	- 1.01
	8	1	2	1.000	0.980	0.000	0.057	0.1	0.13	+ 0.03
	10	9	7	0.534	0.406	0.798	1.046	2.8	2.28	- 0.52
	12	8	7	0.313	0.389	1.410	1.127	5.3	5.91	+ 0.61
3	5	7	8	0.265	0.567	1.517	0.866	0.02	0.15	+ 0.13
	16*	12	10	0.604	0.572	0.755	0.726	30.3	47.53	+17.23
4	4	7	6	0.893	0.709	0.446	0.604	1.6	3.60	+ 2.00
	14	8	8	0.463	0.321	0.990	1.312	0.6	1.95	+ 1.35
5	15*	13	12	0.385	0.438	1.075	0.992	5.5	5.75	+ 0.25

B burned over in autumn 1981.
N newly established in summer 1982.
* on heavy-textured soil.

Table 6. Terrestrial lichen species richness, dominance index, diversity index, and total cover in 20 *Pinus banksiana*-dominated reference stands of the Athabasca Oil Sands region of north-eastern Alberta in 1981 and 1982. Indices defined in Methods.

Impingement zone	Reference stand	Species Richness (R, no. spp.)		Dominance Index (D)		Diversity Index (H')		Total Cover %		Δ
		1981	1982	1981	1982	1981	1982	1981	1982	'82-'81
0	6B	17	.	0.787	.	0.506	.	66.4	.	.
	13B	14	.	0.398	.	1.079	.	69.2	.	.
	N1	.	22	.	0.575	.	1.043	.	19.5	.
	N2	.	18	.	0.820	.	0.452	.	85.2	.
1	1B	10	.	0.231	.	1.636	.	12.0	.	.
	11B	14	.	0.335	.	1.603	.	0.7	.	.
	7	20	20	0.874	0.858	0.324	0.373	46.8	56.2	+9.4
	9	15	17	0.911	0.864	0.248	0.333	43.6	54.7	+11.1
	N3	.	20	.	0.339	.	1.434	.	7.2	.
	N4	.	17	.	0.506	.	1.105	.	22.1	.
2	2	13	16	0.344	0.600	1.229	0.897	27.4	39.9	+12.5
	3	19	18	0.972	0.971	0.104	0.099	46.0	41.4	-4.6
	8	15	22	0.973	0.911	0.124	0.285	76.3	73.7	-2.6
	10	17	22	0.904	0.862	0.271	0.387	66.6	75.8	+9.2
	12	20	19	0.670	0.788	0.770	0.522	30.3	44.6	+14.3
3	5	16	19	0.963	0.892	0.124	0.294	66.5	69.9	+3.4
	16*	15	16	0.200	0.572	1.848	0.726	1.8	2.9	+1.1
4	4	20	20	0.768	0.781	0.585	0.590	21.9	39.7	+7.8
	14	16	17	0.382	0.277	1.367	1.716	2.9	3.5	+0.6
5	15*	17	20	0.652	0.614	0.846	0.959	6.2	10.4	+4.2

B burned over in autumn 1981.
N newly established in summer 1982.
* on heavy-textured soil.

Terrestrial Lichens, Total Cover %: (See Fig. 2 and section 4.5.1 of this report).

In summary, the terrestrial lichen community increased in richness, diversity and cover between 1981 and 1982 in most of the 12 unburned stands surveyed in both years. The increase is probably due to the better growing conditions and the better visibility of the lichens in 1982 as compared with 1981. No trends relating to the impingement zones are evident.

4.5.3 Comparison of 1981 and 1982 Cover Data for Four Selected Reference Stands

In an ordination (not shown) the 12 unburned stands fall into three groups based on vascular plant cover %. Low cover group: Stand No. 8 only 13.7%. Medium cover group: Stands No. 10,2,4,7,12, 5,9,14. Mean 34.3%, range 26% to 42%. High cover group: Stands No. 3,15,16. Mean 54.0%, range 50.5% to 60.4%. (The cover % values used above are based on the 1982 survey).

Table 7 was compiled to include stands representative of the three cover groups. Included in Table 7 are Stand No. 8 (Low cover group); Stands No. 5 and 14 (Medium cover group); and Stand No. 3 (High cover group). Changes in dominance hierarchy, i.e., changes in Cover Rank between 1981 and 1982 are expressed as Spearman's Rank Correlation coefficient, r_s, and it shows that there is very close correlation between 1981 and 1982 dominance hierarchy for the vascular plants. For the bryophytes and lichens the correlation is not as high, but nevertheless significant. It might be noted that Stand No. 3 was the first stand surveyed in 1981 and that $r_s = 0.571$ for bryophytes and lichens might be a reflection of lack of familiarity with the flora more than a reflection of changes in the dominance hierarchy.

[text resumes on page 52]

Table 7. Comparison of 1981 and 1982 plant cover data for Reference Stands No. 8,5,14, and 3 in *Pinus banksiana*-dominated permanent plots of the Athabasca Oil Sands area. Each reference stand is presented as a two-page data set, with stands arranged in order of increasing vascular plant cover.

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 8.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
PIBA	5.00	7.64	+2.64	+1	1	1	.	.
ARUV	2.10	2.06	-0.05	-5	2	2	.	.
VAVI	1.15	0.736	-0.414	-1	3	4	1	1
VAMY	0.816	1.052	+0.236	+2	4	3	1	1
ROAC	0.504	0.604	+0.100	+4	5	6	1	1
MACA	0.473	0.6764	+0.2034	+3	6	5	1	1
ASLA	0.408	0.3564	-0.0516	-4	7	7	.	.
APAN	0.404	0.2768	-0.1272	-2	8	8	.	.
SODE	0.205	0.1484	-0.0566	-3	9	9	.	.
PRPE	0.0764	0.072	-0.0044	.	10	10	.	.
ORPU	0.034	0.0152	-0.0188	-6	11	12	1	1
CARO	0.0164	0.0100	-0.0064	.	12	13	1	1
MELI	0.012	0.0444	+0.0324	+5	13	11	2	4
HICA	0.0108	.	-0.0108	-7	14	21.5	7.5	56.25
ANMU	0.0084	0.0052	-0.0032	.	15	14	1	1
CXFO	0.0064	0.0040	-0.0024	.	16	16.5	0.5	0.25
POTRI	0.0056	.	-0.0056	.	17	21.5	4.5	20.25
CXUM	0.0052	0.0048	-0.0004	.	18	15	3	9
PYVI	0.0008	.	-0.0008	.	19	21.5	2.5	6.25
ANPA	0.0004	.	-0.0004	.	20	21.5	1.5	2.25
PRVI	.	0.0004	+0.0004	+8	22	19	3	9
AGSC	.	0.0008	+0.0008	+7	22	18	4	16
POTR	.	0.0040	+0.0040	+6	22	16.5	5.5	30.25
Totals	11.20	13.71	+2.51	8+,15-	.	.	r_s = + 0.921	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 8.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
POL JUN	.	0.001	+0.001	.	28.5	26.5	2	4
POL PIL	0.088	0.128	+0.040	.	10	11	1	1
CET ERI	0.214	0.214	0.0	.	2	6	4	16
CET NIV	0.004	0.025	+0.021	.	21.5	18	3.5	12.25
CLA MIT	75.3	70.3	-5.00	-1	1	1	.	.
CLA RAN	0.003	0.001	-0.02	-3	23	26.5	3.5	12.25
CLA STE	0.130	0.442	+0.312	+3	4	4	.	.
CLA CAP	0.0007	0.001	+0.0003	.	26.5	27	1.5	2.25
CLA CEN	.	0.004	+0.004	.	28.5	24	4.5	20.25
CLA CHL	0.031	0.115	+0.084	.	14	12	2	4
CLA COC	.	0.029	+0.029	.	28.5	17	11.5	132.25
CLA COR	0.124	0.213	+0.089	+7	6	7	1	1
CLA CRP	.	0.0007	+0.0007	.	28.5	30.5	2	4
CLA CRT	0.069	0.051	-0.018	-4.5	12	13	1	1
CLA GON	0.151	0.033	-0.018	-4.5	3	16	13	169
CLA GRA	0.070	0.207	+0.137	+5	11	8	3	9
CLA MUL	0.016	0.741	+0.725	+1	16	3	13	169
CLA PHY	0.039	0.174	+0.135	+6	13	10	3	9
CLA PYX	.	0.001	+0.001	.	28.5	26.5	2	4
CLA SUB	.	0.0007	+0.0007	.	28.5	30.5	2	4
CLA UNC	0.121	0.314	+0.193	+4	7	5	2	4
CLA VER	.	0.0007	+0.0007	.	28.5	30.5	2	4
PEL MAL	0.100	0.813	+0.713	+2	8	2	6	36
PEL RUF	.	0.0007	+0.0007	.	28.5	30.5	2	4
BRY SPP	0.004	0.010	+0.006	.	21.5	22	0.5	0.25
CET HAL	0.011	0.016	+0.005	.	18	20	2	4
CET PIN	0.094	0.046	-0.048	-2	9	14	5	25
EVE MES	0.011	0.010	-0.001	-7	19.5	22	2.5	6.25
HYP PHY	0.021	0.040	+0.019	.	15	15	.	.
PAR AMB	0.129	0.177	+0.048	.	5	9	4	16
PAR HYP	0.011	0.021	+0.010	.	19.5	19	0.5	0.25
USN SPP	0.012	0.010	-0.002	-6	17	22	4	16
Totals	76.72	74.18	-2.54	24+,8-	.	.	r_s = + 0.874	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 5.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
PIBA	15.80	15.24	-0.56	.	1	1	.	.
VAVI	5.00	10.64	+5.64	+1	1	1	.	.
ARUV	2.02	3.184	+1.164	+3	3	4	+1	1
VAMY	1.98	4.42	2.44	+2	4	3	-1	1
MACA	0.312	0.3764	+0.0644	+5	5	6	+1	1
SABE	0.248	0.480	+0.232	+4	6	5	-1	1
ASLA	0.167	0.1584	-0.0086	.	7	7	.	.
PRPE	0.128	0.0884	-0.0396	.	8	11	+3	9
APAN	0.106	0.1384	+0.0324	+9	9	8	-1	1
AMAL	0.077	0.0072	+0.0402	+7	10	9	-1	1
ROAC	0.048	0.100	+0.052	+6	11	10	-1	1
LIBO	0.040	0.080	+0.040	+8	12	12	.	.
CXFO	0.031	0.0180	-0.013	.	13	16	+3	9
ORPU	0.028	0.0304	+0.0024	.	14	15	+1	1
ANMU	0.021	0.0048	-0.0162	.	15	19	+4	16
MELI	0.020	0.0444	+0.0244	+10	16	13	-3	9
SODE	0.010	0.0308	+0.0208	+11	17	14	-3	9
PYVI	0.008	0.0128	+0.0048	.	18	17	-1	1
EQVA	0.004	0.0040	0.0	.	19	21.5	+2.5	6.25
CARO	0.0032	0.0060	+0.0028	.	20	18	-2	4
FRVI	0.0004	.	-0.0004	.	21.5	(26)	+4.5	20.25
HICA	0.0004	0.0012	+0.0008	.	21.5	24	+2.5	6.25
SAPS	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
SASP	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
POTRI	.	0.0040	+0.004	.	(24.5)	21.5	-3	9
CXUM	.	0.0004	+0.0004	.	(24.5)	2.5	+0.5	0.25
Totals	26.00	35.19	+9.19	19+,6-	.	.	r_s = + 0.957	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 5.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
BRA SAL	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
DIC POL	0.005	0.024	+0.019	.	21.5	15	6.5	42.25
DIC SCO	0.001	0.0007	-0.0003	.	27	34	7	49
PLE SCH	0.001	0.001	0.0	.	28	31	3	9
POH NUT	0.0007	.	-0.0007	.	30.5	37.5	7	49
POL JUN	0.0007	0.012	+0.0113	.	30.5	19	11.5	132.25
POL PIL	0.009	0.109	+0.100	+7	18	8	10	100
PTI PUL	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
PTI C-C	0.007	.	-0.007	-6	20	37.5	17.5	306.25
TET ANG	.	0.0007	+0.0007	.	35.5	34	1.5	2.25
CET ERI	0.020	0.141	+0.121	+6	10	6	4	16
CET NIV	0.0007	0.003	+0.0023	.	30.5	28	2.5	6.25
CLA MIT	65.3	66.0	+0.70	+2	1	1	.	.
CLA RAN	0.002	0.001	-0.001	.	25.5	31	5.5	30.25
CLA STE	0.039	0.375	+0.336	+4	8	4	4	16
CLA CAP	.	0.001	+0.001	.	35.5	31	4.5	20.25
CLA CEN	.	0.003	+0.003	.	35.5	27	8.5	72.25
CLA CHL	0.015	0.020	+0.005	.	12	16	4	16
CLA COC	0.011	0.002	-0.009	-5	13.5	29	15.5	240.25
CLA COR	0.107	0.153	+0.046	.	5	5	.	.
CLA CRT	0.009	0.007	-0.002	-7	18	24.5	6.5	42.25
CLA GON	0.004	0.025	+0.021	.	23	13	10	100
CLA GRA	0.256	0.068	-0.188	-1	3	10	7	49
CLA MUL	0.011	0.454	+0.443	+3	13.5	3	10.5	110.25
CLA PHY	0.003	0.135	+0.132	+5	24	7	17	289
CLA UNC	0.111	0.062	-0.049	-4	4	11	7	49
PEL APH	.	0.007	+0.007	.	35.5	24.5	11	121
PEL MAL	0.573	2.473	+1.90	+1	2	2	.	.
PEL RUF	0.080	0.007	-0.073	-2	7	24.5	17.5	306.25
BRY SPP	0.010	0.010	0.0	.	15.5	21	5.5	30.25
CET HAL	0.009	0.016	+0.007	.	18	17.5	0.5	0.25
CET PIN	0.034	0.082	+0.048	.	9	9	.	.
EVE MES	0.005	0.016	+0.011	.	21.5	17.5	4	16
HYP PHY	0.016	0.028	+0.012	.	11	14	3	9
PAR SUL	0.0007	0.007	+0.0063	.	30.5	24.5	6	36
PAR AMB	0.088	0.034	-0.054	-3	6	12	6	36
PAR HYP	0.002	0.010	+0.008	.	25.5	21	4.5	20.25
USN SPP	0.010	0.010	0.0	.	15.5	21	5.5	30.25
Totals	66.74	70.30	+3.56	25+,10-	.	.	r_s = + 0.742	

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Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 14.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
ARUV	7.04	17.76	+10.72	+1	1	1	.	.
PIBA	4.78	8.00	+3.22	+2	2	2	.	.
VAVI	3.64	4.72	+1.08	+4	3	3	.	.
VAMY	2.96	4.42	+1.46	+3	4	4	.	.
LIBO	1.22	2.18	+0.96	+5	5	5	.	.
GELI	0.916	0.664	-0.252	-1	6	9	3	9
MACA	0.872	0.972	+0.100	9	7	8	1	1
COPA	0.744	0.984	+0.24	7	8	7	1	1
COCA	0.696	1.268	+0.572	6	9	6	3	9
AMAL	0.185	0.2564	+0.0714	12	10	10	.	.
ELIN	0.163	0.1212	+0.0418	-2	11	13	2	4
ORPU	0.150	0.2296	+0.0796	10	12	11	1	1
MELI	0.0748	0.2084	+0.1336	8	13	12	1	1
ROAC	0.024	0.008	-0.016	.	14	21	7	49
LEGR	0.020	0.040	+0.020	.	15	16	1	1
POTRI	0.014	0.0896	+0.0756	11	16	14	2	4
CARO	0.0112	0.0164	+0.0052	.	17	19	2	4
EQVA	0.0040	.	-0.004	.	18.5	25	6.5	42.25
EPAN	0.0040	0.004	0.0	.	18.5	22	3.5	12.25
PYVI	0.0024	0.0604	+0.058	.	20	15	5	25
ORAS	0.0021	0.0212	+0.0191	.	21	17	4	16
CXFO	0.0012	0.0088	+0.0076	.	22	20	2	4
HICA	0.0008	0.0008	0.0	.	23	23	.	.
VIAD	0.0	0.0008	+0.0008	.	24.5	24	0.5	0.25
EQSY	0.0	0.0204	+0.0204	.	24.5	18	6.5	42.25
Totals	23.5	42.07	+18.57	19+,4-	.	.	r_s = + 0.913	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 14.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
AUL PAL	.	.	.	.	.	.	.	.
BRA SAL	.	.	.	.	.	.	.	.
CER PUR	0.007	0.001	-0.006	-7	20.5	31.5	11	121
DIC POL	0.039	0.235	+0.196	+5	11	8.5	25	6.25
DIC SCO	0.175	0.441	+0.266	+3	7	4	3	9
HYL SPL	0.001	0.009	+0.008	.	28	26	2	4
PLE SCH	0.367	0.933	+0.566	+1	3	2	1	1
POL JUN	0.009	0.315	+0.306	+2	18	5	13	169
POL PIL	0.002	0.009	+0.007	.	27	25	2	4
PTI PUL	0.0007	0.007	+0.0063	.	31	27.5	3.5	12.25
CET ERI	0.009	0.0007	-0.0083	-6	17	33.5	16.5	272.25
CLA MIT	0.299	0.492	+0.193	+6	4	3	1	1
CLA AMA	.	0.0007	+0.0007	.	35	33.5	1.5	2.25
CLA CAP	0.0007	0.001	+0.0003	.	31	31.5	0.5	0.25
CLA CEN	0.0007	.	-0.0007	.	31	35.5	4.5	20.25
CLA CHL	0.105	0.032	-0.073	-3	9	15	6	36
CLA COC	0.004	0.023	+0.019	.	24	17	7	49
CLA CON	0.003	0.007	+0.004	.	25.5	27.5	2	4
CLA COR	0.195	0.289	+0.094	.	6	6	.	.
CLA CRP	0.0007	.	-0.0007	.	31	35.5	4.5	20.25
CLA CRT	0.005	0.019	+0.014	.	23	21	2	4
CLA GON	0.003	0.003	0.0	.	25.5	29	3.5	12.25
CLA GRA	0.370	0.249	-0.121	-1	2	7	5	25
CLA MUL	.	0.183	+0.183	+7	35	11	24	576
CLA PHY	.	0.235	+0.235	+4	35	8.5	26.5	702.25
CLA UNC	0.211	0.226	+0.015	.	5	10	5	25
CLA VER	0.0007	0.002	+0.0013	.	31	30	1	1
PEL APH	0.007	0.029	+0.022	.	20.5	16	4.5	20.25
PEL MAL	1.730	1.673	-0.057	-4	1	1	.	.
BRY SPP	0.010	0.010	0.0	.	15.5	22	6.5	42.25
CET HAL	0.007	0.010	+0.003	.	20.5	22	1.5	2.25
CET PIN	0.010	0.022	+0.012	.	15.5	18.5	3	9
EVE MES	0.026	0.010	-0.016	-5	13	22	9	81
HYP PHY	0.040	0.064	+0.024	.	10	12.5	2.5	6.25
PAR SUL	0.007	0.021	+0.014	.	20.5	20	0.5	0.25
PAR AMB	0.028	0.046	+0.018	.	12	14	2	4
PAR HYP	0.011	0.022	+0.011	.	14	18.5	4.5	20.25
USN SPP	0.142	0.064	-0.078	-2	8	12.5	4.5	20.25
Totals	3.83	5.69	+1.86	25+,9-	.	.	r_s = 0.706	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Vascular Plant Cover Data.
Reference Stand No. 3.

Species	1981	1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
ARUV	14.40	20.44	+6.04	+ 1	1	1	.	.
VAVI	8.14	7.00	-1.14	- 1	2	3	1	1
PIBA	7.56	9.30	+1.74	+ 2	3	2	1	1
VAMY	3.38	4.880	+1.50	+ 3	4	4	.	.
ALCR	1.88	1.28	-0.60	- 2	5	6	1	1
MACA	1.27	1.864	+0.594	+ 4	6	5	1	1
LIBO	0.612	0.644	+0.032	.	7	8	1	1
ARNU	0.604	0.932	+0.328	+ 5	8	7	1	1
MELI	0.592	0.496	-0.096	- 5	9	10	1	1
AMAL	0.580	0.432	-0.148	- 3	10	12	2	4
ROAC	0.524	0.504	-0.020	.	11	9	2	4
COPA	0.512	0.492	-0.020	.	12	11	1	1
ELIN	0.276	0.1492	-0.1268	- 4	13	17	0.4	16
ORPU	0.189	0.2496	+0.0606	+ 8.5	14	13	1	1
PRPE	0.184	0.140	-0.044	.	15	20	5	25
GELI	0.160	0.180	+0.020	.	16	24	2	4
POTR	0.144	0.144	0.0	.	17	19	2	4
EPAN	0.124	0.0520	-0.072	- 6	18	27	9	81
LYTR	0.120	0.160	+0.040	+10	19	15	4	16
ANMU	0.117	0.0692	-0.0478	.	20	25	5	25
POTRI	0.089	0.1496	+0.0606	+ 8.5	21	16	5	25
GABO	0.085	0.112	+0.027	.	22	22	.	.
LODI	0.068	0.148	+0.080	+ 7	23	18	5	25
SODE	0.057	0.072	+0.015	.	24	24	.	.
HICA	0.050	0.0896	+0.0396	.	25	23	2	4
CARO	0.046	0.0316	-0.0144	.	26	33	7	4.9
PIGL	0.040	0.060	+0.020	.	27	26	1	1
PYVI	0.038	0.036	-0.002	.	28	31.5	3.5	12.25
LIPH	0.033	0.0032	-0.0298	.	29	42	3	9
FRVI	0.028	0.036	+0.008	.	30	31.5	1.5	2.25
COCA	0.024	0.040	+0.016	.	31	29.5	1.5	2.25
VIAD	0.0084	0.0080	-0.0004	.	32	37	5	25
ANPA	0.0080	0.0128	+0.0048	.	33	35.5	2.5	6.25
ASLA	0.0040	0.0040	0.0	.	34.5	40.5	6	36
SCPU	0.0040	0.0440	+0.04	+10	34.5	28	6.5	42.25
BEPA	.	.0044	+0.0044	.	39.5	38.5	1	1
SHCA	(P)	0.020	+0.020	.	39.5	34	5.5	30.25
PYSE	.	0.0008	+0.0008	.	39.5	43	3.5	12.25
SECY	.	0.040	+0.040	+10	39.5	29.5	10	100
CXFO	.	0.0044	+0.0044	.	39.5	38.5	1	1
ORAS	.	0.0128	+0.0128	.	39.5	35.5	4	16
CACA	.	0.0040	+0.0040	.	39.5	40.5	1	1
GORE	0.0	0.1200	+0.120	+ 6	39.5	21	18.5	342.25
Totals	42.0	50.46	+8.46	27+, 14-	.	.	r_s = + 0.930	

ATHABASCA OIL SANDS ECOLOGICAL MONITORING PROJECT

Comparison of 1981 and 1982 Bryophyte and Lichen Cover Data.
Reference Stand No. 3.

Species	Cover % 1981	Cover % 1982	82-81 Δ	Rank Δ	Cover Rank 1981	Cover Rank 1982	d	d^2
BRA SAL	0.009	0.0007	-0.0083	.	23	31	8	64
CER PUR	0.013	0.009	-0.004	.	19	14	5	25
DIC POL	0.415	0.309	-0.106	-4	3	4	1	1
DIC SCO	0.016	0.0	-0.016	.	16.5	37.5	21	441
HYP SPL	0.282	0.022	-0.260	-3	5	10	5	25
PLE SCH	3.01	1.43	-1.58	-2	2	2	.	.
POH NUT	.	0.0007	+0.0007	.	38	31	7	49
POL JUN	0.002	0.003	+0.001	.	28.5	21.5	7	49
POL PIL	0.007	0.008	+0.001	.	26	15	11	121
PTI CIL	0.0007	0.007	+0.0063	.	32.5	16.5	16	256
PTI C-C	0.003	.	-0.003	.	27	37.5	10.5	110.25
TOM NIT	0.0007	.	-0.0007	.	32.5	37.5	5	25
CET CUC	.	.	.	.	.	.	.	.
CET ERI	0.008	0.0007	-0.0073	.	25	31	6	36
CET NIV	0.002	0.001	-0.001	.	28.5	28	0.5	0.25
CLA MIT	45.3	40.8	-4.50	-1	1	1	.	.
CLA RAN	.	0.0007	+0.0007	.	38	31	7	49
CLA STE	0.030	0.103	+0.073	+2	13	5	8	64
CLA CAP	0.0007	0.0007	0.0	.	32.5	31	1.5	2.25
CLA CEN	0.009	0.005	-0.004	.	23	18	5	25
CLA CHL	0.021	0.140	+0.119	+1	14.5	13	1.5	2.25
CLA CON	0.011	0.001	-0.010	.	20.5	28	7.5	56.25
CLA COR	0.031	0.005	-0.026	-6	11.5	18	6.5	42.25
CLA CRP	0.021	0.0	-0.021	-7	14.5	37.5	23	529
CLA CRT	0.011	0.007	-0.004	.	20.5	16.5	4	16
CLA GON	0.001	0.003	+0.002	.	30	20	10	100
CLA GRA	0.009	0.015	+0.006	+5	23	12.5	10.5	110.25
CLA MUL	0.049	0.030	-0.019	.	8	9.5	1.5	2.25
CLA PHY	0.016	0.001	-0.015	.	16.5	28	11.5	132.25
CLA PYX	0.0007	0.0	-0.0007	.	32.5	37.5	5	25
CLA UNC	.	0.0007	+0.0007	.	38	31	7	49
PEL APH	0.080	0.073	-0.007	.	6	6	.	.
PEL MAL	0.293	0.354	+0.061	+3	4	3	1	1
PEL RUF	0.067	0.0	-0.067	-5	7	37.5	30.5	930.25
BRY SPP	.	0.002	+0.002	.	38	26	12	144
CET HAL	.	0.004	+0.004	+7	38	19	19	361
CET PIN	0.046	0.033	-0.013	.	9	8	1	1
EVE MES	.	0.003	+0.003	.	38	21.5	16.5	272.25
HYP PHY	0.031	0.031	0.0	.	11.5	9.5	2	4
PAR SUL	0.015	0.016	+0.001	.	18	12.5	5.5	30.25
PAR AMB	0.040	0.037	-0.003	.	10	7	3	9
PAR HYP	.	0.017	+0.017	+4	38	11	27	729
USN SPP	.	0.005	+0.005	+6	38	18	20	400
Totals	49.85	43.36	-6.49	17+,25-	.	.	r_s = + 0.571	

4.5.4 Computer Storage of Data

All the survey data for 1982 is on file in the University of Alberta Computing Centre as is also the vascular plant data for 1981. The bryophyte and lichen data for 1981 will be added as well as data from future surveys. Output for the 1982 data is included in the Appendix of this report.

5. DISCUSSION

5.1 NEW REFERENCE STANDS

Except for what appear to be minor differences the four new stands added to the permanent plot array are, on the basis of subjective inference as well as hard data, quite similar to the other stands on light textured soils.

5.2 COMPARISON OF 1981 AND 1982 DATA

The data synthesis methods used did not reveal any trends related to the defined impingement zones. As noted in section 4.5.1, until a fuller understanding of normal successional changes is in hand too much can not be said with assurance regarding pollution-induced changes. In this context we would urge that the burned stands 1B and 11B (see Fig. 1) be included in the permanent plot array and budgeted for accordingly.

6. REFERENCES CITED

First Report = La Roi and Ostafichuk, 1982a.

La Roi, G.H., and M. Ostafichuk. 1982a. Structural dynamics of boreal forest ecosystems on three habitat types in the Hondo - Lesser Slave Lake area of north central Alberta in 1981. Research Management Division, Alberta Environment, RMD-80/35A, and Recreation, Parks and Wildlife Foundation. 157 pp.

La Roi, G.H., and M. Ostafichuk. 1982b. Establishment and vegetation survey of 16 *Pinis banksiana*-dominated permanent plots for the Athabasca Oil Sands Ecological Monitoring Project in 1981. RMD Open File Report OF-34. Research Management Division, Alberta Environment. 133 pp.

Tande, G.F. 1979. Fire history and vegetation pattern of coniferous forests in Jasper National Park, Alberta. Canadian Journal of Botany 57: 1912-1931.

Thomson, B. 1981. Results of Project RMD 80-35B: Permanent sampling plots. Prep. for Research Management Division of Alberta Environment. 6 pp.

7. APPENDIX

7.1 1982 QUANTITATIVE DATA FOR REFERENCE STANDS: COMPUTER PRINT-OUT

The following 128 pages of computer output are drawn from the computer files of the AOSEMP Project, under the direction of Mr. Bill Lee, Computer Programmer-Analyst. Reference to appropriate sections of the First Report and the present report will help explain details in this section, which is mostly self-explanatory.

CPU TIME REQUIRED.. 0.31 SECONDS

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VAR LABELS      PIBA Pinus banksiana /
                PIGL Picea glauca /
                PIMA Picea mariana /
                POTR Populus tremuloides /
                POBA Populus balsamifera /
                BEPA Betula papyrifera /
                LALA Larix laricina /
                VAMY Vaccinium myrtilloides /
                VAVI Vaccinium vitis-idaea /
                ARUV Arctostaphylos uva-ursi /
                ROAC Rosa acicularis /
                PRPE Prunus pensylvanica /
                AMAL Amelanchier alnifolia /
                RUST Rubus strigosus /
                LODI Lonicera dioica /
                VIED Viburnum edule /
                HUTO Hudsonia tomentosa /
                SABE Salix bebbiana /
                ALCR Alnus crispa /
                LEGR Ledum groenlandicum /
                SAPS Salix pseudomonticola /
                SYAL Symphoricarpos albus /
                BEPU Betula pumila /
                SASC Salix scouleriana /
                SHCA Sheperdia canadensis /
                SASP Salix sp. /
                VACA Vaccinium caespitosum /
                SAMY Salix myrtillifolia /
                MACA Maianthemum canadense /
                ASLA Aster laevis /
                ANMU Anemone multifida /
                GABO Galium boreale /
                MELI Melampyrum lineare /
                LIBO Linnaea borealis /
                CARO Campanula rotundifolia /
                SODE Solidago decumbens /
                VIAD Viola adunca /
                APAN Apocynum androsaemifolium /
                COPA Comandra pallida /
                FRVI Fragaria virginiana /
                POTR1 Potentilla tridentata /
                GELI Geocaulon lividum /
                PYVI Pyrola virens /
                HICA Hieracium canadense /
                PYSE Pyrola secunda /
                EPAN Epilobium angustifolium /
                ARCA Artemisia campestris /
                ARNU Aralia nudicaulis /
                COCA Cornus canadensis /
                LIPH Lilium philadelphicum /
                ANPA Anemone patens /
                TRBO Trientalis borealis /
                VIRE Viola renifolia /
                GORE Goodyera repens /
                LAOC Lathyrus ochroleucus /
                VIAM Vicia americana /
                PEPA Petasites palmatus /
                ASCI Aster ciliolatus /
                ACMI Achillea millefolium /
                ANRA Antennaria racemosa /
                DRSP Drasa sp. /
                SESP Senecio sp. /
                SESE Senecio sp. /
                SECY Senecio cymbalarioides /
                STLO Stellaria longipes /
                RACE Ranunculus sp. /
                MINT Labiatae sp. /
                GEBI Geranium bicknellii /
                ARLY Arabis lyallii /
                CHEN Chenopodium sp. /
                PELA Pedicularis labradorica /
                AQFL Aquilegia flavescens /
                GEAM Gentianella amarella /
                RUAC Rubus acaulis /
                PYAS Pyrola asarifolia /
                MINU Mitella nuda /
                ORPU Oryzopsis pungens /
                ELIN Elymus innovatus /
                CXRI Carex richardsonii /
                CXFO Carex foenea /
                ORAS Oryzopsis asperifolia /
                AGSC Agrostis scabra /
                BRCI Bromus ciliatus /
                SCPU Schizachne purpurascens /
                JUBA Juncus balticus /
                ELGL Elymus glaucus /
                CACA Calamagrostis canadensis /
                CAIN Calamagrostis inexpansa /
                FESA Festuca saximontana /
                BRPU Bromus pumpellianus /
                CXSP Carex sp. /
                EQVA Equisetum variegatum /
                LYTR Lycopodium tristachyum /
                LYAN Lycopodium annotinum /
                EQSY Equisetum sylvaticum /
                EQSC Equisetum scirpoides /
                SEDE Selaginella densa /
                EQPR Equisetum pratense /
                LYCL Lycopodium clavatum /
                EQAR Equisetum arvense /
                TEMP Soil temperature 5-10 cm degrees F/
                PRVI Prunus virginiana /
                LOVI Lonicera villosa /
                PEGR Pedicularis groenlandica /
                EMNI Empetrum nigrum /
                TREE    Total Tree Cover per Plot /
                TREERP  Tree Species Richness per Plot /
                SHRUB   Total Shrub Cover per Plot /
                SHRUBRP Shrub Species Richness per Plot /
                FORB    Total Forb Cover per Plot /
                FORBRP  Forb Species Richness per Plot /
                GRAM    Total Graminoid Cover per Plot/
                GRAMRP  Graminoid Species Richness per Plot /
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Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
S01N																			
	0A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	3.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	0C	8.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	8.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	4.00	0.0	5.00	0.0	1.00	0.0	0.0	0.0	0.0
	0G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	1.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	.10	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	4C	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	6.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	2.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	.50	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	6.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	6.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	1.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		5.824	.0	.0	.0	.0	.0	.0	1.875	1.382	5.060	.0040	.2044	.0080	.0400	.0	.0	.0	.0
S02N																			
	0A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	0G	11.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	18.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	6.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	18.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	18.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	12.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		13.32	.0	.0	.0	.0	.0	.0	.5284	.5280	.4750	.0	.0	.0	.0	.0	.0	.0	.0040
S03N																			
	0A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4I	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	6A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	6.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	8A	7.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		11.64	.0	.0	.0040	.0	.0	.0	.1000	.0	2.884	.0	.0040	0	.0048	.0	.0	.0048	.0
S04N																			
	0A	25.00	.10	0.0	0.0	0.0	0.0	0.0	2.00	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	3.00	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	0I	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	30.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50
	4G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
	8E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		10.12	.0040	.0	.0	.0	.0	.0	1.072	.0	1.950	.0080	.0088	.0040	.0	.0	.0	.0004	.0200
S018																			
	0A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0I	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.01	0.0	.50	0.0	0.0	0.0	0.0	0.0
	6A	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.01	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0112	.0	.0	.0	.0	.0	.0	.4840	.0208	.5920	.0084	.0	.0280	.0	.0	.0	.0008	.0
S02																			
	0A	40.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		28.80	.0	.0	.0	.0	.0	.0	.0	.0	1.672	.0	.0	.0	.0	.0	.0	.0	.0
S03																			
	0A	12.00	0.0	0.0	.50	0.0	0.0	0.0	4.00	5.00	12.00	2.00	0.0	1.00	0.0	1.00	0.0	0.0	0.0
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	8.00	12.00	1.00	.50	2.00	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	15.00	.50	.50	2.00	0.0	.10	0.0	0.0	0.0
	0G	4.00	.50	0.0	.50	0.0	0.0	0.0	5.00	7.00	15.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0I	10.00	0.0	0.0	0.0	0.0	.10	0.0	4.00	10.00	15.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	2A	10.00	0.0	0.0	1.00	0.0	0.0	0.0	3.00	15.00	25.00	2.00	0.0	1.00	0.0	1.00	0.0	0.0	0.0
	2C	15.00	0.0	0.0	.50	0.0	0.0	0.0	3.00	12.00	25.00	2.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2E	12.00	0.0	0.0	.10	0.0	0.0	0.0	5.00	10.00	15.00	.10	.10	.10	0.0	0.0	0.0	0.0	0.0
	2G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	20.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	10.00	10.00	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0
	4A	8.00	0.0	0.0	.50	0.0	0.0	0.0	3.00	12.00	25.00	2.00	0.0	.50	0.0	.10	0.0	0.0	0.0
	4C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	10.00	15.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	3.00	25.00	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0
	4G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	5.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	4I	15.00	0.0	0.0	0.0	0.0	.01	0.0	.50	15.00	15.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6A	12.00	.50	0.0	0.0	0.0	0.0	0.0	5.00	5.00	40.00	2.00	0.0	1.00	0.0	.50	0.0	0.0	0.0
	6C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	2.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6G	.50	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	10.00	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0
	6I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	6.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	25.00	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	12.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	4.00	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	10.00	40.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	8I	5.00	0.0	0.0	.50	0.0	0.0	0.0	5.00	5.00	30.00	.50	1.00	.50	0.0	0.0	0.0	0.0	0.0
Mean		8.300	.0400	.0	.1440	.0	.0044	.0	4.840	7.000	20.44	.5240	.1400	.4720	.0	.1480	.0	.0	.0
S04																			
	0A	7.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	3.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	2.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	7.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	7.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2I	6.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	1.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	.50
	4C	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	17.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	10.00	4.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
	8A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	4.00	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	12.00	10.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	5.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	.50	.50	0.0	.50	0.0	0.0	0.0	0.0	.10
	8G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	25.00	4.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	20.00	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
Mean		10.84	.0	.0	.0	.0	.0	.0	5.880	7.380	2.924	.0320	.0	.1172	.0	.0	.0	.0	.0280
S05																			
	0A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	0E	8.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	8.00	7.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	0G	18.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	12.00	.50	.10	.01	0.0	0.0	0.0	0.0	0.0
	0I	30.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	3.00	0.0	.10	.10	0.0	0.0	0.0	0.0	.50
	2A	18.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	12.00	2.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	1.00
	2E	30.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	12.00	3.00	.50	.10	1.00	0.0	0.0	0.0	0.0	1.00
	2G	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	15.00	4.00	1.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2I	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50
	4A	22.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	8.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	15.00	10.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	3.00
	4E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50
	4G	17.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	25.00	1.00	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	4I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	20.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	4.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01
	6C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	3.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6E	4.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	15.00	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	.50
	6G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	10.00	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	2.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	20.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0
	8G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	10.00	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0
	8I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	1.00	0.0	.10	0 0	0.0	0.0	0.0	0.0	0.0
Mean		15.24	.0	.0	.0	.0	.0	.0	4.420	10.84	3.184	.1000	.0884	.1172	.0	.0	.0	.0	.4804
S07																			
	0A	12.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	5.00	1.00	.10	0.0	0.0	0.0	0.0	0.0	0 0
	0C	15.00	.01	0.0	0.0	0.0	0.0	0.0	5.00	3.00	4.00	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	10.00	.50	.50	.10	0.0	0.0	0.0	0.0	0.0
	0G	18.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	8.00	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	5.00	.50	.01	.10	0.0	0.0	0.0	0.0	0.0
	2A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	8.00	5.00	2.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	5.00	10.00	3.00	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2E	11.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	10.00	2.00	.50	.50	0.0	0.0	0.0	0.0	0.0
	2G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	5.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	.10	.50	.01	.10	.10	0.0	0.0	0.0	0.0
	4C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	2.00	2.00	.50	.01	.01	0.0	0.0	0.0	0.0
	4E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	10.00	3.00	.50	.10	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	1.00	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0
	4I	4.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	5.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0
	6A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	30.00	0.0	0.0	0.0	0.0	0.0	0.0	6.00	5.00	5.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	2.00	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	25.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	8.00	5.00	4.00	.50	.10	.10	0.0	0.0	0.0	0.0	0.0
	8C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	10.00	.50	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	3.00	.50	.10	.10	0.0	0.0	0.0	0.0	0.0
	8I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	5.00	0.0	.10	.10	0 0	0.0	.50	0.0	0.0
Mean		15.72	.0004	.0	.0	.0	.0	.0	4.004	3.320	4.504	.3480	.1488	.0788	.0044	.0	.0200	.0	.0
S08																			
	0A	5.00	0 0	0.0	0.0	0.0	0.0	0.0	1.00	.50	4.00	.50	0.0	0.0	0 0	0.0	0.0	0 0	0 0
	0C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	1.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	4.00	2.00	0.0	0 0	0.0	0.0	0.0	0.0	0.0
	0G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	18.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	4.00	1.00	0.0	0 0	0.0	0.0	0.0	0.0	0.0
	2E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	2.00	0 0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	1.00	.50	1.00	0 0	0.0	0.0	0.0	0.0	0.0
	4C	14.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	3.00	.50	.50	0 0	0.0	0.0	0.0	0.0	0.0
	4E	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	3.00	.10	0 0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	2.00	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	1.00	0.0	0 0	0.0	0.0	0.0	0.0	.50	.10	1.00	1.00	0 0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	3.00	0.0	0 0	0.0	0.0	0.0	0.0	2.00	.50	.50	.50	10	0.0	0.0	0.0	0.0	0.0	0.0
	6E	20.00	0.0	0.0	.10	0.0	0.0	0.0	.50	2.00	.50	0.0	10	0.0	0.0	0.0	0.0	0.0	0.0
	6G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	10	2.00	0.0	0.0	0 0	0.0	0.0	0.0	0.0	0.0
	6I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	3.00	0 0	0.0	0.0	0.0	0.0	0.0	3.00	50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	2.00	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8I	17.00	0.0	0 0	0.0	0.0	0.0	0.0	.50	1.00	4.00	0.0	10	0.0	0.0	0 0	0.0	0.0	0 0
Mean		7.640	.0	.0	.0040	.0	.0	0	1.052	.7360	2.060	.5040	.0720	.0	.0	.0	0	.0	.0
S09																			
	0A	25.00	0 0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0 0	0 0
	0C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	13.00	0.0	0 0	0.0	0.0	0.0	0.0	.50	12.00	10.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	15.00	0 0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	5.00	0.0	1.00	0.0	0.0	0.0	0.0	3.00	3.00	10.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	5.00	10.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	5.00	0 0	0.0	0.0	0.0	0.0	0.0	1.00	3.00	5.00	1.00	0.0	0.0	0 0	.10	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
	2G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	8.00	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	5.00	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	15.00	2.00	0.0	0.0	0.0	0.0	0.0	2.00	10.00	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	6.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	5.00	4.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	15.00	5.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	3.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.00	3.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	7.00	5.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	6G	15.00	0.0	0.0	.10	0.0	0.0	0.0	.10	3.00	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	7.00	8.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	4.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	5.00	15.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	30.00	0.0	0.0	.10	0.0	0.0	0.0	.50	30.00	2.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	15.00	12.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	3.00	0.0	0.0	.10	0.0	0.0	0.0	.50	15.00	10.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		12.72	.0800	.0400	.0150	.0	.0	.0	1.948	7.800	5.444	3.550	.0	.0	.0	.0040	.0	.0	.0200
S10																			
	0A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	13.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	12.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	4.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	0G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	13.00	3.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	0I	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	15.00	10.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	8.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	12.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	8.00	0.0	0.0	0.0	.10	0.0	0.0	2.00	8.00	2.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	17.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	10.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	15.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	.50	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	7.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	7.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	7.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	2.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	4.00	2.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	12.00	13.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	8.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	.50	0.0	0.0	0.0	0.0	0.0	0.0	20.00	0.0	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		8.920	.0	.0	.0	.0040	.0	.0	4.282	7.140	3.780	.0	.0154	.0	.0	.0	.0	.0	.0
S11B																			
	0A	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	3.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	2A	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4A	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	2.00	1.00	.01	0.0	0.0	0.0	0.0	0.0
	4E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4I	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0
	6A	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	3.00	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0
	8A	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.10	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	8I	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0852	.0	.0	.0	.0	.0	.0	.2540	.0	.0176	1.324	.2252	.0032	.0	.0	.0	.0	.0
S12																			
	0A	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	5.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	18.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	10.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0G	7.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	6.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	12.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	20.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	20.00	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	20.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	10.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	8.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	7.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	20.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	10.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		14.55	.0	.0	.0	.0	.0	.0	5.460	11.88	.0	.0	.0	.0004	.0	.0	.0	.0	.0
S14																			
	0A	5.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	15.00	10.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	ROAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
	0C	8.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	20.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0E	5.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	7.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	17.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	.50	0.0	0.0	0.0	0.0	0.0	0.0	2.00	12.00	15.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	2A	4.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	5.00	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	11.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	3.00	20.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	2E	9.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	5.00	15.00	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	2G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	15.00	0.0	12.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	15.00	0.0	0.0	0.0	0.0	0.0	0.0	7.00	4.00	10.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4A	11.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	5.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	7.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4E	.01	0.0	0.0	0.0	0.0	0.0	0.0	5.00	2.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	4G	1.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	7.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	3.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	5.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	12.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	25.00	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0
	6E	10.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	4.00	20.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	6G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	30.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6I	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	2.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	10.00	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	3.00	25.00	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8E	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	20.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	3.00	25.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8I	.50	0.0	0.0	0.0	0.0	0.0	0.0	3.00	2.00	15.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
Mean		8.000	.0	.0	.0	.0	.0	.0	4.420	4.720	17.76	.0080	.0	.2564	.0	.0	.0	.0	.0
S15																			
	0A	20.00	0.0	.50	0.0	0.0	0.0	0.0	1.00	0.0	5.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	0C	15.00	0.0	5.00	0.0	0.0	0.0	0.0	1.00	.50	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	0E	20.00	.50	2.00	0.0	0.0	0.0	0.0	.50	0.0	3.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	0G	20.00	.50	.50	0.0	0.0	0.0	0.0	2.00	0.0	1.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	0I	7.00	2.00	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	2A	15.00	0.0	5.00	0.0	0.0	0.0	0.0	5.00	0.0	1.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	2C	20.00	1.00	0.0	0.0	0.0	0.0	0.0	3.00	.50	1.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	2E	15.00	0.0	3.00	0.0	0.0	0.0	0.0	1.00	5.00	5.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	2G	3.00	0.0	3.00	0.0	0.0	0.0	0.0	3.00	0.0	2.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.10
	2I	10.00	2.00	0.0	0.0	0.0	0.0	0.0	2.00	0.0	4.00	3.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4A	8.00	0.0	4.00	0.0	0.0	0.0	0.0	4.00	0.0	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4C	12.00	0.0	4.00	0.0	0.0	0.0	0.0	3.00	10.00	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	4.00	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	4G	35.00	0.0	4.00	0.0	0.0	0.0	0.0	5.00	4.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	8.00	0.0	3.00	0.0	0.0	0.0	0.0	3.00	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	6A	15.00	0.0	5.00	0.0	0.0	0.0	0.0	4.00	1.00	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	6C	25.00	0.0	5.00	0.0	0.0	0.0	0.0	3.00	2.00	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	6E	7.00	0.0	5.00	0.0	0.0	0.0	0.0	4.00	1.00	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	6G	15.00	0.0	1.00	0.0	0.0	0.0	0.0	3.00	2.00	.10	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	10.00	0.0	2.00	0.0	0.0	0.0	0.0	2.00	1.00	0.0	8.00	0.0	.50	0.0	0.0	0.0	0.0	1.00
	8A	15.00	0.0	0.0	0.0	0.0	0.0	0.0	4.00	2.00	2.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	10.00	0.0	.50	.10	0.0	0.0	0.0	1.00	0.0	.10	3.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	8E	25.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	5.00	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	15.00	0.0	.50	0.0	0.0	0.0	0.0	3.00	3.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	8I	10.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
Mean		14.80	.2400	2.180	.0040	.0	.0	.0	2.880	1.880	1.328	3.780	.0	.0200	.0	.0	.0	.0	1.124
S16																			
	0A	13.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	0C	7.00	1.00	0.0	.10	0.0	0.0	0.0	10.00	3.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	0E	17.00	0.0	3.00	.01	0.0	0.0	0.0	3.00	3.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	0G	8.00	0.0	.50	0.0	0.0	0.0	0.0	8.00	8.00	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	0I	17.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	8.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	2A	18.00	0.0	0.0	.01	0.0	0.0	0.0	3.00	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	15.00	0.0	.50	0.0	0.0	0.0	0.0	3.00	5.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00
	2E	20.00	1.00	.50	0.0	0.0	0.0	0.0	2.00	2.00	1.00	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0
	2G	4.00	0.0	4.00	.10	0.0	0.0	0.0	5.00	6.00	3.00	3.00	0.0	0.0	0.0	0.0	2.00	0.0	2.00
	2I	15.00	0.0	5.00	.10	0.0	0.0	0.0	3.00	3.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	4A	4.00	1.00	3.00	.50	0.0	0.0	0.0	2.00	.50	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	4C	10.00	1.00	0.0	0.0	0.0	0.0	0.0	4.00	3.00	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00
	4E	15.00	0.0	0.0	0.0	0.0	0.0	0.0	3.00	15.00	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	4G	20.00	0.0	2.00	0.0	0.0	0.0	0.0	.50	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	4I	30.00	0.0	1.00	0.0	0.0	0.0	0.0	4.00	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	20.00	0.0	.10	.50	0.0	0.0	0.0	.50	4.00	.50	2.00	0.0	0.0	0.0	0.0	.50	0.0	.10
	8C	15.00	0.0	.50	0.0	0.0	0.0	0.0	3.00	10.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8E	2.00	0.0	0.0	.50	.10	0.0	0.0	5.00	7.00	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	8G	16.00	0.0	0.0	.01	0.0	0.0	0.0	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00
	8I	15.00	0.0	1.00	.10	0.0	0.0	.10	.50	.50	2.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8A	10.00	0.0	0.0	.50	0.0	0.0	0.0	3.00	2.00	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8C	10.00	0.0	3.00	.50	0.0	0.0	0.0	1.00	10.00	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.50
	8E	12.00	0.0	.10	0.0	0.0	0.0	0.0	4.00	10.00	1.00	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	15.00	0.0	1.00	.50	0.0	0.0	0.0	2.00	2.00	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	30.00	0.0	5.00	.10	0.0	0.0	0.0	1.00	0.0	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.10
Mean		14.32	.1600	1.328	1412	.0040	.0	.0040	3.140	4.280	.3840	1.880	.0	.0	.0	0	.1800	.0	.8200

TRANSPACE REQUIRED.. 1200 BYTES
12 TRANSFORMATIONS
15 RECODE VALUES + LAG VARIABLES
121 IF/COMPUTE OPERATIONS

CPU TIME REQUIRED.. 1.40 SECONDS

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65 REPORT          FORMAT = NOSPACE(1) BRKSPACE(0) FTSPACE(0) LIST     /
66                 VARIABLES = PLOTNO'Plot'(4) ALCR TO SODE (5)        /
67                 HEAD = 'Athabasca Oil Sands Ecological Monitoring Program'
68                 'August 1982 Survey of Vascular Plant Communities'
69                 'in Pinus banksiana Reference Stands'
70                 'Species Cover % Values by 5x5 m Plots' /
71                 BREAK = SUBFILE 'Stand' (5)                         /
72                 SUMMARY = MEAN 'Mean'
```

REPORT REQUIRES 3060 BYTES FOR THIS TASK

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ANMU	GABO	MELI	LIBO	CARO	SODE
S01N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	.10	.10	0.0	.50	.01	.50
	0C	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	.01	.10	0.0	.10	.01	.50
	0E	50.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	.01	0.0	0.0	0.0	.01	1.00
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	.01	.01	0.0	1.00	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.01	.10	0.0	.10	0.0	.50
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	.10	.10	0.0	.10	0.0	.50
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	.01	.10	0.0	.10	0.0	.50
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	.01	.01	0.0	0.0	.01	.10
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	.01	.01	0.0	0.0	0.0	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	.50	0.0	.50	.01	.10
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.01	.10	0.0	0.0	.10	.01	.50
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	.10	0.0	0.0	0.0	.01	.50
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	.10	.01	.10
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	.01	.10	0.0	.50	.01	.10
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	.01	.10	0.0	0.0	.01	1.00
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	.50	0.0	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	.01	0.0	.50	0.0	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	.10	0.0	0.0	0.0	.50
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	.01	.10
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	.50	0.0	.50
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	0.0	0.0	0.0	.10
Mean		2.080	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1464	.1336	.0248	.0656	.0	.2240	.0048	.3204
S02N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	.01	0.0	.50	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.01
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	.01	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	.01	0.0	0.0	0.0	.01
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	.50	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2284	.0244	.0004	.0056	.0	.0520	.0008	.0092
S03N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.01	.50
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	.10
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	.50
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.01	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.01
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	.01	.50
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	.01	.10
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	.01
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.01	.50
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	.01	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	.10
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	0.0	0.0	0.0	.01	.10
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	.50
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Mean		.0	.0	.0	.0	.0	.0	.0	.6000	.0	.0	.2216	.0336	.0040	.0	.0	.0040	.0072	.1848
S04N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	.01	.10
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	.01	.50
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.01	.10
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	0.0	.01	.10
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	0.0	0.0	0.0	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.50
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	0.0	.01	.10
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	.50	0.0	0.0	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.10	0.0	0.0	.01
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.01	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	0.0	0.0	0.0	.01	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	0.0	.01	.01
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	.01	.10
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	.01

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ANMU	GABO	MELI	LIBO	CARO	SODE
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	.01	.10
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	.01	.50
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4464	.0404	.0095	.0	.0328	.0	.0052	.1140
S018																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	.01	0.0	.01	.10	.10
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.50	0.0	.01	0.0	.10	.10	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	.01	.50	0.0	.10	.50	.10
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.01	1.00	0.0	1.00	.01	.10
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.50	0.0	.10	0.0	.01	.10	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.50	.01	0.0	0.0	0.0	.01	.01
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.50	.10	.10	0.0	.10	.10	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	2.00	0.0	.10	.10	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	.10	.50	0.0	.10	.10	.10
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	.01	0.0	.10	.10	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.10	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	.10	.01
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	.10	0.0	0.0	.10	.01
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	.10	0.0	.01	.10	.01
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	.10	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	.10	.10	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	.10	0.0	.10	.10	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	0.0	.50	0.0	.10	.10	.10
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	.50	0.0	0.0	.50	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	.10	.10	.10
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.10	.50
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	.10	.50	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	0.0	0.0	0.0	0.0	.10	.50
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	.10	.01	.10
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1760	.3360	.0082	.2212	.0	.0882	.1332	.1136
S02																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	.01	.01
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0048	.0	.0	.0	.0	.0008	.0004	.0012
S03																			
	0A	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	.10	.10	2.00	.10	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	1.00	1.00	.01	0.0
	0E	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	.10	.50	.10	.10	.01	0.0
	0G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.01	.50	1.00	.50	.01	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	.50	.10	0.0	.10	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	.10	.50	2.00	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.01	.10	1.00	.50	0.0	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.10	.10	0.0	0.0	0.0
	2G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	.10	2.00	0.0	0.0
	2I	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	1.00	3.00	.10	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.01	0.0	1.00	3.00	.10	0.0
	4C	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	1.00	.50	.01	0.0
	4E	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	.10	0.0	.50	.50	0.0	0.0
	4G	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	.10	.50	.50	0.0	.10
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	.10	0.0	.50	0.0	.01	.50
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	.10	.10	.10	.50	.10	.10
	6C	1.00	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	2.00	0.0	.10	0.0	.50	.50	.10	0.0
	6E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	.50	.10	.10	.50	.01	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	.50	1.00	.50	.01	.10
	6I	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.50
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	.10	.10	.50	.10	.10	
	8C	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.50	0.0	.10	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	0.0	0.0	0.0
	8G	6.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	0.0	.01	0.0
	8I	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	.10	1.00	0.0	0.0
Mean		1.540	.0	.0	.0	.0	.0	.0200	.0	.0	.0	1.984	.0040	.0682	.1120	.4980	.6440	.0316	.0720
S04																			
	0A	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	.50	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	3.00	.01	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	.50	1.00	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	1.00	.01	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	.50	.01	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	4.00	.01	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	2.00	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.50	5.00	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	0.0	0.0
	4A	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	4C	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	2.00	.01	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	10	10	.01	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	.50	.01	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	1.00	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ANMU	GABO	MELI	LIBO	CARO	SODE
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	1.00	0.0	0.0
	6C	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	.10	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	1.00	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	2.00	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.01	2.00	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.10	0.0	.01	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	.10	.10	.01	0.0
Mean		.0	.2240	.0	.0	.0	.0	.0	.0	.0	.0	.8480	.0200	.0	.0	.1412	1.472	.0048	.0
S05																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	.01
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.01	0.0	0.0	0.0	0.0	.01
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	.01	0.0	0.0	0.0	0.0	.01
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	.01	.01
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	.10	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.01	.10
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	0.0	0.0	0.0	0.0	.01	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	0.0	0.0	0.0	2.00	0.0	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	4G	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	1.00	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	0.0	0.0	.01	0.0	0.0	.10
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	.01	.01
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	.01
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	0.0	0.0	0.0	.01	.10
Mean		.0	.0	.0040	.0	.0	.0	.0	.0040	.0	.0	.3764	.1584	.0048	.0	.0444	.0800	.0050	.0308
S07																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.01	.10	.10	.01	.01
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.50	.01	.10	2.00	.01	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	.01	.10	.50	0.0	.01
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.01	0.0	.10	.50	0.0	.10
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	.01	.01	0.0	.10	.01	.10
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	.01	.10	1.00	2.00	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	0.0	.10	.50	1.00	0.0	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	.10	0.0	.01	3.00	.01	.10
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	.01	0.0	1.00	.10	.50
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	.10	.01	0.0	0.0	.01	.10
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.01	.01	0.0	.50	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.01	0.0	0.0	.01	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	0.0	.10	0.0	.50	0.0	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	0.0	.01	0.0	.50	.10	.10
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.01	0.0	.10	.10	.50
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	.10	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	0.0	.10	1.00	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	.10	0.0	.10	0.0	1.00	.10	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	.10	0.0	.50	.10	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	0.0	0.0	.50	.10	.50
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.10	0.0	0.0	12.00	.10	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.50	.10	.10	0.0	.50	.10	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	.01	0.0	.10	.10	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	.50	.10	0.0	3.00	0.0	.10
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	.10	0.0	0.0	0.0	.10	.10
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.432	.2368	.0835	.0324	.0804	1.216	.0468	.1208
S08																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	.01	.10
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	.01	0.0	0.0	0.0	.01	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	0.0	0.0	0.0	0.0	.01	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	0.0	0.0	.01	.10
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	.01	.10
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	.01	.10
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.50
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	.01	.10
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	.01	.50
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	.50	0.0	0.0	.50
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	.50	0.0	0.0	.10
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	.01	.10
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	.10	.10
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	.01	.10
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.01	.10
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	0.0	0.0	.10	0.0	0.0	.10
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.01	.10
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.50	.10	0.0	0.0	0.0	.01	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.01	0.0	0.0	0.0	.01	.01
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.01	0.0	.01	0.0	.01	.10
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5764	.3564	.0052	.0	.0444	.0	.0100	.1484
S09																			
	0A	25.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	2.00	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	.10	.10	0.0	1.00	0.0	.01
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.10	.10	.10	0.0	0.0	.01	.01
	0G	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.10	.01	0.0	0.0	.01	.01
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	.01	0.0	0.0	0.0	.10	.10
	2A	40.00	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	.10	.50	3.00	.01	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	.01	0.0	.10	.01	.10

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ANMU	GABO	MELI	LIBO	CARO	SODE
	2G	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.01	.50	0.0	3.00	.01	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	.50	.01	0.0
	4A	35.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	.50	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	.01	0.0	0.0	3.00	0.0	.01
	4E	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	.10	0.0	5.00	.01	0.0
	4G	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	0.0	4.00	0.0	0.0
	4I	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	0.0	5.00	.10	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.10	.10	.10	0.0	1.00	.01	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.50	0.0	3.00	0.0	.01
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.10	0.0	4.00	.01	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	.01	10.00	.01	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.50	.10	0.0	.50	.10	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	.50	0.0	.10	.01	0.0
	8C	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.10	.50	.01	0.0	0.0	.10
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	.10	.10	.50	0.0	.50	0.0	.10
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	.50	.10	.10	.50	0.0	.10	.10
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.50	.50	.10	0.0	0.0	.01	.10
Mean		5.250	.1000	.0	.0200	.0	.0	.0	.0	.0	.0	.7840	.1888	.1088	.1482	.0408	1.888	.0208	.0280
S10																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	0.0	0.0	1.00	0.0	.01	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	.01
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	.10
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	.01	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	0.0	.01	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0824	.0004	.0	.0	.2892	.0	.0024	.0048
S11B																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0
	0C	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0E	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.01	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.10	.50	0.0	0.0
	2A	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0
	2E	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	.01	0.0
	4A	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0
	4C	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4E	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0
	6C	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.01	0.0	0.0	0.0	0.0
	6E	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0
	8A	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0
	8C	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0
	8E	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0
Mean		1.080	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0404	.0	.0008	.0280	.0044	.0480	.0008	.0
S12																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	1.00	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	1.00	2.00	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	1.00	1.00	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	3.00	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	.50	1.00	.01	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	.50	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.50	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	1.00	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.50	2.00	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	1.00	.10	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	.10	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	1.00	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	.50	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	1.00	.50	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	1.00	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	.50	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	1.00	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	1.00	.01	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.50	0.0	0.0	0.0
Mean		0	.0	.0	.0	.0	.0	.0	0	.0	.0	.1948	.0	.0056	.0004	.5588	.7480	.0008	.0
S14																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	10	4.00	.10	0.0

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Stand	Plot	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	ANMU	GABO	MELI	LIBO	CARO	SODE
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	4.00	.01	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	3.00	.10	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	1.00	2.00	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	2.00	.01	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	2.00	.01	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	1.00	2.00	0.0	0.0
	2G	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.50	3.00	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	3.00	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	1.00	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	2.00	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.50	2.00	.01	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	1.00	.01	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	.50	.01	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	3.00	.10	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.10	.50	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	.10	2.00	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	.50	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	4.00	.01	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	2.00	.01	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	4.00	.01	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.10	2.00	.01	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.50	3.00	.01	0.0
Mean		.0	.0400	.0	.0	.0	.0	.0	.0	.0	.0	1.012	.0	.0	.0	.2084	2.180	.0184	.0
S15																			
	0A	0.0	2.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	10.00	0.0	0.0
	0C	0.0	5.00	0.0	0.0	0.0	0.0	7.00	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	5.00	0.0	.10
	0E	0.0	1.00	0.0	0.0	0.0	0.0	3.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	10.00	0.0	.01
	0G	0.0	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	0.0	0.0
	0I	0.0	30.00	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	2A	0.0	25.00	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0
	2C	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.10	1.00	0.0	0.0
	2E	0.0	12.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	.50	3.00	0.0	.01
	2G	0.0	20.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	2.00	0.0	0.0
	2I	0.0	25.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	2.00	0.0	0.0
	4A	0.0	5.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0
	4C	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0
	4E	0.0	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	4.00	0.0	0.0
	4G	0.0	30.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	3.00	0.0	0.0
	4I	0.0	25.00	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	6A	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	7.00	0.0	0.0
	6C	0.0	25.00	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	0.0	0.0
	6E	0.0	20.00	0.0	0.0	0.0	0.0	7.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	6G	0.0	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	3.00	0.0	0.0
	6I	0.0	25.00	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	7.00	0.0	0.0
	8A	0.0	20.00	0.0	0.0	0.0	0.0	2.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	2.00	0.0	.01
	8C	0.0	40.00	0.0	0.0	0.0	0.0	2.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	5.00	0.0	0.0
	8E	0.0	25.00	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	4.00	0.0	0.0
	8G	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	0.0	0.0
	8I	0.0	20.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	4.00	0.0	0.0
Mean		.0	18.95	.0	.0	.0	.0	1.520	.0	.0	.1480	.0248	.0	.0	.0	.1648	4.000	.0	.0052
S16																			
	0A	0.0	4.00	0.0	0.0	0.0	0.0	7.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	2.00	6.00	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.50	3.00	0.0	0.0
	0E	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	3.00	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.10	2.00	0.0	0.0
	0I	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	4.00	0.0	0.0
	2C	0.0	3.00	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	.50	0.0	0.0	0.0	0.0	0.0	.50	2.00	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0
	2I	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	4.00	0.0	0.0
	4A	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	6.00	0.0	0.0
	4C	0.0	3.00	0.0	0.0	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	5.00	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0
	4G	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	10.00	0.0	0.0
	4I	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	5.00	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	6C	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	1.00	4.00	0.0	0.0
	6E	0.0	10.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	7.00	0.0	.10
	6G	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	6I	0.0	5.00	0.0	0.0	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	3.00	0.0	0.0
	8A	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	7.00	0.0	0.0
	8C	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	5.00	0.0	0.0
	8E	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	.10
	8G	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0				
Mean		.0	1.820	.0040	0	.0	.0	1.304	.0	.3200	.0	.0	.0	.0	.0	.2644	4.520	.0	.0080

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	VIAD	APAN	COPA	FRVI	POTR	GELI	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBO	VIRE	CORE
S01N																			
	0A	0.0	.10	0.0	.10	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.10	0.0	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0
	2A	.10	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2C	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2E	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2G	0.0	.10	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2I	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4A	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.01	.01	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	4E	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	.01	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.01	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	.01	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8C	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8I	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
Mean		.0098	.0532	.0	.1004	.1818	.0	.0004	.0	.0	.0448	.0048	.0	.0	.0	.0292	.0	.0	.0
S02N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
Mean		.0	.0004	.0	.0	.0	.0	.0212	.0	.0	.0	.0	.0	.0	.0	.0168	.0	.0	0
S03N																			
	0A	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0 0	.01	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0 0	.01	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	0I	0.0	.01	0.0	0 0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	2A	0.0	.01	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	.10	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	2E	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	2I	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8E	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0 0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0 0	0.0	0.0	0.0	0.0
Mean		.0044	.0292	.0	.0324	.0004	.0	.0128	.0	.0	.0	.0388	0	.0	.0	.0092	0	.0	.0
S04N																			
	0A	0.0	.10	0.0	.50	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	.50	0.0	.10	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	1.00	0.0	.10	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.10	0.0	.10	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	.50	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	.50	0.0	.01	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	.01	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.50	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.10	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	VIAD	APAN	COPA	FRVI	POTRI	GELI	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBO	VIRE	GORE
	8E	0.0	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0080	.2836	.0	.0456	.0088	.0	.0376	.0288	.0	.0	.0044	.0	.0	.0	.0040	.0	.0	.0
S01B																			
	0A	.01	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0E	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.01	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.01	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.01	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	.01	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	6G	0.0	.10	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0024	.1536	.0	.3128	.0040	.0	.0	.0	.0	.0204	.0208	.0	.0	.0	.0084	.0	.0	.0
S02																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0004	.0	.0	.0	.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03																			
	0A	0.0	0.0	0.0	.10	0.0	1.00	0.0	0.0	0.0	.50	0.0	5.00	1.00	.01	0.0	0.0	0.0	0.0
	0C	0.0	0.0	.50	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	.01	0.0	0.0	0.0	0.0
	0E	0.0	0.0	.10	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0
	0G	0.0	0.0	1.00	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	.50	.10	.10	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2C	0.0	0.0	.50	.10	.01	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	.10	.50	.10	0.0	0.0	.50	0.0	.10	0.0	.10	0.0	.01	.10	0.0	0.0	0.0
	2G	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	3.00	0.0	0.0	.10	0.0	0.0	0.0
	2I	0.0	0.0	2.00	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.01	0.0	0.0	0.0
	4A	0.0	0.0	.50	0.0	1.00	0.0	0.0	.50	0.0	.10	0.0	.50	0.0	.01	0.0	0.0	0.0	0.0
	4C	0.0	0.0	1.00	0.0	.01	0.0	.10	.01	0.0	0.0	0.0	2.00	0.0	.01	0.0	0.0	0.0	0.0
	4E	0.0	0.0	.50	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.50	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	.50	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	.50	0.0	.10	0.0	.10	.10	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	6C	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.10	0.0	1.00	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.10	0.0	.50	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	.10	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	.50	0.0	3.00	0.0	0.0	.10	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0080	.0	.5520	.0360	.1496	.1800	.0360	.0896	.0044	.0520	.0	.9320	.0400	.0032	.0128	.0	.0	.0
S04																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	.10	0.0	.01	0.0	.10	.01	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	.10	0.0	.10	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	.01	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	.01	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	VIAD	APAN	COPA	PRVI	POTR1	GEL1	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	AMPA	TRBO	VIRE	GORE
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	1.00	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	.50	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	.50	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	45.00	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.2088	.0	.0128	.1400	.0788	.0082	.0	.0244	.0	.0	2.872	.0	.0	.0	.0	.0
S05																			
	0A	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.1384	.0	.0	.0040	.0	.0128	.0012	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07																			
	0A	.01	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	.01	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	2G	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	4A	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	.10	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	4G	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	.10	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	.10	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.10	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	.10	.10	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.10	.10	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.10	.10	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.10	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0580	.0980	.0	.0320	.0320	.0448	.0172	.0008	.0	.0	.0	.0	.0	.0	.0208	.0	.0	.0040
S08																			
	0A	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	.50	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	.10	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.2768	.0	.0	.0216	.0	.0	.0068	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S09																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	0C	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.10	0.0	0.0	.01	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0I	.10	0.0	0.0	.50	.01	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	0.0	0.0	1.00	0.0	0.0	0.0	.50	.01
	2C	.01	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01
	2E	.01	0.0	0.0	1.00	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	VIAD	APAN	COPA	FRVI	POTRI	GELI	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBO	VIRE	GORE
	2G	.01	0.0	0.0	1.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	0.0	0.0	0.0	0.0
	2I	.10	0.0	0.0	.10	.50	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.50	0.0	0.0	0.0	0.0	.01
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	.10	0.0	0.0	.50	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10
	4G	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.50
	4I	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.10	0.0	0.0	.50	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	.10	0.0	0.0	.10	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10
	6G	0.0	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.10	0.0	0.0	1.00	0.0	2.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	8A	.10	0.0	0.0	.50	.10	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.10	.10	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.10	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	.10	0.0	0.0	0.0	.10	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0416	.0	.0	.3124	.1088	.2084	.0240	.0572	.0200	.0404	.0	.0	.0880	.0088	.0	.0	.0240	.0332
S10																			
	0A	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	3.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.10	0.0	0.0	0.0	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.50	0.0	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	.10	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0368	.0	.0	.0040	.3848	.0328	.0208	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S11B																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.50	.01	0.0	.01	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	.01	0.0	1.00	0.0	0.0	.01	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0884	.0004	.0	.0	.0	.0208	.0	.2572	.0008	.0	.0140	.0	.0	.0
S12																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	2.00	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.1500	.0520	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S14																			
	0A	0.0	0.0	0.0	0.0	.10	2.00	0.0	.01	0.0	.10	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	VIAD	APAN	COPA	PRVI	POTRI	GEL1	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBO	VIRE	GORE
	0C	0.0	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	1.00	0.0	.50	2.00	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.50	2.00	.10	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	2.00	0.0	.10	.10	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	1.00	0.0	.10	1.00	.10	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	1.00	0.0	.01	1.00	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	.50	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.50	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	1.00	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	2.00	0.0	.10	1.00	.50	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	2.00	0.0	.10	1.00	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	1.00	0.0	.10	.10	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8A	.01	0.0	.10	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	.50	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	2.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.50	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	1.00	0.0	0.0	1.00	.10	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	1.00	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	2.00	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0
	8G	.01	0.0	1.00	0.0	0.0	.50	0.0	.01	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	2.00	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
Mean		.0008	.0	.9840	.0	.0585	.7000	.0504	.0008	.0	.0040	.0	.0	1.288	.0	.0	.0	.0	.0
S15																			
	0A	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	.10
	0C	0.0	0.0	0.0	1.00	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	3.00	.01	0.0	0.0	.01	0.0
	0E	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	.01	0.0
	0G	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	.10
	2G	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	.50
	4G	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.00	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	10.00	.10	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.1048	.1644	.0	.0180	.0040	.0200	.0	.0	.0	6.280	.0044	.0	.0	.0008	.0280
S15																			
	0A	0.0	0.0	0.0	.10	.01	0.0	0.0	.01	.10	.50	0.0	0.0	10.00	0.0	0.0	.50	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	1.00	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	.10	.50	0.0	.50	.01	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.01	.10	0.0	0.0	10	0.0	.50	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	10	0.0	0.0	.01	0.0	0.0	0.0	0.0	5.00	0.0	0.0	10	0.0	10
	2A	0.0	0.0	0.0	.50	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	.01
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	.50	0.0	0.0	0.0	.10	.10	2.00	0.0	0.0	12.00	0.0	0.0	.50	0.0	0.0
	2G	0.0	0.0	0.0	1.00	.01	0.0	0.0	0.0	.10	.50	0.0	0.0	10.00	0.0	0.0	.10	.01	0.0
	2I	0.0	0.0	0.0	.50	.01	0.0	0.0	0.0	0.0	.50	0.0	0.0	6.00	0.0	0.0	.50	0.0	0.0
	4A	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	.50	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	4.00	0.0	0.0	0.0	0.0	.01
	4E	0.0	0.0	0.0	.50	.10	0.0	0.0	.10	.10	2.00	0.0	0.0	10.00	0.0	0.0	.50	0.0	.10
	4G	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	.10	0.0	0.0	10.00	0.0	0.0	1.00	0.0	.10
	8A	0.0	0.0	0.0	.50	.10	0.0	.10	.10	.50	.10	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	10.00	0.0	0.0	.50	0.0	0.0
	8E	0.0	0.0	0.0	1.00	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	15.00	.01	0.0	.50	0.0	0.0
	8G	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	8.00	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.50	.10	0.0	0.0	.10	.10	0.0	0.0	0.0	5.00	0.0	0.0	.10	0.0	0.0
	8A	0.0	0.0	0.0	.10	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	10.00	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.50	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	25.00	.01	0.0	1.00	.10	0.0
	8E	0.0	0.0	0.0	.10	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	5.00	0.0	0.0	1.00	0.0	.10
	8G	0.0	0.0	0.0	.10	.10	0.0	.10	0.0	.10	0.0	0.0	0.0	8.00	0.0	0.0	.50	0.0	0.0
	8I	0.0	0.0	0.0	.10	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.2544	.1020	.0	.0280	.0780	.0640	.3180	.0	.0	8.720	.0008	.0	.2720	.0044	.0188

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	LAOC	VIAM	PEPA	ASCI	ACMI	ANRA	DRSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AOFL
S01N																			
	0A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0252	.0324	.0	.0	.0408	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0120	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0008	.0	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S04N																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values by 5x5 m Plots

Stand	Plot	LAOC	VIAM	PEPA	ASCI	ACMI	AMRA	ORSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AOFL
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0055	.0	.0	.0	.0	.0044	.0004	.0	.0	.0	.0012	.0	.0	.0
S018																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	.50	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	1.00	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	.50	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	.10
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	.10	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	.10	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0004	.0418	.0	.0	.0	.0008	.0	.0088	.0004	.0400	.1580	.0008	.1048	.0040	.0040
S02																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Species Cover % Values by 5x5 m Plots

Stand	Plot	LADC	VIAM	PEPA	ASCI	ACMI	AMRA	DRSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AOFL
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0 *	.0	.0
S05																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S08																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S09																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	LAOC	VIAM	PEPA	ASCI	ACMI	AMRA	ORSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AOFL
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0040	.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S10																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S118																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	.01	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	.01	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	1.00	0.0	0.0	.10	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	.01	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	2.00	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	1.00	0.0	0.0	.50	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	.01	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	1.00	0.0	0.0	.10	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	.01	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0686	.5852	.0	.0	.0420	.0
S12																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S14																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	LADC	VIAM	PEPA	ASCI	ACMI	AMRA	DRSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AOFL
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S15																			
	0A	0.0	.01	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	.50	.50	1.00	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	.10	0.0	.50	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0844	.0244	.0200	.0958	.0008	.0080	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S16																			
	0A	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	1.00	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.50	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	1.00	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	1.00	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	1.00	.10	.50	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	1.00	.10	2.00	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.10	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	2.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	.50	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	.50	0.0	.50	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	.50	0.0	0.0	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	2.00	0.0	1.00	.50	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	4.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.7920	.0160	.1844	.1048	.0252	.0480	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	GEAM	RUAC	PYAS	MINU	ORPU	ELIN	CXRI	CXFO	ORAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
S01N																			
	0A	0.0	0.0	0.0	0.0	.10	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.50	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	0G	0.0	0.0	0.0	0.0	.50	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	0.0	1.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	.01	0.0
	4A	0.0	0.0	0.0	0.0	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.50	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.50	0.0	1.00	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.2132	.0	.2404	.0688	.0004	.0040	.0	.0	.0	.0	.0	.0244	.0044	.0
S02N																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0280	.0	.0252	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N																			
	0A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.10	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0512	.0	.0004	.0480	.0	.0048	.0	.0	.0	.0	.0	.0040	.0044	.0
S04N																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0 0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	GEAM	RUAC	PYAS	MINU	DRPU	ELIN	CXRI	CXPO	DRAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.1482	.0	.0004	.0212	.0	.0	.0	.0	.0	.0	.0	.0	.0004	.0
S01B																			
	0A	0.0	0.0	0.0	0.0	.50	0.0	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	.01	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.50	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.50	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.50	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	1.00	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.50	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.50	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.4404	.0004	.0524	.2958	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0012	.0	.0	.0068	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03																			
	0A	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.2496	.1492	.0	.0044	.0128	.0	.0	.0440	.0	.0	.0040	.0	.0	.0
S04																			
	0A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.50	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.50	.10	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.10	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values By 5x5 m Plots

Stand	Plot	CEAM	RUAC	PYAS	MINU	ORPU	ELIN	CXRI	CXFO	ORAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	.01	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	.01	0.0	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	.10	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.1338	.0332	.0	.0872	.0352	.0	.0	.0	.0	.0	.0	.0	.0	.0
SOS																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0304	.0	.0004	.0180	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SO7																			
	0A	0.0	0.0	0.0	0.0	.10	.10	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	.50	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	.10	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.01	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.10	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0388	.1280	.0732	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
SO8																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0152	.0	.0048	.0040	.0	.0008	.0	.0	.0	.0	.0	.0	.0	.0
SO9																			
	0A	0.0	0.0	0.0	0.0	.01	.50	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.10	1.00	.10	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	.10	.01
	0E	0.0	0.0	0.0	0.0	.10	.10	.50	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10
	0G	0.0	0.0	0.0	0.0	.10	1.00	.50	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01
	0I	0.0	0.0	0.0	0.0	.01	.01	.50	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	.50	.10	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	GEAM	RUAC	PYAS	MINU	DRPU	ELIN	CXRI	CXFO	ORAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
	2G	0.0	0.0	0.0	0.0	.50	1.00	.50	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01
	2I	0.0	0.0	0.0	0.0	.01	.50	.50	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10
	4A	0.0	0.0	0.0	0.0	.01	.10	.50	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	.10	.10	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01
	4E	0.0	0.0	0.0	0.0	.10	3.00	.10	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	2.00	.10	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	6A	0.0	0.0	0.0	0.0	.01	.50	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	1.00	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	6E	0.0	0.0	0.0	0.0	.10	2.00	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.50	1.00	.10	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.01	0.0
	6I	0.0	0.0	0.0	0.0	.50	.50	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	8A	0.0	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	8C	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01
	8E	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10
	8G	0.0	0.0	0.0	0.0	.50	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	.50	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.1548	.6764	.2350	.0104	.0	.0	.0	.0	.0488	.0	.0	.0	.0044	.0304
S10																			
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0120	.0	.0	.0012	.0	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S11B																			
	0A	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	.10	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0044	.2248	.0	.0012	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S12																			
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0644	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0004	.0	.0	.0
S14																			
	0A	0.0	0.0	0.0	0.0	.50	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values by 5x5 m Plots

Stand	Plot	BEAM	RUAC	PYAS	MINU	ORPU	ELIN	CXRI	CXFO	ORAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
	0C	0.0	0.0	0.0	0.0	.10	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.10	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	.50	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.10	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	.01	0.0	.01	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.2296	.1212	.0	.0088	.0212	.0	.0	.0	.0	.0	.0	.0	.0	.0
S15																			
	0A	.01	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	.01	.50	0.0	0.0	.01	2.00	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	.01	0.0	0.0	1.00	0.0	.50	.50	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.10	.50	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	.01	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
Mean		.0012	.0200	.0	.0400	.0140	.3724	.0244	.0	.0040	.0	.0	.0	.0	.0	.0384	.0	.0	.0
S16																			
	0A	0.0	0.0	0.0	0.0	.10	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.00	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	.01	0.0	0.0	6.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0
	2G	.01	0.0	0.0	0.0	.50	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	7.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	4.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	15.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	1.00	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0
Mean		.0004	.0	.0004	.0	.0240	4.400	.0004	.0	.0	.0	.0	0	0	.0	1120	.0	.0	.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CXSP	EQVA	LYTR	LYAN	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LQVI	PEGR	EMNI
S01N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0	.0
S02N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04N	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CXSP	EQVA	LYTR	LYAM	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LDVI	PEGR	EMNI
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S018															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0	.0	0
S03															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	3.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.1800	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CXSP	EQVA	LYTR	LYAN	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LOVI	PEGR	EMNI
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S05															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07															
	0A	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0004	.0880	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S08															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0004	.0	.0	.0
S09															
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	.01	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus Banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CXSP	EQVA	LYTR	LYAN	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LOVI	PEGR	EMNI
	2G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0188	.0	.0	.0006	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S10															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S11B															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	0	.0340	.0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S12															
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	0	.0	0	0	.0	.0	.0	.0	0	0	0	.0	.0
S14															
	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Stand	Plot	CXSP	EQVA	LYTR	LYAN	EQSY	EQSC	SEDE	EQPR	LYCL	EQAR	PRVI	LOVI	PEGR	EMNI
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0204	.0	.0	.0	.0	.0	.0	.0	.0	.0
S15	0A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	.01	0.0	0.0
	0C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.01	.10	0.0	0.0	0.0	1.00	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	2E	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	6I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	8C	.10	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
Mean		.0040	.0	.0	.0	.0236	.0080	.0	.0	.0	.1736	.0	.0004	.0	.0
S16	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2E	0.0	0.0	1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10
	4E	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.10	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	2.00	.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6A	0.0	0.0	1.00	5.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6C	0.0	0.0	0.0	2.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	6I	0.0	0.0	.50	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	5.00	0.0	0.0	0.0	0.0	0.0	.10	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	.50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	.10	.10	0.0	.01	0.0	0.0	0.0	.01	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.01	0.0	.01	0.0	.01	0.0	0.0	0.0	0.0
Mean		.0	.0	.2440	.5480	.0	.0008	.0	.0044	.0200	.0044	.0	.0	.0040	.0040

Athabasca Oil Sands Ecological Monitoring Program
August 1992 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Soil Temperature & Synthetic Variables by 5x5 m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
S01N														
	0A	57.0	3.00	1	7.21	5	1.23	11	.21	3	0.0	0	12.05	20
	0C	57.0	6.00	1	16.10	5	2.05	13	1.01	3	0.0	0	25.16	22
	0E	56.0	3.00	1	81.00	7	2.62	6	.81	3	0.0	0	87.23	17
	0G	58.0	3.00	1	6.00	3	2.34	9	1.02	4	0.0	0	12.36	17
	0I	58.0	2.00	1	8.00	4	2.44	11	1.11	4	0.0	0	13.55	20
	2A	58.0	4.00	1	20.20	5	1.91	12	.31	4	0.0	0	26.42	22
	2C	58.0	4.00	1	18.80	6	1.80	10	1.20	3	0.0	0	25.80	18
	2E	58.0	7.00	1	19.20	4	1.51	12	.70	3	0.0	0	28.41	20
	2G	58.0	7.00	1	4.70	4	1.04	10	.30	3	0.0	0	13.04	18
	2I	58.0	3.00	1	2.51	3	1.94	10	.62	4	0.0	0	7.57	18
	4A	57.0	3.00	1	7.60	5	1.94	10	.51	3	0.0	0	13.15	19
	4C	58.0	.10	1	8.10	4	.70	12	.81	3	.01	1	9.52	21
	4E	58.0	8.00	1	4.50	2	1.03	9	.51	2	0.0	0	12.04	14
	4G	58.0	16.00	1	3.50	4	.88	8	.03	3	0.0	0	18.29	16
	4I	57.0	10.00	1	6.00	4	.65	10	.51	3	0.0	0	17.16	18
	6A	58.0	.50	1	2.10	4	1.74	12	.30	3	0.0	0	4.64	20
	6C	57.0	7.00	1	2.00	3	.81	5	.20	2	0.0	0	10.11	12
	6E	57.0	5.00	1	4.00	1	.04	4	.11	2	0.0	0	9.15	8
	6G	58.0	6.00	1	7.00	3	.72	5	.11	2	0.0	0	13.83	11
	6I	58.0	8.00	1	5.80	4	.43	7	1.81	4	0.0	0	16.84	16
	8A	58.0	4.00	1	7.60	3	1.01	7	.70	3	0.0	0	13.31	14
	8C	58.0	1.00	1	4.10	3	.82	5	.20	3	0.0	0	6.02	15
	8E	58.0	15.00	1	1.60	3	0.0	0	.10	1	0.0	0	16.70	5
	8G	58.0	20.00	1	4.50	4	.83	7	.30	3	0.0	0	25.63	15
	8I	58.0	3.00	1	19.00	2	1.30	9	.70	3	0.0	0	24.00	15
Mean		57.6	5.8240	1.00	10.8588	3.72	1.2384	8.72	.5556	2.96	.0004	.04	18.5072	15.64
S02N														
	0A	57.0	17.00	1	4.50	3	.52	3	.02	2	0.0	0	22.04	9
	0C	56.0	12.00	1	3.50	3	.52	4	.11	2	0.0	0	16.23	10
	0E	57.0	20.00	1	2.10	4	.01	1	.20	2	0.0	0	22.31	8
	0G	56.0	11.00	1	6.00	3	1.10	2	.10	1	0.0	0	18.20	7
	0I	57.0	15.00	1	2.01	3	.51	2	.01	1	0.0	0	17.53	7
	2A	58.0	7.00	1	3.00	3	.80	4	.10	1	0.0	0	10.90	9
	2C	58.0	12.00	1	1.80	3	.10	1	.11	2	0.0	0	13.81	7
	2E	58.0	12.00	1	1.50	2	0.0	0	.10	1	0.0	0	13.60	4
	2G	56.0	15.00	1	.50	1	.10	1	0.0	0	0.0	0	15.60	3
	2I	56.0	15.00	1	.10	1	.10	1	.01	1	0.0	0	15.21	4
	4A	57.0	15.00	1	.10	1	.10	1	.10	1	0.0	0	15.30	4
	4C	57.0	7.00	1	6.50	2	.10	1	0.0	0	0.0	0	13.50	4
	4E	56.0	15.00	1	1.50	2	0.0	0	0.0	0	0.0	0	16.50	3
	4G	57.0	16.00	1	.10	1	.01	1	0.0	0	0.0	0	16.11	3
	4I	57.0	8.00	1	3.00	2	.62	4	.10	1	0.0	0	11.72	8
	6A	56.0	8.00	1	4.60	3	.51	2	.10	1	0.0	0	13.21	7
	6C	57.0	20.00	1	.10	1	0.0	0	0.0	0	0.0	0	20.10	2
	6E	57.0	15.00	1	.10	1	.31	4	0.0	0	0.0	0	15.41	5
	6G	56.0	13.00	1	.80	2	.01	1	0.0	0	0.0	0	13.81	4
	6I	56.0	17.00	1	1.20	3	.72	5	.20	2	0.0	0	19.12	11
	8A	59.0	18.00	1	2.10	4	.20	2	.01	1	0.0	0	20.31	8
	8C	58.0	20.00	1	.20	2	.20	2	.01	1	0.0	0	20.41	6
	8E	57.0	15.00	1	1.10	3	.11	2	.01	1	0.0	0	16.22	7
	8G	57.0	12.00	1	1.80	3	.13	4	.02	2	0.0	0	13.75	10
	8I	57.0	10.00	1	2.10	4	1.10	2	.02	2	0.0	0	13.22	9
Mean		56.9	13.9200	1.00	1.9884	2.40	.3192	2.00	.0532	1.00	0.0	0.0	16.2808	8.40
S03N														
	0A	57.0	15.00	1	4.00	2	1.73	7	.13	4	0.0	0	20.86	14
	0C	57.0	25.00	1	4.00	1	.43	7	.11	2	0.0	0	29.54	11
	0E	57.0	10.00	1	15.00	1	.22	4	.11	2	0.0	0	25.33	8
	0G	56.0	5.00	1	6.01	2	1.52	5	.21	3	0.0	0	12.74	11
	0I	58.0	20.00	1	5.00	1	.33	6	.11	2	0.0	0	25.44	10
	2A	58.0	4.00	1	1.50	2	1.25	9	.11	2	0.0	0	6.86	14
	2C	57.0	20.00	1	3.00	1	.31	4	.02	2	0.0	0	23.33	8
	2E	57.0	15.00	1	1.00	1	.13	4	.20	2	0.0	0	16.33	8
	2G	56.0	17.00	1	1.20	3	1.11	4	.11	3	0.0	0	19.42	10
	2I	56.0	15.00	1	15.50	2	.22	4	.10	1	0.0	0	30.82	8
	4A	59.0	5.00	1	3.01	2	.32	5	.12	3	0.0	0	8.45	11
	4C	61.0	7.00	1	2.00	1	.12	3	.02	2	0.0	0	9.14	7
	4E	59.0	17.00	1	4.00	1	.05	5	.11	2	0.0	0	21.16	9
	4G	59.0	17.00	1	3.01	2	0.0	0	.10	1	0.0	0	20.11	4
	4I	59.0	8.00	1	4.01	2	1.71	5	.30	3	0.0	0	14.02	11
	6A	60.0	17.00	1	2.00	1	.24	6	.10	1	0.0	0	19.34	9
	6C	62.0	3.00	1	.50	1	.51	6	.20	2	0.0	0	4.21	10
	6E	60.0	10.00	1	.10	1	.31	4	.02	2	0.0	0	10.43	8
	6G	59.0	6.00	1	2.00	1	.22	4	.11	2	0.0	0	8.33	8
	6I	60.0	3.00	1	.60	2	.50	1	.01	1	0.0	0	4.11	5
	8A	58.0	7.10	2	2.00	1	.80	4	.11	2	0.0	0	10.01	9
	8C	60.0	11.00	1	2.10	2	.32	5	.02	2	0.0	0	13.44	10
	8E	58.0	12.00	1	4.00	1	1.21	5	.11	2	0.0	0	17.32	9
	8G	59.0	7.00	1	2.00	1	.31	4	.12	3	0.0	0	9.43	9
	8I	58.0	15.00	1	2.00	1	.62	4	.11	2	0.0	0	17.73	8
Mean		58.7	11.8440	1.04	3.5816	1.44	.5796	4.80	.1108	2.08	0.0	0.0	15.9160	9.16
S04N														
	0A	61.0	25.10	2	6.00	2	1.03	9	.01	1	0.0	0	32.14	14
	0C	61.0	3.00	1	6.10	3	1.83	8	.01	1	0.0	0	8.94	14
	0E	59.0	5.00	1	6.20	4	2.61	9	.50	1	0.0	0	14.31	15
	0G	60.0	2.00	1	3.01	2	.93	8	1.00	1	0.0	0	6.94	12
	0I	59.0	12.00	1	4.00	1	1.02	9	.02	2	0.0	0	17.05	13
	2A	56.0	15.00	1	3.00	2	1.01	7	.10	1	0.0	0	19.11	11
	2C	62.0	1.00	1	2.50	2	1.33	8	.01	1	0.0	0	4.84	12
	2E	62.0	3.00	1	3.10	2	.12	3	.01	1	0.0	0	6.23	7
	2G	62.0	30.00	1	.80	2	.73	6	.10	1	0.0	0	31.43	10
	2I	62.0	2.00	1	.50	1	1.14	7	.02	2	0.0	0	3.66	11
	4A	60.0	20.00	1	.50	1	.14	5	.01	1	0.0	0	20.85	8
	4C	59.0	35.00	1	3.00	1	.42	6	.10	1	0.0	0	38.52	9
	4E	62.0	10.00	1	1.50	3	1.81	6	.10	1	0.0	0	13.51	11
	4G	61.0	6.00	1	3.00	2	2.22	6	1.00	1	0.0	0	12.22	10
	4I	62.0	5.00	1	3.10	2	.12	3	.02	2	0.0	0	8.24	6
	6A	62.0	7.00	1	1.50	2	.61	3	.01	1	0.0	0	9.12	7
	6C	63.0	5.00	1	3.00	1	.31	4	.02	2	0.0	0	8.33	8
	6E	62.0	.10	1	3.01	3	1.22	5	.10	1	0.0	0	4.43	10
	6G	62.0	10.00	1	2.80	3	3.04	6	.60	2	0.0	0	16.24	12
	6I	60.0	3.00	1	2.00	1	1.30	5	.01	1	0.0	0	6.31	8
	8A	59.0	4.00	1	5.50	2	2.73	7	.50	1	0.0	0	12.73	11
	8C	60.0	15.00	1	5.00	2	.12	3	0.0	0	0.0	0	20.12	6

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Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	8E	61.0	12.00	1	7.00	1	.12	3	0.0	0	0.0	0	19.12	5
	8G	62.0	8.00	1	2.01	2	.74	7	.01	1	0.0	0	10.76	11
	8I	61.0	15.00	1	1.00	1	.64	6	.02	2	0.0	0	16.66	10
Mean		61.2	10.1280	1.04	3.0732	1.92	1.0820	6.00	.1712	1.16	0.0	0.0	14.4844	10.12
S01E														
	0A	63.0	.01	1	1.11	3	1.03	9	1.01	3	0.0	0	3.16	16
	0C	63.0	0.0	0	1.30	4	1.36	11	.70	3	0.0	0	3.36	18
	0E	63.0	.01	1	3.20	4	4.72	11	.50	1	0.0	0	8.43	17
	0G	64.0	.01	1	3.11	5	2.94	12	.60	2	0.0	0	6.66	20
	0I	63.0	.01	1	1.51	3	1.93	9	1.10	2	0.0	0	4.55	15
	2A	64.0	.01	1	1.00	2	.84	8	1.10	2	0.0	0	2.95	13
	2C	63.0	.01	1	2.11	4	.97	12	1.00	2	0.0	0	4.09	19
	2E	65.0	.10	1	2.70	4	5.23	10	.71	4	0.0	0	8.74	18
	2G	65.0	0.0	0	3.10	3	2.41	8	.60	2	0.0	0	6.11	13
	2I	62.0	.01	1	1.20	3	1.52	9	.52	3	0.0	0	3.25	16
	4A	64.0	.01	1	.50	1	1.24	7	.50	1	0.0	0	2.25	10
	4C	64.0	.01	1	.20	2	1.20	8	.70	3	0.0	0	2.11	14
	4E	0.0	0.0	0	.11	2	.83	8	.51	2	0.0	0	1.55	12
	4G	0.0	.01	1	.70	3	.53	8	1.00	2	0.0	0	2.24	14
	4I	0.0	.01	1	.72	5	1.33	8	1.00	2	0.0	0	3.06	16
	6A	64.0	.01	1	.10	1	1.11	8	.70	3	0.0	0	1.92	13
	6C	64.0	.01	1	1.10	2	.90	9	.70	3	0.0	0	2.71	15
	6E	63.0	.01	1	.70	3	1.22	10	1.10	3	0.0	0	3.03	17
	6G	64.0	.01	1	1.30	4	3.21	11	1.10	2	0.0	0	5.82	18
	6I	64.0	.01	1	.60	2	2.41	9	.10	1	0.0	0	3.12	13
	8A	64.0	0.0	0	1.20	3	1.31	10	1.50	2	0.0	0	4.01	15
	8C	64.0	.01	1	.50	1	1.50	8	1.10	3	0.0	0	3.21	13
	8E	64.0	.01	1	1.10	2	2.41	8	.60	2	0.0	0	4.12	13
	8G	64.0	0.0	0	.80	2	2.51	9	.70	3	0.0	0	3.81	14
	8I	64.0	0.0	0	.31	4	2.02	10	.60	2	0.0	0	2.93	16
Mean		63.7	.0112	.76	1.2032	2.88	1.8752	9.20	.7900	2.32	0.0	0.0	3.8796	15.16
S02														
	0A	58.0	40.00	1	.10	1	0.0	0	0.0	0	0.0	0	40.10	2
	0C	57.0	30.00	1	1.01	2	.12	3	.01	1	0.0	0	31.14	7
	0E	57.0	25.00	1	3.01	2	0.0	0	.01	1	0.0	0	28.02	4
	0G	57.0	20.00	1	0.0	0	.01	1	.01	1	0.0	0	20.02	3
	0I	57.0	30.00	1	1.00	1	.01	1	.01	1	0.0	0	31.02	4
	2A	58.0	30.00	1	2.00	1	0.0	0	.01	1	0.0	0	32.01	3
	2C	57.0	25.00	1	3.00	1	0.0	0	0.0	0	0.0	0	28.00	2
	2E	57.0	30.00	1	6.00	1	.10	1	0.0	0	0.0	0	36.10	3
	2G	58.0	35.00	1	1.00	1	0.0	0	.01	1	0.0	0	36.01	3
	2I	58.0	20.00	1	2.00	1	0.0	0	.01	1	0.0	0	22.01	3
	4A	58.0	25.00	1	.10	1	0.0	0	0.0	0	0.0	0	25.10	2
	4C	58.0	25.00	1	3.00	1	0.0	0	0.0	0	0.0	0	28.00	2
	4E	58.0	30.00	1	3.00	1	0.0	0	0.0	0	0.0	0	33.00	2
	4G	58.0	25.00	1	.10	1	0.0	0	0.0	0	0.0	0	25.10	2
	4I	58.0	30.00	1	2.00	1	0.0	0	0.0	0	0.0	0	32.00	2
	6A	58.0	30.00	1	.50	1	0.0	0	.01	1	0.0	0	30.51	3
	6C	58.0	25.00	1	.50	1	0.0	0	0.0	0	0.0	0	25.50	2
	6E	58.0	35.00	1	1.00	1	0.0	0	0.0	0	0.0	0	36.00	2
	6G	58.0	30.00	1	3.00	1	0.0	0	.10	1	0.0	0	33.10	3
	6I	58.0	25.00	1	0.0	0	0.0	0	0.0	0	0.0	0	25.00	1
	8A	58.0	30.00	1	.50	1	0.0	0	.01	1	0.0	0	30.51	3
	8C	58.0	30.00	1	1.00	1	0.0	0	0.0	0	0.0	0	31.00	2
	8E	58.0	30.00	1	2.00	1	0.0	0	0.0	0	0.0	0	32.00	2
	8G	57.0	35.00	1	2.00	1	0.0	0	.01	1	0.0	0	37.01	3
	8I	57.0	30.00	1	4.00	1	.03	3	0.0	0	0.0	0	34.03	5
Mean		57.7	28.8000	1.00	1.6728	1.00	.0108	.36	.0080	.44	0.0	0.0	30.4816	2.80
S03														
	0A	63.0	12.50	2	29.00	8	10.01	11	1.10	3	0.0	0	52.61	24
	0C	63.0	5.00	1	26.50	7	3.32	9	.70	3	3.00	1	38.52	21
	0E	65.0	12.00	1	29.20	9	5.43	10	.21	3	1.00	1	47.84	24
	0G	63.0	5.00	3	31.00	6	4.64	9	1.50	3	0.0	0	42.14	21
	0I	63.0	10.10	2	29.20	5	2.51	9	1.00	1	0.0	0	42.81	17
	2A	63.0	11.00	2	49.00	7	3.81	8	1.10	3	0.0	0	64.91	20
	2C	63.0	15.50	2	43.00	6	3.93	10	1.10	3	0.0	0	63.53	21
	2E	64.0	12.10	2	30.30	6	2.71	11	.02	2	0.0	0	45.13	21
	2G	63.0	25.00	1	32.10	6	6.80	6	.21	3	0.0	0	64.11	16
	2I	65.0	10.00	1	30.10	6	5.32	9	.30	3	0.0	0	45.72	19
	4A	63.0	8.50	2	45.60	7	5.72	10	.60	2	0.0	0	60.42	21
	4C	64.0	7.00	1	32.00	6	5.24	10	.11	2	0.0	0	44.35	19
	4E	63.0	15.00	1	40.00	7	4.71	7	.20	2	0.0	0	59.91	17
	4G	64.0	8.00	1	58.60	6	6.50	9	.60	2	0.0	0	73.70	18
	4I	64.0	15.01	2	30.60	4	6.11	8	.50	1	0.0	0	52.22	15
	6A	64.0	12.50	2	54.00	7	6.32	12	.20	2	0.0	0	73.02	23
	6C	61.0	15.00	1	34.10	7	5.20	6	.20	2	0.0	0	54.50	16
	6E	66.0	7.00	1	27.60	6	8.11	11	.60	2	0.0	0	43.31	20
	6G	66.0	.50	1	20.10	6	3.51	10	.20	2	0.0	0	24.31	19
	6I	71.0	5.00	1	32.10	5	2.00	3	.01	1	0.0	0	39.11	10
	8A	64.0	6.00	1	34.00	6	2.80	9	.02	2	0.0	0	42.82	18
	8C	64.0	7.00	1	40.10	5	3.10	4	.10	1	0.0	0	50.30	11
	8E	64.0	5.00	1	11.50	3	2.00	4	.11	2	0.0	0	18.61	10
	8G	64.0	2.00	1	59.50	5	3.11	6	.21	3	0.0	0	64.82	15
	8I	61.0	5.50	2	45.00	8	8.70	6	.70	3	0.0	0	59.90	19
Mean		63.9	9.4884	1.44	35.7680	6.16	4.8644	8.28	.4640	2.24	.1800	.08	50.7448	18.20
S04														
	0A	57.0	7.00	1	10.80	5	.70	3	.21	3	0.0	0	18.51	12
	0C	56.0	10.00	1	11.00	4	1.40	5	.11	2	0.0	0	22.51	12
	0E	57.0	12.00	1	10.50	4	3.33	8	.11	2	0.0	0	25.94	15
	0G	58.0	5.00	1	12.01	5	1.81	7	.11	2	0.0	0	18.93	15
	0I	58.0	5.00	1	4.51	5	.32	5	.20	2	0.0	0	10.03	13
	2A	57.0	15.00	1	12.50	4	4.61	4	.11	2	0.0	0	32.22	11
	2C	57.0	4.00	1	23.00	4	3.71	6	.60	2	0.0	0	31.31	13
	2E	57.0	20.00	1	19.10	5	4.10	5	.12	3	0.0	0	43.32	14
	2G	57.0	5.00	1	19.50	5	1.53	5	.51	2	0.0	0	26.54	13
	2I	57.0	6.00	1	12.01	5	2.70	5	.11	2	0.0	0	20.82	13
	4A	56.0	10.00	1	27.50	7	3.71	6	1.20	4	0.0	0	42.41	18
	4C	57.0	8.00	1	16.00	5	5.11	6	.21	3	0.0	0	29.32	15
	4E	56.0	17.00	1	32.80	4	1.11	4	.21	3	0.0	0	50.92	12
	4G	56.0	4.00	1	15.50	4	2.21	6	.20	2	0.0	0	21.91	13
	4I	56.0	20.00	1	19.10	5	2.50	4	.20	2	0.0	0	41.80	12

Athabasca Oil Sands Ecological Monitoring Program
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Soil Temperature & Synthetic Variables by 5x5 m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	6A	56.0	6.00	1	11.10	4	1.10	3	.21	3	0.0	0	20.41	11
	6C	57.0	20.00	1	16.60	4	1.71	5	.22	4	0.0	0	38.53	14
	6E	57.0	5.00	1	16.30	6	1.72	6	.12	3	0.0	0	23.14	16
	6G	56.0	10.00	1	30.50	5	1.80	5	.12	3	0.0	0	42.42	14
	6I	55.0	20.00	1	18.00	4	6.52	5	.30	3	0.0	0	42.82	13
	8A	55.0	15.00	1	16.10	5	.81	5	.22	4	0.0	0	32.13	15
	8C	55.0	10.00	1	13.80	4	1.71	5	.30	3	0.0	0	25.51	13
	8E	54.0	5.00	1	16.80	7	2.21	6	.21	3	0.0	0	24.02	17
	8G	54.0	16.00	1	40.10	5	3.71	6	.21	3	0.0	0	59.02	15
	8I	54.0	15.00	1	30.70	5	48.71	6	.61	3	0.0	0	96.02	15
Mean		55.2	10.8400	1.00	18.1172	4.80	4.3540	5.24	.2692	2.72	0.0	0.0	33.5804	13.76
SOS														
	0A	58.0	25.00	1	6.50	3	.62	4	.02	2	0.0	0	32.14	10
	0C	58.0	10.00	1	13.00	4	.80	4	.10	1	0.0	0	23.90	10
	0E	59.0	6.00	1	18.50	5	.72	5	.02	2	0.0	0	25.24	13
	0G	59.0	15.00	1	22.61	6	2.13	6	.11	2	0.0	0	40.85	15
	0I	56.0	30.00	1	9.70	6	.14	5	.02	2	0.0	0	39.86	14
	2A	57.0	18.00	1	10.10	4	.71	4	.11	2	0.0	0	28.92	11
	2C	57.0	15.00	1	16.01	5	.51	2	.02	2	0.0	0	33.54	10
	2E	57.0	30.00	1	20.80	7	.01	1	.01	1	0.0	0	50.52	10
	2G	57.0	12.00	1	27.50	5	.81	3	.02	2	0.0	0	40.13	11
	2I	58.0	8.00	1	14.50	4	1.22	5	.02	2	0.0	0	23.74	12
	4A	58.0	22.00	1	15.50	4	1.11	3	.01	1	0.0	0	38.62	9
	4C	58.0	20.00	1	32.50	5	1.10	2	.10	1	0.0	0	53.70	8
	4E	57.0	25.00	1	34.60	5	.71	4	.10	1	0.0	0	60.41	11
	4G	56.0	17.00	1	41.40	7	.60	2	.11	2	0.0	0	59.11	12
	4I	56.0	17.00	1	24.10	4	1.90	6	.02	2	0.0	0	43.02	13
	6A	58.0	4.00	1	20.02	5	.13	4	.02	2	.10	1	24.27	13
	6C	57.0	4.00	1	8.10	4	.80	4	.02	2	0.0	0	12.92	11
	6E	58.0	4.00	1	22.50	5	.71	4	.11	2	0.0	0	27.32	12
	6G	58.0	4.00	1	11.80	4	.64	6	.01	1	0.0	0	16.25	12
	6I	58.0	15.00	1	10.00	3	.33	6	.01	1	0.0	0	25.34	11
	8A	58.0	20.00	1	25.10	4	1.51	4	.01	1	0.0	0	47.62	10
	8C	56.0	20.00	1	19.10	4	.61	3	.11	2	0.0	0	39.82	10
	8E	58.0	25.00	1	24.61	5	.20	2	.02	2	0.0	0	49.83	10
	8G	58.0	5.00	1	17.70	5	.70	3	.10	1	0.0	0	23.50	10
	8I	58.0	7.00	1	8.10	4	.91	6	.02	2	0.0	0	16.03	13
Mean		57.8	15.2400	1.00	18.1180	4.68	.7772	3.92	.0488	1.64	.0040	.04	35.1880	11.28
SO7														
	0A	58.0	12.00	1	17.20	6	2.36	10	.71	4	.50	1	32.77	22
	0C	58.0	15.01	2	14.80	6	1.43	9	.02	2	0.0	0	31.06	19
	0E	58.0	12.00	1	18.60	7	.82	6	.02	2	0.0	0	31.44	16
	0G	60.0	10.00	1	16.01	6	.92	7	.03	3	0.0	0	32.96	17
	0I	58.0	7.00	1	13.71	7	.44	8	.01	1	0.0	0	21.16	17
	2A	59.0	8.00	1	20.10	6	3.72	7	.71	4	0.0	0	32.53	18
	2C	59.0	12.00	1	29.80	6	3.80	6	.21	3	0.0	0	45.51	16
	2E	58.0	11.00	1	28.00	7	3.34	9	.03	3	.01	1	39.38	21
	2G	58.0	7.00	1	9.50	5	1.41	7	.02	2	0.0	0	17.93	15
	2I	60.0	10.00	1	6.50	4	.85	5	.02	2	0.0	0	17.37	16
	4A	58.0	9.00	1	11.21	6	1.52	4	1.01	3	.10	1	22.94	17
	4C	58.0	10.00	1	9.52	7	2.42	7	.11	2	0.0	0	22.05	17
	4E	60.0	10.00	1	21.10	7	3.50	8	.10	1	0.0	0	34.70	17
	4G	58.0	15.00	1	5.20	6	2.41	6	.02	2	0.0	0	22.63	15
	4I	58.0	4.00	1	14.10	6	3.01	8	.21	3	.50	1	21.82	19
	6A	58.0	25.00	1	8.00	4	2.40	6	.30	3	.10	1	36.80	15
	6C	58.0	30.00	1	18.50	5	2.52	6	.30	3	0.0	0	52.32	17
	6E	58.0	25.00	1	13.10	6	5.00	7	.11	2	0.0	0	43.21	16
	6G	60.0	15.00	1	19.00	4	1.51	8	.12	3	0.0	0	35.63	16
	6I	59.0	25.00	1	10.80	4	3.10	8	.10	1	0.0	0	38.80	14
	8A	58.0	25.00	1	29.70	7	1.70	6	.80	2	1.00	1	58.00	19
	8C	58.0	25.00	1	15.10	6	4.02	9	.30	3	0.0	0	44.42	19
	8E	58.0	20.00	1	5.10	5	.81	9	.10	1	0.0	0	26.01	16
	8G	58.0	25.00	1	10.80	7	3.50	8	.70	3	0.0	0	40.00	19
	8I	60.0	20.00	1	8.70	6	3.40	7	.11	2	0.0	0	32.21	15
Mean		58.0	15.7204	1.04	14.9420	5.92	2.3596	7.36	.2388	2.40	.0884	.24	33.3480	17.16
SO8														
	0A	58.0	5.00	1	6.00	4	1.21	5	.11	2	0.0	0	12.32	12
	0C	58.0	15.00	1	4.00	4	2.22	6	.01	1	0.0	0	21.23	12
	0E	59.0	2.00	1	9.00	4	1.53	5	.02	2	0.0	0	12.55	12
	0G	58.0	6.00	1	5.11	4	2.71	6	.10	1	0.0	0	11.92	12
	0I	59.0	7.00	1	2.00	1	1.80	3	.02	2	0.0	0	10.62	7
	2A	59.0	18.00	1	6.00	3	1.13	5	.01	1	0.0	0	25.14	10
	2C	59.0	15.00	1	8.00	4	1.81	5	0.0	0	0.0	0	24.81	11
	2E	58.0	5.00	1	8.50	4	1.70	5	.12	3	0.0	0	13.32	13
	2G	60.0	2.00	1	4.00	2	1.23	7	.03	3	0.0	0	7.26	13
	2I	59.0	5.00	1	3.00	2	2.51	5	0.0	0	0.0	0	10.51	8
	4A	59.0	8.00	1	4.00	5	2.01	5	.02	2	0.0	0	14.03	13
	4C	58.0	14.00	1	8.00	5	1.70	5	.01	1	0.0	0	23.71	12
	4E	59.0	4.00	1	4.50	4	2.20	5	.01	1	0.0	0	10.81	11
	4G	60.0	10.00	1	2.20	3	.72	5	.02	2	0.0	0	12.94	11
	4I	60.0	7.00	1	1.50	3	.10	1	0.0	0	0.0	0	8.70	5
	6A	60.0	1.00	1	2.80	4	.90	5	.02	2	0.0	0	4.52	12
	6C	59.0	3.00	1	3.80	5	2.32	8	.02	2	0.0	0	8.94	14
	6E	59.0	20.10	2	3.10	4	.73	6	.01	1	0.0	0	23.94	13
	6G	58.0	2.00	1	2.20	3	.40	4	.01	1	0.0	0	4.61	9
	6I	58.0	5.00	1	5.50	3	2.80	5	.01	1	0.0	0	13.31	10
	8A	58.0	10.00	1	1.50	2	.42	6	.02	2	0.0	0	11.94	11
	8C	58.0	7.00	1	7.00	4	3.11	5	.02	2	0.0	0	17.13	12
	8E	58.0	3.00	1	4.50	3	.71	4	.01	1	0.0	0	8.22	9
	8G	58.0	2.00	1	3.50	3	1.54	6	.01	1	0.0	0	7.05	11
	8I	59.0	17.00	1	5.50	6	1.34	8	.01	1	0.0	0	23.85	16
Mean		58.9	7.8440	1.06	4.5244	3.48	1.5460	5.16	.0248	1.40	0.0	0.0	13.7392	11.08
SO9														
	0A	58.0	25.00	1	35.00	6	82	4	.62	4	.01	1	81.25	16
	0C	57.0	15.00	1	12.00	4	.92	7	1.33	7	0.0	0	29.25	19
	0E	56.0	13.00	1	24.50	4	1.53	9	.81	5	.01	1	39.85	20
	0G	57.0	15.00	1	12.00	4	2.25	9	1.52	5	.01	1	30.68	20
	0I	57.0	7.00	2	21.00	4	1.93	10	.54	5	.01	1	30.48	22
	2A	53.0	20.00	1	52.00	6	4.01	6	.51	2	.02	2	78.54	17
	2C	55.0	10.00	1	27.00	5	2.73	9	.72	5	.01	1	40.46	21
	2E	57.0	5.00	1	10.20	6	2.24	9	.72	5	.01	1	18.17	22

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Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	2G	56.0	2.00	1	27.00	6	3.54	9	2.02	5	.01	1	34.57	22
	2I	56.0	10.00	1	23.50	5	2.31	7	1.13	6	.01	1	36.95	20
	4A	53.0	8.00	1	42.60	6	1.03	5	.62	4	.01	1	52.25	17
	4C	55.0	17.00	2	21.00	5	.53	4	.33	6	0.0	0	38.86	17
	4E	56.0	15.00	1	29.00	6	1.81	11	3.21	4	.01	1	49.03	23
	4G	54.0	15.00	1	34.00	6	1.80	6	2.22	6	.01	1	53.03	19
	4I	56.0	20.00	1	34.50	7	1.10	7	.90	5	.10	1	56.60	21
	6A	55.0	20.00	1	13.50	5	1.01	7	.71	4	0.0	0	35.22	17
	6C	55.0	20.00	1	26.00	4	3.91	9	1.40	5	.01	1	51.32	20
	6E	55.0	15.00	1	23.00	5	3.41	12	2.30	4	.01	1	43.72	23
	6G	56.0	15.10	2	22.60	6	.83	8	1.81	6	.01	1	40.45	23
	6I	56.0	7.00	1	26.00	5	5.31	9	1.30	5	.10	1	39.71	21
	8A	56.0	3.00	1	15.10	4	3.01	11	.80	5	.01	1	22.02	22
	8C	56.0	4.10	2	24.50	4	2.51	10	.71	4	.01	1	31.83	21
	8E	54.0	30.10	2	37.00	5	3.40	7	.80	4	.01	1	71.31	19
	8G	56.0	7.00	1	30.10	4	2.90	12	1.10	3	.01	1	41.11	21
	8I	57.0	3.10	2	28.50	4	2.51	10	.70	3	.10	1	34.91	20
Mean		55.6	12.8560	1.24	26.0840	5.04	2.2900	8.28	1.1612	4.84	.0200	.92	42.3812	20.12
S10														
	0A	57.0	10.00	1	8.00	3	3.00	1	0.0	0	0.0	0	21.00	5
	0C	56.0	13.00	1	16.10	3	0.0	0	0.0	0	0.0	0	28.10	4
	0E	57.0	5.00	1	28.10	4	3.60	3	.01	1	0.0	0	35.71	9
	0G	56.0	6.00	1	20.10	4	2.13	7	.01	1	0.0	0	28.24	13
	0I	55.0	12.00	1	29.10	4	2.11	6	.01	1	0.0	0	43.22	12
	2A	56.0	8.00	1	15.00	3	2.00	1	0.0	0	0.0	0	25.00	5
	2C	56.0	4.00	1	22.00	3	.20	2	.01	1	0.0	0	26.21	7
	2E	56.0	15.00	1	5.50	2	.11	2	0.0	0	0.0	0	20.61	5
	2G	56.0	9.10	2	12.10	4	1.00	1	.01	1	0.0	0	22.21	8
	2I	55.0	17.00	1	3.50	3	.01	1	0.0	0	0.0	0	20.51	5
	4A	56.0	17.00	1	11.10	3	0.0	0	0.0	0	0.0	0	28.10	4
	4C	56.0	20.00	1	18.00	3	1.10	3	0.0	0	0.0	0	39.10	7
	4E	56.0	.50	1	16.00	3	2.11	3	.01	1	0.0	0	18.62	8
	4G	56.0	3.00	1	9.00	3	.02	2	.01	1	0.0	0	12.03	7
	4I	56.0	7.00	1	20.00	3	.11	2	.01	1	0.0	0	27.12	7
	6A	56.0	8.00	1	18.00	3	.10	1	0.0	0	0.0	0	27.10	5
	6C	56.0	20.00	1	8.50	3	.01	1	.01	1	0.0	0	28.52	6
	6E	56.0	20.00	1	11.10	3	.52	3	.01	1	0.0	0	31.63	8
	6G	56.0	2.00	1	16.01	4	.82	6	.11	2	0.0	0	18.94	13
	6I	56.0	20.00	1	4.00	3	.11	2	0.0	0	0.0	0	24.11	6
	8A	56.0	8.00	1	30.00	3	.01	1	0.0	0	0.0	0	38.01	5
	8C	56.0	10.00	1	10.00	3	.10	1	.01	1	0.0	0	20.11	6
	8E	56.0	8.00	1	8.50	3	.10	1	.01	1	0.0	0	16.61	6
	8G	56.0	5.00	1	8.00	3	.22	4	.01	1	0.0	0	13.23	9
	8I	58.0	.50	1	32.00	2	1.22	5	.10	1	0.0	0	33.82	9
Mean		56.1	9.8240	1.04	15.2284	3.12	.8284	2.36	.0136	.64	0.0	0.0	25.9944	7.16
S11B														
	0A	0.0	.01	1	.12	3	.13	4	.10	1	0.0	0	.36	9
	0C	0.0	.01	1	5.02	4	.82	6	.10	1	0.0	0	5.95	12
	0E	0.0	.01	1	2.62	6	1.03	5	.10	1	0.0	0	3.76	13
	0G	0.0	.10	1	.21	3	.91	6	.51	2	.10	1	1.83	13
	0I	0.0	.10	1	1.10	3	.41	5	.10	1	.10	1	1.81	11
	2A	0.0	.10	1	4.02	4	1.52	4	.50	1	0.0	0	6.14	10
	2C	0.0	.01	1	3.10	3	.73	6	.50	1	.10	1	4.44	12
	2E	0.0	.01	1	5.11	4	.62	4	.11	2	0.0	0	5.85	11
	2G	0.0	.10	1	1.02	4	.63	5	.51	2	.01	1	2.27	13
	2I	0.0	.01	1	.62	4	.72	5	.51	2	.01	1	1.87	13
	4A	0.0	.50	1	3.50	3	4.74	9	.51	2	0.0	0	9.25	15
	4C	0.0	.01	1	4.22	7	.64	6	.50	1	0.0	0	5.37	15
	4E	0.0	.01	1	4.10	3	.52	3	.01	1	.01	1	4.65	9
	4G	0.0	.01	1	1.03	4	1.21	4	.51	2	.10	1	2.86	12
	4I	0.0	.01	1	1.02	4	.12	3	.11	2	.10	1	1.36	11
	6A	0.0	.10	1	2.50	2	2.12	5	.01	1	0.0	0	4.73	9
	6C	0.0	.01	1	5.02	4	3.10	4	.50	1	0.0	0	8.63	10
	6E	0.0	.01	1	5.11	4	2.01	4	.10	1	0.0	0	7.23	10
	6G	0.0	.01	1	4.50	2	.70	3	0.0	0	.01	1	5.22	7
	6I	0.0	.10	1	.72	5	.73	6	.12	3	0.0	0	1.67	15
	8A	0.0	.50	1	5.20	4	2.00	7	.10	1	0.0	0	7.80	13
	8C	0.0	.10	1	6.10	4	.90	5	.10	1	.10	1	7.30	12
	8E	0.0	.10	1	4.01	5	1.22	5	.02	2	.10	1	5.45	14
	8G	0.0	.10	1	2.21	4	.72	5	.12	3	.10	1	3.25	14
	8I	0.0	.10	1	1.12	5	.32	5	.01	1	.01	1	1.56	13
Mean		M	.0852	1.00	2.9320	3.92	1.1428	4.96	.2304	1.44	.0340	.52	4.4244	11.84
S12														
	0A	57.0	10.00	1	14.00	2	1.01	2	.01	1	0.0	0	25.02	5
	0C	56.0	5.00	1	10.00	3	1.10	2	.01	1	0.0	0	16.11	7
	0E	56.0	18.00	1	21.01	4	1.12	4	.01	1	0.0	0	40.14	10
	0G	56.0	7.00	1	13.00	3	.70	3	.01	1	0.0	0	20.71	8
	0I	57.0	10.00	1	7.00	2	1.50	3	.01	1	0.0	0	18.51	7
	2A	56.0	15.00	1	7.50	3	1.02	4	.10	1	0.0	0	23.62	9
	2C	56.0	25.00	1	1.50	2	1.01	2	.51	2	0.0	0	28.02	7
	2E	57.0	12.00	1	16.00	2	.61	3	.10	1	0.0	0	28.71	7
	2G	57.0	9.00	1	8.00	2	.51	2	.01	1	0.0	0	17.52	6
	2I	57.0	20.00	1	6.00	2	2.01	3	.01	1	0.0	0	28.02	7
	4A	57.0	12.00	1	19.00	3	.51	2	.01	1	0.0	0	31.52	7
	4C	57.0	20.00	1	3.10	3	1.02	3	.01	1	0.0	0	24.13	8
	4E	56.0	15.00	1	55.10	3	3.00	1	0.0	0	0.0	0	73.10	5
	4G	56.0	15.00	1	31.00	3	2.10	2	.10	1	0.0	0	48.20	7
	4I	56.0	20.00	1	35.50	3	1.10	3	.01	1	0.0	0	56.61	8
	6A	56.0	25.00	1	5.50	2	.21	3	0.0	0	0.0	0	30.71	6
	6C	56.0	10.00	1	25.00	2	.70	3	.10	1	0.0	0	35.80	7
	6E	56.0	20.00	1	23.50	3	1.61	4	.10	1	0.0	0	45.21	9
	6G	56.0	20.00	1	30.00	3	.30	3	.11	2	0.0	0	50.41	9
	6I	56.0	10.00	1	23.00	2	.60	2	.10	1	0.0	0	33.70	6
	8A	56.0	20.00	1	.10	1	.11	2	0.0	0	0.0	0	20.21	4
	8C	56.0	7.00	1	5.50	3	2.70	4	.10	1	0.0	0	15.30	9
	8E	56.0	20.00	1	27.00	3	.60	2	.10	1	0.0	0	47.70	7
	8G	56.0	4.00	1	35.00	3	.61	3	.01	1	0.0	0	39.62	8
	8I	57.0	15.00	1	30.00	2	1.00	2	.10	1	0.0	0	46.10	6
Mean		56.3	14.5800	1.00	18.0924	2.56	1.0704	2.68	.0852	.96	0.0	0.0	33.7880	7.20
S14														
	0A	60.0	5.00	1	36.10	5	4.51	8	1.10	3	.01	1	46.72	18

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Soil Temperature & Synthetic Variables by 5x5 m Plots

Stand	Plot	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TOT	TOTRP
	0C	61.0	8.00	1	25.60	4	2.60	4	.12	3	0.0	0	35.22	12
	0E	61.0	6.00	1	35.10	5	5.61	7	.50	1	0.0	0	47.21	14
	0G	57.0	4.00	1	38.00	4	8.10	4	1.00	2	0.0	0	48.10	11
	0I	57.0	.50	1	32.00	5	7.80	6	.20	2	0.0	0	40.30	14
	2A	59.0	4.00	1	27.00	4	2.91	7	.20	2	.50	1	34.61	15
	2C	61.0	11.00	1	28.50	5	3.71	7	.80	2	0.0	0	44.81	15
	2E	61.0	9.00	1	31.00	5	8.01	6	.50	1	0.0	0	48.51	13
	2G	61.0	4.00	1	31.00	4	8.60	5	1.00	2	0.0	0	42.80	12
	2I	61.0	15.00	1	24.90	5	1.61	5	.10	1	0.0	0	41.21	12
	4A	61.0	11.00	1	12.50	5	1.61	5	.60	2	0.0	0	25.71	13
	4C	61.0	12.00	1	15.01	5	2.61	5	.21	3	0.0	0	29.83	14
	4E	60.0	.01	1	34.70	5	8.11	8	1.00	2	0.0	0	44.22	16
	4G	60.0	1.00	1	37.00	4	4.80	7	.10	1	0.0	0	42.80	13
	4I	60.0	3.00	1	30.10	5	2.91	8	.01	1	0.0	0	35.02	15
	6A	58.0	15.00	1	20.50	4	2.23	8	.80	2	0.0	0	38.33	15
	6C	58.0	12.00	1	34.80	6	3.20	6	.20	2	0.0	0	50.00	15
	6E	58.0	10.00	1	28.00	5	5.20	5	.60	2	0.0	0	43.80	13
	6G	59.0	15.00	1	27.10	5	3.80	7	.20	2	0.0	0	56.10	15
	6I	60.0	5.00	1	23.60	5	1.80	5	.02	2	0.0	0	30.42	13
	8A	56.0	20.00	1	39.00	4	5.31	7	.02	2	0.0	0	64.33	14
	8C	58.0	15.00	1	33.60	6	2.31	7	.20	2	0.0	0	51.11	16
	8E	57.0	1.00	1	25.60	5	4.62	7	.20	2	0.0	0	31.42	15
	8G	56.0	15.00	1	32.10	5	3.13	8	.20	2	0.0	0	50.43	16
	8I	58.0	.50	1	23.10	5	4.71	8	.04	4	0.0	0	28.35	18
Mean		59.2	8.0004	1.00	28.3844	4.80	4.3444	6.40	.3804	2.00	.0204	.08	42.1304	14.28
S15														
	0A	57.0	20.50	2	24.01	8	12.22	8	.80	2	.11	2	57.44	22
	0C	56.0	20.00	2	29.00	9	6.85	14	2.02	3	.11	2	57.98	30
	0E	58.0	22.50	3	22.00	8	6.04	12	1.10	3	1.11	3	52.75	29
	0G	58.0	21.00	3	28.50	6	2.71	5	.50	1	.50	1	54.21	15
	0I	57.0	9.00	2	40.50	6	4.70	4	0.0	0	.10	1	54.30	13
	2A	57.0	21.00	2	37.00	7	3.10	2	.01	1	.02	2	61.13	14
	2C	58.0	21.00	2	19.00	7	5.22	5	.01	1	.11	2	45.34	17
	2E	58.0	18.00	2	32.00	8	5.72	6	1.00	1	.80	2	97.32	19
	2G	57.0	6.00	2	32.10	7	4.10	4	1.00	1	0.0	0	43.20	14
	2I	57.0	12.00	2	38.00	7	2.61	6	.10	1	.01	1	52.72	15
	4A	60.0	12.00	2	22.00	7	4.61	6	.80	4	.11	2	39.52	19
	4C	57.0	16.00	2	34.50	7	2.00	1	.21	3	.02	2	52.73	15
	4E	0.0	15.00	1	51.00	6	6.30	6	.20	2	.10	1	72.80	16
	4G	0.0	29.00	2	48.00	5	10.61	4	.10	1	.10	1	98.81	13
	4I	0.0	11.00	2	41.00	6	8.60	3	.10	1	.10	1	80.80	13
	6A	0.0	20.00	2	32.50	6	10.80	5	.60	2	.20	2	64.10	17
	6C	0.0	30.00	2	43.00	7	8.30	4	.80	2	.20	2	82.10	17
	6E	0.0	12.00	2	44.50	8	10.40	5	.50	1	.10	1	87.50	17
	6G	0.0	16.00	2	32.20	7	7.31	5	.11	2	.10	1	55.72	17
	6I	0.0	12.00	2	46.50	8	20.30	6	.21	3	.50	1	78.51	18
	8A	0.0	15.00	1	37.10	8	7.82	7	.10	1	.11	2	60.13	19
	8C	0.0	10.60	3	52.80	8	10.40	5	.20	2	.01	1	73.81	19
	8E	0.0	25.00	1	40.00	8	9.50	2	.10	1	.50	2	73.20	12
	8G	0.0	15.50	2	24.00	6	4.30	6	.60	2	.11	2	44.51	18
	8I	0.0	10.00	1	32.00	6	5.80	5	.61	3	.10	1	48.51	16
Mean		57.3	17.2040	1.96	35.4004	6.96	7.1328	5.20	.4552	1.76	.2052	1.52	60.3976	17.40
S16														
	0A	60.0	13.00	1	23.00	8	13.82	10	1.50	3	0.0	0	51.62	22
	0C	57.0	8.10	3	21.00	6	8.70	6	2.00	2	1.00	1	41.80	16
	0E	60.0	20.01	2	13.00	6	5.12	8	.50	1	.50	1	39.13	19
	0G	57.0	6.50	2	28.50	8	12.22	8	2.00	1	0.0	0	49.22	19
	0I	58.0	17.00	1	18.50	7	8.51	7	2.00	1	0.0	0	44.01	16
	2A	59.0	14.01	2	7.50	4	11.73	8	2.50	2	0.0	0	39.74	16
	2C	58.0	15.50	2	20.50	7	6.10	6	4.00	1	0.0	0	46.10	14
	2E	61.0	21.50	3	18.90	7	16.82	11	6.50	2	1.00	1	84.32	24
	2G	60.0	8.10	3	31.00	8	16.33	13	3.50	2	0.0	0	58.93	25
	2I	57.0	20.10	3	15.00	6	8.01	6	4.00	1	0.0	0	47.11	16
	4A	57.0	8.50	4	13.00	7	8.23	8	3.00	1	.50	1	33.23	21
	4C	61.0	11.00	2	20.00	8	6.81	8	4.00	1	0.0	0	41.91	19
	4E	0.0	15.00	1	38.70	8	14.50	11	4.10	2	.50	1	72.80	23
	4G	0.0	22.00	2	13.80	6	8.60	9	4.00	1	0.0	0	48.20	18
	4I	0.0	31.00	2	17.10	8	12.00	8	7.00	1	2.10	2	89.20	19
	6A	0.0	20.80	3	17.70	8	12.80	11	7.00	1	6.00	2	63.90	25
	6C	0.0	15.50	2	21.20	7	13.30	7	3.10	2	2.00	1	54.10	19
	6E	0.0	2.50	3	29.00	7	22.11	12	7.00	1	0.0	0	80.71	23
	6G	0.0	16.01	2	8.50	6	9.40	6	4.00	1	0.0	0	37.91	15
	6I	0.0	16.20	4	18.20	9	8.20	9	4.00	1	.80	2	45.20	25
	8A	0.0	10.50	2	11.20	7	10.91	7	6.00	1	5.00	1	43.61	18
	8C	0.0	13.50	3	18.50	6	31.01	10	15.00	1	.80	2	78.81	22
	8E	0.0	12.10	2	28.00	6	7.40	7	15.00	1	.50	1	63.00	17
	8G	0.0	15.50	3	11.50	5	9.00	7	1.01	2	.21	3	38.22	20
	8I	0.0	38.10	3	5.70	6	5.32	6	.80	2	.03	3	49.75	20
Mean		58.3	15.8572	2.44	18.8580	6.76	11.3140	8.28	4.5364	1.40	.8216	.88	51.2852	19.76

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values per 5x5 m Plot by Stand

Stand	PIBA	PIGL	PIMA	POTR	POBA	BEPA	LALA	VAMY	VAVI	ARUV	RDAC	PRPE	AMAL	RUST	LODI	VIED	HUTO	SABE
S01N Mean	5.824	.0	.0	.0	.0	.0	.0	1.876	1.382	5.080	.0040	.2044	.0080	.0400	.0	.0	.0	.0
S02N Mean	13.92	.0	.0	.0	.0	.0	.0	.8284	.5280	.4760	.0	.0	.0	.0	.0	.0	.0	.0040
S03N Mean	11.64	.0	.0	.0040	.0	.0	.0	.1000	.0	2.864	.0	.0040	.0	.0048	.0	.0	.0048	.0
S04N Mean	10.12	.0040	.0	.0	.0	.0	.0	1.072	.0	1.980	.0080	.0088	.0040	.0	.0	.0	.0004	.0200
S01B Mean	.0112	.0	.0	.0	.0	.0	.0	.4840	.0208	.5920	.0084	.0	.0280	.0	.0	.0	.0008	.0
S02 Mean	28.80	.0	.0	.0	.0	.0	.0	.0	.0	1.672	.0	.0	.0	.0	.0	.0	.0	.0
S03 Mean	9.300	.0400	.0	.1440	.0	.0044	.0	4.840	7.000	20.44	.5240	.1400	.4720	.0	.1480	.0	.0	.0
S04 Mean	10.84	.0	.0	.0	.0	.0	.0	5.880	7.380	2.824	.0920	.0	.1172	.0	.0	.0	.0	.0280
S05 Mean	15.24	.0	.0	.0	.0	.0	.0	4.420	10.84	3.184	.1000	.0884	.1172	.0	.0	.0	.0	.4804
S07 Mean	15.72	.0004	.0	.0	.0	.0	.0	4.004	3.820	4.804	.9480	.1488	.0768	.0044	.0	.0200	.0	.0
S08 Mean	7.640	.0	.0	.0040	.0	.0	.0	1.052	.7380	2.060	.8040	.0720	.0	.0	.0	.0	.0	.0
S09 Mean	12.72	.0800	.0400	.0160	.0	.0	.0	1.948	7.800	5.444	3.580	.0	.0	.0	.0040	.0	.0	.0200
S10 Mean	9.920	.0	.0	.0	.0040	.0	.0	4.292	7.140	3.780	.0	.0164	.0	.0	.0	.0	.0	.0
S11B Mean	.0852	.0	.0	.0	.0	.0	.0	.2540	.0	.0176	1.324	.2252	.0032	.0	.0	.0	.0	.0
S12 Mean	14.56	.0	.0	.0	.0	.0	.0	5.460	11.88	.0	.0	.0	.0004	.0	.0	.0	.0	.0
S14 Mean	8.000	.0	.0	.0	.0	.0	.0	4.420	4.720	17.76	.0080	.0	.2564	.0	.0	.0	.0	.0
S15 Mean	14.80	.2400	2.160	.0040	.0	.0	.0	2.860	1.680	1.328	3.760	.0	.0200	.0	.0	.0	.0	1.124
S16 Mean	14.32	.1600	1.328	.1412	.0040	.0	.0040	3.140	4.280	.3840	1.880	.0	.0	.0	.0	.1800	.0	.8200

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Vascular Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	ALCR	LEGR	SAPS	SYAL	BEPU	SASC	SHCA	SASP	VACA	SAMY	MACA	ASLA	AMMU	GABO	MELI	LIBO	CARO	SODE
S01N Mean	2.080	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1464	.1336	.0248	.0856	.0	.2240	.0048	.3204
S02N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2284	.0244	.0004	.0056	0	.0520	.0008	.0032
S03N Mean	.0	.0	.0	.0	.0	.0	.0	.8000	.0	.0	.2216	.0336	.0040	.0	.0	.0040	.0072	.1848
S04N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4484	.0404	.0096	.0	.0328	.0	.0052	.1140
S01S Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1760	.3380	.0092	.2212	.0	.0892	.1332	.1136
S02 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0048	.0	.0	.0	.0	.0008	.0004	.0012
S03 Mean	1.540	.0	.0	.0	.0	.0	.0200	.0	.0	.0	1.984	.0040	.0832	.1120	.4960	.6440	.0316	.0720
S04 Mean	.0	.2240	.0	.0	.0	.0	.0	.0	.0	.0	.8480	.0200	.0	.0	.1412	1.472	.0048	.0
S05 Mean	.0	.0	.0040	.0	.0	.0	.0	.0040	.0	.0	.3764	.1584	.0048	.0	.0444	.0800	.0060	.0308
S07 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.432	.2368	.0836	.0324	.0804	1.216	.0488	.1208
S08 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6764	.3564	.0052	.0	.0444	.0	.0100	.1484
S09 Mean	5.280	.1000	.0	.0200	.0	.0	.0	.0	.0	.0	.7840	.1888	.1056	.1492	.0404	1.888	.0208	.0280
S10 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0524	.0004	.0	.0	.2592	0	.0024	.0048
S11S Mean	1.080	.0	0	.0	0	.0	.0	.0	.0	.0	.0404	.0	.0008	.0280	.0044	.0480	.0008	.0
S12 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1948	.0	.0056	.0004	.5568	.7480	.0008	.0
S14 Mean	.0	.0400	.0	.0	0	.0	.0	.0	.0	0	1.012	.0	.0	.0	.2084	2.180	.0164	.0
S15 Mean	.0	18.96	.0	.0	.0	.0	1.520	.0	.0	.1480	.0268	.0	0	.0	.1648	4.000	.0	.0052
S16 Mean	.0	1.820	.0040	.0	0	.0	1.304	.0	.3200	.0	.0	.0	.0	.0	.2844	4.520	.0	.0060

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values per 5x5 m Plot by Stand

Stand	VIAD	APAN	COPA	FRVI	POTRI	GELI	PYVI	HICA	PYSE	EPAN	ARCA	ARNU	COCA	LIPH	ANPA	TRBO	VIRE	GORE
S01N Mean	.0096	.0932	.0	.1004	.1516	.0	.0008	.0	.0	.0448	.0048	.0	.0	.0	.0292	.0	.0	.0
S02N Mean	.0	.0004	.0	.0	.0	.0	.0212	.0	.0	.0	.0	.0	.0	.0	.0168	.0	.0	.0
S03N Mean	.0044	.0292	.0	.0324	.0004	.0	.0128	.0	.0	.0	.0388	.0	.0	.0	.0092	.0	.0	.0
S04N Mean	.0080	.2936	.0	.0456	.0088	.0	.0376	.0288	.0	.0	.0044	.0	.0	.0	.0040	.0	.0	.0
S01B Mean	.0024	.1536	.0	.3128	.0040	.0	.0	.0	.0	.0204	.0208	.0	.0	.0	.0084	.0	.0	.0
S02 Mean	.0	.0004	.0	.0	.0	.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03 Mean	.0080	.0	.5520	.0360	.1496	.1800	.0360	.0896	.0044	.0520	.0	.9320	.0400	.0032	.0128	.0	.0	.0
S04 Mean	.0	.0	.2088	.0	.0128	.1400	.0768	.0052	.0	.0244	.0	.0	2.872	.0	.0	.0	.0	.0
S05 Mean	.0	.1384	.0	.0	.0040	.0	.0128	.0012	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07 Mean	.0560	.0960	.0	.0320	.0320	.0448	.0172	.0008	.0	.0	.0	.0	.0	.0	.0208	.0	.0	.0040
S08 Mean	.0	.2768	.0	.0	.0216	.0	.0	.0068	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S09 Mean	.0416	.0	.0	.3124	.1088	.2084	.0240	.0572	.0200	.0404	.0	.0	.0880	.0088	.0	.0	.0240	.0332
S10 Mean	.0	.0368	.0	.0	.0040	.3648	.0328	.0208	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S11B Mean	.0	.0	.0	.0	.0884	.0004	.0	.0	.0	.0208	.0	.2572	.0008	.0	.0140	.0	.0	.0
S12 Mean	.0	.0	.0	.0	.0	.1600	.0520	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S14 Mean	.0008	.0	.9840	.0	.0896	.7000	.0504	.0008	.0	.0040	.0	.0	1.268	.0	.0	.0	.0	.0
S15 Mean	.0	.0	.0	.1048	.1844	.0	.0160	.0040	.0200	.0	.0	.0	6.280	.0044	.0	.0	.0008	.0280
S16 Mean	.0	.0	.0	.2644	.1020	.0	.0280	.0780	.0640	.3160	.0	.0	8.720	.0008	.0	.2720	.0044	.0168

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values per 5x5 m Plot by Stand

Stand	LAOC	VIAM	PEPA	ASCI	ACMI	AMRA	ORSP	SESP	SESE	SECY	STLO	RACE	MINT	GEBI	ARLY	CHEN	PELA	AGPL
S01N Mean	.0	.0	.0	.0	.0252	.0324	.0	.0	.0408	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0120	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N Mean	.0	.0	.0	.0	.0008	.0	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S04N Mean	.0	.0	.0	.0	.0068	.0	.0	.0	.0	.0044	.0004	.0	.0	.0	.0012	.0	.0	.0
S01B Mean	.0	.0	.0	.0004	.0416	.0	.0	.0	.0008	.0	.0088	.0004	.0400	.1520	.0008	.1048	.0040	.0040
S02 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S05 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0
S07 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S08 Mean	0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0	.0	.0
S09 Mean	.0	.0	.0	.0	.0	.0040	.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S10 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0
S11B Mean	.0	.0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0836	.5852	.0	.0	.0420	.0
S12 Mean	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0	.0
S14 Mean	.0	.0	0	.0	.0	.0	.0	.0	.0	.0	.0	0	.0	.0	.0	.0	.0	.0
S15 Mean	.0844	.0244	.0200	.0888	.0008	.0080	.0	.0	.0	.0	.0	0	.0	.0	.0	.0	0	.0
S16 Mean	.7920	.0160	.1844	.1048	.0252	.0480	.0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Athabasca Oil Sands Ecological Monitoring Program
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in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	GEAM	RUAC	PYAS	MINU	ORPU	ELIN	CXRI	CXFO	ORAS	AGSC	BRCI	SCPU	JUBA	ELGL	CACA	CAIN	FESA	BRPU
S01N Mean	.0	.0	.0	.0	.2132	.0	.2404	.0688	.0004	.0040	.0	.0	.0	.0	.0	.0244	.0044	.0
S02N Mean	.0	.0	.0	.0	.0280	.0	.0252	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N Mean	.0	.0	.0	.0	.0512	.0	.0004	.0460	.0	.0048	.0	.0	.0	.0	.0	.0040	.0044	.0
S04N Mean	.0	.0	.0	.0	.1492	.0	.0004	.0212	.0	.0	.0	.0	.0	.0	.0	.0	.0004	.0
S01B Mean	.0	.0	.0	.0	.4404	.0004	.0524	.2988	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02 Mean	.0	.0	.0	.0	.0012	.0	.0	.0088	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03 Mean	.0	.0	.0	.0	.2496	.1492	.0	.0044	.0128	.0	.0	.0440	.0	.0	.0040	.0	.0	.0
S04 Mean	.0	.0	.0	.0	.1336	.0332	.0	.0672	.0352	.0	.0	.0	.0	.0	.0	.0	.0	.0
S05 Mean	.0	.0	.0	.0	.0304	.0	.0004	.0180	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07 Mean	.0	.0	.0	.0	.0368	.1260	.0732	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S08 Mean	.0	.0	.0	.0	.0152	.0	.0048	.0040	.0	.0008	.0	.0	.0	.0	.0	.0	.0	.0
S09 Mean	.0	.0	.0	.0	.1548	.6764	.2360	.0104	.0	.0	.0	.0	.0488	.0	.0	.0	.0044	.0304
S10 Mean	.0	.0	.0	.0	.0120	.0	.0	.0012	.0	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S11B Mean	.0	.0	.0	.0	.0044	.2248	.0	.0012	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S12 Mean	.0	.0	.0	.0	.0644	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0004	.0	.0	.0
S14 Mean	.0	.0	.0	.0	.2296	.1212	.0	.0088	.0212	.0	.0	.0	.0	.0	.0	.0	.0	.0
S15 Mean	.0012	.0200	.0	.0400	.0140	.3724	.0244	.0	.0040	.0	.0	.0	.0	.0	.0364	.0	.0	.0
S16 Mean	.0004	.0	.0004	.0	.0240	4.400	.0004	.0	.0	.0	.0	.0	.0	.0	.1120	.0	.0	.0

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values per 5x5 m Plot by Stand

Stand	CXSP	EOVA	LYTR	LYAN	EOSY	EOSC	SEDE	EOPR	LYCL	EQAR	PRVI	LOVI	PEGR	EMNI
S01N Mean	.0	.0	.0	.0	.0	.0	.0004	.0	.0	.0	.0	.0	.0	.0
S02N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S01B Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S02 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S03 Mean	.0	.0	.1800	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S04 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S05 Mean	.0	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S07 Mean	.0	.0004	.0880	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S08 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0004	.0	.0	.0
S09 Mean	.0	.0188	.0	.0	.0005	.0004	.0	.0	.0	.0	.0	.0	.0	.0
S10 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S11B Mean	.0	.0	.0340	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S12 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
S14 Mean	.0	.0	.0	.0	.0204	.0	.0	.0	.0	.0	.0	.0	.0	.0
S15 Mean	.0040	.0	.0	.0	.0235	.0080	.0	.0	.0	.1735	.0	.0004	.0	.0
S16 Mean	.0	.0	.2440	.5480	.0	.0008	.0	.0044	.0200	.0044	.0	.0	.0040	.0040

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Soil Temperature & Synthetic Variables per 5x5 m Plot by Stand

Stand	TEMP	TREE	TREERP	SHRUB	SHRUBRP	FORB	FORBRP	GRAM	GRAMRP	PTER	PTERRP	TDT	TDTRP
S01N Mean	57.6	5.8240	1.00	10.8888	3.72	1.2384	8.72	.5556	2.96	.0004	.04	18.5072	16.44
S02N Mean	56.9	13.8200	1.00	1.9884	2.40	.3192	2.00	.0532	1.00	0.0	0.0	16.2808	5.40
S03N Mean	58.7	11.6440	1.04	3.5816	1.44	.5796	4.80	.1108	2.08	0.0	0.0	15.9160	9.16
S04N Mean	61.2	10.1280	1.04	3.0732	1.92	1.0820	6.00	.1712	1.16	0.0	0.0	14.4644	10.12
S01B Mean	63.7	.0112	.76	1.2032	2.88	1.8752	8.20	.7900	2.32	0.0	0.0	3.8796	15.16
S02 Mean	57.7	28.8000	1.00	1.6728	1.00	.0108	.36	.0080	.44	0.0	0.0	30.4916	2.80
S03 Mean	63.9	9.4884	1.44	35.7680	6.16	4.8644	8.28	.4640	2.24	.1600	.08	50.7448	18.20
S04 Mean	56.2	10.8400	1.00	18.1172	4.80	4.3540	5.24	.2892	2.72	0.0	0.0	33.5804	13.76
S05 Mean	57.8	15.2400	1.00	19.1180	4.68	.7772	3.92	.0488	1.84	.0040	.04	35.1880	11.28
S07 Mean	59.0	15.7204	1.04	14.9420	5.92	2.3564	7.56	.2388	2.40	.0884	.24	33.3460	17.16
S08 Mean	58.9	7.6440	1.04	4.5244	3.48	1.5460	5.16	.0248	1.40	0.0	0.0	13.7392	11.08
S09 Mean	55.8	12.8560	1.24	26.0640	5.04	2.2900	8.28	1.1612	4.64	.0200	.92	42.3912	20.12
S10 Mean	56.1	9.9240	1.04	15.2284	3.12	.8284	2.36	.0136	.64	0.0	0.0	25.9944	7.16
S11B Mean	M	.0852	1.00	2.9320	3.92	1.1428	4.96	.2304	1.44	.0340	.52	4.4244	11.84
S12 Mean	56.3	14.5600	1.00	18.0924	2.56	1.0704	2.68	.0652	.96	0.0	0.0	33.7880	7.20
S14 Mean	59.2	8.0004	1.00	29.3844	4.80	4.3444	6.40	.3808	2.00	.0204	.08	42.1304	14.28
S15 Mean	57.3	17.2040	1.96	35.4004	6.96	7.1328	5.20	.4552	1.76	.2052	1.52	60.3976	17.40
S16 Mean	58.8	15.9572	2.44	18.6560	6.76	11.3140	8.28	4.5364	1.40	.8216	.88	51.2852	19.76

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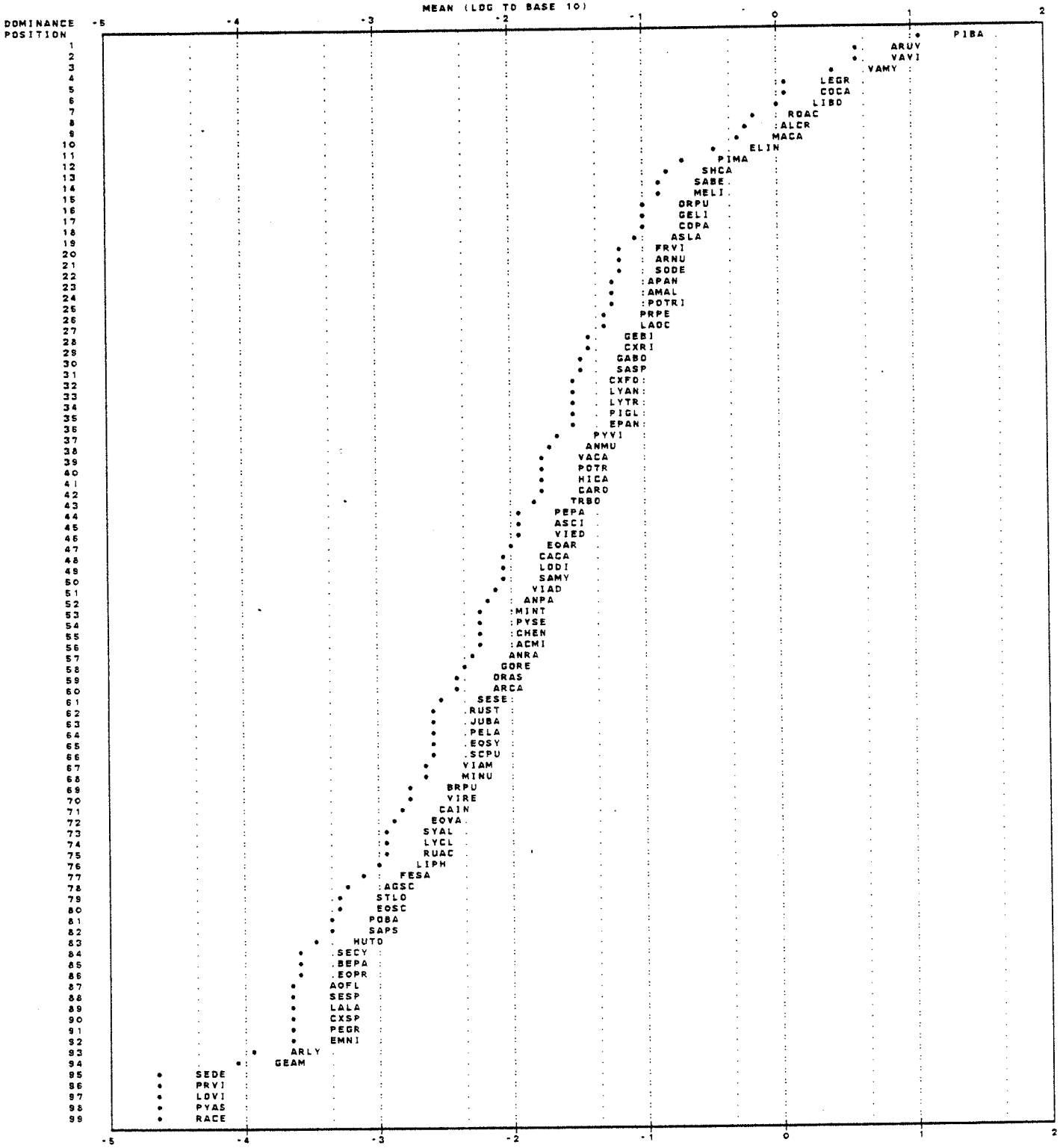
Descriptive Statistics for Each Species Variable Over All Stands
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N S02N S03N S04N S01B S02 S03 S04 S05 S07
S06 S09 S10 S11B S12 S14 S15 S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	450	98.67	11.3036	8.806	0.406	0.036	+0.0	46.00
Picea glauca	PIGL	450	3.11	0.0291	0.198	0.009	0.321	+0.0	2.00
Picea mariana	PIMA	450	7.78	0.1950	0.875	0.041	0.211	+0.0	8.00
Populus tremuloides	POTR	450	6.22	0.0174	0.091	0.004	0.247	+0.0	1.00
Populus balsamifera	POBA	450	0.44	0.0004	0.007	0.000	0.706	+0.0	0.10
Betula papyrifera	BEPA	450	0.44	0.0002	0.005	0.000	0.912	+0.0	0.10
Larix laricina	LALA	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Vaccinium myrtilloides	VAMY	450	80.22	2.8061	3.158	0.149	0.057	+0.0	20.00
Vaccinium vitis-idaea	VAVI	450	58.89	3.8456	5.613	0.265	0.068	+0.0	35.00
Arctostaphylos uva-ursi	ARUV	450	82.22	4.1416	6.519	0.307	0.074	+0.0	40.00
Rosa acicularis	ROAC	450	34.00	0.7122	1.416	0.067	0.094	+0.0	10.00
Prunus pensylvanica	PRPE	450	15.33	0.0504	0.278	0.013	0.256	+0.0	5.00
Amelanchier alnifolia	AMAL	450	20.22	0.0813	0.211	0.010	0.162	+0.0	2.00
Rubus strigosus	RUST	450	1.33	0.0027	0.048	0.002	0.821	+0.0	1.00
Lonicera dioica	LODI	450	1.56	0.0064	0.085	0.004	0.675	+0.0	1.00
Viburnum edule	VIED	450	0.88	0.0111	0.137	0.006	0.582	+0.0	2.00
Hudsonia tomentosa	HUTO	450	1.33	0.0003	0.005	0.000	0.882	+0.0	0.10
Salix babbiana	SABE	450	12.67	0.1387	0.470	0.022	0.160	+0.0	3.00
Alnus crispa	ALCR	450	5.22	0.5833	3.763	0.177	0.321	+0.0	50.00
Legum groenlandicum	LEGR	450	10.88	1.1747	4.922	0.232	0.198	+0.0	40.00
Salix pseudomonticola	SAPS	450	0.44	0.0004	0.007	0.000	0.706	+0.0	0.10
Symphoricarpos albus	SYAL	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Betula pumila	BEPU	450	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Salix scouleriana	SASC	450	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Shepherdia canadensis	SHCA	450	5.78	0.1580	0.925	0.044	0.278	+0.0	10.00
Salix sp.	SASP	450	0.44	0.0336	0.707	0.033	0.983	+0.0	15.00
Vaccinium caespitosum	VACA	450	3.11	0.0178	0.181	0.008	0.427	+0.0	3.00
Salix myrtillifolia	SAMY	450	1.33	0.0062	0.102	0.005	0.589	+0.0	2.00
Maianthemum canadense	MACA	450	70.00	0.4827	0.740	0.035	0.072	+0.0	5.00
Aster laevis	ASLA	450	34.00	0.0852	0.198	0.009	0.108	+0.0	1.00
Anemone multifida	ANMU	450	22.44	0.0185	0.080	0.003	0.154	+0.0	0.50
Galium boreale	GABO	450	22.67	0.0341	0.137	0.006	0.190	+0.0	2.00
Melampyrum lineare	MELI	450	36.89	0.1380	0.319	0.015	0.111	+0.0	3.00
Linnaea borealis	LIBO	450	49.78	0.8537	1.823	0.086	0.090	+0.0	12.00
Campanula rotundifolia	CARO	450	39.56	0.0182	0.049	0.002	0.143	+0.0	0.50
Solidago decumbens	SODE	450	41.33	0.0844	0.140	0.007	0.102	+0.0	1.00
Viola adunca	VIAD	450	12.22	0.0078	0.026	0.001	0.157	+0.0	0.10
Apocynum androsaemifolium	APAN	450	27.11	0.0621	0.187	0.009	0.142	+0.0	2.00
Comandra pallida	COPA	450	13.56	0.0888	0.321	0.015	0.156	+0.0	2.00
Fragaria virginiana	FRVI	450	25.33	0.0688	0.190	0.009	0.130	+0.0	1.00
Potentilla tridentata	POTRI	450	30.89	0.0546	0.154	0.007	0.133	+0.0	1.00
Geocaulon lividum	GELI	450	12.00	0.0888	0.388	0.018	0.183	+0.0	2.00
Pyrola virens	PYVI	450	22.00	0.0240	0.070	0.003	0.137	+0.0	0.50
Hieracium canadense	HICA	450	16.67	0.0163	0.066	0.003	0.182	+0.0	0.50
Pyrola secunda	PYSE	450	2.67	0.0060	0.048	0.002	0.378	+0.0	0.50
Epilobium angustifolium	EPAN	450	7.11	0.0290	0.172	0.008	0.278	+0.0	2.00
Artemisia campestris	ARCA	450	5.33	0.0038	0.028	0.001	0.347	+0.0	0.50
Aralia nudicaulis	ARNU	450	8.00	0.0881	0.379	0.018	0.270	+0.0	5.00
Cornus canadensis	COCA	450	23.33	1.0705	3.488	0.183	0.153	+0.0	45.00
Lilium philadelphicum	LIPH	450	3.56	0.0010	0.008	0.000	0.408	+0.0	0.10
Anemone patens	ANPA	450	8.11	0.0084	0.032	0.001	0.234	+0.0	0.50
Trientalis borealis	TRBO	450	2.89	0.0151	0.102	0.005	0.318	+0.0	1.00
Viola renifolia	VIRE	450	1.33	0.0016	0.024	0.001	0.711	+0.0	0.50
Goodyera repens	GORE	450	3.78	0.0046	0.036	0.002	0.375	+0.0	0.50
Lathyrus ochroleucus	LAOC	450	7.11	0.0467	0.271	0.013	0.283	+0.0	4.00
Vicia americana	VIAM	450	1.56	0.0022	0.026	0.001	0.541	+0.0	0.50
Petasites palmetus	PEPA	450	1.78	0.0114	0.115	0.005	0.478	+0.0	2.00
Aster ciliolatus	ASCI	450	4.67	0.0112	0.082	0.004	0.346	+0.0	1.00
Achillea millefolium	ACMI	450	10.89	0.0056	0.030	0.001	0.255	+0.0	0.50
Antennaria racemosa	ANRA	450	2.67	0.0051	0.043	0.002	0.352	+0.0	0.50
Draba sp.	DRSP	450	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Senecio sp.	SESP	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Senecio sp.	SESE	450	2.89	0.0030	0.027	0.001	0.427	+0.0	0.50
Senecio cymbalarioides	SECY	450	0.67	0.0003	0.005	0.000	0.841	+0.0	0.10
Stellaria longipes	STLO	450	1.11	0.0005	0.007	0.000	0.618	+0.0	0.10
Ranunculus sp.	RACE	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Labiatae sp.	MINT	450	3.11	0.0081	0.059	0.003	0.455	+0.0	1.00
Geranium bicknellii	GEBI	450	10.22	0.0402	0.216	0.010	0.254	+0.0	3.00
Arabis lyallii	ARLY	450	1.11	0.0001	0.001	0.000	0.445	+0.0	0.01
Chenopodium sp.	CHEN	450	2.44	0.0058	0.059	0.003	0.475	+0.0	1.00
Pedicularis labradorica	PELA	450	2.67	0.0026	0.026	0.001	0.483	+0.0	0.50
Aquilegia flavescens	AQFL	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Gentianella amarella	GEAM	450	0.89	0.0001	0.001	0.000	0.488	+0.0	0.01
Rubus acaulis	RUAC	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Pyrola asarifolia	PYAS	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Mitella nuda	MINU	450	0.22	0.0022	0.047	0.002	1.000	+0.0	1.00
Oryzopsis pungens	ORPU	450	72.67	0.1029	0.186	0.009	0.085	+0.0	1.00
Elymus innovatus	ELIN	450	34.44	0.3391	1.344	0.063	0.187	+0.0	15.00
Carex richardsonii	CXRI	450	16.67	0.0366	0.122	0.006	0.157	+0.0	1.00
Carex foenea	CXFO	450	36.22	0.0310	0.089	0.005	0.150	+0.0	1.00
Oryzopsis asperifolia	ORAS	450	5.33	0.0041	0.035	0.002	0.606	+0.0	0.50
Agrostis scabra	AGSC	450	1.56	0.0006	0.007	0.000	0.571	+0.0	0.10
Bromus ciliatus	BRCI	450	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Schizachne purpurascens	SCPU	450	0.67	0.0024	0.034	0.002	0.848	+0.0	0.50
Juncus balticus	JUBA	450	5.11	0.0027	0.016	0.001	0.270	+0.0	0.10
Elymus glaucus	ELGL	450	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Calamagrostis canadensis	CACA	450	4.22	0.0085	0.064	0.003	0.356	+0.0	1.00
Calamagrostis inexpansa	CAIN	450	0.89	0.0016	0.024	0.001	0.731	+0.0	0.50
Festuca saximontana	FESA	450	1.56	0.0008	0.008	0.000	0.511	+0.0	0.10
Bromus pumellianus	BRPU	450	2.55	0.0017	0.012	0.001	0.347	+0.0	0.10
Carex sp.	CXSP	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Equisetum variegatum	EQVA	450	4.88	0.0013	0.010	0.000	0.350	+0.0	0.10
Lycopodium tristachyum	LYTR	450	8.00	0.0252	0.204	0.010	0.329	+0.0	3.00
Lycopodium annotinum	LYAN	450	1.78	0.0304	0.348	0.016	0.539	+0.0	5.00
Equisetum sylvaticum	EQSY	450	4.00	0.0025	0.026	0.001	0.488	+0.0	0.50
Equisetum scirpoides	EQSC	450	1.11	0.0005	0.007	0.000	0.818	+0.0	0.10
Selaginella densa	SEDE	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Equisetum pratense	EQPR	450	0.44	0.0002	0.005	0.000	0.913	+0.0	0.10
Lycopodium clavatum	LYCL	450	0.22	0.0011	0.024	0.001	1.000	+0.0	0.50
Equisetum arvense	EQAR	450	5.33	0.0039	0.058	0.003	0.326	+0.0	1.00
Prunus virginiana	PRVI	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Lonicera villosa	LOVI	450	0.22	0.0000	0.000	0.000	1.000	+0.0	0.01
Pedicularis groenlandica	PEGR	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10
Empetrum nigrum	EMNI	450	0.22	0.0002	0.005	0.000	1.000	+0.0	0.10

BASED ON 99 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.200
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.208 (NATURAL LOGS)

99 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 29.2527

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 20
Descriptive Statistics for Each Species Variable Over All Stands
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N S02N S03N S04N S01B S02 S03 S04 S05 S07
S08 S08 S10 S11B S12 S14 S15 S16



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 22
Descriptive Statistics for Synthetic Variables Over All Stands
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S01N S02N S03N S04N S01S S02 S03 S04 S05 S07
S06 S08 S09 S10 S11S S12 S14 S15 S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	395	100.00	58.5202	2.824	0.132	0.002	53.00	71.00
Total Tree Cover per Plot	TREE	450	98.67	11.5470	8.730	0.412	0.036	0.0	40.00
Tree Species Richness per Plot	TREERP	450	96.67	1.1688	0.506	0.024	0.020	0.0	4.00
Total Shrub Cover per Plot	SHRUB	450	99.56	14.4787	13.767	0.649	0.045	0.0	81.00
Shrub Species Richness per Plot	SHRUBRP	450	99.56	3.9756	1.972	0.093	0.023	0.0	9.00
Total Forb Cover per Plot	FORB	450	94.00	2.6187	4.017	0.189	0.072	0.0	48.71
Forb Species Richness per Plot	FORBRP	450	94.00	5.5111	3.077	0.145	0.026	0.0	14.00
Total Graminoid Cover per Plot	GRAM	450	90.89	0.5321	1.358	0.064	0.120	0.0	15.00
Graminoid Species Richness per Plot	GRAMRP	450	90.89	1.8444	1.183	0.056	0.030	0.0	7.00
Total Pteridophyte Cover per Plot	PTER	450	18.89	0.0782	0.435	0.021	0.273	0.0	6.00
Pteridophyte Species Richness per Plot	PTERRP	450	18.89	0.2400	0.548	0.026	0.107	0.0	3.00
Total Vascular Cover per Plot	TOT	450	100.00	29.2527	19.158	0.903	0.031	0.38	96.81
Species Richness per Plot	TOTRP	450	100.00	12.7400	5.492	0.259	0.020	1.00	30.00

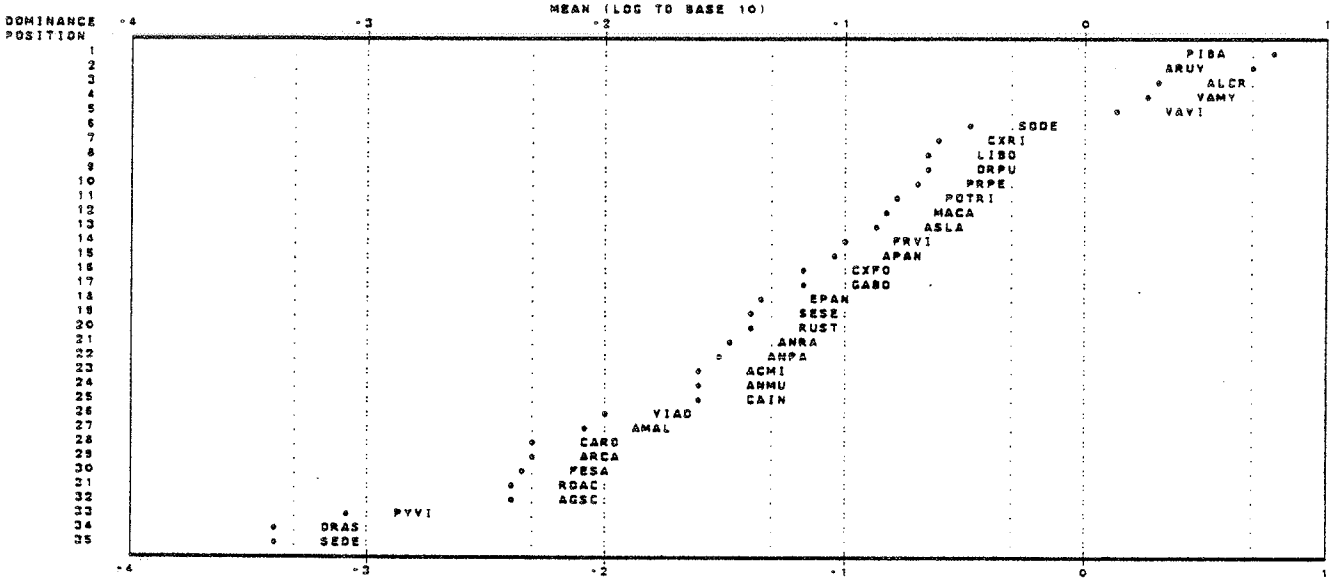
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 24
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOIN

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	5.8240	4.801	0.960	0.185	0.10	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	96.00	1.8760	2.139	0.428	0.228	-0.0	10.00
Vaccinium vitis-idaea	VAVI	25	84.00	1.3824	2.262	0.452	0.325	-0.0	10.00
Arctostaphylos uva-ursi	ARUV	25	100.00	5.0800	4.940	0.988	0.195	0.50	17.00
Rosa acicularis	ROAC	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Prunus pensylvanica	PRPE	25	12.00	0.2044	0.999	0.200	0.978	-0.0	5.00
Amelanchier alnifolia	AMAL	25	8.00	0.0080	0.028	0.006	0.692	-0.0	0.10
Rubus strigosus	RUST	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix babbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	8.00	2.0800	9.991	1.998	0.961	-0.0	50.00
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomenticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	80.00	0.1464	0.276	0.055	0.377	-0.0	1.00
Aster laevis	ASLA	25	84.00	0.1336	0.169	0.034	0.253	-0.0	0.50
Anemone multifida	ANMU	25	68.00	0.0248	0.038	0.008	0.312	-0.0	0.10
Galium boreale	GABO	25	84.00	0.0656	0.103	0.021	0.313	-0.0	0.50
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	25	56.00	0.2240	0.310	0.062	0.277	-0.0	1.00
Campanula rotundifolia	CARO	25	48.00	0.0048	0.005	0.001	0.212	-0.0	0.01
Solidago decumbens	SODE	25	92.00	0.3204	0.291	0.058	0.182	-0.0	1.00
Viola adunca	VIAD	25	24.00	0.0096	0.027	0.005	0.572	-0.0	0.10
Apocynum androsaemifolium	APAN	25	88.00	0.0932	0.094	0.019	0.202	-0.0	0.50
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	72.00	0.1004	0.129	0.026	0.257	-0.0	0.50
Potentilla tridentata	POTRI	25	52.00	0.1616	0.332	0.066	0.411	-0.0	1.00
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	16.00	0.0448	0.200	0.040	0.883	-0.0	1.00
Artemisia campestris	ARCA	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	40.00	0.0252	0.045	0.009	0.309	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	72.00	0.0252	0.038	0.008	0.305	-0.0	0.10
Antennaria racemosa	ANRA	25	20.00	0.0324	0.103	0.021	0.635	-0.0	0.50
Draba sp	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	32.00	0.0408	0.104	0.021	0.509	-0.0	0.50
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AOFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	96.00	0.2132	0.204	0.041	0.191	-0.0	0.50
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	76.00	0.2404	0.300	0.060	0.249	-0.0	1.00
Carex foenea	CXFO	25	96.00	0.0688	0.101	0.020	0.292	-0.0	0.50
Oryzopsis asperifolia	ORAS	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Agrostis scabra	AGSC	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	12.00	0.0244	0.101	0.020	0.829	-0.0	0.50
Festuca saximontana	FESA	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 35 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.204
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.990 (NATURAL LOGS)

35 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 18.5072

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 25
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOIN



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 61
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOIN

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	57.8000	0.645	0.129	0.002	56.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	5.8240	4.801	0.960	0.165	0.10	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	10.8888	15.723	3.145	0.288	1.80	81.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.7200	1.208	0.242	0.065	1.00	7.00
Total Forb Cover per Plot	FORB	25	96.00	1.2384	0.727	0.145	0.117	0.0	2.52
Forb Species Richness per Plot	FORBRP	25	96.00	8.7200	3.007	0.601	0.068	0.0	13.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.5556	0.397	0.079	0.143	0.03	1.81
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.9600	0.735	0.147	0.050	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	4.00	0.0004	0.002	0.000	1.000	0.0	0.01
Pteridophyte Species Richness per Plot	PTERRP	25	4.00	0.0400	0.200	0.040	1.000	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	18.5072	15.848	3.168	0.171	4.84	87.23
Species Richness per Plot	TOTRP	25	100.00	19.4400	4.184	0.837	0.051	5.00	22.00

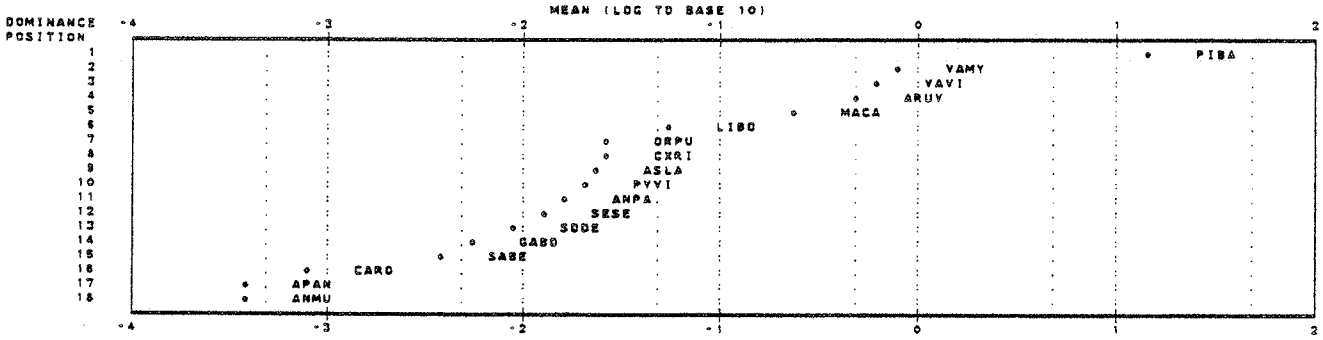
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 26
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	13.9200	3.978	0.796	0.057	7.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Vaccinium myrtilloides	VAMY	25	64.00	0.8284	1.416	0.283	0.342	+0.0	6.00
Vaccinium vitis-idaea	VAVI	25	60.00	0.6280	0.827	0.165	0.263	+0.0	3.00
Arctostaphylos uva-ursi	ARUV	25	52.00	0.4780	0.475	0.095	0.200	+0.0	2.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Salix bebbiana	SABE	25	4.00	0.0040	0.020	0.004	1.000	+0.0	0.10
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Maianthemum canadense	MACA	25	64.00	0.2284	0.307	0.061	0.269	+0.0	1.00
Aster laevis	ASLA	25	12.00	0.0244	0.101	0.020	0.829	+0.0	0.50
Anemone multifida	ANMU	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Galium boreale	GABO	25	20.00	0.0056	0.020	0.004	0.715	+0.0	0.10
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Linnaea borealis	LIBO	25	20.00	0.0520	0.139	0.028	0.534	+0.0	0.50
Campanula rotundifolia	CARO	25	8.00	0.0008	0.003	0.001	0.892	+0.0	0.01
Solidago decumbens	SODE	25	20.00	0.0092	0.028	0.006	0.598	+0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Apocynum androsaemifolium	APAN	25	4.00	0.0004	0.002	0.000	1.000	+0.0	0.01
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Pyrola virens	PYVI	25	32.00	0.0212	0.040	0.008	0.381	+0.0	0.10
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Anemone patens	ANPA	25	24.00	0.0168	0.037	0.007	0.442	+0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Senecio sp.	SESE	25	12.00	0.0120	0.033	0.007	0.553	+0.0	0.10
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Oryzopsis pungens	ORPU	25	64.00	0.0280	0.042	0.008	0.297	+0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Carex richardsonii	CXRI	25	36.00	0.0252	0.043	0.009	0.341	+0.0	0.10
Carex foenea	CXFO	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	+0.0	-0.0

BASED ON 18 POSITIVE MEANS. SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.736
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.654 (NATURAL LOGS)

18 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 16.2808

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 27
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02N



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 82
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0582Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.3200	0.812	0.162	0.002	56.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	13.9200	3.878	0.776	0.057	7.00	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	1.9884	1.841	0.368	0.185	0.10	6.50
Shrub Species Richness per Plot	SHRUBRP	25	100.00	2.4000	1.000	0.200	0.083	1.00	4.00
Total Forb Cover per Plot	FORB	25	88.00	0.3192	0.344	0.069	0.216	0.0	1.10
Forb Species Richness per Plot	FORBRP	25	84.00	2.0000	1.443	0.289	0.144	0.0	5.00
Total Graminoid Cover per Plot	GRAM	25	72.00	0.0532	0.063	0.013	0.237	0.0	0.20
Graminoid Species Richness per Plot	GRAMRP	25	72.00	1.0000	0.764	0.153	0.153	0.0	2.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	15.2808	3.155	0.631	0.039	10.90	22.31
Species Richness per Plot	TOTRP	25	100.00	5.4000	2.582	0.516	0.081	2.00	11.00

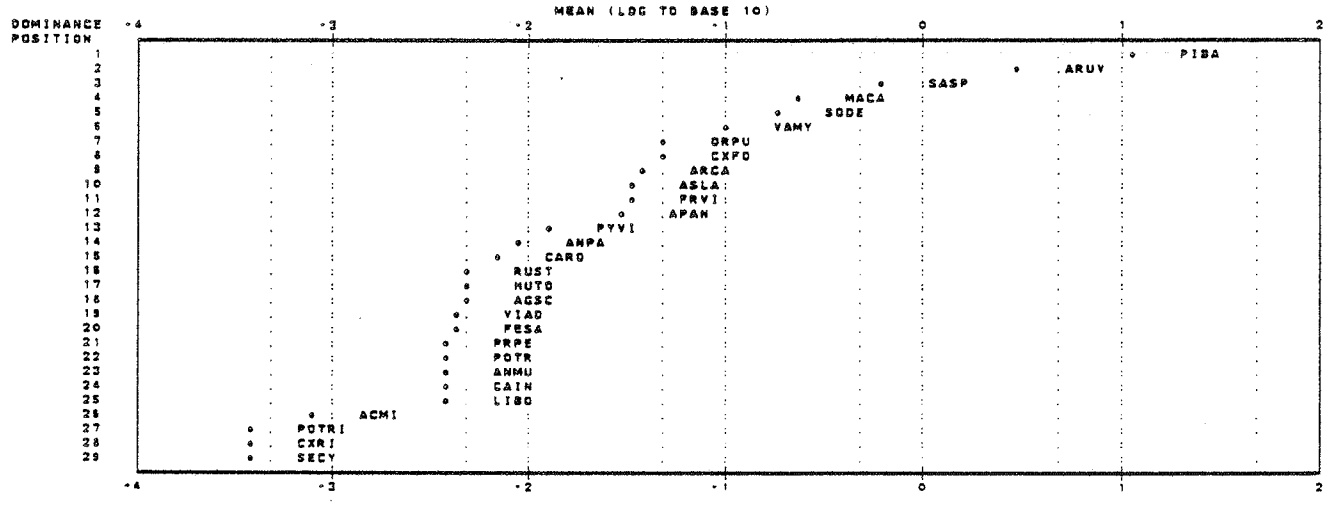
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 28
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO3N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	11.8400	6.089	1.218	0.105	3.00	25.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	8.00	0.1000	0.408	0.082	0.816	-0.0	2.00
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	25	100.00	2.8640	2.942	0.588	0.205	0.10	15.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	4.00	0.6000	3.000	0.600	1.000	-0.0	15.00
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	84.00	0.2216	0.297	0.059	0.268	-0.0	1.00
Aster laevis	ASLA	25	32.00	0.0336	0.103	0.021	0.610	-0.0	0.50
Anemone multifida	ANMU	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Campanula rotundifolia	CARO	25	72.00	0.0072	0.005	0.001	0.127	-0.0	0.01
Solidago decumbens	SODE	25	96.00	0.1848	0.183	0.037	0.198	-0.0	0.50
Viola adunca	VIAD	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Apocynum androsaemifolium	APAN	25	24.00	0.0292	0.102	0.020	0.698	-0.0	0.50
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	20.00	0.0324	0.103	0.021	0.635	-0.0	0.50
Potentilla tridentata	POTRI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	64.00	0.0388	0.047	0.009	0.242	-0.0	0.10
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	20.00	0.0092	0.028	0.006	0.598	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	80.00	0.0512	0.048	0.010	0.187	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex foenea	CXFO	25	100.00	0.0460	0.045	0.009	0.196	0.01	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Festuca saximontana	FESA	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 29 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.569
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.928 (NATURAL LOGS)

29 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 15.9160

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 29
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO3N



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 53
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO3N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.5800	1.314	0.263	0.004	57.00	62.00
Total Tree Cover per Plot	TREE	25	100.00	11.6440	5.086	1.217	0.105	2.00	25.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	3.5816	3.800	0.760	0.212	0.10	15.50
Shrub Species Richness per Plot	SHRUBRP	25	100.00	1.4400	0.583	0.117	0.081	1.00	3.00
Total Forb Cover per Plot	FORB	25	95.00	0.5795	0.525	0.105	0.182	0.0	1.73
Forb Species Richness per Plot	FORBRP	25	95.00	4.6000	1.803	0.361	0.078	0.0	9.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.1108	0.086	0.013	0.120	0.01	0.30
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.0800	0.702	0.140	0.068	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	15.9160	7.596	1.520	0.095	4.11	30.82
Species Richness per Plot	TOTRP	25	100.00	8.1600	2.249	0.450	0.049	4.00	14.00

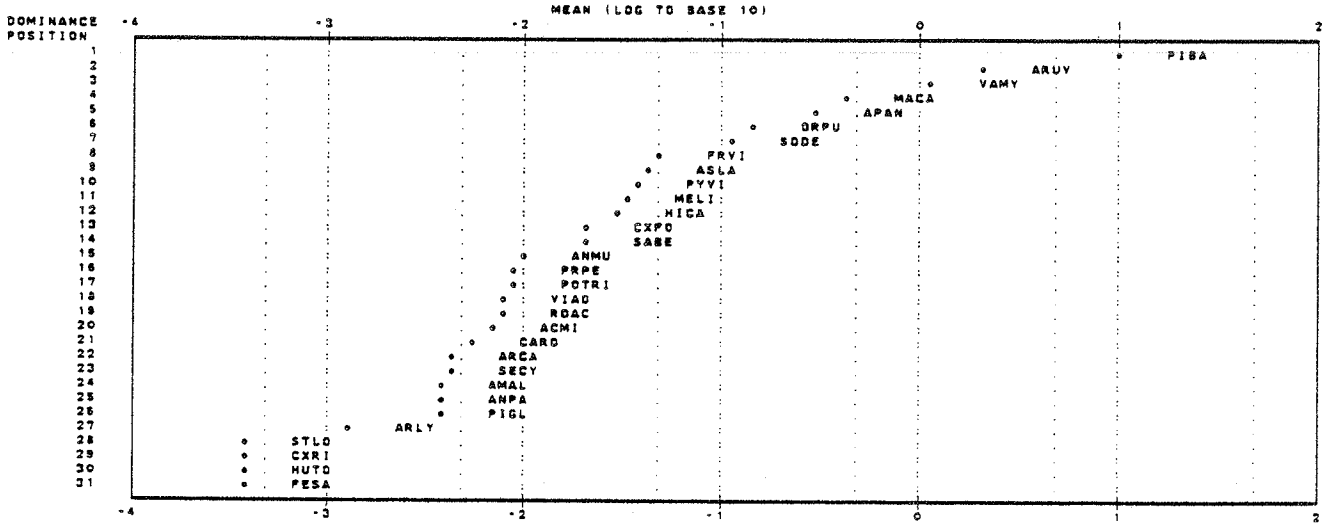
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 30
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO4N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	10.1240	9.189	1.838	0.182	0.10	35.00
Picea glauca	PIGL	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	60.00	1.0720	1.696	0.339	0.316	-0.0	7.00
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	25	96.00	1.9600	1.258	0.252	0.128	-0.0	5.00
Rosa acicularis	ROAC	25	8.00	0.0080	0.028	0.006	0.682	-0.0	0.10
Prunus pensylvanica	PRPE	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Amelanchier alnifolia	AMAL	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Salix bebbiana	SABE	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	0.4464	0.493	0.099	0.221	0.01	2.00
Aster laevis	ASLA	25	44.00	0.0404	0.050	0.010	0.246	-0.0	0.10
Anemone multifida	ANMU	25	24.00	0.0096	0.027	0.005	0.572	-0.0	0.10
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	24.00	0.0328	0.103	0.021	0.626	-0.0	0.50
Linnaea borealis	LIBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Campanula rotundifolia	CARO	25	52.00	0.0052	0.005	0.001	0.196	-0.0	0.01
Solidago decumbens	SODE	25	84.00	0.1140	0.152	0.030	0.267	-0.0	0.50
Viola adunca	VIAD	25	8.00	0.0080	0.028	0.006	0.682	-0.0	0.10
Apocynum androsaemifolium	APAN	25	64.00	0.2836	0.473	0.095	0.322	-0.0	2.00
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	44.00	0.0456	0.104	0.021	0.455	-0.0	0.50
Potentilla tridentata	POTRI	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	52.00	0.0376	0.048	0.010	0.255	-0.0	0.10
Hieracium canadense	HICA	25	20.00	0.0288	0.102	0.020	0.708	-0.0	0.50
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	8.00	0.0044	0.020	0.004	0.810	-0.0	0.10
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	32.00	0.0088	0.020	0.004	0.587	-0.0	0.10
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Stellaria longipes	STLO	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	92.00	0.1492	0.289	0.058	0.387	-0.0	1.00
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex foenea	CXFO	25	16.00	0.0212	0.100	0.020	0.942	-0.0	0.50
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 31 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.515
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.122 (NATURAL LOGS)

31 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 14.4644

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 31
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S04N



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 64
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S04N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	51.2000	1.555	0.311	0.005	58.00	66.00
Total Tree Cover per Plot	TREE	25	100.00	10.1280	8.196	1.639	0.162	0.10	35.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	3.0732	1.785	0.357	0.116	0.50	7.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	1.8200	0.812	0.162	0.085	1.00	4.00
Total Forb Cover per Plot	FORB	25	100.00	1.0820	0.859	0.172	0.157	0.12	3.04
Forb Species Richness per Plot	FORBRP	25	100.00	5.0000	2.041	0.408	0.066	3.00	9.00
Total Graminoid Cover per Plot	GRAM	25	92.00	0.1712	0.301	0.060	0.352	0.0	1.00
Graminoid Species Richness per Plot	GRAMRP	25	92.00	1.1800	0.554	0.111	0.095	0.0	2.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	14.4644	9.051	1.810	0.125	3.66	38.52
Species Richness per Plot	TOTRP	25	100.00	10.1200	2.571	0.514	0.051	5.00	15.00

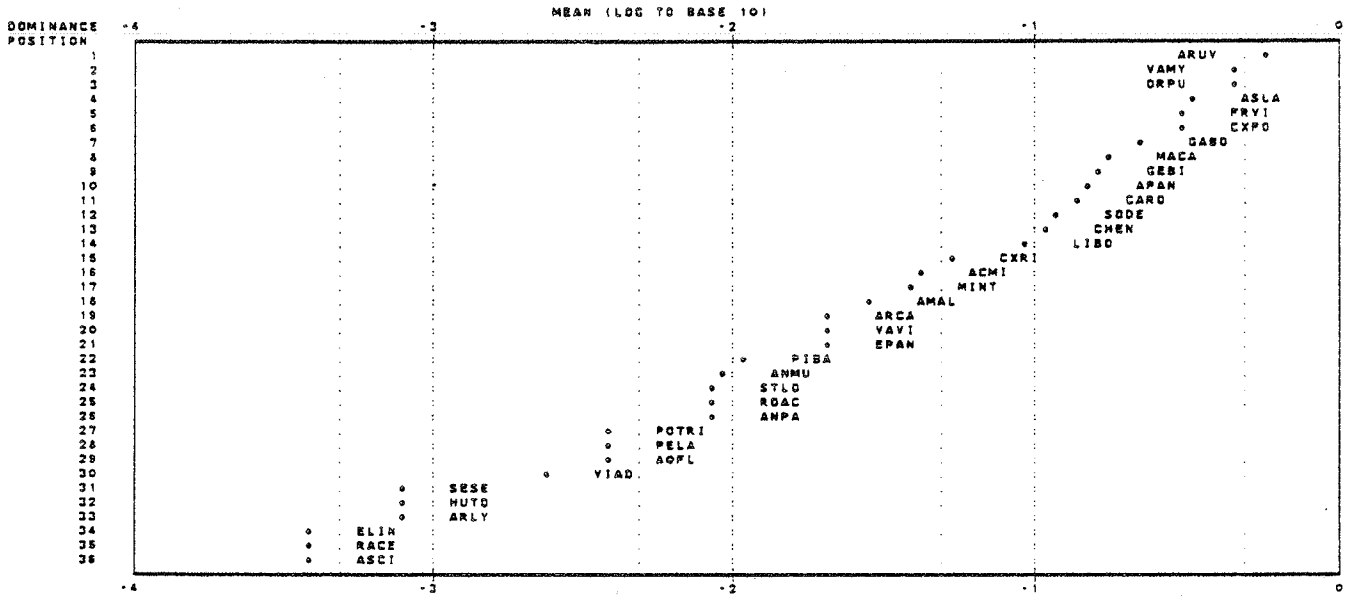
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE 501B

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	76.00	0.0112	0.019	0.004	0.339	-0.0	0.10
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	64.00	0.4640	0.618	0.124	0.267	-0.0	2.00
Vaccinium vitis-idaea	VAVI	25	28.00	0.0208	0.041	0.008	0.390	-0.0	0.10
Arctostaphylos uva-ursi	ARUV	25	100.00	0.5920	0.471	0.094	0.159	0.10	2.00
Rosa acicularis	ROAC	25	12.00	0.0084	0.028	0.006	0.658	-0.0	0.10
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	12.00	0.0280	0.102	0.020	0.730	-0.0	0.50
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	96.00	0.1760	0.255	0.051	0.289	-0.0	1.00
Aster laevis	ASLA	25	100.00	0.3360	0.311	0.062	0.185	0.10	1.00
Anemone multifida	ANMU	25	20.00	0.0092	0.028	0.006	0.598	-0.0	0.10
Galium boreale	GABO	25	56.00	0.2212	0.448	0.090	0.405	-0.0	2.00
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	25	64.00	0.0892	0.196	0.039	0.439	-0.0	1.00
Campanula rotundifolia	CARO	25	96.00	0.1332	0.142	0.028	0.214	-0.0	0.50
Solidago decumbens	SODE	25	96.00	0.1136	0.122	0.024	0.215	-0.0	0.50
Viola adunca	VIAD	25	24.00	0.0024	0.004	0.001	0.363	-0.0	0.01
Apocynum androsaemifolium	APAN	25	72.00	0.1536	0.203	0.041	0.265	-0.0	0.50
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	80.00	0.3128	0.361	0.072	0.231	-0.0	1.00
Potentilla tridentata	POTRI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	8.00	0.0204	0.100	0.020	0.980	-0.0	0.50
Artemisia campestris	ARCA	25	12.00	0.0208	0.100	0.020	0.960	-0.0	0.50
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	12.00	0.0084	0.028	0.006	0.658	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Achillea millefolium	ACMI	25	56.00	0.0416	0.049	0.010	0.235	-0.0	0.10
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Ranunculus sp.	RACE	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Labiatae sp.	MINT	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Geranium bicknellii	GEBI	25	92.00	0.1580	0.230	0.046	0.291	-0.0	1.00
Arabis lyallii	ARLY	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Chenopodium sp.	CHEN	25	44.00	0.1048	0.231	0.046	0.442	-0.0	1.00
Pedicularis labradorica	PELA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Aquilegia flavescens	AQFL	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	96.00	0.4404	0.285	0.057	0.129	-0.0	1.00
Elymus innovatus	ELIN	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex richardsonii	CXRI	25	40.00	0.0524	0.104	0.021	0.398	-0.0	0.50
Carex foenea	CXFO	25	92.00	0.2968	0.261	0.052	0.176	-0.0	1.00
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella dense	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 36 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.083
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.743 (NATURAL LOGS)

36 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 3.8796

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S018



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 85
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S018

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	22	100.00	63.7273	0.703	0.150	0.002	62.00	65.00
Total Tree Cover per Plot	TREE	25	76.00	0.0112	0.019	0.004	0.339	0.0	0.10
Tree Species Richness per Plot	TREERP	25	76.00	0.7600	0.435	0.087	0.115	0.0	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	1.2032	0.939	0.188	0.156	0.10	3.20
Shrub Species Richness per Plot	SHRUBRP	25	100.00	2.8800	1.186	0.233	0.081	1.00	5.00
Total Forb Cover per Plot	FORB	25	100.00	1.8752	1.188	0.234	0.125	0.53	5.23
Forb Species Richness per Plot	FORBRP	25	100.00	9.2000	1.384	0.277	0.030	7.00	12.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.7900	0.289	0.060	0.076	0.10	1.50
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.3200	0.748	0.150	0.065	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	3.8796	1.883	0.377	0.097	1.55	8.74
Species Richness per Plot	TOTRP	25	100.00	15.1600	2.478	0.496	0.033	10.00	20.00

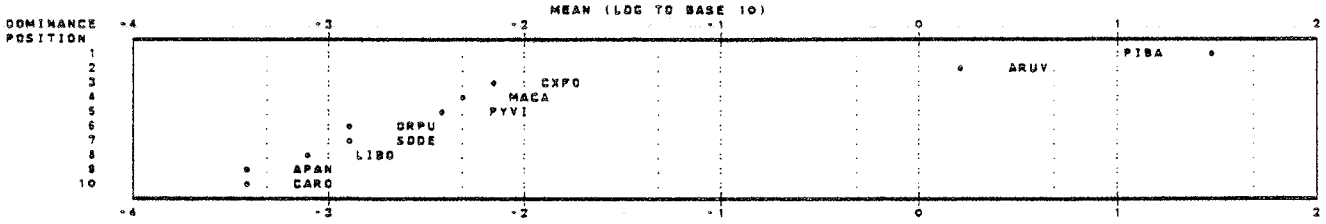
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 34
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	28.8000	4.628	0.926	0.032	20.00	40.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	25	92.00	1.8720	1.485	0.297	0.178	-0.0	6.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Linnaea borealis	LIBO	25	8.00	0.0008	0.003	0.001	0.682	-0.0	0.01
Campanula rotundifolia	CARO	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Solidago decumbens	SODE	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	32.00	0.0068	0.020	0.004	0.587	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 10 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.895
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.219 (NATURAL LOGS)

10 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 30.4916

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 35
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 66
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S02

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	57.6800	0.476	0.095	0.002	57.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	28.8000	4.628	0.926	0.032	20.00	40.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	92.00	1.5728	1.485	0.297	0.178	0.0	6.00
Shrub Species Richness per Plot	SHRUBRP	25	92.00	1.0000	0.408	0.082	0.082	0.0	2.00
Total Forb Cover per Plot	FORB	25	20.00	0.0108	0.031	0.006	0.568	0.0	0.12
Forb Species Richness per Plot	FORBRP	25	20.00	0.3600	0.880	0.172	0.478	0.0	3.00
Total Graminoid Cover per Plot	GRAM	25	44.00	0.0080	0.020	0.004	0.495	0.0	0.10
Graminoid Species Richness per Plot	GRAMRP	25	44.00	0.4400	0.507	0.101	0.230	0.0	1.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	30.4916	4.890	0.978	0.032	20.02	40.10
Species Richness per Plot	TOTRP	25	100.00	2.8000	1.225	0.245	0.087	1.00	7.00

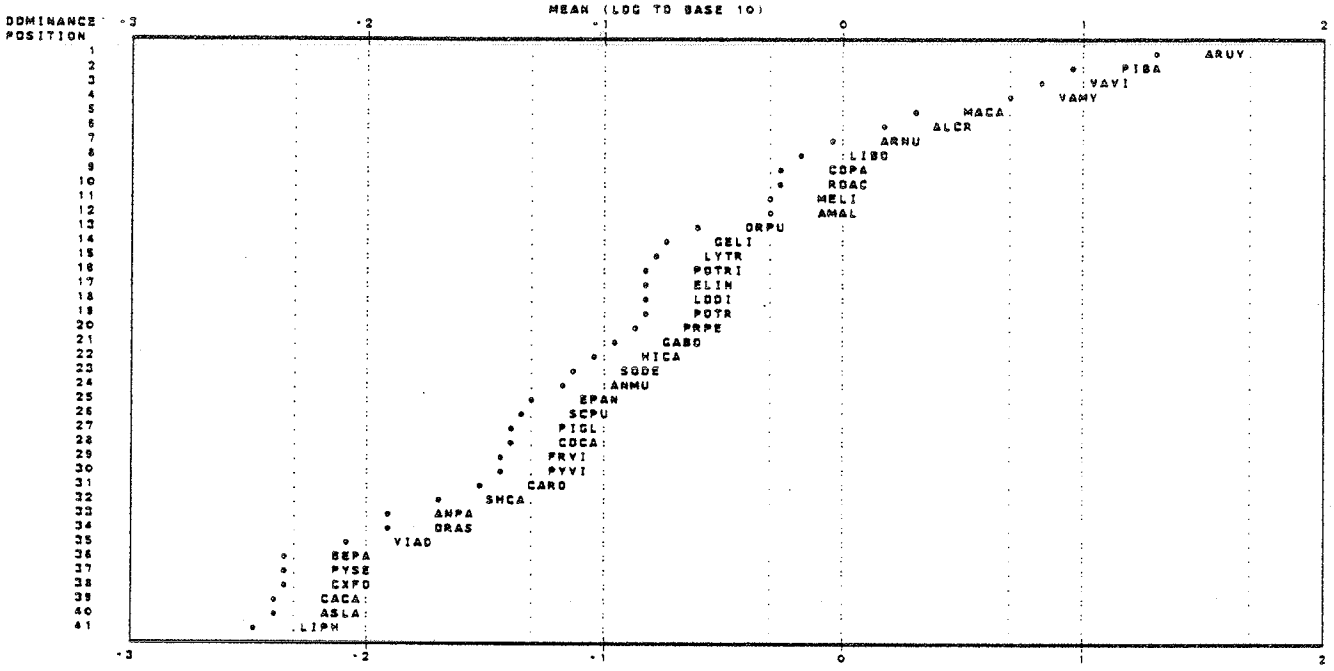
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 35
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S03

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	9.3000	5.284	1.057	0.114	0.50	25.00
Picea glauca	PIGL	25	8.00	0.0400	0.138	0.028	0.692	-0.0	0.50
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	28.00	0.1440	0.269	0.054	0.374	-0.0	1.00
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.8400	3.322	0.664	0.137	0.50	15.00
Vaccinium vitis-idaea	VAVI	25	100.00	7.0000	3.990	0.798	0.114	2.00	15.00
Arctostaphylos uva-ursi	ARUV	25	100.00	20.4400	8.761	1.752	0.086	7.00	40.00
Rosa acicularis	ROAC	25	40.00	0.5240	0.807	0.161	0.308	-0.0	2.00
Prunus pensylvanica	PRPE	25	40.00	0.1400	0.255	0.051	0.364	-0.0	1.00
Amelanchier alnifolia	AMAL	25	84.00	0.4720	0.558	0.112	0.237	-0.0	2.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	24.00	0.1480	0.337	0.067	0.455	-0.0	1.00
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	56.00	1.5400	2.071	0.414	0.269	-0.0	8.00
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	96.00	1.9840	1.239	0.248	0.125	-0.0	5.00
Aster laevis	ASLA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Anemone multifida	ANMU	25	84.00	0.0692	0.102	0.020	0.295	-0.0	0.50
Galium boreale	GABO	25	48.00	0.1120	0.178	0.036	0.319	-0.0	0.50
Melampyrum lineare	MELI	25	100.00	0.4960	0.365	0.073	0.147	0.10	1.00
Linnaea borealis	LIBO	25	68.00	0.8440	0.794	0.159	0.247	-0.0	3.00
Campanula rotundifolia	CARO	25	64.00	0.0316	0.044	0.009	0.277	-0.0	0.10
Solidago decumbens	SODE	25	40.00	0.0720	0.137	0.027	0.381	-0.0	0.50
Viola adunca	VIAD	25	8.00	0.0060	0.028	0.006	0.692	-0.0	0.10
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	92.00	0.5520	0.416	0.083	0.151	-0.0	2.00
Fragaria virginiana	FRVI	25	20.00	0.0360	0.104	0.021	0.576	-0.0	0.50
Potentilla tridentata	POTRI	25	80.00	0.1496	0.289	0.058	0.387	-0.0	1.00
Geocaulon lividum	GELI	25	12.00	0.1800	0.627	0.125	0.697	-0.0	3.00
Pyrola virens	PYVI	25	20.00	0.0360	0.104	0.021	0.576	-0.0	0.50
Hieracium canadense	HICA	25	56.00	0.0896	0.161	0.032	0.359	-0.0	0.50
Pyrola secunda	PYSE	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Epilobium angustifolium	EPAN	25	20.00	0.0520	0.139	0.028	0.534	-0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	60.00	0.9320	1.304	0.261	0.280	-0.0	5.00
Cornus canadensis	COCA	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Lilium philadelphicum	LIPH	25	32.00	0.0032	0.005	0.001	0.298	-0.0	0.01
Anemone patens	ANPA	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	100.00	0.2496	0.255	0.051	0.204	0.01	1.00
Elymus innovatus	ELIN	25	80.00	0.1492	0.184	0.037	0.247	-0.0	0.50
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	12.00	0.0440	0.139	0.028	0.630	-0.0	0.50
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	8.00	0.1600	0.624	0.125	0.781	-0.0	3.00
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 41 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.227
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.965 (NATURAL LOGS)

41 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 50.7448

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 37
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S03



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 67
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S03

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	63.8200	1.631	0.378	0.006	61.00	71.00
Total Tree Cover per Plot	TREE	25	100.00	9.4884	5.282	1.056	0.111	0.50	25.00
Tree Species Richness per Plot	TREERP	25	100.00	1.4400	0.583	0.117	0.081	1.00	3.00
Total Shrub Cover per Plot	SHRUB	25	100.00	35.7630	11.439	2.288	0.064	11.50	58.50
Shrub Species Richness per Plot	SHRUBRP	25	100.00	5.1800	1.281	0.256	0.042	3.00	9.00
Total Forb Cover per Plot	FORB	25	100.00	4.8544	2.108	0.422	0.087	2.00	10.01
Forb Species Richness per Plot	FORBRP	25	100.00	8.2800	2.424	0.485	0.058	3.00	12.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.4540	0.420	0.084	0.181	0.01	1.50
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.2400	0.723	0.145	0.065	1.00	3.00
Total Pteridophyte Cover per Plot	PTER	25	8.00	0.1600	0.624	0.125	0.781	0.0	3.00
Pteridophyte Species Richness per Plot	PTERRP	25	8.00	0.0800	0.277	0.055	0.682	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	50.7448	13.575	2.715	0.054	18.61	73.70
Species Richness per Plot	TOTRP	25	100.00	18.2000	3.862	0.772	0.042	10.00	24.00

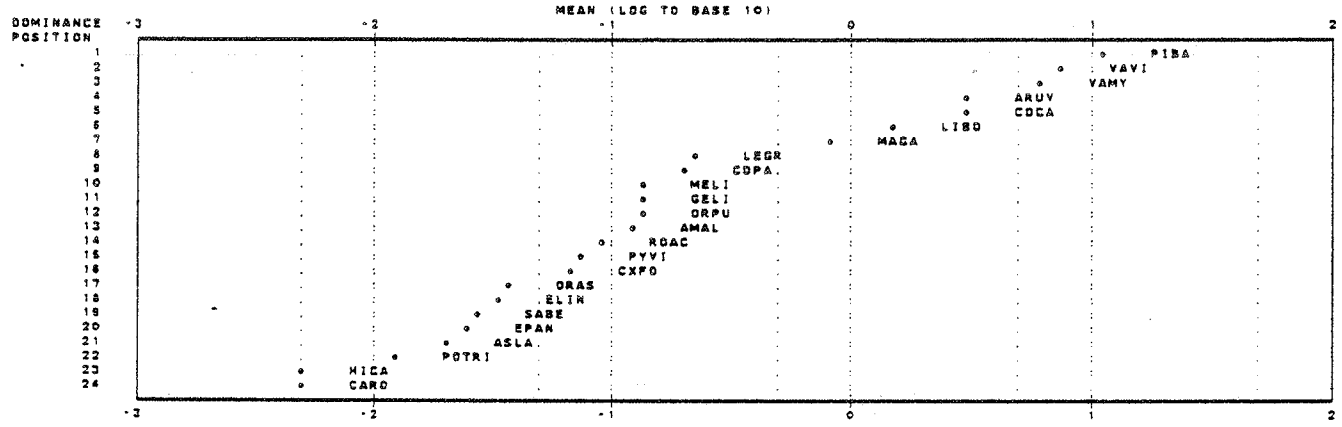
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 38
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S04

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	10.8400	5.647	1.129	0.104	4.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	5.8800	2.726	0.546	0.093	1.00	10.00
Vaccinium vitis-idaea	VAVI	25	96.00	7.3800	6.839	1.368	0.185	-0.0	25.00
Arctostaphylos uva-ursi	ARUV	25	96.00	2.8240	2.348	0.470	0.161	-0.0	10.00
Rosa acicularis	RDAC	25	24.00	0.0920	0.234	0.047	0.510	-0.0	1.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	44.00	0.1172	0.246	0.049	0.419	-0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	12.00	0.0280	0.102	0.020	0.730	-0.0	0.50
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	16.00	0.2240	0.707	0.141	0.631	-0.0	3.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	0.8480	0.597	0.119	0.141	0.10	3.00
Aster laevis	ASLA	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	88.00	0.1412	0.165	0.033	0.233	-0.0	0.50
Linnaea borealis	LIBO	25	92.00	1.4720	1.252	0.250	0.170	-0.0	5.00
Campanula rotundifolia	CARO	25	48.00	0.0048	0.005	0.001	0.212	-0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	68.00	0.2088	0.269	0.054	0.257	-0.0	1.00
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Geocaulon lividum	GELI	25	12.00	0.1400	0.445	0.089	0.636	-0.0	2.00
Pyrola virens	PYVI	25	68.00	0.0768	0.101	0.020	0.262	-0.0	0.50
Hieracium canadense	HICA	25	16.00	0.0052	0.020	0.004	0.770	-0.0	0.10
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	12.00	0.0244	0.101	0.020	0.829	-0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	88.00	2.8720	8.864	1.773	0.617	-0.0	45.00
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	100.00	0.1336	0.142	0.028	0.213	0.01	0.50
Elymus innovatus	ELIN	25	28.00	0.0332	0.103	0.021	0.618	-0.0	0.50
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	96.00	0.0672	0.045	0.009	0.133	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	48.00	0.0352	0.102	0.020	0.580	-0.0	0.50
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella dense	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 24 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.201
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.886 (NATURAL LOGS)

24 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.5804

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 38
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO4



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 88
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO4

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.2000	1.155	0.231	0.004	54.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	10.8400	5.647	1.129	0.104	4.00	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	18.1172	8.355	1.671	0.092	4.51	40.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	4.8000	0.866	0.173	0.036	4.00	7.00
Total Herb Cover per Plot	HERB	25	100.00	4.3540	9.384	1.873	0.430	0.32	48.71
Herb Species Richness per Plot	HERBRP	25	100.00	5.2400	1.128	0.226	0.043	3.00	8.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.2692	0.240	0.048	0.179	0.11	1.20
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.7200	0.678	0.136	0.050	2.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0*	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	33.5804	17.252	3.450	0.103	10.03	85.02
Species Richness per Plot	TOTRP	25	100.00	13.7800	1.763	0.353	0.025	11.00	18.00

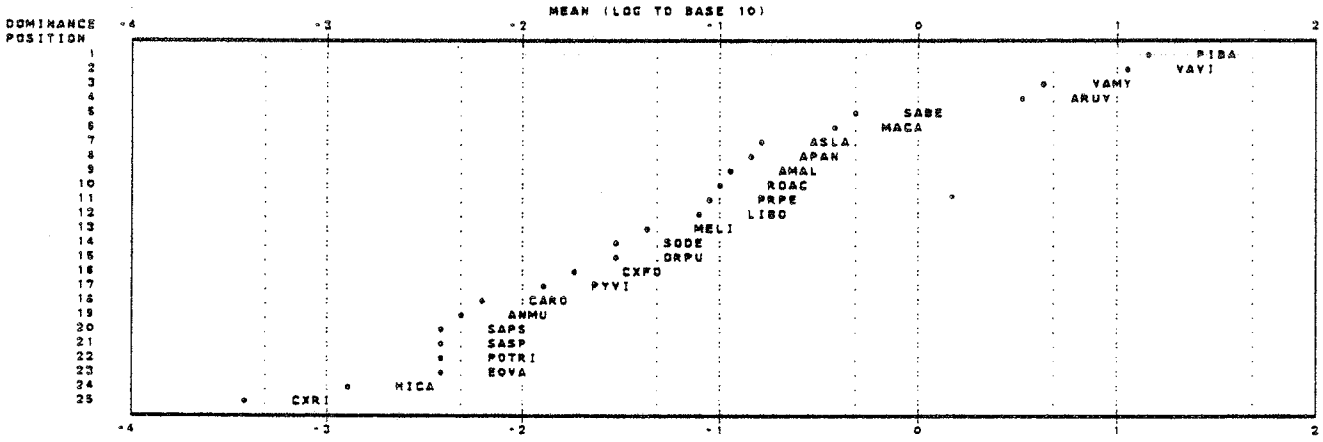
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 40
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S05

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	15.2400	8.343	1.688	0.108	4.00	30.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.4200	2.857	0.571	0.129	0.50	15.00
Vaccinium vitis-idaea	VAVI	25	100.00	10.6400	7.181	1.436	0.135	2.00	25.00
Arctostaphylos uva-ursi	ARUV	25	98.00	3.1840	3.037	0.607	0.191	-0.0	12.00
Rosa acicularis	ROAC	25	16.00	0.1000	0.250	0.050	0.500	-0.0	1.00
Prunus pensylvanica	PRPE	25	60.00	0.0884	0.133	0.027	0.301	-0.0	0.50
Amelanchier alnifolia	AMAL	25	44.00	0.1172	0.246	0.049	0.418	-0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	40.00	0.4804	0.895	0.179	0.373	-0.0	3.00
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomenticola	SAPS	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	0.3764	0.274	0.055	0.145	0.01	1.00
Aster laevis	ASLA	25	76.00	0.1584	0.285	0.057	0.361	-0.0	1.00
Anemone multifida	ANMU	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	12.00	0.0444	0.200	0.040	0.901	-0.0	1.00
Linnaea borealis	LIBO	25	4.00	0.0800	0.400	0.080	1.000	-0.0	2.00
Campanula rotundifolia	CARO	25	24.00	0.0060	0.020	0.004	0.667	-0.0	0.10
Solidago decumbens	SODE	25	56.00	0.0308	0.044	0.009	0.287	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	76.00	0.1384	0.238	0.048	0.344	-0.0	1.00
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	20.00	0.0128	0.033	0.007	0.515	-0.0	0.10
Hieracium canadense	HICA	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryopsis pungens	DRPU	25	88.00	0.0304	0.040	0.008	0.263	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex foenea	CXFO	25	72.00	0.0180	0.031	0.006	0.347	-0.0	0.10
Dryopsis asperifolia	DRAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 25 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.303
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.455 (NATURAL LOGS)

25 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 35.1880

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 41
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S05



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 89
Descriptive Statistics for Synthetic Variables at Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S05

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	57.8400	0.554	0.111	0.002	57.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	15.2400	8.343	1.668	0.109	4.00	30.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	19.1180	8.904	1.781	0.093	6.50	41.40
Shrub Species Richness per Plot	SHRUBRP	25	100.00	4.6800	1.030	0.206	0.044	3.00	7.00
Total Forb Cover per Plot	FORB	25	100.00	0.7772	0.509	0.102	0.131	0.01	2.13
Forb Species Richness per Plot	FORBRP	25	100.00	3.9200	1.470	0.294	0.075	1.00	6.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.0488	0.044	0.009	0.179	0.01	0.11
Graminoid Species Richness per Plot	GRAMRP	25	100.00	1.8400	0.490	0.098	0.060	1.00	2.00
Total Pteridophyte Cover per Plot	PTER	25	4.00	0.0040	0.020	0.004	1.000	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	25	4.00	0.0400	0.200	0.040	1.000	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	35.1880	13.425	2.685	0.076	12.92	60.41
Species Richness per Plot	TOTRP	25	100.00	11.2800	1.568	0.314	0.028	9.00	15.00

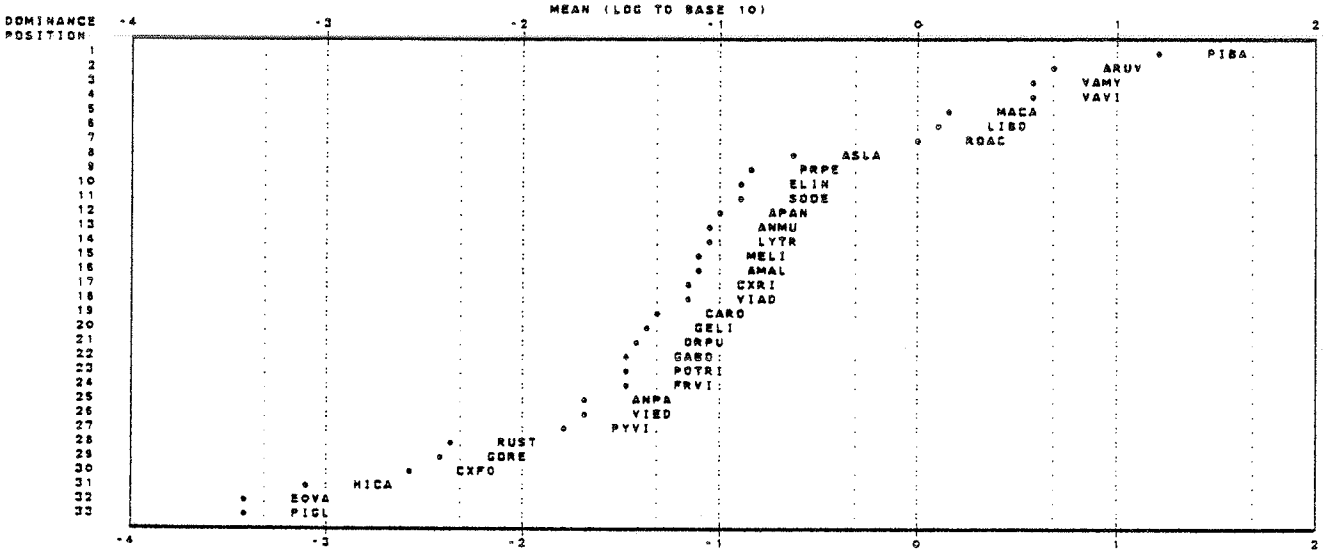
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 42
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S07

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	15.7200	7.402	1.480	0.094	4.00	30.00
Picea glauca	PIGL	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.0040	2.651	0.530	0.132	0.10	10.00
Vaccinium vitis-idaea	VAVI	25	100.00	3.9200	1.847	0.369	0.094	1.00	10.00
Arctostaphylos uva-ursi	ARUV	25	96.00	4.5040	3.919	0.784	0.170	-0.0	15.00
Rosa acicularis	ROAC	25	88.00	0.9480	0.884	0.193	0.203	-0.0	3.00
Prunus pensylvanica	PRPE	25	60.00	0.1488	0.205	0.041	0.277	-0.0	0.50
Amelanchier alnifolia	AMAL	25	52.00	0.0768	0.136	0.027	0.354	-0.0	0.50
Rubus strigosus	RUST	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	1.4320	0.979	0.195	0.137	0.10	4.00
Aster laevis	ASLA	25	92.00	0.2368	0.288	0.058	0.243	-0.0	1.00
Anemone multifida	ANMU	25	76.00	0.0936	0.131	0.026	0.280	-0.0	0.50
Galium boreale	GABO	25	72.00	0.0324	0.043	0.009	0.267	-0.0	0.10
Melampyrum lineare	MELI	25	32.00	0.0804	0.218	0.044	0.542	-0.0	1.00
Linnaea borealis	LIBO	25	84.00	1.2160	2.407	0.481	0.396	-0.0	12.00
Campanula rotundifolia	CARO	25	72.00	0.0468	0.048	0.010	0.206	-0.0	0.10
Solidago decumbens	SODE	25	80.00	0.1208	0.149	0.030	0.247	-0.0	0.50
Viola adunca	VIAD	25	84.00	0.0650	0.048	0.009	0.141	-0.0	0.10
Apocynum androsaemifolium	APAN	25	48.00	0.0960	0.158	0.032	0.332	-0.0	0.50
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	16.00	0.0320	0.103	0.021	0.643	-0.0	0.50
Potentilla tridentata	POTRI	25	16.00	0.0320	0.103	0.021	0.643	-0.0	0.50
Geocaulon lividum	GELI	25	16.00	0.0448	0.200	0.040	0.893	-0.0	1.00
Pyrola virens	PYVI	25	28.00	0.0172	0.037	0.007	0.431	-0.0	0.10
Hieracium canadense	HICA	25	8.00	0.0008	0.003	0.001	0.892	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	12.00	0.0208	0.100	0.020	0.960	-0.0	0.50
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	80.00	0.0368	0.044	0.009	0.241	-0.0	0.10
Elymus innovatus	ELIN	25	80.00	0.1260	0.172	0.034	0.274	-0.0	0.50
Carex richardsonii	CXRI	25	52.00	0.0732	0.136	0.027	0.373	-0.0	0.50
Carex foenea	CXFO	25	28.00	0.0028	0.005	0.001	0.327	-0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Lycopodium tristachyum	LYTR	25	20.00	0.0880	0.235	0.047	0.534	-0.0	1.00
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 33 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.274
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.757 (NATURAL LOGS)

33 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.3460

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 43
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S07



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 70
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S07

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.9600	0.676	0.135	0.002	58.00	60.00
Total Tree Cover per Plot	TREE	25	100.00	15.7204	7.402	1.480	0.094	4.00	30.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	14.9420	6.846	1.369	0.092	5.10	29.70
Shrub Species Richness per Plot	SHRUBRP	25	100.00	5.9200	1.115	0.223	0.038	4.00	8.00
Total Forb Cover per Plot	FORB	25	100.00	2.3584	1.204	0.241	0.102	0.44	5.00
Forb Species Richness per Plot	FORBRP	25	100.00	7.5800	1.325	0.265	0.035	4.00	10.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.2384	0.281	0.056	0.235	0.01	1.01
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.4000	0.866	0.173	0.072	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	24.00	0.0884	0.235	0.047	0.532	0.0	1.00
Pteridophyte Species Richness per Plot	PTERRP	25	24.00	0.2400	0.436	0.087	0.363	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	33.3460	10.518	2.104	0.063	17.37	58.00
Species Richness per Plot	TOTRP	25	100.00	17.1600	1.930	0.386	0.022	14.00	22.00

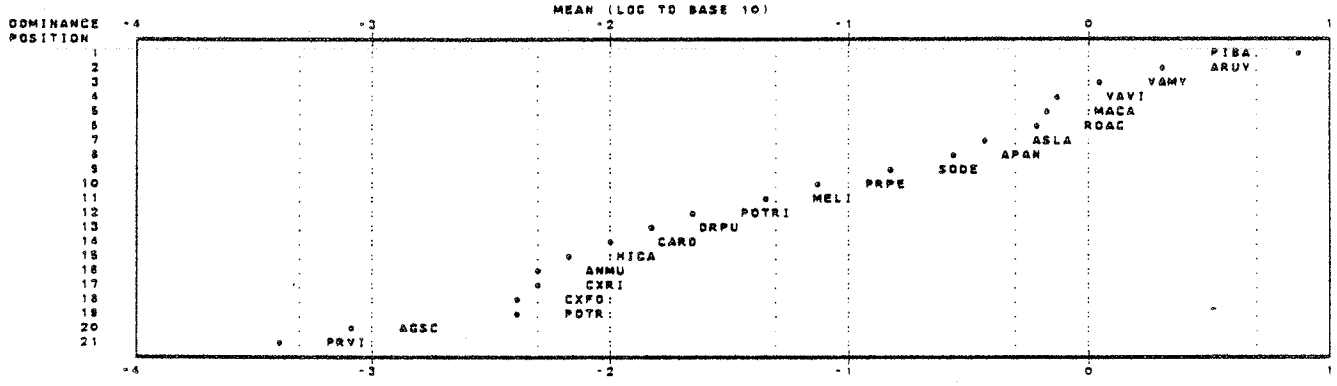
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 44
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO8

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	7.8400	5.593	1.139	0.148	1.00	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	88.00	1.0520	0.976	0.195	0.186	-0.0	3.00
Vaccinium vitis-idaea	VAVI	25	88.00	0.7360	0.612	0.122	0.166	-0.0	2.00
Arctostaphylos uva-ursi	ARUV	25	100.00	2.0600	1.325	0.265	0.129	0.50	4.00
Rosa acicularis	ROAC	25	48.00	0.6040	1.097	0.219	0.363	-0.0	5.00
Prunus pensylvanica	PRPE	25	20.00	0.0720	0.219	0.044	0.608	-0.0	1.00
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	92.00	0.6764	0.607	0.121	0.180	-0.0	2.00
Aster laevis	ASLA	25	92.00	0.3564	0.317	0.063	0.178	-0.0	1.00
Anemone multifida	ANMU	25	16.00	0.0052	0.020	0.004	0.770	-0.0	0.10
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	16.00	0.0444	0.139	0.028	0.624	-0.0	0.50
Linnaea borealis	LIBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Campanula rotundifolia	CARO	25	64.00	0.0100	0.019	0.004	0.387	-0.0	0.10
Solidago decumbens	SODE	25	88.00	0.1484	0.161	0.032	0.217	-0.0	0.50
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	80.00	0.2768	0.334	0.067	0.241	-0.0	1.00
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	36.00	0.0216	0.040	0.008	0.372	-0.0	0.10
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hieracium canadense	HICA	25	32.00	0.0068	0.020	0.004	0.587	-0.0	0.10
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryopsis pungens	DRPU	25	80.00	0.0152	0.026	0.005	0.340	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Carex foenea	CXFO	25	40.00	0.0040	0.005	0.001	0.250	-0.0	0.01
Dryopsis asperifolia	DRAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	8.00	0.0008	0.003	0.001	0.892	-0.0	0.01
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 21 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.346
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.556 (NATURAL LOGS)

21 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 13.7382

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 45
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOS



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 71
Descriptive Statistics for Synthetic Variables at Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SOS

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.9200	0.640	0.128	0.002	58.00	60.00
Total Tree Cover per Plot	TREE	25	100.00	7.5640	5.702	1.140	0.149	1.00	20.10
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	4.5244	2.106	0.422	0.093	1.50	9.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.4800	1.005	0.201	0.058	1.00	5.00
Total Forb Cover per Plot	FORB	25	100.00	1.5480	0.808	0.162	0.105	0.10	3.11
Forb Species Richness per Plot	FORBRP	25	100.00	5.1600	1.313	0.263	0.051	1.00	8.00
Total Graminoid Cover per Plot	GRAM	25	88.00	0.0248	0.033	0.007	0.267	0.0	0.12
Graminoid Species Richness per Plot	GRAMRP	25	88.00	1.4000	0.816	0.163	0.117	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	13.7392	6.460	1.292	0.094	4.52	25.14
Species Richness per Plot	TOTRP	25	100.00	11.0800	2.159	0.432	0.039	5.00	14.00

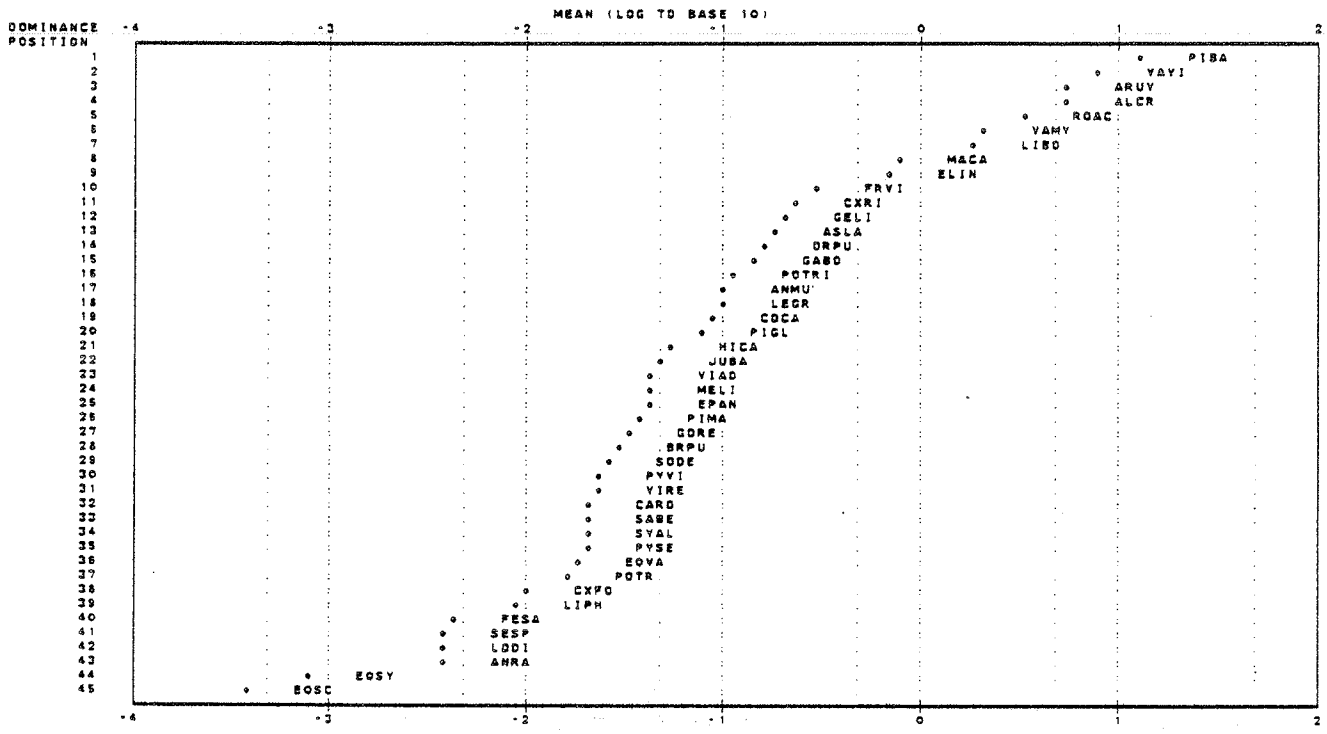
Athabasca Oil Sands Ecological Monitering: August 1982 Surveys 04/07/83 PAGE 46
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE SO9

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	12.7200	7.317	1.463	0.115	2.00	30.00
Picea glauca	PIGL	25	4.00	0.0800	0.400	0.080	1.000	-0.0	2.00
Picea mariana	PIMA	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Populus tremuloides	POTR	25	16.00	0.0160	0.037	0.007	0.468	-0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	84.00	1.9480	2.384	0.477	0.245	-0.0	10.00
Vaccinium vitis-idaea	VAVI	25	100.00	7.8000	6.305	1.261	0.162	3.00	30.00
Arctostaphylos uva-ursi	ARUV	25	92.00	5.4440	3.857	0.771	0.142	-0.0	15.00
Rosa acicularis	RDAC	25	100.00	3.5600	1.895	0.379	0.106	1.00	10.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Alnus crispa	ALCR	25	32.00	5.2800	11.301	2.260	0.428	-0.0	40.00
Ledum groenlandicum	LEGR	25	8.00	0.1000	0.408	0.082	0.816	-0.0	2.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	100.00	0.7840	0.516	0.103	0.132	0.10	2.00
Aster laevis	ASLA	25	88.00	0.1888	0.222	0.044	0.235	-0.0	0.50
Anemone multifida	ANMU	25	88.00	0.1056	0.126	0.025	0.239	-0.0	0.50
Galium boreale	GABO	25	80.00	0.1492	0.184	0.037	0.247	-0.0	0.50
Melampyrum lineare	MELI	25	16.00	0.0408	0.138	0.028	0.678	-0.0	0.50
Linnaea borealis	LIBO	25	76.00	1.8880	2.388	0.478	0.253	-0.0	10.00
Campanula rotundifolia	CARO	25	64.00	0.0208	0.036	0.007	0.342	-0.0	0.10
Solidago decumbens	SODE	25	44.00	0.0260	0.043	0.009	0.328	-0.0	0.10
Viola adunca	VIAD	25	56.00	0.0416	0.049	0.010	0.235	-0.0	0.10
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	76.00	0.3124	0.362	0.072	0.232	-0.0	1.00
Potentilla tridentata	POTRI	25	48.00	0.1088	0.230	0.046	0.424	-0.0	1.00
Geocaulon lividum	GELI	25	36.00	0.2084	0.453	0.091	0.435	-0.0	2.00
Pyrola virens	PYVI	25	8.00	0.0240	0.101	0.020	0.843	-0.0	0.50
Hieracium canadense	HICA	25	52.00	0.0572	0.104	0.021	0.363	-0.0	0.50
Pyrola secunda	PYSE	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Epilobium angustifolium	EPAN	25	8.00	0.0404	0.200	0.040	0.990	-0.0	1.00
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	CDCA	25	20.00	0.0880	0.235	0.047	0.534	-0.0	1.00
Lilium philadelphicum	LIPH	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	8.00	0.0240	0.101	0.020	0.843	-0.0	0.50
Goodyera repens	GORE	25	28.00	0.0332	0.103	0.021	0.618	-0.0	0.50
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AOFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	100.00	0.1548	0.180	0.036	0.233	0.01	0.50
Elymus innovatus	ELIN	25	88.00	0.6764	0.732	0.146	0.216	-0.0	3.00
Carex richardsonii	CXRI	25	92.00	0.2360	0.204	0.041	0.173	-0.0	0.50
Carex foenea	CXFO	25	32.00	0.0104	0.027	0.005	0.525	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	92.00	0.0488	0.046	0.009	0.190	-0.0	0.10
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Bromus pumpellianus	BRPU	25	52.00	0.0304	0.044	0.009	0.293	-0.0	0.10
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	80.00	0.0188	0.031	0.006	0.328	-0.0	0.10
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Equisetum scirpoides	EQSC	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 45 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.168
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.144 (NATURAL LOGS)

45 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 42.3912

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 47
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S09



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 72
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S09

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	55.8000	1.155	0.231	0.004	53.00	57.00
Total Tree Cover per Plot	TREE	25	100.00	12.4560	7.319	1.464	0.114	2.00	30.10
Tree Species Richness per Plot	TREERP	25	100.00	1.2400	0.436	0.087	0.070	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	25.0640	9.836	1.967	0.075	10.20	52.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	5.0400	0.935	0.187	0.037	4.00	7.00
Total Forb Cover per Plot	FORB	25	100.00	2.2900	1.214	0.243	0.106	0.53	5.31
Forb Species Richness per Plot	FORBRP	25	100.00	8.2800	2.246	0.449	0.054	4.00	12.00
Total Graminoid Cover per Plot	GRAM	25	100.00	1.1512	0.695	0.139	0.120	0.33	3.21
Graminoid Species Richness per Plot	GRAMRP	25	100.00	4.6400	1.075	0.215	0.046	2.00	7.00
Total Pteridophyte Cover per Plot	PTER	25	88.00	0.0200	0.030	0.006	0.304	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	25	88.00	0.9200	0.400	0.080	0.087	0.0	2.00
Total Vascular Cover per Plot	TOT	25	100.00	42.3912	13.979	2.795	0.065	18.17	76.54
Species Richness per Plot	TOTRP	25	100.00	20.1200	2.068	0.414	0.021	16.00	23.00

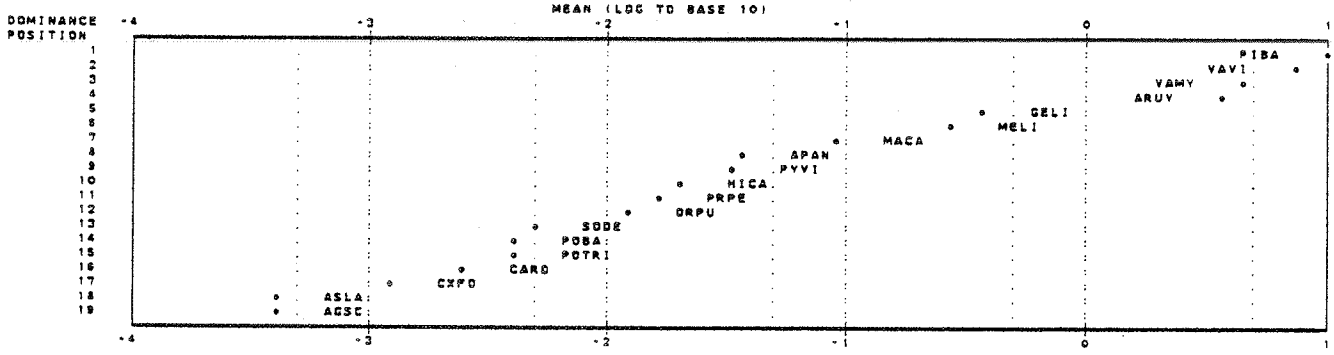
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 48
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	9.9200	6.316	1.263	0.127	0.50	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.2920	4.743	0.949	0.221	0.10	20.00
Vaccinium vitis-idaea	VAVI	25	96.00	7.1400	5.235	1.047	0.147	-0.0	20.00
Arctostaphylos uva-ursi	ARUV	25	96.00	3.7800	3.803	0.761	0.201	-0.0	13.00
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	25	20.00	0.0164	0.037	0.007	0.455	-0.0	0.10
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Majanthemum canadense	MACA	25	28.00	0.0924	0.234	0.047	0.507	-0.0	1.00
Aster laevis	ASLA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	68.00	0.2892	0.468	0.094	0.348	-0.0	2.00
Linnaea borealis	LIBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Campanula rotundifolia	CARO	25	24.00	0.0024	0.004	0.001	0.363	-0.0	0.01
Solidago decumbens	SODE	25	12.00	0.0048	0.020	0.004	0.834	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	28.00	0.0368	0.103	0.021	0.562	-0.0	0.50
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Geocaulon lividum	GELI	25	32.00	0.3648	0.894	0.179	0.490	-0.0	3.00
Pyrola virens	PYVI	25	24.00	0.0328	0.103	0.021	0.626	-0.0	0.50
Hieracium canadense	HICA	25	12.00	0.0208	0.100	0.020	0.980	-0.0	0.50
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AOFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	48.00	0.0120	0.027	0.005	0.449	-0.0	0.10
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 19 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.270
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.465 (NATURAL LOGS)

19 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 25.9844

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 49
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 73
Descriptive Statistics for Synthetic Variables at Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	55.0800	0.572	0.114	0.002	55.00	58.00
Total Tree Cover per Plot	TREE	25	100.00	8.5240	6.315	1.263	0.127	0.50	30.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0400	0.200	0.040	0.038	1.00	2.00
Total Shrub Cover per Plot	SHRUB	25	100.00	15.2284	8.259	1.652	0.108	3.50	32.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.1200	0.526	0.105	0.034	2.00	4.00
Total Forb Cover per Plot	FORB	25	92.00	0.4284	1.061	0.212	0.256	0.0	3.60
Forb Species Richness per Plot	FORBRP	25	52.00	2.3600	1.912	0.382	0.162	0.0	7.00
Total Graminoid Cover per Plot	GRAM	25	60.00	0.0136	0.028	0.006	0.411	0.0	0.11
Graminoid Species Richness per Plot	GRAMRP	25	60.00	0.8400	0.569	0.114	0.178	0.0	2.00
Total Pteridophyte Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	25.9944	8.001	1.600	0.062	12.03	43.22
Species Richness per Plot	TOTRP	25	100.00	7.1600	2.561	0.512	0.072	4.00	13.00

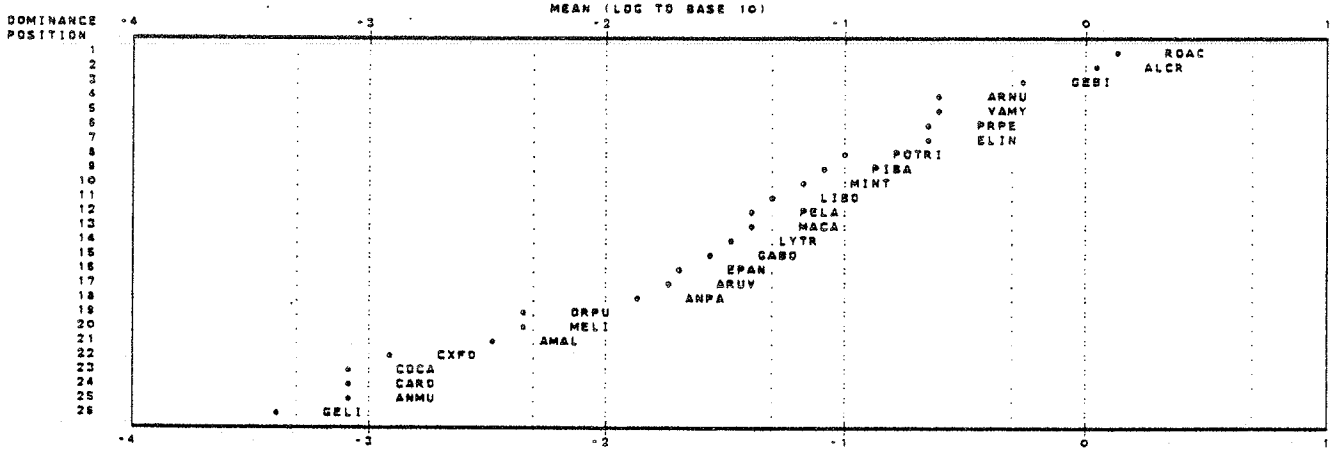
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S118

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	0.0852	0.132	0.026	0.310	0.01	0.50
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	84.00	0.2540	0.419	0.084	0.330	-0.0	2.00
Vaccinium vitis-idaea	VAVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arctostaphylos uva-ursi	ARUV	25	32.00	0.0176	0.037	0.007	0.419	-0.0	0.10
Rosa acicularis	ROAC	25	80.00	1.3240	1.193	0.238	0.180	-0.0	4.00
Prunus pensylvanica	PRPE	25	44.00	0.2252	0.381	0.076	0.339	-0.0	1.00
Amelanchier alnifolia	AMAL	25	32.00	0.0032	0.005	0.001	0.298	-0.0	0.01
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	52.00	1.0800	1.261	0.252	0.238	-0.0	4.00
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	8.00	0.0404	0.200	0.040	0.990	-0.0	1.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Galium boreale	GABO	25	64.00	0.0280	0.042	0.008	0.297	-0.0	0.10
Melampyrum lineare	MELI	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Linnaea borealis	LIBO	25	68.00	0.0480	0.103	0.021	0.428	-0.0	0.50
Campanula rotundifolia	CARO	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	72.00	0.0984	0.158	0.032	0.321	-0.0	0.50
Geocaulon lividum	GELI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Pyrola virens	PYVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	12.00	0.0208	0.100	0.020	0.960	-0.0	0.50
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	84.00	0.2572	0.302	0.060	0.235	-0.0	1.00
Cornus canadensis	COCA	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	32.00	0.0140	0.033	0.007	0.467	-0.0	0.10
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	52.00	0.0696	0.137	0.027	0.393	-0.0	0.50
Geranium bicknellii	GEBI	25	92.00	0.5652	0.702	0.140	0.248	-0.0	3.00
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	44.00	0.0420	0.103	0.021	0.492	-0.0	0.50
Aquilegia flavescens	AOFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	44.00	0.0044	0.005	0.001	0.230	-0.0	0.01
Elymus innovatus	ELIN	25	88.00	0.2248	0.214	0.043	0.190	-0.0	0.50
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Oryzopsis asperifolia	ORAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	52.00	0.0340	0.046	0.009	0.273	-0.0	0.10
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 26 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.177
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.122 (NATURAL LOGS)

26 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 4.4244

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 51
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S118



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 74
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S118

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	0	0.0	0.0	LESS THAN 2 CASES, HENCE NO STATISTICS				
Total Tree Cover per Plot	TREE	25	100.00	0.0852	0.132	0.026	0.310	0.01	0.50
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	2.9320	1.887	0.377	0.129	0.12	5.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	3.9200	1.115	0.223	0.057	2.00	7.00
Total Forb Cover per Plot	FORB	25	100.00	1.1428	1.020	0.204	0.178	0.12	4.74
Forb Species Richness per Plot	FORBRP	25	100.00	4.9600	1.338	0.268	0.054	3.00	9.00
Total Graminoid Cover per Plot	GRAM	25	96.00	0.2304	0.214	0.043	0.186	0.0	0.51
Graminoid Species Richness per Plot	GRAMRP	25	96.00	1.4400	0.712	0.142	0.099	0.0	3.00
Total Pteridophyte Cover per Plot	PTER	25	52.00	0.0340	0.046	0.008	0.273	0.0	0.10
Pteridophyte Species Richness per Plot	PTERRP	25	52.00	0.5200	0.510	0.102	0.196	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	4.4244	2.494	0.499	0.113	0.35	8.25
Species Richness per Plot	TOTRP	25	100.00	11.8400	2.115	0.423	0.038	7.00	15.00

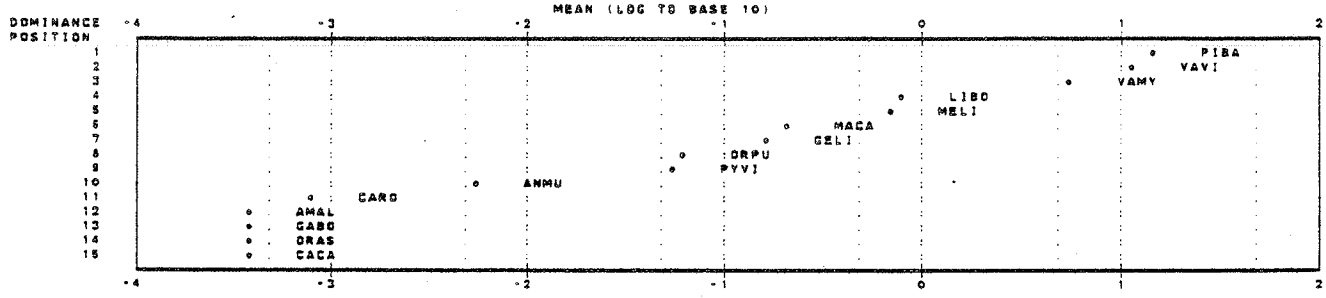
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 52
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S12

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.5600	6.063	1.213	0.083	4.00	25.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	96.00	5.4600	5.101	1.020	0.187	-0.0	20.00
Vaccinium vitis-idaea	VAVI	25	100.00	11.8840	8.373	1.875	0.158	0.10	35.00
Arctostaphylos uva-ursi	ARUV	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rosa acicularis	ROAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepherdia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	88.00	0.1948	0.261	0.052	0.268	-0.0	1.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	20.00	0.0056	0.020	0.004	0.715	-0.0	0.10
Galium boreale	GABO	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Melampyrum lineare	MELI	25	96.00	0.6588	0.869	0.134	0.204	-0.0	3.00
Linnaea borealis	LIBO	25	56.00	0.7480	1.036	0.207	0.277	-0.0	3.00
Campanula rotundifolia	CARO	25	8.00	0.0008	0.003	0.001	0.882	-0.0	0.01
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geocaulon lividum	GELI	25	16.00	0.1500	0.450	0.090	0.563	-0.0	2.00
Pyrola virens	PYVI	25	36.00	0.0520	0.105	0.021	0.402	-0.0	0.50
Hieracium canadense	HICA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryzopsis pungens	DRPU	25	88.00	0.0644	0.102	0.020	0.315	-0.0	0.50
Elymus innovatus	ELIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryzopsis asperifolia	DRAS	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 15 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.336
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.265 (NATURAL LOGS)

15 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 33.7880

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 53
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S12



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 75
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S12

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	55.3200	0.476	0.095	0.002	56.00	57.00
Total Tree Cover per Plot	TREE	25	100.00	14.5800	6.063	1.213	0.083	4.00	25.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	18.0924	13.440	2.688	0.149	0.10	55.10
Shrub Species Richness per Plot	SHRUBRP	25	100.00	2.5600	0.651	0.130	0.051	1.00	4.00
Total Forb Cover per Plot	FORB	25	100.00	1.0704	0.732	0.146	0.137	0.11	3.00
Forb Species Richness per Plot	FORBRP	25	100.00	2.8400	0.802	0.160	0.060	1.00	4.00
Total Graminoid Cover per Plot	GRAM	25	88.00	0.0652	0.103	0.021	0.317	0.0	0.51
Graminoid Species Richness per Plot	GRAMRP	25	88.00	0.8800	0.455	0.091	0.095	0.0	2.00
Total Pteridophyta Cover per Plot	PTER	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pteridophyte Species Richness per Plot	PTERRP	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Vascular Cover per Plot	TOT	25	100.00	33.7680	14.422	2.888	0.085	15.30	73.10
Species Richness per Plot	TOTRP	25	100.00	7.2000	1.384	0.277	0.038	4.00	10.00

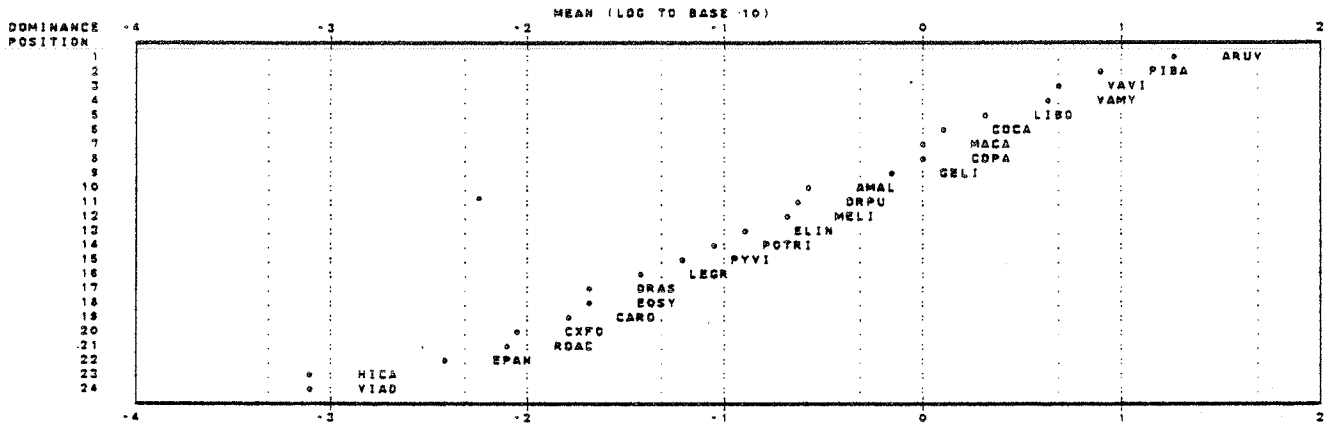
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 54
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S14

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	8.0004	5.836	1.167	0.146	0.01	20.00
Picea glauca	PIGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Picea mariana	PIMA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus tremuloides	POTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	4.4200	3.081	0.616	0.139	0.50	15.00
Vaccinium vitis-idaea	VAVI	25	96.00	4.7200	3.635	0.727	0.154	-0.0	15.00
Arctostaphylos uva-ursi	ARUV	25	100.00	17.7600	6.043	1.209	0.068	6.00	30.00
Rosa acicularis	ROAC	25	8.00	0.0080	0.028	0.006	0.692	-0.0	0.10
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	76.00	0.2564	0.303	0.061	0.236	-0.0	1.00
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	96.00	1.0120	0.762	0.152	0.151	-0.0	3.00
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	76.00	0.2084	0.291	0.058	0.279	-0.0	1.00
Linnaea borealis	LIBO	25	96.00	2.1800	1.172	0.234	0.107	-0.0	4.00
Campanula rotundifolia	CARO	25	56.00	0.0164	0.032	0.006	0.389	-0.0	0.10
Solidago decumbens	SODE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola adunca	VIAD	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	84.00	0.9840	0.694	0.139	0.141	-0.0	2.00
Fragaria virginiana	FRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Potentilla tridentata	POTRI	25	72.00	0.0896	0.132	0.025	0.295	-0.0	0.50
Geocaulon lividum	GELI	25	88.00	0.7000	0.622	0.124	0.178	-0.0	2.00
Pyrola virens	PYVI	25	48.00	0.0604	0.104	0.021	0.344	-0.0	0.50
Hieracium canadense	HICA	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Pyrola secunda	PYSE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Epilobium angustifolium	EPAN	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	100.00	1.2680	1.234	0.247	0.195	0.10	5.00
Lilium philadelphicum	LIPH	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Goodyera repens	GORE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lathyrus ochroleucus	LAOC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vicia americana	VIAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Petasites palmatus	PEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster ciliolatus	ASCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Achillea millefolium	ACMI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Antennaria racemosa	ANRA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis pungens	ORPU	25	100.00	0.2296	0.209	0.042	0.182	0.01	0.50
Elymus innovatus	ELIN	25	68.00	0.1212	0.175	0.035	0.288	-0.0	0.50
Carex richardsonii	CXRI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex foenea	CXFO	25	16.00	0.0088	0.028	0.006	0.627	-0.0	0.10
Oryzopsis asperifolia	ORAS	25	16.00	0.0212	0.100	0.020	0.942	-0.0	0.50
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	8.00	0.0204	0.100	0.020	0.980	-0.0	0.50
Equisetum scirpoides	EQSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 24 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.242
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.812 (NATURAL LOGS)

24 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 42.1304

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 55
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S14



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 76
Descriptive Statistics for Synthetic Variables at Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S14

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	25	100.00	58.2000	1.708	0.342	0.006	56.00	61.00
Total Tree Cover per Plot	TREE	25	100.00	6.0004	5.836	1.167	0.146	0.01	20.00
Tree Species Richness per Plot	TREERP	25	100.00	1.0000	0.0	0.0	0.0	1.00	1.00
Total Shrub Cover per Plot	SHRUB	25	100.00	29.3844	6.820	1.364	0.046	12.50	39.00
Shrub Species Richness per Plot	SHRUBRP	25	100.00	4.8000	0.577	0.115	0.024	4.00	6.00
Total Forb Cover per Plot	FORB	25	100.00	4.3444	2.173	0.435	0.100	1.51	9.11
Forb Species Richness per Plot	FORBRP	25	100.00	6.4000	1.323	0.265	0.041	4.00	8.00
Total Graminoid Cover per Plot	GRAM	25	100.00	0.3808	0.347	0.069	0.182	0.01	1.10
Graminoid Species Richness per Plot	GRAMRP	25	100.00	2.0000	0.707	0.141	0.071	1.00	4.00
Total Pteridophyte Cover per Plot	PTER	25	8.00	0.0204	0.100	0.020	0.980	0.0	0.50
Pteridophyte Species Richness per Plot	PTERRP	25	8.00	0.0400	0.277	0.055	0.882	0.0	1.00
Total Vascular Cover per Plot	TOT	25	100.00	42.1304	9.295	1.859	0.044	25.71	64.33
Species Richness per Plot	TOTRP	25	100.00	14.2800	1.768	0.354	0.025	11.00	18.00

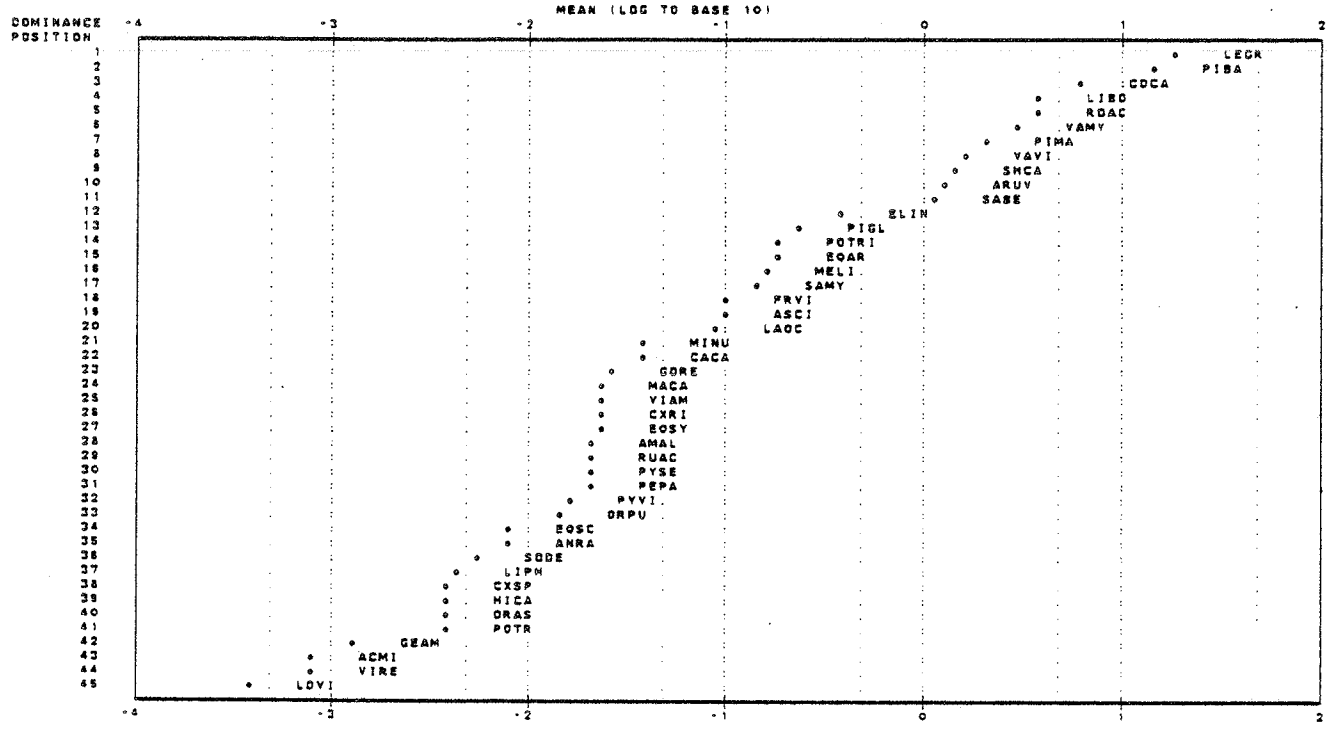
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 56
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S15

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.8000	7.006	1.401	0.095	3.00	35.00
Picea glauca	PIGL	25	20.00	0.2400	0.580	0.116	0.483	-0.0	2.00
Picea mariana	PIMA	25	72.00	2.1600	2.085	0.417	0.193	-0.0	6.00
Populus tremuloides	POTR	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Populus balsamifera	POBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium myrtilloides	VAMY	25	100.00	2.8600	1.893	0.339	0.118	0.50	8.00
Vaccinium vitis-idaea	VAVI	25	60.00	1.5800	2.389	0.478	0.284	-0.0	10.00
Arctostaphylos uva-ursi	ARUV	25	56.00	1.3280	1.790	0.358	0.270	-0.0	6.00
Rosa acicularis	ROAC	25	100.00	3.7800	1.535	0.307	0.082	2.00	7.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	84.00	1.1240	0.802	0.160	0.143	-0.0	2.00
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	100.00	18.9600	9.762	1.952	0.103	1.00	40.00
Salix pseudomonticola	SAPS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Shepardia canadensis	SHCA	25	64.00	1.5200	2.018	0.404	0.266	-0.0	7.00
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix myrtillifolia	SAMY	25	24.00	0.1480	0.418	0.084	0.567	-0.0	2.00
Malanthemum canadense	MACA	25	16.00	0.0248	0.101	0.020	0.815	-0.0	0.50
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	88.00	0.1648	0.226	0.045	0.275	-0.0	1.00
Linnaea borealis	LIBO	25	100.00	4.0000	2.512	0.502	0.126	0.50	10.00
Campanula rotundifolia	CARO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Solidago decumbens	SODE	25	16.00	0.0052	0.020	0.004	0.770	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	44.00	0.1048	0.231	0.046	0.442	-0.0	1.00
Potentilla tridentata	POTRI	25	76.00	0.1844	0.205	0.041	0.222	-0.0	0.50
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	16.00	0.0160	0.037	0.007	0.468	-0.0	0.10
Hieracium canadense	HICA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Pyrola secunda	PYSE	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Epilobium angustifolium	EPAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	100.00	5.2800	4.005	0.801	0.128	2.00	20.00
Lilium philadelphicum	LIPH	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viola renifolia	VIRE	25	8.00	0.0008	0.003	0.001	0.892	-0.0	0.01
Goodyera repens	GORE	25	12.00	0.0280	0.102	0.020	0.730	-0.0	0.50
Lathyrus ochroleucus	LAOC	25	40.00	0.0844	0.162	0.032	0.385	-0.0	0.50
Vicia americana	VIAM	25	12.00	0.0244	0.101	0.020	0.829	-0.0	0.50
Petasites palmatus	PEPA	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Aster ciliolatus	ASCI	25	36.00	0.0968	0.233	0.047	0.482	-0.0	1.00
Achillea millefolium	ACMI	25	8.00	0.0008	0.003	0.001	0.892	-0.0	0.01
Antennaria racemosa	ANRA	25	8.00	0.0080	0.028	0.006	0.892	-0.0	0.10
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	12.00	0.0012	0.003	0.001	0.553	-0.0	0.01
Rubus acaulis	RUAC	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Pyrola asarifolia	PYAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Mitella nuda	MINU	25	4.00	0.0400	0.200	0.040	1.000	-0.0	1.00
Oryzopsis pungens	ORPU	25	32.00	0.0140	0.033	0.007	0.467	-0.0	0.10
Elymus innovatus	ELIN	25	84.00	0.3724	0.450	0.090	0.242	-0.0	2.00
Carex richardsonii	CXRI	25	12.00	0.0244	0.101	0.020	0.829	-0.0	0.50
Carex foenea	CXFO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Oryzopsis asperifolia	ORAS	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	40.00	0.0364	0.049	0.010	0.268	-0.0	0.10
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium annotinum	LYAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum sylvaticum	EQSY	25	56.00	0.0236	0.039	0.008	0.333	-0.0	0.10
Equisetum scirpoides	EQSC	25	8.00	0.0080	0.028	0.006	0.892	-0.0	0.10
Selaginella dense	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium clavatum	LYCL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum arvense	EQAR	25	88.00	0.1736	0.240	0.048	0.276	-0.0	1.00
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Pedicularis groenlandica	PEGR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Empetrum nigrum	EMNI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0

BASED ON 45 POSITIVE MEANS. SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.184
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.107 (NATURAL LOGS)

45 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 60.3976

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 57
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S15



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 77
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S15

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	12	100.00	57.3333	1.073	0.310	0.005	56.00	60.00
Total Tree Cover per Plot	TREE	25	100.00	17.2040	7.213	1.443	0.084	5.00	39.00
Tree Species Richness per Plot	TREERP	25	100.00	1.9800	0.539	0.108	0.055	1.00	3.00
Total Shrub Cover per Plot	SHRUB	25	100.00	35.4004	9.345	1.869	0.053	19.00	52.60
Shrub Species Richness per Plot	SHRUBRP	25	100.00	5.9600	0.978	0.196	0.028	5.00	9.00
Total Forb Cover per Plot	FORB	25	100.00	7.1328	3.936	0.787	0.110	2.00	20.30
Forb Species Richness per Plot	FORBRP	25	100.00	5.2000	2.814	0.563	0.108	1.00	14.00
Total Graminoid Cover per Plot	GRAM	25	96.00	0.4552	0.470	0.094	0.206	0.0	2.02
Graminoid Species Richness per Plot	GRAMRP	25	96.00	1.7600	0.970	0.194	0.110	0.0	4.00
Total Pteridophyte Cover per Plot	PTER	25	96.00	0.2052	0.260	0.052	0.253	0.0	1.11
Pteridophyte Species Richness per Plot	PTERRP	25	88.00	1.5200	0.652	0.131	0.086	0.0	3.00
Total Vascular Cover per Plot	TOT	25	100.00	80.3976	13.722	2.744	0.045	39.52	98.81
Species Richness per Plot	TOTRP	25	100.00	17.4000	4.349	0.870	0.050	12.00	30.00

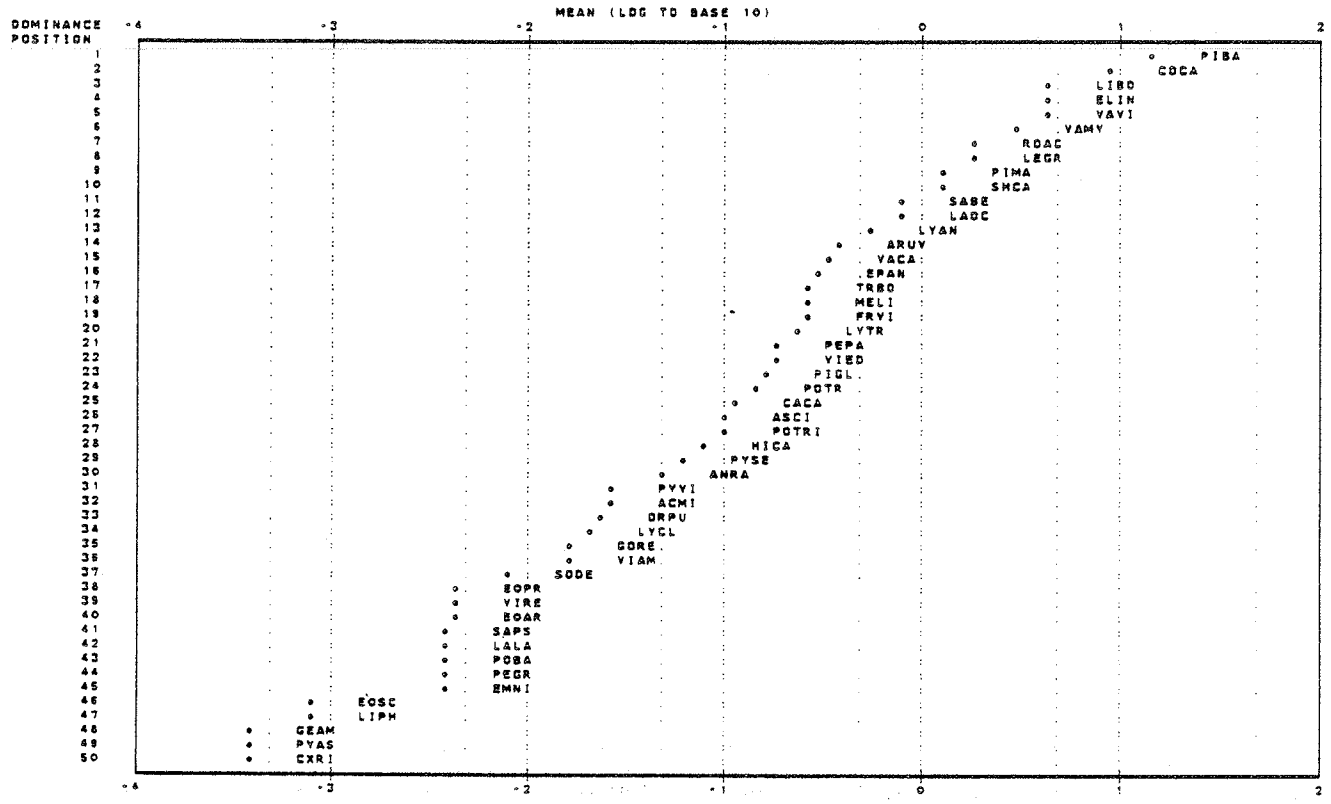
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 58
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82V25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Pinus banksiana	PIBA	25	100.00	14.3200	6.902	1.380	0.096	2.00	30.00
Picea glauca	PIGL	25	16.00	0.1800	0.374	0.075	0.468	-0.0	1.00
Picea mariana	PIMA	25	64.00	1.3280	1.989	0.400	0.301	-0.0	8.00
Populus tremuloides	POTR	25	56.00	0.1412	0.209	0.042	0.297	-0.0	0.50
Populus balsamifera	POBA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Betula papyrifera	BEPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Larix laricina	LALA	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Vaccinium myrtilloides	VAMY	25	100.00	3.1400	2.191	0.438	0.140	0.50	10.00
Vaccinium vitis-idaea	VAVI	25	96.00	4.2800	3.913	0.783	0.183	-0.0	16.00
Arctostaphylos uva-ursi	ARUV	25	36.00	0.3840	0.738	0.148	0.384	-0.0	3.00
Rosa acicularis	ROAC	25	84.00	1.8800	1.301	0.260	0.138	-0.0	4.00
Prunus pensylvanica	PRPE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Amelanchier alnifolia	AMAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Rubus strigosus	RUST	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera dioica	LODI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Viburnum edule	VIED	25	12.00	0.1800	0.557	0.111	0.618	-0.0	2.00
Hudsonia tomentosa	HUTO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix bebbiana	SABE	25	80.00	0.8200	0.872	0.174	0.213	-0.0	3.00
Alnus crispa	ALCR	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ledum groenlandicum	LEGR	25	68.00	1.8200	2.272	0.454	0.250	-0.0	10.00
Salix pseudomonticola	SAPS	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Symphoricarpos albus	SYAL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Betula pumila	BEPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Salix scouleriana	SASC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Sheperdia canadensis	SHCA	25	36.00	1.3040	2.867	0.573	0.440	-0.0	10.00
Salix sp.	SASP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Vaccinium caespitosum	VACA	25	56.00	0.3200	0.620	0.124	0.388	-0.0	3.00
Salix myrtillifolia	SAMY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Maianthemum canadense	MACA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aster laevis	ASLA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Anemone multifida	ANMU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Galium boreale	GABO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Melampyrum lineare	MELI	25	76.00	0.2644	0.438	0.088	0.332	-0.0	2.00
Linnaea borealis	LIBO	25	100.00	4.5200	2.220	0.444	0.098	2.00	10.00
Campanula rotundifolia	CARO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Solidago decumbens	SODE	25	8.00	0.0080	0.028	0.006	0.692	-0.0	0.10
Viola adunca	VIAD	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Apocynum androsaemifolium	APAN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Comandra pallida	COPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Fragaria virginiana	FRVI	25	84.00	0.2644	0.297	0.059	0.224	-0.0	1.00
Potentilla tridentata	POTRI	25	72.00	0.1020	0.157	0.031	0.308	-0.0	0.50
Geocaulon lividum	GELI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola virens	PYVI	25	12.00	0.0280	0.102	0.020	0.730	-0.0	0.50
Hieracium canadense	HICA	25	80.00	0.0780	0.100	0.020	0.256	-0.0	0.50
Pyrola secunda	PYSE	25	32.00	0.0640	0.138	0.028	0.432	-0.0	0.50
Epilobium angustifolium	EPAN	25	48.00	0.3160	0.570	0.114	0.361	-0.0	2.00
Artemisia campestris	ARCA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aralia nudicaulis	ARNU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cornus canadensis	COCA	25	100.00	8.7200	4.402	0.880	0.101	3.00	25.00
Lilium philadelphicum	LIPH	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Anemone patens	ANPA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Trientalis borealis	TRBO	25	52.00	0.2720	0.349	0.070	0.257	-0.0	1.00
Viola renifolia	VIRE	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Goodyera repens	GORE	25	24.00	0.0168	0.037	0.007	0.442	-0.0	0.10
Lathyrus ochroleucus	LAOC	25	88.00	0.7920	0.856	0.171	0.216	-0.0	4.00
Vicia americana	VIAM	25	16.00	0.0160	0.037	0.007	0.468	-0.0	0.10
Petasites palmatus	PEPA	25	28.00	0.1844	0.452	0.090	0.491	-0.0	2.00
Aster ciliolatus	ASCI	25	44.00	0.1048	0.231	0.046	0.442	-0.0	1.00
Achillea millefolium	ACMI	25	20.00	0.0252	0.101	0.020	0.801	-0.0	0.50
Artemisia racemosa	ARRA	25	16.00	0.0480	0.139	0.028	0.578	-0.0	0.50
Draba sp.	DRSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio sp.	SESE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Senecio cymbalarioides	SECY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stellaria longipes	STLO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ranunculus sp.	RACE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Labiatae sp.	MINT	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Geranium bicknellii	GEBI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Arabis lyallii	ARLY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Chenopodium sp.	CHEN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis labradorica	PELA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Aquilegia flavescens	AQFL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Gentianella amarella	GEAM	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Rubus acaulis	RUAC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pyrola asarifolia	PYAS	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Mitella nuda	MINU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryopsis pungens	DRPU	25	8.00	0.0240	0.101	0.020	0.843	-0.0	0.50
Elymus innovatus	ELIN	25	100.00	4.4000	3.751	0.752	0.171	0.50	15.00
Carex richardsonii	CXRI	25	4.00	0.0004	0.002	0.000	1.000	-0.0	0.01
Carex foenea	CXFO	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dryopsis asperifolia	DRAS	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Agrostis scabra	AGSC	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus ciliatus	BRCI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Schizachne purpurascens	SCPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Juncus balticus	JUBA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Elymus glaucus	ELGL	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Calamagrostis canadensis	CACA	25	28.00	0.1120	0.247	0.049	0.441	-0.0	1.00
Calamagrostis inexpansa	CAIN	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Festuca saximontana	FESA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bromus pumpellianus	BRPU	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Carex sp.	CXSP	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum variegatum	EQVA	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lycopodium tristachyum	LYTR	25	28.00	0.2440	0.501	0.100	0.411	-0.0	2.00
Lycopodium annotinum	LYAN	25	32.00	0.5480	1.403	0.281	0.512	-0.0	5.00
Equisetum sylvaticum	EQSY	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum scirpoides	EQSC	25	8.00	0.0008	0.003	0.001	0.692	-0.0	0.01
Selaginella densa	SEDE	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Equisetum pratense	EQPR	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Lycopodium clavatum	LYCL	25	4.00	0.0200	0.100	0.020	1.000	-0.0	0.50
Equisetum arvense	EQAR	25	8.00	0.0044	0.020	0.004	0.910	-0.0	0.10
Prunus virginiana	PRVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lonicera villosa	LOVI	25	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pedicularis groenlandica	PEGR	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10
Empetrum nigrum	EMNI	25	4.00	0.0040	0.020	0.004	1.000	-0.0	0.10

BASED ON 50 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.138
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.440 (NATURAL LOGS)

50 OF THE 104 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 51.2852

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 58
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S16



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/07/83 PAGE 78
Descriptive Statistics for Synthetic Variables at Each Stand
FILE AOS82Y25 (CREATION DATE = 04/07/83) Eighteen Stand Tables of 1982 Vascular Cover % Data (5m x 5m)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Soil temperature 5-10 cm degrees F	TEMP	12	100.00	58.8333	1.586	0.458	0.008	57.00	61.00
Total Tree Cover per Plot	TREE	25	100.00	15.9572	7.481	1.496	0.094	2.60	38.10
Tree Species Richness per Plot	TREERP	25	100.00	2.4400	0.821	0.164	0.067	1.00	4.00
Total Shrub Cover per Plot	SHRUB	25	100.00	18.6560	7.786	1.557	0.083	5.70	38.70
Shrub Species Richness per Plot	SHRUBRP	25	100.00	6.7800	1.128	0.226	0.033	4.00	9.00
Total Forb Cover per Plot	FORB	25	100.00	11.3140	5.793	1.159	0.102	5.12	31.01
Forb Species Richness per Plot	FORBRP	25	100.00	8.2800	2.170	0.434	0.052	4.00	13.00
Total Graminoid Cover per Plot	GRAM	25	100.00	4.5384	3.691	0.738	0.163	0.50	15.00
Graminoid Species Richness per Plot	GRAMRP	25	100.00	1.4000	0.577	0.115	0.082	1.00	3.00
Total Pteridophyta Cover per Plot	PTER	25	58.00	0.8216	1.532	0.306	0.373	0.0	6.00
Pteridophyte Species Richness per Plot	PTERRP	25	56.00	0.6800	0.971	0.194	0.221	0.0	3.00
Total Vascular Cover per Plot	TOT	25	100.00	51.2852	12.069	2.414	0.047	33.23	78.81
Species Richness per Plot	TOTRP	25	100.00	19.7600	3.304	0.662	0.033	14.00	26.00

CPU TIME REQUIRED.. 0.18 SECONDS

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128 VAR LABELS      AULPAL Aulacomnium palustre                    /
129                 BRASAL Brachythecium salebrosum                /
130                 CERPUR Ceratodon purpureus                     /
131                 DICPOL Dicranum polysetum                      /
132                 DICSCO Dicranum scoparium                      /
133                 DREUNC Drepanocladus uncinatus                 /
134                 EURPUL Eurhynchium pulchellum                  /
135                 HYLSPL Hylocomium splendens                    /
136                 ORTFLA Orthodicranum flagillare                /
137                 PLESCH Pleurozium schreberi                    /
138                 POHNUT Pohlia nutans                           /
139                 POLJUN Polytrichum juniperinum                 /
140                 POLPIL Polytrichum piliferum                   /
141                 PTICIL Ptilidium ciliare                       /
142                 PTIPUL Ptilidium pulcherrimum                  /
143                 PTICC  Ptilium crista-castrensis               /
144                 CETERI Cetraria ericetorum                     /
145                 CETPIN Cetraria pinastri                       /
146                 CETNIV Cetraria nivalis                        /
147                 CLACAP Cladonia capitata                       /
148                 CLACEN Cladonia cenotea                        /
149                 CLACHL Cladonia chlorophaea                    /
150                 CLACOC Cladonia coccifera                      /
151                 CLACON Cladonia coniocraea                     /
152                 CLACOR Cladonia cornuta                        /
153                 CLACRP Cladonia crispata                       /
154                 CLACRT Cladonia cristatella                    /
155                 CLAGON Cladonia gonecha                        /
156                 CLAGRA Cladonia gracilis                       /
157                 CLAMIT Cladina mitis                           /
158                 CLAMUL Cladonia multiformis                    /
159                 CLAPHY Cladonia phyllophora                    /
160                 CLAPYX Cladonia pyxidata                       /
161                 CLARAN Cladina rangiferina                     /
162                 CLASTE Cladina stellaris                       /
163                 CLASUB Cladonis subulata                       /
164                 CLAUNC Cladonia uncialis                       /
165                 CLAVER Cladonia verticillata                   /
166                 LECGRA Lecidea granulosa                       /
167                 PARSUL Parmelia sulcata                        /
168                 PELAPH Peltigera aphthosa                      /
169                 PELMAL Peltigera malacea                       /
170                 PELPUL Peltigera pulverulenta                  /
171                 PELRUF Peltigera rufescens                     /
172                 STEALP Stereocaulon alpinum                    /
173                 DITFLE Ditrichum flexicaule                    /
174                 USNSPP Usnea spp.                              /
175                 PLAGLA Platismatia glauca                      /
176                 PARHYP Parmeliopsis hyperopta                  /
177                 PARAMB Parmeliopsis ambigua                    /
178                 PARELE Parmelia elegantula                     /
179                 HYPPHY Hypogymnia physodes                     /
180                 EVEMES Evernia mesomorpha                      /
181                 CETHAL Cetraria halei                          /
182                 BRYSPP Bryoria spp.                            /
183                 CLAAMA Cladonia amaurocraea                    /
184                 CETCUC Cetraria cucullata                      /
185                 TOMNIT Tomenthypnum nitens                     /
186                 TETANG Tetraplodon angustatus                  /
187                 SPLSPP Splachnum spp.                          /
188                 CLACAR Cladonia cariosa                        /
189                 CLASQU Cladonia squamosa                       /
190                 BRYDPHCV Bryophyte Cover % per Plot /
191                 BRYDPHRP Bryophyte Spp. Richness per Plot /
192                 LCHTERCV Terr. Lichen Cover % per Plot /
193                 LCHTERRP Terr. Lichen Spp. Richness per Plot /
194                 LCHEPICV Epiph. Lichen Cover % per Plot /
195                 LCHEPIRP Epiph. Lichen Spp. Richness per Plot/
196                 LCHALLCV Lichen Cover % per Plot /
197                 LCHALLRP Lichen Spp. Richness per Plot /
198                 TOTALCV  Cover % per Plot of All Spp. /
199                 TOTALRP  Richness per Plot of All Spp. /
200 RUN SUBFILES   ALL
201 TASK NAME      Descriptive Statistics for Each Species Variable and Each Stand
202 USER1         AULPAL TO CLAVER LECGRA PELAPH TO USNSPP
203 OPTIONS       2
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***** GIVEN WORKSPACE OF 71680 BYTES ALLOWS FOR 500 VARIABLES FOR USER1 PROBLEM *****

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITFLE	DREUNC	EURPUL	HYLSPL	ORTFLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
S01N																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	3.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.010	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	15.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
Mean		.0	.0	.0	.00067	.0	.0	.0	.0	.00067	.0	.00067	.0	.00200	7.0207	.0	.0
S02N																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	.010	0.0	1.000	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	.010
	8C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.100	0.0	0.0	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100	0.0	0.0
	8I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	1.000	0.0	0.0	0.0
Mean		.0	.0	.0	.06533	.0	.0	.0	.0	.01467	.0	.00133	.0	.43533	.00733	.0	.00200
S03N																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	30.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	2.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.00733	11.867	.0	.0
S04N																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	2.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100	0.0	0.0
	4C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100	0.0	.010
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.010	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	.100	1.000	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	.100
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	1.000	0.0	0.0
Mean		0	.0	.0	.010	.0	.0	.0	.0	0.0	.0	0.0	.0	.010	.100	.0	.0
					.01733	.0	.0	.0	.0	.00067	.0	.00733	0	.34800	.50733	.0	.00733
S02																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	3.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.000	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0
Mean		.0	.0	.0	.00067	.0	.0	.0	.0	.0	.0	.0	.0	.00667	3.8000	.0	.0
S03																	
	0A	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	.010	0.0	0.0	0.0
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0	.100	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	.010	.010	0.0	0.0
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	8C	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITFLE	DREUNC	EURPUL	HYLSPL	ORTFLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
	8E	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0
Mean		.0	.00067	.00867	.30933	.0	.0	.0	.0	.02200	.0	1.4280	.00067	.00267	.00800	.00733	.0
S04																	
	0A	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	2.000	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	5.000	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	7.000	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	6.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	15.000	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	.100	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	5.000	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.010	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.010	0.0	0.0	0.0
Mean		.0	.0	.13333	.00867	.0	.0	.0	.0	.00067	.0	.07400	.0	.38200	3.0073	.0	.0
S05																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0G	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	1.000	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.010
	4G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
	4I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
Mean		.0	.00067	.0	.02400	.00067	.0	.0	.0	.0	.0	.00133	.0	.01200	.10867	.0	.00067
S07																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.100	1.000	0.0	0.0
	0E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	.010	0.0	.010
	0G	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4C	0.0	0.0	.100	.010	.010	0.0	0.0	0.0	0.0	0.0	.100	0.0	.100	1.000	0.0	0.0
	4E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	.100	.010	0.0	.100
	8C	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	.010
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
Mean		.0	.0	.02667	.03733	.00067	.0	.0	.0	.00133	.0	.08800	.0	.24800	.34800	.0	.00800
S08																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
Mean		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.00133	.12800	.0	.0
S09																	
	0A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	3.000	.100	15.000	0.0	.010	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	.010	15.000	0.0	.010	0.0	0.0	.100
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	.100	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	7.000	0.0	.100	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0
	4A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	20.000	0.0	55.000	0.0	0.0	0.0	0.0	.100
	4C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.100
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	2.000	0.0	5.000	0.0	2.000	0 0	0.0	.100
	4G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	5.000	0.0	30.000	0.0	.100	0.0	0.0	.010
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	10.000	.100	20.000	0.0	0.0	0.0	0.0	1.000
	8A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	5.000	0.0	50.000	0.0	0.0	0.0	0.0	.010
	8C	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	1.000	0.0	2.000	0.0	.010	0.0	0.0	0.0
	8E	0.0	0.0	.100	1.000	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	.100	0.0	0.0	.100
	8G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	3.000	0.0	.010	0.0	0.0	.010
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	.100	0.0	0.0	0.0
Mean		.0	.0	.00667	.32067	.00667	.0	.0	.0	3.2147	.01400	14.867	.0	.17000	.0	.0	.10200
S10																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0
	0C	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	1.000	0.0	0.0
	0E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.010
	0G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0

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in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITFLE	DREUNC	EURPUL	HYLSPL	ORTFLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
	4A	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	4G	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	.010
	8A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	.100	0.0	0.0
Mean		.0	.0	.0	.95333	.0	.0	.0	.0	.00800	.0	1.0867	.0	.00067	.14667	.0	.00133
S12																	
	0A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0	7.000	0.0	.100	0.0	0.0	0.0
	0C	0.0	0.0	0.0	1.000	.010	0.0	0.0	0.0	2.000	0.0	10.000	0.0	1.000	0.0	0.0	0.0
	0E	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	2.000	.100	0.0	0.0	0.0	3.000	0.0	15.000	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.100	0.0	0.0	.010
	4A	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	.100
	4C	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	0.0	.100
	4E	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	1.000	0.0	0.0	0.0
	4I	0.0	0.0	0.0	4.000	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100	0.0	0.0
	8C	0.0	0.0	0.0	2.000	.010	0.0	0.0	0.0	.100	0.0	1.000	0.0	3.000	0.0	0.0	0.0
	8E	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	0.0
	8G	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0
Mean		.0	.0	.0	1.9400	.00800	.0	.0	.0	.35400	.0	3.0733	.0	.50133	.01400	.0	.02067
S14																	
	0A	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.010	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0G	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	0I	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
	4C	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0
	4E	0.0	0.0	0.0	1.000	1.000	0.0	0.0	0.0	.010	0.0	1.000	0.0	.010	.100	0.0	0.0
	4G	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.010	0.0	0.0	0.0
	8A	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	1.000	2.000	0.0	0.0	0.0	0.0	0.0	2.000	0.0	.100	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	0.0	0.0
	8G	0.0	0.0	0.0	1.000	3.000	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	.010	0.0	0.0
	8I	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	.100	0.0	4.000	0.0	.100	0.0	0.0	0.0
Mean		.0	.0	.00133	.23533	.44133	.0	.0	.0	.00867	.0	.93333	.0	.31467	.00933	.0	.00667
S15																	
	0A	0.0	.010	0.0	.010	0.0	0.0	0.0	.010	4.000	0.0	2.000	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	4.000	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000	0.0	.100	0.0	.010	0.0	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	8.000	0.0	.010	0.0	0.0	.100
	0I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	1.000	0.0	5.000	0.0	.010	0.0	0.0	.100
	4A	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	3.000	0.0	2.000	0.0	.010	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	.100
	4E	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	2.000	0.0	3.000	0.0	.010	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	.100
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	.010
	8A	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	1.000	0.0	2.000	0.0	.010	0.0	0.0	.010
	8C	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	2.000	0.0	3.000	0.0	0.0	0.0	0.0	.100
	8E	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	1.000	0.0	3.000	0.0	0.0	0.0	0.0	0.0
	8G	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	1.000	0.0	7.000	0.0	0.0	0.0	0.0	.100
	8I	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	.100	0.0	0.0	0.0
Mean		.0	.00133	.06733	.01800	.00867	.0	.0	.00133	2.2020	.0	3.0867	.0	.01133	.0	.0	.04200
S16																	
	0A	0.0	.010	.100	.100	.010	0.0	0.0	0.0	3.000	0.0	3.000	0.0	.100	0.0	0.0	0.0
	0C	0.0	0.0	.100	.100	.010	0.0	0.0	0.0	3.000	0.0	50.000	0.0	1.000	0.0	0.0	.100
	0E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	2.000	0.0	20.000	0.0	1.000	0.0	0.0	.100
	0G	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	30.000	0.0	35.000	.010	.100	0.0	0.0	.010
	0I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	3.000	0.0	8.000	0.0	1.000	0.0	0.0	0.0
	4A	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	85.000	.010	0.10	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	15.000	0.0	80.000	0.0	010	0.0	0.0	0.0
	4E	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	25.000	0.0	30.000	0.0	100	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	30.000	0.0	.100	0.0	0.0	0.0
	4I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	20.000	0.0	50.000	0.0	100	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	25.000	0.0	1.000	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	15.000	0.0	40.000	0.0	.100	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.100	.010	0.0	0.0	0.0	15.000	0.0	80.000	0.0	.010	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	15.000	0.0	3.000	0.0	0.0	0.0
	8I	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	1.000	0.0	0.0	.100
Mean		.0	.00667	.00667	.06733	.00333	.0	.0	.0	12.607	.0	33.733	.00133	.57533	.0	.0	.02800

```
TRANSPACE REQUIRED...        1000 BYTES
      10 TRANSFORMATIONS
       9 RECODE VALUES + LAG VARIABLES
      77 IF/COMPUTE OPERATIONS

CPU TIME REQUIRED...      0.88 SECONDS


      54 REPORT          FORMAT = HOSPACE(1) BRKSPACE(0) FTSPACE(0) LIST    /
      55                 VARIABLES = PLOTNO'Plot'(4) PTICC  TO CLACOC (6)   /
      56                 HEAD = 'Athabasca Oil Sands Ecological Monitoring Program'
      57                 'August 1982 Survey of Bryophyte and Lichen Plant Communities'
      58                 'in Pinus banksiana Reference Stands'
      59                 'Species Cover % Values by 5x5 m Plots' /
      60                 BREAK = SUBFILE 'Stand' (5)                        /
      61                 SUMMARY = MEAN 'Mean'

REPORT REQUIRES      2884 BYTES FOR THIS TASK
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Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PTICC	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAN	CLASTE	CLAAMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
S01N																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	.010	0.0	0.0	0.0	0.0	1.000
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	.010	.010	0.0	0.0	0.0	.100	2.000
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4E	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4G	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8G	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	.0	.0	.0	.0	.03667	.0	14.613	.0	.00067	.00133	.0	.0	.00067	.01067	.37000
S02N																	
	0A	0.0	0.0	0.0	0.0	0.0	.010	0.0	80.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	.100	.010	75.000	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	.010	85.000	.100	1.000	.010	0.0	0.0	0.0	.100	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	70.000	0.0	.100	.010	0.0	0.0	0.0	.100	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	2.000	.010	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	2.000	.010	0.0	0.0	0.0	0.0	0.0
	8A	.010	0.0	0.0	0.0	0.0	.100	0.0	65.000	0.0	1.000	.010	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	.100	.010	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	.100	75.000	.100	2.000	0.0	0.0	0.0	.010	.100	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	.010	80.000	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	2.000	.100	0.0	0.0	0.0	.010	0.0
Mean		.00067	.0	.0	.0	.0	.08800	.01000	77.000	.02000	.90733	.01200	.0	.0	.00067	.03133	.0
S03N																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	.010	0.0	0.0	.010	.100
	4C	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4I	0.0	0.0	0.0	0.0	0.0	.010	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	8E	0.0	0.0	0.0	0.0	0.0	.100	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8I	0.0	0.0	0.0	0.0	0.0	0.0	.010	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	.0	.0	.0	.0	.18267	.00067	2.1333	.0	.0	.0	.00067	.0	.00133	.00333	.08800
S04N																	
	0A	0.0	0.0	0.0	0.0	0.0	.010	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	.100
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	60.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	.010	.010
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	30.000	0.0	.010	0.0	0.0	0.0	0.0	.010	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	.010	.010	.100	
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	.0	.0	.0	.0	.03533	.0	15.341	.0	.00067	.0	.0	.00067	.00067	.08533	.03333
S02																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0I	0.0	0.0	0.0	0.0	0.0	.100	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4G	0.0	0.0	0.0	0.0	0.0	.010	0.0	7.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	5.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.100
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	4.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	2.000	0.0	.010	0.0	0.0	0.0	0.0	0.0	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
Mean		.0	.0	.0	.0	.0	.14800	.0	30.467	.0	.00067	.00067	.0	.0	.00067	.07467	.32800
S03																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	.010	0.0	0.0	0.0	.010	.010	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	.010	0.0	0.0	0.0	.010	.100	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	.010	10.000	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.010	0.0	55.000	0.0	100	0.0	0.0	0.0	.010	.010	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	.100	0.0	0.0	0.0	.010	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	.010	.100	0.0	0.0	0.0	0.0	.010	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PTICIL	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAN	CLASTE	CLAAMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.010	85.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.000	0.0	.010	0.0	.010	0.0	.010	.010	0.0
Mean		.0	.0	.0	.0	.0	.00067	.00133	40.867	.00067	.10333	.0	.00067	.0	.00467	.01400	.0
S04																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	30.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.010	.010	25.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	55.000	0.0	.010	0.0	.010	0.0	0.0	.010	.010
	0I	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	0.0	0.0	.010	0.0	.010	.010	1.000
	4A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	35.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	0.0	0.0	.010	0.0	.010	.100	.100
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	30.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	.010	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
Mean		.0	.0	.0	.0	.0	.30200	.00067	35.067	.0	.00067	.0	.00333	.0	.00400	.01933	.15133
S05																	
	0A	0.0	0.0	0.0	0.0	0.0	.100	0.0	85.000	.010	.100	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	.010	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	.100	0.0	0.0	0.0	.010	0.0	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	.010	80.000	0.0	.100	0.0	.010	0.0	.010	.010	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.100	.010	80.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	1.000	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	.010	.010	0.0	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.100	.010	70.000	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	0.0	45.000	0.0	.100	0.0	0.0	0.0	0.0	.100	0.0
	8G	0.0	0.0	.010	0.0	0.0	.100	0.0	80.000	0.0	.100	0.0	.010	0.0	.010	.010	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	.010	75.000	0.0	1.000	0.0	0.0	0.0	.010	.100	0.0
Mean		.0	.0	.00067	.0	.0	.14067	.00267	68.000	.00133	.37533	.0	.00133	.0	.00333	.02000	.00200
S07																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	.010	45.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	0E	0.0	.010	0.0	0.0	0.0	.010	0.0	25.000	0.0	.010	0.0	0.0	0.0	0.0	.100	0.0
	0G	0.0	0.0	0.0	0.0	0.0	.010	0.0	50.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0	0.0	0.0	0.0	.010	100	.010
	4E	0.0	0.0	0.0	0.0	0.0	.100	0.0	55.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.010	.010	65.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	4I	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8A	.100	0.0	0.0	0.0	0.0	.010	0.0	20.000	0.0	0.0	0.0	0.0	0.0	.010	100	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.010	75.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	75.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
Mean		.00667	.00067	.0	.0	.0	.01733	.00200	52.000	0	.00067	.0	.0	.0	.00533	.05600	.00267
S08																	
	0A	0.0	0.0	0.0	0.0	0.0	100	.010	80.000	.010	.100	0.0	0.0	0.0	0.0	100	0.0
	0C	0.0	0.0	0.0	0.0	0.0	100	.010	60.000	0.0	1.000	0.0	0.0	0.0	.010	.100	0.0
	0E	0.0	0.0	0.0	0.0	0.0	100	.100	80.000	0.0	1.000	0.0	.010	0.0	.010	100	.100
	0G	0.0	0.0	0.0	0.0	0.0	100	.100	75.000	0.0	1.000	0.0	0.0	0.0	.010	.100	.100
	0I	0.0	0.0	0.0	0.0	0.0	100	.010	75.000	0.0	100	0.0	0.0	0.0	0.0	0.0	.010
	4A	0.0	0.0	0.0	0.0	0.0	100	.010	85.000	0.0	1.000	0.0	0.0	0.0	0.0	010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	100	.010	70.000	0.0	100	0.0	0.0	0.0	0.0	0.0	.010
	4E	0.0	0.0	0.0	0.0	0.0	100	0.0	55.000	.010	.010	0.0	0.0	0.0	0.0	100	0.0
	4G	0.0	0.0	0.0	0.0	0.0	100	0.0	55.000	0.0	100	0.0	0.0	0.0	.010	100	0.0
	4I	0.0	0.0	0.0	0.0	0.0	100	.010	50.000	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	55.000	0.0	100	0.0	0.0	0.0	0.0	0.0	.010
	8C	0.0	0.0	0.0	0.0	0.0	100	0.0	55.000	0.0	100	0.0	0.0	0.0	.010	100	100
	8E	0.0	0.0	0.0	0.0	0.0	100	.010	75.000	0.0	1.000	0.0	0.0	0.0	0.0	1.000	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	100	90.000	0.0	1.000	0.0	0.0	0.0	0.0	100	0.0
	8I	0.0	0.0	0.0	0.0	0.0	1.000	0.0	75.000	0.0	100	0.0	0.0	0.0	.010	.010	100
Mean		.0	.0	.0	.0	.0	21400	.02467	70.333	.00133	.44200	0	.00133	.0	.00400	.11533	.02867
S09																	
	0A	1.000	0.0	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	010	0.0
	0C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0E	100	0.0	0.0	0.0	0.0	.010	0.0	75.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0G	.010	0.0	0.0	0.0	0.0	.010	0.0	65.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	0I	0.0	0.0	0.0	0.0	0.0	.010	0.0	70.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4A	2.000	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4E	.010	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4G	100	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	0.0	0.0	0.0	0.0	0.0	010	.010
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.000	0.0	100	0.0	0.0	0.0	0.0	0.0	0.0
	8A	100	0.0	0.0	0.0	0.0	0.0	0.0	30.000	0.0	1.000	0.0	0.0	0.0	0.0	010	0.0
	8C	100	0.0	0.0	0.0	0.0	010	0.0	85.000	0.0	100	0.0	0.0	0.0	0.0	010	0.0
	8E	1.000	0.0	0.0	0.0	0.0	.010	0.0	55.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.36133	.0	.0	.0	.0	.00400	.0	50.800	.0	.15333	.0	.0	.0	.0	.02067	.00200
S10																	
	0A	0.0	0.0	0.0	0.0	0.0	1.000	0.0	85.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	75.000	0.0	2.000	0.0	0.0	0.0	0.0	100	0.0
	0E	100	0.0	0.0	0.0	0.0	100	010	75.000	010	2.000	0.0	0.0	0.0	0.0	0.0	010
	0G	100	0.0	0.0	0.0	0.0	100	100	75.000	010	1.000	0.0	0.0	0.0	0.0	010	0.0
	0I	1.000	0.0	0.0	0.0	0.0	100	0.0	50.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PTICC	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAN	CLASTE	CLAAMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACDC
	4A	0.0	0.0	0.0	0.0	0.0	.100	.100	75.000	0.0	1.000	0.0	0.0	0.0	0.0	.100	0.0
	4C	0.0	0.0	0.0	0.0	0.0	1.000	.100	70.000	0.0	2.000	0.0	0.0	0.0	0.0	.010	0.0
	4E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	75.000	.010	2.000	0.0	0.0	0.0	.010	.010	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	.010	60.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	4I	.010	0.0	0.0	0.0	0.0	.100	0.0	75.000	.010	2.000	0.0	0.0	0.0	0.0	.100	0.0
	8A	.100	0.0	0.0	0.0	0.0	.010	0.0	70.000	0.0	2.000	0.0	.010	0.0	0.0	0.0	0.0
	8C	.010	0.0	0.0	0.0	0.0	1.000	.010	75.000	0.0	1.000	.010	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	1.000	0.0	60.000	0.0	5.000	0.0	0.0	0.0	0.0	.010	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.100	.010	75.000	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	0.0	0.0	0.0	0.0	.100	.100	80.000	0.0	.100	0.0	0.0	0.0	.010	.010	0.0
Mean		.08800	.0	.0	.0	.0	.45400	.02933	70.333	.00267	1.5133	.00067	.00067	.0	.00133	.02400	.00067
S12																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.000	0.0	.010	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.000	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	.100	0.0	8.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	0I	0.0	0.0	0.0	0.0	0.0	.010	0.0	20.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	.100	0.0	0.0	0.0	0.0	.100	.010
	4E	0.0	0.0	0.0	0.0	0.0	.010	0.0	10.000	0.0	0.0	.010	0.0	0.0	0.0	1.000	0.0
	4G	0.0	0.0	0.0	0.0	0.0	.100	0.0	25.000	0.0	.010	.010	0.0	0.0	0.0	.010	0.0
	4I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.100	0.0	40.000	0.0	.100	.100	0.0	0.0	0.0	.010	.100
	8C	0.0	0.0	0.0	0.0	0.0	.100	0.0	75.000	.010	.100	.100	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	85.000	0.0	.010	0.0	0.0	0.0	.010	.100	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.100	0.0	80.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	8I	0.0	0.0	0.0	0.0	0.0	.100	0.0	15.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
Mean		.0	.0	.0	.0	.0	.05533	.0	39.533	.00067	.03533	.02133	.0	.0	.00133	.09733	.01667
S14																	
	0A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	.100
	4E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	.100	.100
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	.100	0.0
	8A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0
Mean		.0	.0	.0	.0	.0	.00067	.0	.48200	.0	.0	.00067	.00133	.0	.0	.03200	.02267
S15																	
	0A	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.100	0.0	.010
	0C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	0E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	1.000	0.0	0.0	.010	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	0I	.100	0.0	0.0	0.0	0.0	0.0	.010	35.000	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0
	4A	.100	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	.100	0.0	0.0	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	4E	.100	.010	0.0	0.0	0.0	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.000	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010
	4I	.100	0.0	0.0	0.0	0.0	0.0	0.0	25.000	0.0	.010	0.0	0.0	0.0	.010	2.000	.010
	8A	1.000	0.0	0.0	0.0	0.0	0.0	.010	8.000	0.0	0.0	0.0	0.0	0.0	.010	.010	.010
	8C	.100	0.0	0.0	0.0	0.0	0.0	0.0	6.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8E	.010	0.0	0.0	0.0	0.0	0.0	0.0	7.000	0.0	0.0	0.0	0.0	0.0	.010	.100	.010
	8G	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	8I	1.000	0.0	0.0	0.0	0.0	.010	0.0	7.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
Mean		.30800	.00067	.0	.00067	.0	.00067	.00133	8.0747	.0	.00133	.0	.0	.0	.01200	.14200	.00600
S16																	
	0A	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	0C	1.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0
	0E	.100	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	.010
	0G	.100	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	0I	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	4C	5.000	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	4E	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4G	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	4I	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8A	.100	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	.010	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0
	8G	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8I	2.000	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
Mean		.70800	.0	.0	.0	.0	.00067	.0	1.2213	.0	.00067	.0	.0	.0	.00467	.01333	.00067

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Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLAGON	CLAGRA	CLAMUL	CLAPHY	CLAPYX	CLASOU	CLASUB	CLAUNC	CLAVER	LECGRA	PELAPH	PELMAL
S01N																	
	0A	0.0	.100	0.0	0.0	0.0	2.000	.100	2.000	0.0	0.0	0.0	.010	0.0	0.0	1.000	5.000
	0C	0.0	1.000	0.0	.010	0.0	1.000	.100	1.000	.010	0.0	0.0	0.0	0.0	0.0	.100	3.000
	0E	0.0	.100	0.0	0.0	0.0	1.000	.010	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	0G	0.0	2.000	0.0	5.000	0.0	0.0	.100	1.000	.100	0.0	.010	0.0	0.0	0.0	0.0	.010
	0I	0.0	1.000	0.0	2.000	0.0	.010	.010	1.000	0.0	0.0	0.0	.010	0.0	.100	0.0	1.000
	4A	0.0	0.0	0.0	.100	0.0	.010	.100	.100	.100	0.0	0.0	0.0	0.0	1.000	0.0	1.000
	4C	0.0	.100	0.0	.100	.010	.010	0.0	1.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	2.000
	4E	0.0	.100	0.0	2.000	0.0	.100	.100	1.000	0.0	0.0	.010	0.0	.010	.010	0.0	1.000
	4G	0.0	.010	0.0	.010	.010	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	1.000	0.0	.100
	4I	0.0	2.000	0.0	.100	.010	.100	.010	2.000	0.0	0.0	.010	0.0	0.0	.100	0.0	.100
	8A	0.0	0.0	0.0	1.000	0.0	0.0	.010	2.000	0.0	0.0	0.0	0.0	0.0	.010	.010	3.000
	8C	0.0	.100	0.0	.010	0.0	.100	.010	.100	0.0	0.0	.010	1.000	0.0	0.0	0.0	1.000
	8E	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	8G	0.0	0.0	0.0	.010	0.0	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	8I	0.0	.100	0.0	.100	0.0	.100	0.0	2.000	.100	0.0	0.0	0.0	.010	.100	0.0	2.000
Mean		.0	.44067	.0	.59600	.00200	.29667	.03667	1.0213	.02733	.0	.00267	.06800	.00200	.15467	.07400	1.5140
S02N																	
	0A	0.0	1.000	0.0	0.0	.100	.100	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	.100
	0C	0.0	.100	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0E	0.0	.100	0.0	0.0	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	.100
	0G	0.0	1.000	0.0	0.0	.100	.100	.100	.100	0.0	0.0	0.0	0.0	.010	0.0	0.0	2.000
	0I	0.0	.100	0.0	0.0	.010	.010	.010	.100	0.0	0.0	0.0	1.000	0.0	0.0	.100	5.000
	4A	0.0	1.000	0.0	.010	0.0	.100	0.0	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0	2.000
	4C	0.0	.100	0.0	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	5.000	0.0	0.0	0.0	0.0
	4E	0.0	.100	0.0	0.0	0.0	.100	.010	.100	0.0	0.0	0.0	20.000	0.0	0.0	0.0	1.000
	4G	0.0	1.000	0.0	0.0	.100	2.000	0.0	.100	0.0	0.0	0.0	25.000	0.0	0.0	0.0	.100
	4I	0.0	.100	0.0	0.0	.100	.100	.100	.010	0.0	0.0	0.0	1.000	0.0	0.0	0.0	5.000
	8A	0.0	1.000	0.0	.010	.010	.100	.100	.100	0.0	0.0	0.0	2.000	0.0	0.0	0.0	3.000
	8C	0.0	.100	0.0	0.0	0.0	1.000	.010	.010	0.0	0.0	0.0	4.000	0.0	0.0	0.0	5.000
	8E	0.0	.100	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	2.000
	8G	0.0	.100	0.0	0.0	0.0	.100	.100	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0	.100
	8I	0.0	.100	0.0	.010	.010	1.000	0.0	0.0	0.0	0.0	0.0	3.000	0.0	0.0	0.0	2.000
Mean		.0	.40000	.0	.00200	.04267	.38800	.02933	.08200	.0	.0	.0	4.2800	.00067	.0	.01333	1.8833
S03N																	
	0A	0.0	2.000	0.0	.010	.010	3.000	.010	.100	.010	0.0	0.0	0.0	.010	0.0	.100	2.000
	0C	0.0	.100	0.0	0.0	.010	.100	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	0E	0.0	.100	0.0	.010	0.0	.100	1.000	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	0G	0.0	.010	0.0	.100	0.0	.100	0.0	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	0I	0.0	.100	0.0	.100	0.0	.100	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	10.000
	4A	0.0	.010	0.0	.010	0.0	.100	0.0	1.000	.010	0.0	0.0	0.0	.010	0.0	0.0	1.000
	4C	0.0	.100	0.0	.010	0.0	.010	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	4E	0.0	.100	0.0	.010	0.0	.100	.010	.100	.010	0.0	0.0	.010	0.0	0.0	.100	3.000
	4G	0.0	1.000	0.0	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	.010	0.0	0.0	.100	1.000
	4I	0.0	.100	0.0	.010	0.0	1.000	.010	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	15.000
	8A	0.0	.100	0.0	0.0	0.0	.100	0.0	1.000	.010	0.0	0.0	.100	0.0	0.0	.100	5.000
	8C	0.0	.100	0.0	0.0	.010	.010	.100	.100	.010	0.0	0.0	.010	.010	0.0	0.0	0.0
	8E	0.0	.100	0.0	.010	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	5.000
	8G	0.0	.100	0.0	.010	0.0	.100	0.0	1.000	0.0	0.0	.010	0.0	0.0	.010	.010	2.000
	8I	0.0	.100	0.0	.100	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	.100	2.000
Mean		.0	.27467	.0	.02600	.00200	.32833	.05267	.45000	.00467	0	.00067	.02267	.00267	.00200	.03467	3.5333
S04N																	
	0A	0.0	.100	.010	.010	.010	.100	.100	1.000	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0C	0.0	0.0	0.0	0.0	0.0	.010	.010	.100	.010	0.0	0.0	5.000	0.0	0.0	0.0	.100
	0E	0.0	.100	.010	0.0	.010	.100	.100	.100	0.0	0.0	0.0	4.000	0.0	0.0	0.0	2.000
	0G	0.0	.010	0.0	0.0	0.0	1.000	.010	.100	0.0	0.0	0.0	10.000	0.0	0.0	0.0	4.000
	0I	0.0	0.0	0.0	.010	0.0	.100	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	4A	0.0	2.000	0.0	0.0	0.0	3.000	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4C	0.0	.010	0.0	.010	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.100	0.0	0.0	.010	.100	0.0	.100	.010	0.0	0.0	3.000	0.0	0.0	0.0	1.000
	4G	0.0	2.000	0.0	.010	0.0	3.000	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	.100
	4I	0.0	0.0	0.0	0.0	.010	2.000	.010	.100	0.0	0.0	0.0	10.000	0.0	0.0	0.0	2.000
	8A	0.0	2.000	0.0	.010	0.0	1.000	0.0	1.000	0.0	0.0	0.0	1.000	0.0	0.0	0.0	4.000
	8C	0.0	.010	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	3.000	0.0	0.0	0.0	3.000	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0
	8G	0.0	2.000	0.0	0.0	.010	2.000	.010	1.000	0.0	0.0	0.0	1.000	0.0	0.0	0.0	1.000
	8I	0.0	1.000	.010	0.0	0.0	5.000	.100	2.000	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0
Mean		.0	.82200	.00200	.00333	.00467	1.5813	.02267	.52000	.00133	.0	.0	2.4873	0	.0	.0	1.1467
S02																	
	0A	0.0	4.000	0.0	0.0	0.0	7.000	0.0	1.000	.010	0.0	0.0	5.000	0.0	0.0	0.0	0.0
	0C	0.0	1.000	0.0	.010	0.0	10.000	.100	.100	0.0	0.0	0.0	100	0.0	0.0	0.0	1.000
	0E	0.0	1.000	0.0	.010	0.0	1.000	0.0	0.0	0.0	0.0	0.0	100	0.0	0.0	0.0	.100
	0G	0.0	2.000	0.0	0.0	.100	4.000	.100	.100	0.0	0.0	0.0	3.000	0.0	0.0	0.0	0.0
	0I	0.0	2.000	0.0	0.0	0.0	3.000	.100	0.0	0.0	0.0	0.0	2.000	0.0	0.0	0.0	.100
	4A	0.0	2.000	0.0	0.0	.010	2.000	0.0	1.000	.010	0.0	0.0	7.000	0.0	0.0	0.0	0.0
	4C	0.0	.100	0.0	.010	0.0	1.000	.100	.100	.010	0.0	0.0	20.000	0.0	0.0	0.0	3.000
	4E	0.0	1.000	0.0	0.0	0.0	3.000	.100	.100	.010	0.0	0.0	3.000	0.0	0.0	0.0	0.0
	4G	0.0	1.000	0.0	.010	0.0	5.000	.100	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	4I	0.0	1.000	0.0	.010	.010	2.000	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8A	0.0	3.000	0.0	.010	.010	5.000	.100	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	100
	8C	0.0	1.000	0.0	.010	.010	5.000	0.0	.100	.010	0.0	0.0	3.000	0.0	0.0	0.0	.100
	8E	0.0	1.000	0.0	0.0	.010	5.000	.100	0.0	0.0	0.0	0.0	100	0.0	0.0	0.0	0.0
	8G	0.0	.100	0.0	.010	0.0	1.000	.100	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0
	8I	0.0	1.000	0.0	0.0	.010	3.000	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100
Mean		.0	1.4133	.0	.00533	.01067	3.8000	.05067	.17467	.00400	.0	0	3.0207	.0	.0	.0	.36667
S03																	
	0A	.010	0.0	0.0	.010	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	0C	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	0E	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000
	0G	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	0I	.010	.010	0.0	.010	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4C	0.0	.010	0.0	.010	.010	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4E	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4G	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	0.0	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.010	0.0	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLAGON	CLAGRA	CLAMUL	CLAPHY	CLAPYX	CLASQU	CLASUB	CLAUNC	CLAVER	LECGRA	PELAPH	PELMAL
	8E	0.0	0.0	0.0	.010	.010	.010	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0
	8G	0.0	.010	0.0	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8I	0.0	.010	0.0	.010	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.00133	.00467	.0	.00733	.00333	.01533	.03000	.00133	.0	.0	.0	.00067	.0	.0	.07333	.35400
S04																	
	0A	0.0	0.0	0.0	.010	.010	.100	1.000	1.000	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0C	0.0	0.0	0.0	.010	0.0	.100	.010	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	0E	0.0	.100	0.0	.010	.010	1.000	1.000	1.000	.010	0.0	0.0	.010	.010	0.0	0.0	1.000
	0G	0.0	.100	0.0	.010	.010	1.000	.100	2.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010
	0I	0.0	.100	.010	.010	0.0	.100	1.000	1.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	3.000
	4A	0.0	.100	0.0	0.0	.010	.100	.100	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	4C	0.0	1.000	0.0	.010	.010	1.000	.100	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	4E	0.0	1.000	.010	.010	0.0	.010	.100	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4G	0.0	1.000	0.0	.010	.010	1.000	.100	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	4I	.010	.100	0.0	10.000	0.0	1.000	0.0	2.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8A	0.0	1.000	0.0	.010	0.0	1.000	.100	.100	0.0	0.0	0.0	.100	.010	0.0	0.0	.100
	8C	0.0	1.000	0.0	0.0	0.0	.100	.100	1.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	8E	0.0	1.000	0.0	.010	.010	.010	.100	.100	0.0	0.0	0.0	.010	0.0	0.0	0.0	2.000
	8G	0.0	.100	0.0	.010	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8I	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.00067	.44000	.00133	.67400	.00533	.43533	.26133	1.1467	.00133	.0	.0	.00933	.00200	.0	.0	1.2140
S05																	
	0A	0.0	.100	0.0	.010	.100	0.0	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	.100
	0C	0.0	.100	0.0	.010	.010	.100	1.000	.010	0.0	0.0	0.0	.100	0.0	0.0	0.0	2.000
	0E	0.0	1.000	0.0	0.0	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	0G	0.0	.100	0.0	.010	.010	.010	.100	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	4.000
	0I	0.0	.100	0.0	.010	.100	.100	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	2.000
	4A	0.0	.100	0.0	.010	.010	.010	.100	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	3.000
	4C	0.0	.100	0.0	0.0	0.0	.100	.100	.100	0.0	0.0	0.0	.010	0.0	0.0	0.0	3.000
	4E	0.0	.100	0.0	.010	.010	.100	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	.100	3.000
	4G	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000	0.0	0.0	0.0	.100	0.0	0.0	0.0	2.000
	4I	0.0	.100	0.0	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	8A	0.0	.100	0.0	.010	0.0	.100	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	4.000
	8C	0.0	.100	0.0	0.0	.010	.100	.100	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	2.000
	8E	0.0	.100	0.0	.010	.010	.100	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	8G	0.0	.100	0.0	.010	.100	.100	.100	.100	0.0	0.0	0.0	.010	0.0	0.0	0.0	3.000
	8I	0.0	.100	0.0	0.0	.010	1.000	.100	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
Mean		.0	.15333	.0	.00667	.02533	.06800	.45400	.13467	.0	.0	.0	.05200	.0	.0	.00667	2.4733
S07																	
	0A	0.0	.100	0.0	.010	.010	.100	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	0C	0.0	1.000	.010	.010	.010	1.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	4.000
	0E	0.0	1.000	0.0	.010	.010	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	0G	0.0	.100	0.0	.010	.010	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	5.000
	0I	0.0	.100	0.0	.010	.010	.100	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	4.000
	4A	0.0	.100	0.0	.010	0.0	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4C	0.0	1.000	0.0	.010	.100	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	4E	0.0	1.000	0.0	.100	.010	.100	.100	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000
	4G	0.0	2.000	0.0	.010	0.0	.100	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	4I	0.0	.100	0.0	.010	.100	.100	1.000	1.000	.010	0.0	0.0	0.0	0.0	0.0	.100	2.000
	8A	0.0	2.000	0.0	.010	.010	.100	1.000	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8C	0.0	1.000	0.0	.010	0.0	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	2.000
	8E	0.0	.100	0.0	0.0	.010	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	8G	0.0	1.000	0.0	.010	0.0	.100	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8I	0.0	.100	0.0	.010	.100	1.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000
Mean		.0	.71333	.00067	.01533	.02533	.21400	.46000	.18867	.00067	.0	.0	.0	.0	.0	.15333	2.3400
S08																	
	0A	0.0	.100	0.0	.100	0.0	.100	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0C	0.0	1.000	0.0	.100	.010	.100	1.000	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0E	0.0	.100	0.0	.100	.100	.100	1.000	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0G	0.0	.100	0.0	.100	.010	.100	1.000	0.0	0.0	0.0	.010	1.000	0.0	0.0	0.0	2.000
	0I	0.0	.100	.010	.010	.010	.100	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4A	0.0	.100	0.0	.100	.100	.010	.100	1.000	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0
	4C	0.0	.100	0.0	0.0	.010	0.0	1.000	0.0	.010	0.0	0.0	2.000	0.0	0.0	0.0	1.000
	4E	0.0	.100	0.0	.010	.010	.100	1.000	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	4G	0.0	.100	0.0	.010	.010	.100	1.000	.010	0.0	0.0	0.0	.100	.010	0.0	0.0	.100
	4I	0.0	0.0	0.0	.010	.100	1.000	1.000	.100	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0
	8A	0.0	1.000	0.0	.010	.100	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	.100	0.0	.100	.010	.100	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000
	8E	0.0	.100	0.0	.010	.010	.100	0.0	.100	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	8G	0.0	.100	0.0	.010	0.0	.100	.010	0.0	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0
	8I	0.0	.100	0.0	.100	.010	.100	1.000	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean		.0	.21333	.00067	.05133	.03267	.20733	.74067	.17400	.00133	.0	.00067	.31400	.00067	.0	.0	.81333
S09																	
	0A	0.0	.010	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	0C	.010	.100	0.0	0.0	.010	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.000
	0E	0.0	1.000	0.0	.010	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	0G	0.0	.100	.010	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.000
	0I	0.0	.100	0.0	.100	.010	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	4A	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	.010	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	2.000
	4E	0.0	.100	0.0	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	2.000
	4G	0.0	.100	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000
	4I	0.0	.100	0.0	0.0	.100	.100	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	2.000
	8A	0.0	.100	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	8C	0.0	.010	0.0	0.0	0.0	.010	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	4.000
	8E	0.0	.100	0.0	.010	.010	.100	.100	.010	0.0	0.0	0.0	.010	0.0	0.0	.100	2.000
	8G	0.0	.100	0.0	.010	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	5.000
	8I	0.0	1.000	0.0	0.0	.010	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	3.000
Mean		.00067	.19600	.00067	.00867	.01667	.05800	.05133	.00333	.0	.0	.0	.00133	.0	.0	.36000	2.8333
S10																	
	0A	0.0	.100	0.0	0.0	0.0	.100	1.000	.100	.010	0.0	0.0	.100	0.0	0.0	0.0	2.000
	0C	0.0	1.000	0.0	.010	.010	1.000	.100	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0	1.000
	0E	0.0	1.000	0.0	.010	0.0	1.000	.100	.100	0.0	0.0	0.0	1.000	0.0	0.0	0.0	2.000
	0G	0.0	.100	0.0	0.0	0.0	.100	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	3.000
	0I	0.0	.010	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	2.000

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values by 5x5 m Plots

Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLAGON	CLAGRA	CLAMUL	CLAPHY	CLAPYX	CLASOU	CLASUB	CLAUNC	CLAVER	LECCRA	PELAPH	PELMAL
	4A	0.0	1.000	0.0	0.0	0.0	1.000	.010	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	4C	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	4E	0.0	2.000	.010	.010	.010	2.000	0.0	.100	0.0	.010	0.0	.100	0.0	0.0	0.0	2.000
	4G	0.0	2.000	0.0	.010	0.0	1.000	0.0	.010	0.0	0.0	0.0	1.000	0.0	0.0	0.0	.100
	4I	0.0	1.000	0.0	0.0	0.0	.100	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.100
	8A	0.0	1.000	0.0	.010	.010	.100	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	2.000
	8C	0.0	.100	0.0	0.0	0.0	.100	.100	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	3.000
	8E	0.0	.100	0.0	0.0	0.0	.100	0.0	.010	0.0	0.0	0.0	1.000	0.0	0.0	0.0	2.000
	8G	0.0	.100	0.0	0.0	.010	.100	.100	.100	0.0	0.0	0.0	1.000	0.0	0.0	.010	1.000
	8I	0.0	.100	0.0	0.0	.010	.100	0.0	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	2.000
Mean		.0	.64733	.00067	.00333	.00333	.46867	.09467	.05533	.00067	.00067	.0	.43600	.0	.0	.00067	1.8133
S12																	
	0A	0.0	.100	0.0	0.0	0.0	.100	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.000
	0C	0.0	1.000	0.0	0.0	0.0	.100	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	0E	0.0	0.0	0.0	0.0	.010	2.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	0G	0.0	1.000	0.0	0.0	.010	1.000	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	0I	0.0	2.000	0.0	0.0	0.0	3.000	.100	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	4A	0.0	1.000	0.0	0.0	0.0	2.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
	4C	0.0	.100	0.0	.010	.010	2.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4E	0.0	.100	0.0	0.0	0.0	1.000	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100
	4G	0.0	1.000	0.0	.010	0.0	2.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.000
	4I	0.0	.100	0.0	.010	.010	100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	3.000
	8A	0.0	1.000	0.0	.010	0.0	2.000	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	1.000	0.0	.100	.010	1.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8E	0.0	.100	0.0	0.0	0.0	2.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.000
	8G	0.0	2.000	0.0	.010	.010	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.000
	8I	0.0	1.000	0.0	0.0	0.0	2.000	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000
Mean		.0	.76667	.0	.01000	.00400	1.4200	.07333	.05533	.00067	.0	.0	.0	.0	.0	.00667	2.4133
S14																	
	0A	0.0	.010	0.0	.010	.010	.100	.010	.010	0.0	0.0	0.0	.100	0.0	0.0	.010	2.000
	0C	0.0	.010	0.0	.100	.010	0.0	.010	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	0E	0.0	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	.010	.010	0.0	.100	2.000
	0G	0.0	.010	0.0	.100	0.0	.010	.100	.100	0.0	0.0	0.0	.100	0.0	0.0	0.0	1.000
	0I	0.0	.100	0.0	.010	0.0	1.000	.100	.010	0.0	0.0	0.0	1.000	0.0	0.0	.100	2.000
	4A	0.0	1.000	0.0	.010	0.0	.100	.100	1.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	4C	0.0	1.000	0.0	.010	.010	.100	0.0	1.000	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	4E	0.0	0.0	0.0	.010	0.0	1.000	.100	.100	0.0	0.0	0.0	.010	0.0	0.0	.010	3.000
	4G	0.0	.100	0.0	0.0	0.0	.100	1.000	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	2.000
	4I	.100	1.000	0.0	.010	0.0	.100	.010	1.000	0.0	0.0	0.0	.010	.010	0.0	.010	1.000
	8A	0.0	.010	0.0	.010	.010	.010	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.100
	8C	0.0	.100	0.0	.010	0.0	.010	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	100	1.000
	8E	0.0	1.000	0.0	0.0	.010	1.000	1.000	.100	0.0	0.0	0.0	2.000	0.0	0.0	0.0	4.000
	8G	0.0	0.0	0.0	.010	0.0	100	.100	.100	0.0	0.0	0.0	.010	0.0	0.0	0.0	1.000
	8I	0.0	0.0	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	.100	0.0	0.0	.100	3.000
Mean		.00667	.28933	.0	.01333	.00333	.24833	.16333	.23533	.0	.0	.0	.22800	.00200	.0	.02867	1.8733
S15																	
	0A	0.0	.100	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	0C	0.0	0.0	0.0	0.0	0.0	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	0E	0.0	.010	0.0	.010	0.0	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	3.000	0.0
	0G	0.0	.100	0.0	.010	0.0	.100	1.000	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	.100	0.0	0.0	0.0	.010	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000
	4A	0.0	1.000	0.0	0.0	0.0	.100	.100	.010	0.0	0.0	0.0	.010	0.0	0.0	.100	0.0
	4C	0.0	1.000	0.0	0.0	.100	.100	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4E	0.0	.100	0.0	.010	.010	.100	1.000	.010	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000
	4G	0.0	.100	0.0	.010	0.0	0.0	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4I	0.0	2.000	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	1.000
	8A	0.0	1.000	0.0	.010	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	1.000
	8C	0.0	.100	0.0	0.0	0.0	.010	.100	.010	0.0	0.0	0.0	0.0	.010	0.0	100	1.000
	8E	0.0	1.000	0.0	0.0	.010	.100	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000
	8G	0.0	1.000	0.0	0.0	0.0	.010	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	.010	2.000
	8I	0.0	.100	0.0	0.0	.010	0.0	1.000	.100	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0
Mean		.0	.51400	.0	.00333	.00833	.05000	.33400	.04267	.0	.0	.00067	.00067	.00067	.0	.42800	.53333
S16																	
	0A	0.0	.100	0.0	.010	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	0C	0.0	.100	0.0	.010	.010	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	0E	0.0	.100	0.0	.010	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0G	0.0	.010	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0
	0I	0.0	1.000	0.0	.010	.010	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.000	0.0
	4A	0.0	.010	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	0.0
	4C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	4E	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.100	1.000
	4G	0.0	.010	0.0	0.0	0.0	.010	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	4I	0.0	.010	0.0	0.0	.010	.010	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0
	8A	0.0	1.000	0.0	.010	.010	.100	1.000	.100	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	8C	0.0	.010	0.0	0.0	.010	.010	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.100	.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	8G	0.0	100	0.0	0.0	.010	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0
	8I	0.0	1.000	0.0	0.0	0.0	.100	.100	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010
Mean		.0	.23000	.0	.00400	.00533	.05800	.12867	.00833	.0	.0	.0	.0	.0	.0	.88800	.06733

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in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PELPUL	PELRUF	STEALP	BRYSPP	CETHAL	CETPIN	EVEMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
S01N															
	0A	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
	0C	0.0	0.0	.010	0.0	0.0	10.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0E	0.0	0.0	0.0	0.0	.010	.100	0.0	1.000	0.0	.100	0.0	0.0	0.0	.010
	0G	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0I	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	0.0	.010
	4C	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
	4E	0.0	.010	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0
	4G	0.0	0.0	0.0	0.0	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4I	0.0	.010	0.0	0.0	0.0	.100	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8C	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	0.0	0.0	0.0	.100
	8G	0.0	.010	0.0	.010	0.0	.010	0.0	.100	0.0	0.0	.010	0.0	0.0	.010
	8I	0.0	0.0	.010	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
Mean		.0	.00200	.00133	.00067	.00133	.68800	.00067	.08733	.0	.00800	.01133	.00267	.0	.00933
S02N															
	0A	0.0	0.0	0.0	.010	.100	.010	.010	.100	0.0	0.0	.010	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.100	.010	.010	.100	0.0	0.0	.010	.010	0.0	.100
	0E	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	0.0	.010	.010	0.0	1.000
	0G	0.0	0.0	0.0	.100	.100	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	1.000	.010	.010	.010	0.0	0.0	.010	.010	0.0	.100
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	4E	0.0	0.0	0.0	.010	.100	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	4G	0.0	0.0	0.0	.010	.100	.010	.100	.100	0.0	0.0	.010	.010	0.0	.100
	4I	0.0	0.0	0.0	.010	.100	.010	.010	.100	0.0	.010	.010	.010	0.0	.010
	8A	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.100
	8E	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	0.0	.010	.010	0.0	.100
	8G	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	.010	.010	.010	0.0	.100
	8I	0.0	0.0	0.0	.010	1.000	.010	.010	.100	0.0	.100	.010	.010	0.0	.100
Mean		.0	.0	.0	.01600	.20800	.01000	.01800	.05200	.0	.01000	.01000	.01000	.0	.13000
S03N															
	0A	0.0	0.0	0.0	.010	.010	.010	0.0	0.0	0.0	0.0	.100	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	0.0	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.010	0.0	0.0	0.0	0.0	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.010	.010	0.0	0.0	0.0	.010	0.0	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	0.0	.100	0.0	0.0	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	0.0	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.010	0.0	.010
Mean		.0	.0	.0	.00933	.00867	.02800	.00333	.01333	.0	.0	.05200	.00867	.0	.01000
S04N															
	0A	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	.010	1.000	.100	0.0	.010
	0C	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	.010
	0E	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	.010	.010	.100	0.0	0.0
	0G	0.0	0.0	0.0	0.0	.010	.010	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0
	0I	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.100	.010	0.0	.100
	4C	0.0	0.0	0.0	.010	0.0	.010	.010	.010	0.0	0.0	.100	0.0	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	0.0	0.0	.010
	4G	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.100	.010	0.0	0.0	.010	.010	0.0	1.000
	8E	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.100	.010	.100	.010	0.0	.010	.010	.010	0.0	2.000
	8I	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	0.0	0.0	.010
Mean		.0	.0	.0	.00733	.01333	.02200	.01533	.00733	.0	.00267	.08733	.01800	.0	.21333
S02															
	0A	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.100	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.100	.100	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.100	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	.010	.100	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.100	.100	.010	.100	0.0	.010	.100	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		.0	.0	.0	.01000	.02200	.02800	.01000	.01600	.0	.00733	.04600	.02200	.0	.01000
S03															
	0A	0.0	0.0	0.0	0.0	.010	.100	.010	0.0	0.0	0.0	0.0	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	0E	0.0	0.0	0.0	0.0	.010	.010	0.0	.100	0.0	.100	0.0	0.0	0.0	0.0
	0G	0.0	0.0	0.0	.010	.010	.010	0.0	.100	0.0	.010	.100	.100	0.0	.010
	0I	0.0	0.0	0.0	.010	.100	.010	0.0	.010	0.0	0.0	.010	.010	0.0	0.0
	4A	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4C	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	.010	.010	.100	0.0	0.0
	4E	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.100	0.0	0.0	.010
	4G	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	.100	0.0	0.0	0.0	0.0
	4I	0.0	0.0	0.0	0.0	0.0	.100	.010	.010	0.0	0.0	.100	0.0	0.0	.010
	8A	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	8C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.010	0.0	.010	.010	0.0	0.0	0.0

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PELPUL	PELRUF	STEALP	BRYSPP	CETHAL	CETPIN	EVEMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
	8E	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0
	8G	0.0	0.0	0.0	0.0	0.0	.010	0.0	0.0	0.0	0.0	.100	.010	0.0	.010
	8I	0.0	0.0	0.0	0.0	0.0	.010	0.0	.100	0.0	0.0	.010	.010	0.0	0.0
Mean		.0	.0	.0	.00200	.00400	.03333	.00267	.03067	.0	.01800	.03733	.01733	.0	.00467
S04															
	0A	0.0	0.0	0.0	.010	.100	.100	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.010	.010	0.0	0.0	0.0	.100	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.100	.010	.100	0.0	.010
Mean		0	.0	.0	.01000	.02200	.01800	.01000	.02133	.0	.01200	.02200	.01800	.00067	.01000
S05															
	0A	0.0	0.0	0.0	.010	.010	.100	.100	.100	0.0	.010	.010	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.100	.100	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.010	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.010	.010	0.0	.010
	4C	0.0	.100	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.010	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.100	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.100	.010	0.0	.010
Mean		.0	.00667	.0	.01000	.01800	.08200	.01600	.02800	.0	.00667	.03400	.01000	.0	.01000
S07															
	0A	.010	.010	0.0	.010	1.000	.100	.010	2.000	0.0	.010	.100	.100	0.0	1.000
	0C	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.010	.100	0.0	.100
	0E	0.0	.010	0.0	.010	.100	.100	.010	.100	0.0	0.0	.100	.010	0.0	.010
	0G	0.0	0.0	0.0	.100	.010	.010	.010	.100	0.0	0.0	.010	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.100	.100	.010	.100	0.0	0.0	.010	.010	0.0	.100
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.100	.010	1.000	0.0	0.0	.100	.010	0.0	.010
	4E	0.0	0.0	.010	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.100	.100	.010	.100	0.0	0.0	.010	.010	0.0	.100
	4I	0.0	0.0	0.0	.010	.100	.100	0.0	.010	0.0	0.0	.100	.100	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	.010	.010	1.000	0.0	0.0	.100	.010	0.0	.100
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.100	.100	0.0	.100
	8E	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.010	.100	0.0	.100
	8G	0.0	0.0	0.0	.010	.010	.010	.010	1.000	0.0	0.0	1.000	.100	0.0	.010
	8I	0.0	0.0	0.0	.010	.100	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		.00667	.00133	.00067	.01800	.10800	.05800	.00933	.37667	.0	.00133	.11800	.05200	.0	.11200
S08															
	0A	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.010	0.0	.010
	0G	0.0	.010	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.100	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	0.0	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	1.000	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.100	.010	.010	.100	0.0	0.0	1.000	.100	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	0.0	.100	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	0.0	.100	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		.0	.00067	.0	.01000	.01800	.04800	.01000	.04000	.0	.0	.17733	.02133	.0	.01000
S09															
	0A	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	0.0	.010	.100	0.0	.100
	0C	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.100	.010	1.000	0.0	1.000
	0E	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.010	.100	0.0	.100
	0G	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.010	.010	0.0	.100
	0I	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.010	.010	0.0	.100
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	4C	0.0	0.0	0.0	.010	.010	.100	.100	.100	0.0	.010	.010	.010	0.0	.100
	4E	0.0	0.0	0.0	.010	.010	.100	.100	.010	0.0	.010	.010	.010	0.0	.100
	4G	2.000	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.100
	4I	0.0	0.0	0.0	.010	.010	.100	.010	100	0.0	0.0	.010	.010	0.0	.100
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.100
	8C	0.0	0.0	0.0	.100	.010	.010	.010	100	0.0	.010	.010	.010	0.0	.100
	8E	0.0	0.0	0.0	.010	.010	.010	0.0	.100	0.0	0.0	.100	.100	0.0	1.000
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		13333	.0	.0	.01600	.01000	.05800	.02067	06400	.0	.01200	.02200	.03400	0	.20200
S10															
	0A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.010	010	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.010	010	0.0	.010
	0E	0.0	0.0	0.0	.010	010	010	.010	010	0.0	0.0	100	010	0.0	010
	0G	0.0	0.0	0.0	.010	100	100	.100	100	0.0	0.0	.100	.010	0.0	100
	0I	0.0	0.0	0.0	.010	1.000	.010	.100	1.000	0.0	0.0	.010	.010	0.0	1.000

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in Pinus banksiana Reference Stands
Species Cover % Values by 5x5 m Plots

Stand	Plot	PELPUL	PELRUF	STEALP	BRYSPP	CETHAL	CETPIN	EVEMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
	4A	0.0	0.0	0.0	.010	.100	.010	.010	1.000	0.0	0.0	.010	.010	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4E	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	0.0	.100	.100	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.100	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	8A	0.0	0.0	0.0	.010	.010	1.000	.010	.100	0.0	0.0	.100	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.100	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	0.0	.010	0.0	.010
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		.0	.0	.0	.01000	.08800	.09400	.02200	.17800	.0	.0	.04533	.01600	.0	.08200
S12															
	0A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	0.0	.010	.010	0.0	.100
	0C	0.0	0.0	1.000	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	0I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	1.000
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.100	.010	0.0	.100
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8C	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.100	.010	.100	0.0	.100
	8I	1.000	0.0	0.0	.010	0.0	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
Mean		.06667	.0	.06667	.01000	.00933	.01800	.01000	.04000	.0	.01200	.02200	.01600	.0	.10600
S14															
	0A	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.100
	0C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.010
	0E	0.0	0.0	0.0	.010	.010	.100	.010	.010	0.0	.010	.100	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
	0I	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.010
	4A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	4C	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.100	.010	0.0	.100
	4E	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	0.0	.100	.010	0.0	.010
	4G	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.100	.010	.100	0.0	.100
	4I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.100	.010	0.0	.100
	8A	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.010	.010	0.0	.100
	8C	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	.010	.100	.100	0.0	.100
	8E	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.100	.010	.010	0.0	.100
	8G	0.0	0.0	0.0	.010	.010	.010	.010	.100	0.0	.010	.100	.010	0.0	.100
	8I	0.0	0.0	0.0	.010	.010	.010	.010	.010	0.0	.010	.010	.010	0.0	.010
Mean		.0	.0	.0	.01000	.01000	.02200	.01000	.05400	.0	.02133	.04800	.02200	.0	.05400
S15															
	0A	0.0	0.0	0.0	.010	.010	.100	.010	.100	0.0	0.0	.100	0.0	0.0	.010
	0C	0.0	0.0	0.0	.010	.010	.100	0.0	.100	0.0	0.0	0.0	0.0	0.0	.010
	0E	0.0	1.000	0.0	.010	.010	.100	.010	.100	0.0	0.0	.010	.010	0.0	.010
	0G	0.0	0.0	0.0	.010	.010	.100	0.0	.100	0.0	0.0	.100	.010	0.0	.010
	0I	0.0	0.0	.010	.010	.010	1.000	0.0	.010	0.0	0.0	.100	0.0	0.0	.010
	4A	0.0	.100	.100	.010	.100	.100	0.0	.100	0.0	0.0	.100	.100	0.0	.010
	4C	0.0	0.0	0.0	.010	.100	.100	.010	.100	0.0	0.0	.100	.100	0.0	.010
	4E	0.0	.010	0.0	.010	.010	.100	0.0	.100	0.0	0.0	.100	.010	0.0	.010
	4G	0.0	.010	0.0	.010	.010	.010	.010	.100	0.0	0.0	.010	.100	0.0	.010
	4I	0.0	0.0	0.0	0.0	.010	.100	0.0	.010	0.0	0.0	.100	.010	0.0	0.0
	8A	0.0	1.000	0.0	.010	0.0	.010	0.0	.010	0.0	0.0	.100	.010	0.0	.010
	8C	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8E	0.0	0.0	0.0	.010	.010	.100	0.0	.100	0.0	0.0	.010	.010	0.0	.010
	8G	0.0	1.000	.100	.010	.010	.010	0.0	.100	0.0	.010	.100	.100	0.0	.010
	8I	0.0	.010	.010	.010	.010	.100	0.0	.100	0.0	.010	.010	.010	0.0	.010
Mean		.0	.20867	.01467	.00867	.02067	.20200	.00267	.07533	.0	.00133	.06267	.03133	.0	.00867
S16															
	0A	0.0	.100	1.000	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.100
	0C	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	0E	0.0	.100	1.000	.010	.010	.100	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	0G	0.0	1.000	0.0	.010	.010	.010	.010	.010	0.0	0.0	.010	.010	0.0	.010
	0I	0.0	.010	.010	.010	.010	.100	0.0	.100	0.0	0.0	.010	.010	0.0	.010
	4A	0.0	.100	.100	.010	.010	.010	0.0	.100	0.0	0.0	.010	.010	0.0	.010
	4C	0.0	1.000	0.0	.010	.010	.100	0.0	.100	0.0	0.0	.010	0.0	0.0	.010
	4E	0.0	.100	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	4G	0.0	.100	.010	.010	.010	.100	0.0	.010	0.0	0.0	.010	.010	0.0	.100
	4I	0.0	0.0	0.0	.010	.010	.100	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	8A	0.0	1.000	1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	8C	0.0	0.0	0.0	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.100
	8E	0.0	.100	.100	.010	.010	.010	0.0	.010	0.0	0.0	.010	.010	0.0	.010
	8G	0.0	0.0	0.0	.010	.100	.100	.010	.100	0.0	0.0	.010	.010	0.0	.100
	8I	0.0	0.0	.010	.010	.010	.100	0.0	.100	0.0	0.0	.010	.010	0.0	.100
Mean		.0	.24067	.21533	.00933	.01533	.05733	.00133	.03933	.0	.0	.00933	.00867	.0	.03933

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Stand	Plot	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
S01N											
	0A	3.010	2	51.330	11	.030	3	51.350	14	54.380	16
	0C	1.010	3	26.440	13	10.000	1	36.440	14	37.450	16
	0E	.040	4	7.120	7	1.220	5	8.340	12	8.380	16
	0G	30.000	1	35.440	13	.010	1	35.450	14	65.450	15
	0I	10.000	1	37.030	10	.010	1	37.040	11	47.040	12
	4A	1.000	1	4.440	10	.130	4	4.570	14	5.570	15
	4C	4.000	1	22.380	12	.030	3	22.390	15	26.390	16
	4E	5.000	1	7.520	11	.030	3	7.550	14	12.550	15
	4G	.100	1	1.170	9	.160	7	1.330	16	1.430	17
	4I	30.000	1	10.550	16	.110	2	10.660	16	40.660	17
	8A	15.010	2	31.230	9	.020	2	31.250	11	46.260	13
	8C	5.000	1	17.350	11	.010	1	17.360	12	22.360	13
	8E	.100	1	2.140	6	.220	4	2.360	10	2.460	11
	8G	.100	1	3.280	10	.140	5	3.400	15	3.500	16
	8I	1.000	1	34.720	12	.020	2	34.740	14	35.740	15
Mean		7.02467	1.40	19.47254	10.53	.80833	2.93	20.28197	13.47	27.30664	14.87
S02N											
	0A	1.000	1	82.510	9	.260	8	82.770	17	83.770	18
	0C	.100	1	78.430	10	.350	8	78.780	18	78.880	19
	0E	1.110	3	86.830	13	1.160	8	87.990	21	89.100	24
	0G	1.100	2	83.620	11	.270	9	83.880	20	84.980	22
	0I	.110	2	91.630	12	.170	8	91.800	20	91.910	22
	4A	.120	3	84.430	11	1.160	8	85.590	19	85.710	22
	4C	.010	1	91.340	10	.270	9	91.610	19	91.620	20
	4E	.020	2	91.620	11	.380	9	91.980	20	92.000	22
	4G	.020	2	90.430	12	.440	8	90.870	20	90.880	22
	4I	2.110	4	86.520	11	.270	9	86.790	20	90.900	24
	8A	.130	4	72.440	13	.170	8	72.610	21	72.740	25
	8C	1.010	2	90.340	11	.170	8	90.510	19	91.520	21
	8E	.130	4	80.510	11	.260	8	80.770	19	81.000	23
	8G	.200	2	81.630	11	.270	9	81.900	20	82.100	22
	8I	1.030	4	83.330	11	1.350	9	84.680	20	85.710	24
Mean		.54867	2.47	85.18061	11.13	.45200	8.40	85.64280	19.53	86.18826	22.00
S03N											
	0A	8.000	1	8.450	13	.150	6	8.600	19	16.600	20
	0C	3.000	1	4.230	9	.250	7	4.480	16	7.480	17
	0E	1.000	1	10.410	9	.160	7	10.570	16	11.570	17
	0G	50.000	1	5.440	10	.070	7	5.510	17	55.510	18
	0I	30.010	2	11.620	10	.060	6	11.680	16	41.690	18
	4A	25.000	1	4.280	13	.060	6	4.340	19	29.340	20
	4C	5.000	1	4.640	10	.160	7	4.800	17	9.800	18
	4E	3.000	1	7.550	13	.070	7	7.620	20	10.620	21
	4G	2.100	2	3.430	10	.080	8	3.510	18	5.610	20
	4I	4.000	1	18.430	10	.250	7	18.680	17	22.680	16
	8A	2.000	1	10.610	10	.130	4	10.740	14	12.740	15
	8C	2.000	1	1.470	12	.070	7	1.540	19	3.540	20
	8E	3.000	1	7.440	10	.070	7	7.510	17	10.510	18
	8G	30.000	1	4.650	12	.160	7	4.810	19	34.810	20
	8I	10.000	1	5.530	10	.260	8	5.790	18	15.790	19
Mean		11.87400	1.13	7.18533	10.73	.13333	5.73	7.31866	17.47	19.18266	18.80
S04N											
	0A	1.110	2	8.460	13	1.250	8	9.710	21	10.820	24
	0C	.100	1	85.250	9	.040	4	85.290	13	85.390	14
	0E	2.020	3	10.820	12	.130	4	10.950	16	12.770	19
	0G	.100	1	75.330	10	.030	3	75.360	13	75.460	14
	0I	1.100	2	11.420	8	.070	7	11.490	15	12.590	17
	4A	1.120	4	7.120	7	.340	7	7.460	14	8.580	18
	4C	1.010	2	.190	8	.130	6	.320	14	1.330	16
	4E	1.000	1	24.430	10	.070	7	24.500	17	25.500	18
	4G	1.000	1	10.430	10	.040	4	10.470	14	11.470	15
	4I	.110	2	19.330	10	.080	8	19.410	18	19.520	20
	8A	1.300	4	39.050	11	.050	5	39.100	16	40.400	20
	8C	.010	1	.040	4	1.160	8	1.200	12	1.210	13
	8E	220	4	8.030	7	.070	7	8.100	14	8.320	18
	8G	3.000	2	12.140	11	2.280	9	15.400	20	18.400	22
	8I	120	3	18.210	8	.080	6	18.270	14	18.390	17
Mean		.88800	2.27	22.08865	9.20	.38867	6.20	22.45832	15.40	23.34331	17.87
S02											
	0A	3.100	2	78.110	9	.270	9	78.380	18	82.480	20
	0C	1.000	1	87.510	10	.180	9	87.690	19	88.690	20
	0E	1.000	1	72.410	8	.080	8	72.490	16	73.490	17
	0G	2.000	1	64.500	9	.360	9	64.860	18	66.860	19
	0I	1.000	1	57.410	9	.180	9	57.590	18	58.590	19
	4A	4.000	1	27.220	9	.080	8	27.300	17	31.300	18
	4C	4.000	1	65.420	11	.090	9	65.510	20	69.510	21
	4E	1.000	1	33.310	9	.080	8	33.390	17	34.390	18
	4G	4.000	1	14.160	11	.270	9	14.430	20	18.430	21
	4I	1.000	1	9.240	9	.090	9	9.330	18	10.330	19
	8A	5.000	1	14.530	12	.180	9	14.710	21	19.710	22
	8C	8.000	1	39.430	11	.090	9	39.520	20	47.520	21
	8E	2.010	2	11.310	8	.460	9	11.780	17	13.770	19
	8G	2.000	1	4.430	10	.090	9	4.520	19	6.520	20
	8I	3.000	1	8.140	9	.080	8	8.220	17	11.220	18
Mean		2.80733	1.13	38.87531	9.80	.19133	8.73	40.06664	18.33	42.85397	19.47
S03											
	0A	16.110	4	.240	6	.140	5	.380	11	16.490	15
	0C	1.220	5	21.020	4	.070	7	21.090	11	22.310	16
	0E	4.010	3	44.150	8	.220	4	44.370	12	48.380	15
	0G	1.210	4	50.730	6	.350	8	50.580	14	51.790	18
	0I	.010	1	70.280	9	.140	9	70.400	14	70.410	15
	4A	.020	2	16.010	3	.010	1	16.020	4	16.040	6
	4C	1.100	2	10.070	8	.230	5	10.300	13	11.400	15
	4E	1.200	3	70.120	4	.280	8	70.380	12	71.580	15
	4G	.160	5	10.150	7	.120	3	10.270	10	10.410	15
	4I	.110	2	65.250	8	.230	5	65.480	13	65.590	15
	8A	.120	3	55.230	6	.140	5	55.370	11	55.490	14
	8C	1.110	3	75.340	8	.030	3	75.370	11	76.480	14

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Stand	Plot	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
	8E	.110	2	86.070	9	.020	2	86.090	11	86.200	13
	8G	.130	4	2.130	5	.130	4	2.260	9	2.390	13
	8I	.210	3	45.060	9	.130	4	45.210	13	45.420	16
Mean		1.78733	3.07	41.42331	6.67	.14800	4.60	41.57130	11.27	43.35863	14.33
S04											
	0A	6.000	3	32.280	11	.260	8	32.520	19	38.520	22
	0C	7.000	2	43.120	6	.090	9	43.210	15	50.210	17
	0E	7.100	2	30.180	15	.090	9	30.270	24	37.370	26
	0G	6.100	2	58.380	14	.160	7	58.540	21	64.640	23
	0I	15.100	2	71.270	14	.090	9	71.360	23	86.460	25
	4A	1.100	2	46.330	10	.180	9	46.510	19	47.610	21
	4C	.110	2	42.140	11	.090	9	42.230	20	42.340	22
	4E	1.100	2	25.140	10	.080	8	25.220	18	26.320	20
	4G	1.100	2	31.440	13	.080	8	31.520	21	32.620	23
	4I	1.010	2	33.320	9	.180	9	33.500	18	34.510	20
	8A	5.100	2	67.550	13	.080	8	67.630	21	72.730	23
	8C	1.010	2	78.310	8	.080	8	78.390	16	79.400	18
	8E	1.010	2	34.360	13	.180	9	34.540	22	35.550	24
	8G	.210	3	1.250	8	.180	9	1.430	17	1.640	20
	8I	1.010	2	.150	6	.280	10	.430	16	1.440	18
Mean		3.60400	2.13	39.67996	10.73	.14000	8.60	39.81995	18.33	43.42394	21.47
S05											
	0A	.110	2	86.740	13	.360	9	87.100	22	87.210	24
	0C	.210	3	79.450	13	.260	8	79.710	21	79.920	24
	0E	.100	1	79.420	9	.090	9	79.510	18	79.610	19
	0G	1.030	4	80.540	12	.180	8	80.720	21	81.750	25
	0I	0.0	0	53.650	14	.180	9	53.830	23	53.830	23
	4A	.020	2	84.370	13	.180	9	84.550	22	84.570	24
	4C	.120	3	43.610	9	.080	8	43.690	17	43.810	20
	4E	.130	4	39.540	12	.180	9	39.720	21	39.850	25
	4G	.120	3	79.300	7	.170	8	79.470	15	79.590	18
	4I	.120	3	74.420	9	.260	8	74.680	17	74.800	20
	8A	.010	1	85.540	12	.180	9	85.720	21	85.730	22
	8C	.010	1	72.640	12	.270	9	72.910	21	72.920	22
	8E	.110	2	47.540	11	.270	9	47.810	20	47.920	22
	8G	.030	3	83.760	15	.170	8	83.930	23	83.960	25
	8I	.110	2	78.540	13	.360	9	78.900	22	79.010	24
Mean		.14867	2.27	69.83727	11.60	.21267	8.67	70.14983	20.27	70.29859	22.53
S07											
	0A	.030	3	49.360	12	4.330	9	53.690	21	53.720	24
	0C	1.310	5	62.330	11	.350	8	62.680	19	63.990	24
	0E	.150	6	27.450	12	.440	8	27.890	20	28.040	26
	0G	.210	3	56.270	12	.260	8	56.530	20	56.740	23
	0I	.100	1	55.420	9	.440	8	55.860	17	55.960	18
	4A	1.200	3	71.510	8	.170	8	71.680	18	72.880	19
	4C	1.320	6	28.530	11	1.250	8	29.780	19	31.100	25
	4E	1.110	3	71.530	12	.170	8	71.700	20	72.810	23
	4G	1.000	1	69.250	11	.530	8	69.780	19	70.780	20
	4I	1.000	1	79.530	12	.430	7	79.960	18	80.960	20
	8A	1.420	7	24.250	11	1.340	8	25.590	19	27.010	26
	8C	1.310	5	68.360	11	.350	9	68.710	20	70.020	25
	8E	1.010	2	75.530	9	1.340	8	76.870	17	77.880	19
	8G	.200	2	23.230	9	1.070	8	24.300	17	24.500	19
	8I	.110	2	80.430	10	.260	8	80.690	18	80.800	20
Mean		.76533	3.33	56.19795	10.67	.84933	8.07	57.04727	18.73	57.81260	22.07
S08											
	0A	0.0	0	82.820	13	.260	8	83.080	21	83.080	21
	0C	.100	1	64.530	13	.260	8	64.790	21	64.890	22
	0E	.100	1	84.020	16	.080	8	84.100	24	84.200	25
	0G	.100	1	80.740	16	.170	8	80.910	24	81.010	25
	0I	.110	2	76.650	13	.260	8	76.910	21	77.020	23
	4A	.010	1	88.530	12	.080	8	88.610	20	88.620	21
	4C	.100	1	74.340	11	.160	7	74.500	18	74.600	19
	4E	0.0	0	57.550	13	1.160	8	58.710	21	58.710	21
	4G	1.000	1	55.640	12	1.340	8	57.980	20	58.880	21
	4I	.100	1	52.460	13	.170	8	52.630	21	52.730	22
	8A	.010	1	68.420	10	.350	8	68.770	18	68.780	18
	8C	.010	1	61.520	11	.350	8	61.870	19	61.880	20
	8E	.100	1	77.540	12	.080	8	77.620	20	77.720	21
	8G	.100	1	91.550	12	.080	8	91.630	20	91.730	21
	8I	.100	1	78.420	10	.160	7	78.580	17	78.680	18
Mean		.12833	.93	73.71527	12.47	.33067	7.87	74.04592	20.33	74.17525	21.27
S09											
	0A	19.210	6	11.040	6	.440	8	11.480	14	30.690	20
	0C	18.120	6	62.340	9	2.340	9	64.680	18	82.800	24
	0E	6.200	4	78.240	9	.450	9	78.690	18	84.890	22
	0G	7.220	5	75.430	9	.360	9	75.790	18	83.010	23
	0I	.020	2	72.250	9	.250	7	72.500	16	72.520	18
	4A	88.100	5	2.030	4	.270	9	2.300	13	90.400	18
	4C	2.110	3	43.220	7	.450	9	43.670	16	45.780	19
	4E	9.210	6	34.220	7	.450	8	34.670	16	43.880	22
	4G	35.310	6	28.420	9	.170	8	28.590	17	63.900	23
	4I	31.200	5	63.410	8	.360	9	63.770	17	94.970	22
	8A	55.210	5	32.140	8	.180	9	32.320	17	87.530	22
	8C	3.310	6	90.160	10	.270	9	90.430	19	93.740	25
	8E	5.310	7	57.550	12	1.330	7	58.880	19	64.190	26
	8G	4.120	5	81.340	10	.080	8	81.420	18	85.540	23
	8I	1.300	4	89.330	9	.080	8	89.410	17	90.710	21
Mean		18.06333	5.00	54.74129	8.40	.49867	8.47	55.23995	16.87	74.30327	21.87
S10											
	0A	1.000	1	70.410	10	.170	8	70.580	18	71.580	19
	0C	3.000	3	82.320	12	.170	8	82.490	20	85.490	23
	0E	3.110	4	82.340	13	.170	8	82.510	21	85.620	25
	0G	3.100	3	79.520	11	.620	8	80.240	19	83.340	22
	0I	3.100	4	53.220	7	3.140	8	56.360	15	59.460	19

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus Banksiana Reference Stands
Synthetic Cover & Richness Variables by 5x5 m Plots

Stand	Plot	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
	4A	2.100	2	78.330	11	1.160	8	80.490	18	82.590	21
	4C	1.900	2	74.320	9	.080	8	74.400	17	75.500	19
	4E	1.100	2	84.270	15	.350	8	84.620	23	85.720	25
	4G	3.000	2	84.330	10	.280	8	84.590	18	87.590	20
	4I	1.130	5	78.430	10	.080	8	78.510	18	79.640	23
	8A	4.120	5	76.140	10	1.250	8	77.390	18	81.510	23
	8C	1.110	3	80.530	12	.260	8	80.790	20	81.900	23
	8E	5.000	2	69.220	9	.170	8	69.390	17	74.390	19
	8G	1.100	2	79.330	12	.070	7	79.400	18	80.700	21
	8I	1.200	3	82.730	12	.080	8	82.810	20	84.010	23
Mean		2.28467	2.87	78.78262	10.87	.53533	7.93	78.31795	18.80	78.60261	21.87
S12											
	0A	8.200	4	44.330	8	.280	8	44.580	16	52.780	20
	0C	14.010	5	75.220	8	.090	9	75.310	17	89.320	22
	0E	7.100	3	12.320	8	.080	8	12.400	18	19.500	19
	0G	20.100	4	54.240	10	.270	9	54.510	18	74.610	23
	0I	6.110	4	28.230	9	1.080	9	29.310	18	35.420	22
	4A	1.200	3	45.400	8	.080	8	45.480	16	46.680	19
	4C	6.100	4	17.630	11	.270	9	17.900	20	24.000	24
	4E	1.010	2	12.330	9	.080	8	12.410	17	13.420	19
	4G	4.000	3	33.240	10	.170	8	33.410	18	37.410	21
	4I	9.100	3	38.520	9	.360	9	38.880	18	47.980	21
	8A	2.200	3	43.520	10	.090	9	43.610	19	45.810	22
	8C	6.110	5	78.620	12	.090	8	78.710	21	84.820	26
	8E	2.120	4	74.430	10	.090	9	74.520	19	76.640	23
	8G	1.100	2	86.330	10	.540	8	86.870	19	87.970	21
	8I	.210	3	21.310	9	.070	7	21.380	16	21.590	19
Mean		5.81133	3.47	44.84463	8.40	.24133	8.53	44.88596	17.93	50.78726	21.40
S14											
	0A	1.020	3	3.280	12	.180	8	3.460	21	4.460	24
	0C	.100	1	1.170	9	.180	9	1.350	18	1.450	19
	0E	.100	1	2.250	8	.270	9	2.520	17	2.620	18
	0G	.120	3	3.440	10	.090	9	3.530	19	3.650	22
	0I	1.010	2	4.440	11	.180	8	4.620	20	5.630	22
	4A	.220	4	3.630	10	.270	9	3.700	19	3.920	23
	4C	.230	5	3.260	11	.360	9	3.620	20	3.850	25
	4E	3.120	5	4.450	11	.170	8	4.620	19	7.740	25
	4G	1.210	4	3.220	8	.450	8	3.670	15	4.880	19
	4I	1.210	4	4.370	14	.270	9	4.640	23	5.850	27
	8A	2.200	3	.180	9	.270	9	.450	18	2.650	21
	8C	5.100	4	1.440	9	.540	9	1.980	18	7.080	22
	8E	3.200	4	9.220	9	.360	9	9.580	18	12.780	22
	8G	6.020	5	1.430	8	.360	9	1.790	17	7.810	22
	8I	4.400	5	8.410	9	.090	9	8.500	18	10.900	21
Mean		1.95067	3.80	3.68600	9.80	.26933	8.93	3.73533	18.53	5.68600	22.13
S15											
	0A	6.040	6	.430	7	.340	7	.770	14	6.810	20
	0C	24.100	4	1.130	5	.230	5	1.360	10	25.460	14
	0E	1.120	4	4.330	8	.250	8	4.590	18	5.710	20
	0G	9.120	6	4.240	8	.340	7	4.580	15	13.700	21
	0I	8.310	6	37.340	10	1.140	6	38.480	16	44.790	22
	4A	5.140	7	3.520	9	.520	7	4.040	16	9.180	23
	4C	2.210	4	6.420	8	.530	8	6.950	16	9.160	20
	4E	5.140	7	12.340	10	.340	7	12.680	17	17.820	24
	4G	.220	6	7.240	7	.260	8	7.500	15	7.720	19
	4I	.220	4	30.240	10	.230	5	30.470	15	30.690	19
	8A	4.040	7	12.260	13	.150	8	12.410	19	16.450	26
	8C	5.310	6	7.340	9	1.000	1	8.340	10	13.650	16
	8E	4.020	4	10.230	9	.250	7	10.480	16	14.500	20
	8G	8.120	5	10.340	11	.350	2	10.690	19	18.810	24
	8I	5.110	5	8.270	11	.260	8	8.530	19	13.640	24
Mean		5.74800	5.27	10.37799	9.00	.41333	8.53	10.79132	15.53	16.53932	20.80
S16											
	0A	6.230	8	3.350	11	.180	7	3.510	18	9.840	26
	0C	65.210	7	2.350	10	.180	7	2.510	17	67.720	24
	0E	23.300	6	3.430	9	.180	7	3.590	16	26.890	22
	0G	65.240	8	6.040	7	.080	8	6.120	15	71.360	23
	0I	12.100	4	5.260	11	.250	7	5.510	18	17.610	22
	4A	80.130	6	.540	10	.160	7	.700	17	80.830	23
	4C	80.020	5	3.020	5	.240	6	3.260	11	83.280	16
	4E	55.300	5	2.320	6	.070	7	2.390	13	57.690	18
	4G	51.100	4	.350	9	.250	7	.610	16	51.710	20
	4I	71.200	5	.150	7	.180	7	.320	14	71.520	19
	8A	41.100	4	8.220	10	0.0	0	8.220	10	49.320	14
	8C	55.300	5	1.050	6	.180	7	1.210	13	56.510	18
	8E	75.230	7	4.420	8	.070	7	4.490	15	79.720	22
	8G	23.100	4	1.340	8	.440	8	1.780	16	24.880	20
	8I	8.300	6	1.430	8	.340	7	1.770	15	10.070	21
Mean		47.53065	5.80	2.88800	8.33	.18000	6.80	3.06800	14.93	50.59864	20.53

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	AULPAL	BRASAL	CERPUR	DICPOL	DICSCO	DITFLE	DREUNC	EURPUL	HYLSPL	ORTFLA	PLESCH	POHNUT	POLJUN	POLPIL	PTICIL	PTIPUL
S01N Mean	.0	.0	.0	.00067	.0	.0	.0	.0	.00067	.0	.00067	.0	.00200	7.0207	.0	.0
S02N Mean	.0	.0	.0	.08533	.0	.0	.0	.0	.01467	.0	.00133	.0	.43533	.00733	.0	.00200
S03N Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.00733	11.867	.0	.0
S04N Mean	.0	.0	.0	.01733	.0	.0	.0	.0	.00067	.0	.00733	.0	.34800	.50733	.0	.00733
S02 Mean	.0	.0	.0	.00067	.0	.0	.0	.0	.0	.0	.0	.0	.00867	2.8000	.0	.0
S03 Mean	.0	.00067	.00867	.30933	.0	.0	.0	.0	.02200	.0	1.4280	.00067	.00267	.00800	.00733	.0
S04 Mean	.0	.0	.13333	.00867	.0	.0	.0	.0	.00067	.0	.07400	.0	.38200	3.0073	.0	.0
S05 Mean	.0	.00067	.0	.02400	.00067	.0	.0	.0	.0	.0	.00133	.0	.01200	.10867	.0	.00067
S07 Mean	.0	.0	.02667	.03733	.00067	.0	.0	.0	.00133	.0	.08800	.0	.24800	.34800	.0	.00800
S08 Mean	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.00133	.12800	.0	.0
S09 Mean	.0	.0	.00667	.32067	.00667	.0	.0	.0	3.2147	.01400	14.867	.0	.17000	.0	.0	.10200
S10 Mean	.0	.0	.0	.95333	.0	.0	.0	.0	.00800	.0	1.0867	.0	.00067	.14667	.0	.00133
S12 Mean	.0	.0	.0	1.9400	.00800	.0	.0	.0	.35400	.0	3.0733	.0	.50133	.01400	.0	.02067
S14 Mean	.0	.0	.00133	.23533	.44133	.0	.0	.0	.00867	.0	.93333	.0	.31467	.00833	.0	.00667
S15 Mean	.0	.00133	.05733	.01800	.00867	.0	.0	.00133	2.2020	.0	3.0867	.0	.01133	.0	.0	.04200
S16 Mean	.0	.00067	.00667	.06733	.00333	.0	.0	.0	12.407	.0	33.733	.00133	.57533	.0	.0	.02800

Athabasca Oil Sands Ecological Monitoring Program
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Species Cover % Values per 5x5 m Plot by Stand

Stand	PTICIL	SPLSPP	TETANG	TOMNIT	CETCUC	CETERI	CETNIV	CLAMIT	CLARAN	CLASTE	CLAAMA	CLACAP	CLACAR	CLACEN	CLACHL	CLACOC
S01N Mean	.0	.0	.0	.0	.0	.03667	.0	14.813	.0	.00067	.00133	.0	.0	.00067	.01067	.37000
S02N Mean	.00067	.0	.0	.0	.0	.08800	.01000	77.000	.02000	.90733	.01200	.0	.0	.00067	.03133	.0
S03N Mean	.0	.0	.0	.0	.0	.18267	.00067	2.1333	.0	.0	.0	.00067	.0	.00133	.00333	.08800
S04N Mean	.0	.0	.0	.0	.0	.03533	.0	15.341	.0	.00067	.0	.0	.00067	.00067	.08533	.03333
S02 Mean	.0	.0	.0	.0	.0	.14800	.0	30.467	.0	.00067	.00067	.0	.0	.00067	.07667	.32800
S03 Mean	.0	.0	.0	.0	.0	.00067	.00133	40.807	.00067	10333	.0	.00067	.0	.00467	.01600	.0
S04 Mean	.0	.0	.0	.0	.0	.30200	.00067	35.007	.0	.00067	.0	.00333	.0	.00400	.01933	.15133
S05 Mean	0	.0	.00067	.0	.0	.14067	.00267	88.000	.00133	.37533	.0	.00133	.0	.00333	.02000	.00200
S07 Mean	.00667	.00067	.0	.0	.0	.01733	.00200	52.000	.0	.00067	.0	.0	.0	.00533	.05800	.00267
S08 Mean	.0	.0	.0	.0	.0	.21400	.02467	70.333	.00133	.44200	.0	.00133	.0	.00400	.11533	.02867
S09 Mean	.38133	.0	.0	.0	.0	.00400	.0	50.800	.0	.15333	.0	.0	.0	.0	.02067	.00200
S10 Mean	.08800	.0	.0	.0	.0	.45600	.02933	70.333	.00267	1.5133	.00067	.00067	.0	.00133	.02400	.00067
S12 Mean	.0	.0	.0	.0	.0	.08533	.0	38.533	.00067	.03533	.02133	.0	.0	.00133	.05733	.01667
S14 Mean	0	.0	.0	.0	.0	.00067	.0	.49200	.0	0	.00067	.00133	.0	.0	.03200	.02267
S15 Mean	.30800	.00067	.0	.00067	.0	.00067	.00133	8.0747	.0	.00133	.0	.0	0	.01200	.14200	.00800
S16 Mean	.70800	.0	0	.0	.0	.00067	.0	1.2213	.0	.00067	.0	.0	.0	.00467	.01333	.00067

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	Plot	CLACON	CLACOR	CLACRP	CLACRT	CLAGON	CLAGRA	CLAMUL	CLAPHY	CLAPYX	CLASOU	CLASUB	CLAUNC	CLAVER	LECGRA	PELAPH	PELMAL
S01N	Mean	.0	.44067	.0	.69600	.00200	.29667	.03667	1.0213	.02733	.0	.00267	.06800	.00200	.15467	.07400	1.6140
S02N	Mean	.0	.40000	.0	.00200	.04267	.38800	.02933	.05200	.0	.0	.0	4.2800	.00067	.0	.01333	1.8933
S03N	Mean	.0	.27467	.0	.02600	.00200	.32933	.08267	.46000	.00467	.0	.00067	.02267	.00267	.00200	.03467	3.5333
S04N	Mean	.0	.82200	.00200	.00333	.00467	1.5513	.02267	.52000	.00133	.0	.0	2.4873	.0	.0	.0	1.1467
S02	Mean	.0	1.4133	.0	.00533	.01067	3.8000	.06067	.17467	.00400	.0	.0	3.0207	.0	.0	.0	.36667
S03	Mean	.00133	.00467	.0	.00733	.00333	.01533	.03000	.00133	.0	.0	.0	.00067	.0	.0	.07333	.35400
S04	Mean	.00067	.44000	.00133	.67400	.00533	.43533	.26133	1.1467	.00133	.0	.0	.00933	.00200	.0	.0	1.2140
S05	Mean	.0	.15333	.0	.00667	.02533	.06800	.45400	.13467	.0	.0	.0	.06200	.0	.0	.00867	2.4733
S07	Mean	.0	.71333	.00067	.01533	.02533	.21400	.46000	.18867	.00067	.0	.0	.0	.0	.0	.15333	2.3400
S08	Mean	.0	.21333	.00067	.05133	.03267	.20733	.74067	.17400	.00133	.0	.00067	.31400	.00067	.0	.0	.81333
S09	Mean	.00067	.19600	.00067	.00867	.01667	.05800	.05133	.00333	.0	.0	.0	.00133	.0	.0	.36000	2.9333
S10	Mean	.0	.84733	.00067	.00333	.00333	.46667	.09467	.05533	.00067	.00067	.0	.43600	.0	.0	.00067	1.6133
S12	Mean	.0	.76667	.0	.01000	.00400	1.4200	.07333	.05533	.00067	.0	.0	.0	.0	.0	.00667	2.4133
S14	Mean	.00667	.28933	.0	.01933	.00333	.24933	.18333	.23533	.0	.0	.0	.22600	.00200	.0	.02867	1.5733
S15	Mean	.0	.51400	.0	.00333	.00933	.05000	.33400	.04267	.0	.0	.00067	.00067	.00067	.0	.42800	.53333
S16	Mean	.0	.23000	.0	.00400	.00533	.05600	.12867	.00933	.0	.0	.0	.0	.0	.0	.68800	.05733

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Species Cover % Values per 5x5 m Plot by Stand

Stand	PELRUF	STEALP	BRYSPP	CETHAL	CETPIN	EVEMES	HYPPHY	PARELE	PARSUL	PARAMB	PARHYP	PLAGLA	USNSPP
S01N Mean	.00200	.00133	.00067	.00133	.58800	.00067	.08733	.0	.00800	.01133	.00267	.0	.00933
S02N Mean	.0	.0	.01800	.20800	.01000	.01800	.05200	.0	.01000	.01000	.01000	.0	.13000
S03N Mean	.0	.0	.00833	.00667	.02800	.00333	.01333	.0	.0	.05200	.00867	.0	.01000
S04N Mean	.0	.0	.00733	.01333	.02200	.01533	.00733	.0	.00267	.06733	01800	.0	.21333
S02 Mean	.0	.0	.01000	.02200	.02800	.01000	.01600	.0	.00733	.04800	.02200	.0	.01000
S03 Mean	.0	.0	.00200	.00400	.03333	.00267	.03067	.0	.01600	.03733	.01733	.0	.00467
S04 Mean	.0	.0	.01000	.02200	.01600	.01000	.02133	.0	.01200	.02200	.01600	.00067	.01000
S05 Mean	.00667	.0	.01000	.01600	.06200	.01600	.02800	.0	.00667	.03400	.01000	.0	.01000
S07 Mean	.00133	.00067	.01600	.10600	.05800	.00933	.37667	.0	.00133	.11800	.05200	0	.11200
S08 Mean	.00067	.0	.01000	.01800	.04800	.01000	.04000	.0	.0	.17733	.02133	.0	.01000
S09 Mean	.0	.0	01600	.01000	.05800	.02067	.06400	.0	.01200	.02200	.09400	.0	.20200
S10 Mean	.0	.0	.01000	.06800	.09400	.02200	.17800	.0	.0	.04533	01800	.0	.06200
S12 Mean	.0	.06667	.01000	.00933	.01800	.01000	.04000	.0	.01200	.02200	.01600	.0	.10600
S14 Mean	.0	.0	.01000	.01000	.02200	.01000	.06400	.0	.02133	.04800	.02200	.0	.06400
S15 Mean	.20667	.01467	.00867	.02067	.20200	.00267	.07533	.0	.00133	.06267	.03133	.0	.00867
S16 Mean	24067	.21533	.00933	.01533	.05733	.00133	.03933	.0	.0	.00933	.00867	.0	.03933

Athabasca Oil Sands Ecological Monitoring Program
August 1982 Survey of Bryophyte and Lichen Plant Communities
in Pinus banksiana Reference Stands
Synthetic Cover & Richness Variables by 5x5 m Plots by Stand

Stand	BRYOPHCV	BRYOPHRP	LCHTERCV	LCHTERRP	LCHEPICV	LCHEPIRP	LCHALLCV	LCHALLRP	TOTALCV	TOTALRP
S01N Mean	7.02467	1.40	19.47264	10.53	.80933	2.93	20.28197	13.47	27.30664	14.67
S02N Mean	.54567	2.47	85.18051	11.13	.46200	8.40	85.64260	19.53	86.18826	22.00
S03N Mean	11.87400	1.13	7.18533	10.73	.13333	6.73	7.31866	17.47	19.19266	18.60
S04N Mean	.88800	2.27	22.06865	8.20	.38667	6.20	22.45532	15.40	23.34331	17.67
S02 Mean	2.80733	1.13	39.87531	9.60	.17133	8.73	40.04864	18.33	42.85397	19.47
S03 Mean	1.78733	3.07	41.42331	6.67	.14800	4.60	41.57130	11.27	43.35863	14.33
S04 Mean	3.50400	2.13	39.67996	10.73	.14000	8.60	39.81995	19.33	43.42394	21.47
S05 Mean	.14867	2.27	69.93727	11.60	.21267	8.67	70.14993	20.27	70.29859	22.53
S07 Mean	.76533	3.33	56.19795	10.67	.84933	8.07	57.04727	18.73	57.81260	22.07
S08 Mean	.12933	.93	73.71527	12.47	.33067	7.87	74.04582	20.33	74.17525	21.27
S09 Mean	19.06333	5.00	54.74129	8.40	.49867	8.47	55.23995	16.87	74.30327	21.87
S10 Mean	2.28467	2.67	75.78262	10.67	.53533	7.93	76.31795	18.60	78.60261	21.67
S12 Mean	5.91133	3.47	44.64463	8.40	.24133	8.53	44.88596	17.93	50.79728	21.40
S14 Mean	1.95067	3.60	3.46600	9.60	.26933	8.93	3.73533	18.53	5.68600	22.13
S15 Mean	5.74800	5.27	10.37799	9.00	.41333	6.53	10.79132	15.53	16.53932	20.80
S16 Mean	47.53065	5.60	2.88600	8.33	.18000	8.60	3.06600	14.93	50.59664	20.53

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 13
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S01N S02N S03N S04N S02 S03 S04 S05 S07 S08
S09 S10 S12 S14 S15 S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	240	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	240	2.08	0.0002	0.001	0.000	0.443	-0.0	0.01
Ceratodon purpureus	CERPUR	240	6.25	0.0157	0.146	0.009	9.587	-0.0	2.00
Dicranum polysetum	DICPOL	240	53.75	0.2510	0.535	0.041	0.163	-0.0	5.00
Dicranum scoparium	DICSCO	240	10.83	0.0293	0.241	0.016	0.530	-0.0	3.00
Ditrichum flexicaule	DITFLE	240	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	240	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	240	0.83	0.0001	0.001	0.000	0.706	-0.0	0.01
Hylocomium splendens	HYLSPL	240	28.75	1.1395	4.113	0.265	0.233	-0.0	30.00
Orthodicranum flagillare	ORTFLA	240	1.25	0.0008	0.009	0.001	0.673	-0.0	0.10
Pleurozium schreberi	PLESCH	240	42.92	3.6466	11.178	0.722	0.198	-0.0	85.00
Pohlia nutans	POHNUT	240	1.25	0.0001	0.001	0.000	0.575	-0.0	0.01
Polytrichum juniperinum	POLJUN	240	52.50	0.1887	0.484	0.031	0.166	-0.0	3.00
Polytrichum piliferum	POLPIL	240	49.58	1.5232	5.527	0.357	0.220	-0.0	50.00
Ptilidium ciliare	PTICIL	240	0.83	0.0008	0.008	0.000	0.513	-0.0	0.10
Ptilidium pulcherrimum	PTIPUL	240	16.67	0.0137	0.070	0.005	0.330	-0.0	1.00
Ptilium crista-castrensis	PTICC	240	17.92	0.0920	0.420	0.027	0.295	-0.0	5.00
Splachnum spp.	SPLSPP	240	0.83	0.0001	0.001	0.000	0.706	-0.0	0.01
Tetraplodon angustatus	TETANG	240	0.42	0.0000	0.001	0.000	1.000	-0.0	0.01
Tomenthypnum nitens	TOMNIT	240	0.42	0.0000	0.001	0.000	1.000	-0.0	0.01
Cetraria cucullata	CETCUC	240	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	240	80.42	0.1050	0.244	0.016	0.150	-0.0	1.00
Cetraria nivalis	CETNIV	240	15.42	0.0045	0.016	0.001	0.257	-0.0	0.10
Cladina mitis	CLAMIT	240	100.00	35.8848	31.305	2.021	0.056	0.01	90.00
Cladina rangiferina	CLARAN	240	5.42	0.0017	0.011	0.001	0.436	-0.0	0.10
Cladina stellaris	CLASTE	240	37.92	0.2272	0.588	0.038	0.167	-0.0	5.00
Cladonia amaurocraea	CLAAMA	240	7.92	0.0023	0.013	0.001	0.385	-0.0	0.10
Cladonia capitata	CLACAP	240	5.83	0.0005	0.002	0.000	0.250	-0.0	0.01
Cladonia carioса	CLACAR	240	0.42	0.0000	0.001	0.000	1.000	-0.0	0.01
Cladonia cenotea	CLACEN	240	24.17	0.0028	0.006	0.000	0.176	-0.0	0.10
Cladonia chlorophaea	CLACHL	240	65.42	0.0475	0.182	0.012	0.247	-0.0	2.00
Cladonia coccifera	CLACOC	240	46.25	0.0658	0.228	0.015	0.223	-0.0	2.00
Cladonia coniocraea	CLACON	240	2.08	0.0006	0.007	0.000	0.727	-0.0	0.10
Cladonia cornuta	CLACOR	240	87.92	0.4699	0.572	0.043	0.092	-0.0	4.00
Cladonia crispata	CLACRP	240	3.75	0.0004	0.002	0.000	0.328	-0.0	0.01
Cladonia cristatella	CLACRT	240	59.50	0.0960	0.743	0.048	0.500	-0.0	10.00
Cladonia gonecha	CLAGON	240	47.50	0.0122	0.027	0.002	0.142	-0.0	0.10
Cladonia gracilis	CLAGRA	240	87.50	0.5006	1.299	0.084	0.168	-0.0	10.00
Cladonia multiformis	CLAMUL	240	75.83	0.1902	0.338	0.022	0.115	-0.0	1.00
Cladonia phyllophora	CLAPHY	240	70.00	0.2678	0.520	0.034	0.125	-0.0	2.00
Cladonia pyxidata	CLAPYX	240	11.25	0.0026	0.013	0.001	0.321	-0.0	0.10
Cladonia squamosa	CLASQU	240	0.42	0.0000	0.001	0.000	1.000	-0.0	0.01
Cladonia subulata	CLASUB	240	2.92	0.0003	0.002	0.000	0.373	-0.0	0.01
Cladonia uncialis	CLAUNC	240	45.42	0.5430	2.712	0.175	0.256	-0.0	35.00
Cladonia verticillata	CLAVER	240	6.67	0.0007	0.002	0.000	0.242	-0.0	0.01
Lecidea granulosa	LECGRA	240	4.17	0.0098	0.082	0.006	0.604	-0.0	1.00
Peltigera aphthosa	PELAPH	240	25.00	0.1167	0.377	0.024	0.208	-0.0	3.00
Peltigera malacea	PELMAL	240	78.33	1.5614	1.872	0.121	0.077	-0.0	15.00
Peltigera pulverulenta	PELPUL	240	1.25	0.0125	0.144	0.008	0.742	-0.0	2.00
Peltigera rufescens	PELRUF	240	10.00	0.0287	0.157	0.010	0.382	-0.0	1.00
Stereocaulon alpinum	STEALP	240	6.67	0.0187	0.128	0.008	0.445	-0.0	1.00
Bryoria spp.	BRYSPP	240	85.83	0.0097	0.011	0.001	0.072	-0.0	0.10
Cetraria halei	CETHAL	240	86.67	0.0357	0.128	0.008	0.234	-0.0	1.00
Cetraria pinastri	CETPIN	240	99.17	0.0913	0.552	0.042	0.461	-0.0	10.00
Evernia mesomorpha	EVEMES	240	70.00	0.0100	0.017	0.001	0.112	-0.0	0.10
Hypogymnia physodes	HYPPHY	240	69.17	0.0708	0.200	0.013	0.182	-0.0	2.00
Parmelia elegantula	PARELE	240	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	240	35.42	0.0069	0.018	0.001	0.177	-0.0	0.10
Parmeliopsis ambigua	PARAMB	240	82.92	0.0502	0.130	0.008	0.168	-0.0	1.00
Parmeliopsis hyperopta	PARHYP	240	86.25	0.0228	0.070	0.005	0.197	-0.0	1.00
Platismatia glauca	PLAGLA	240	0.42	0.0000	0.001	0.000	1.000	-0.0	0.01
Usnea spp.	USNSPP	240	90.42	0.0838	0.210	0.014	0.212	-0.0	2.00

BASED ON 57 POSITIVE MEANS. SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.573
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.161 (NATURAL LOGS)

57 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 49.7800

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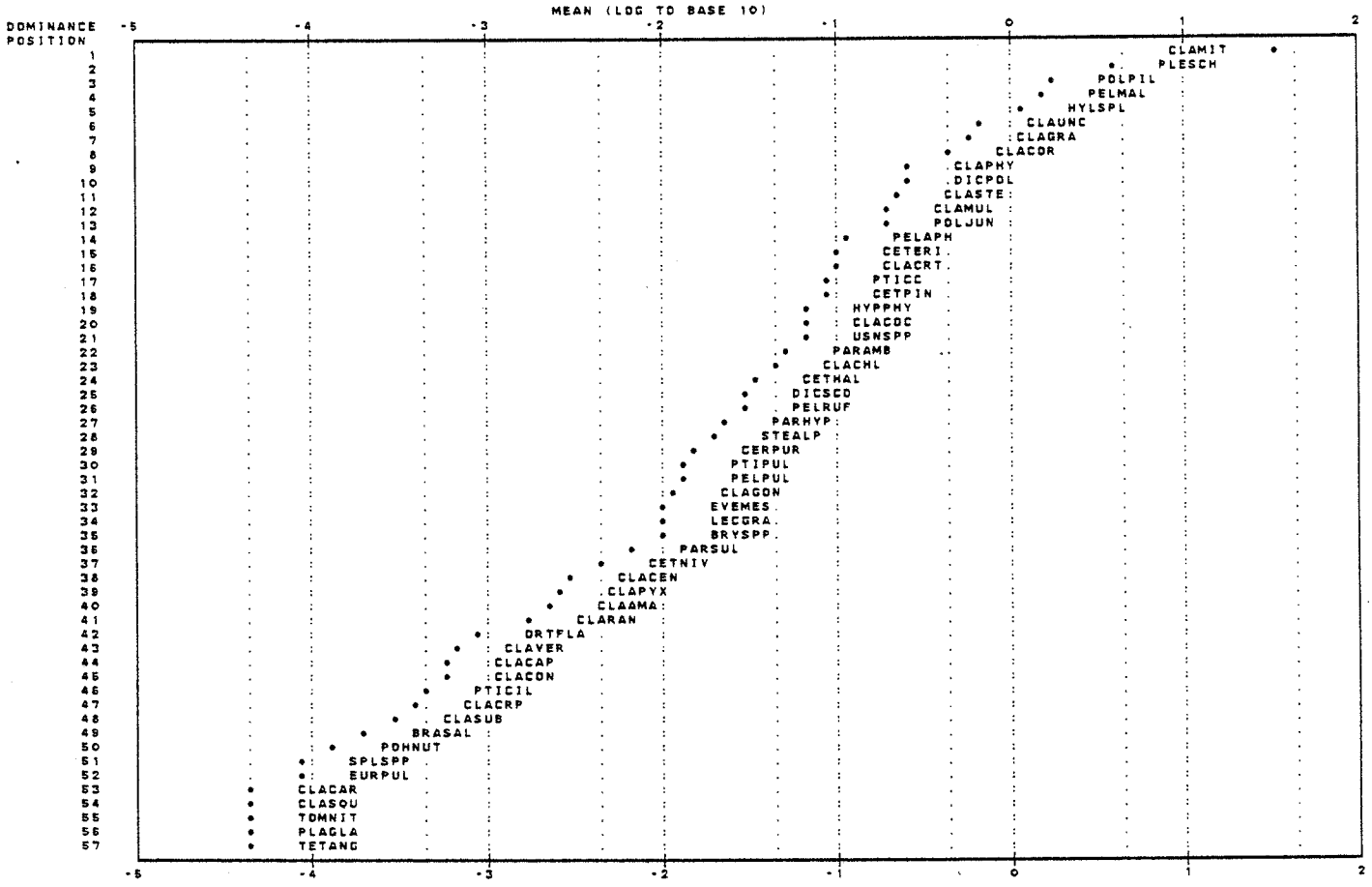
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S01N S02N S03N S04N S02 S03 S04 S05 S07 S08
S09 S10 S12 S14 S15 S16



Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 18
Descriptive Statistics for Each Synthetic Variable
FILE AOS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S01N S02N S03N S04N S02 S03 S04 S05 S07 S08
S09 S10 S12 S14 S15 S16

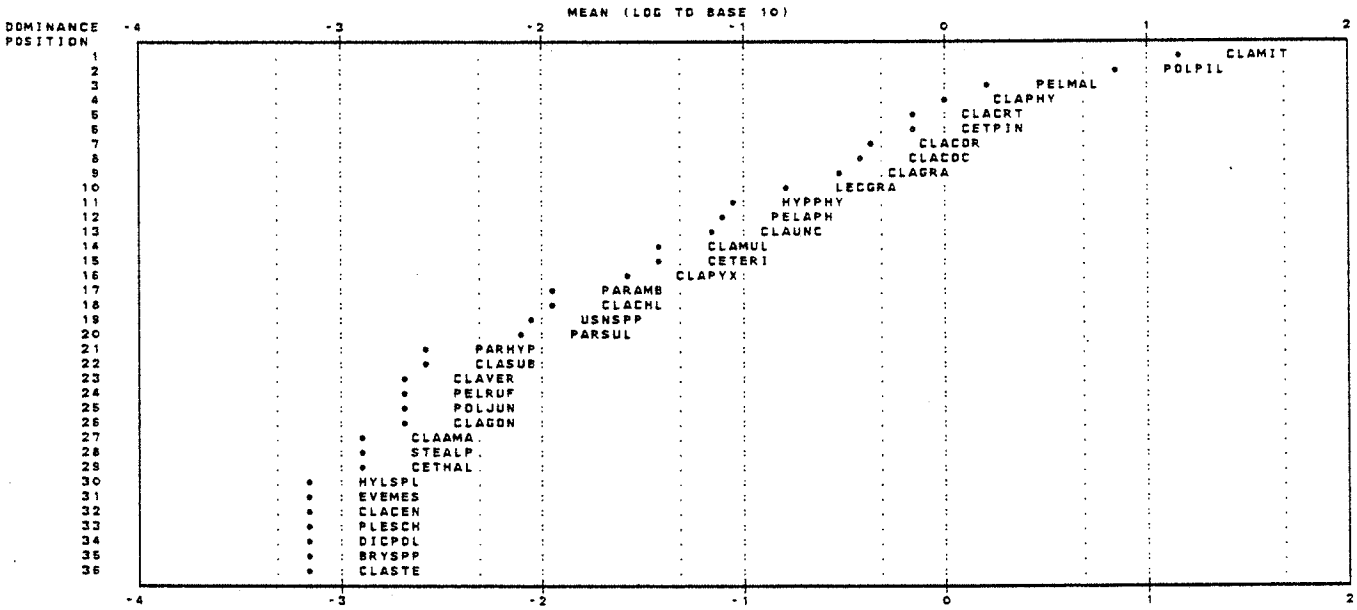
LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	240	96.75	7.0040	15.364	0.992	0.142	0.0	88.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	240	96.75	2.8708	1.789	0.115	0.040	0.0	8.00
Terr. Lichen Cover % per Plot	LCHTERCV	240	100.00	40.4147	32.232	2.081	0.051	0.04	97.51
Terr. Lichen Spp. Richness per Plot	LCHTERRP	240	100.00	9.9333	2.301	0.149	0.015	3.00	16.00
Epiph. Lichen Cover % per Plot	LCHEPICV	240	99.58	0.3613	0.782	0.051	0.140	0.0	10.00
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	240	99.58	7.3625	1.976	0.126	0.017	0.0	10.00
Lichen Cover % per Plot	LCHALLCV	240	100.00	40.7760	32.255	2.082	0.051	0.32	97.89
Lichen Spp. Richness per Plot	LCHALLRP	240	100.00	17.2958	3.174	0.205	0.012	4.00	24.00
Cover % per Plot of All Spp.	TOTALCV	240	100.00	47.7800	30.778	1.987	0.042	1.21	98.89
Richness per Plot of All Spp.	TOTALRP	240	100.00	20.1667	3.404	0.220	0.011	6.00	27.00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 18
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S01N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Ponlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Polytrichum piliferum	POLPIL	15	100.00	7.0207	10.225	2.640	0.376	0.01	30.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	86.67	0.0367	0.047	0.012	0.328	-0.0	0.10
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	15	100.00	14.8133	13.416	3.464	0.237	0.10	40.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	46.67	0.0107	0.025	0.007	0.610	-0.0	0.10
Cladonia coccifera	CLACOC	15	83.33	0.3700	0.587	0.154	0.417	-0.0	2.00
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	73.33	0.4407	0.715	0.184	0.419	-0.0	2.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	80.00	0.6960	1.383	0.357	0.513	-0.0	5.00
Cladonia gonecha	CLAGON	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladonia gracilis	CLAGRA	15	80.00	0.2967	0.581	0.150	0.505	-0.0	2.00
Cladonia multiformis	CLAMUL	15	86.67	0.0367	0.047	0.012	0.328	-0.0	0.10
Cladonia phyllophora	CLAPHY	15	100.00	1.0213	0.819	0.211	0.207	0.01	2.00
Cladonia pyxidata	CLAPYX	15	33.33	0.0273	0.045	0.012	0.429	-0.0	0.10
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Cladonia uncialis	CLAUNC	15	20.00	0.0680	0.258	0.067	0.978	-0.0	1.00
Cladonia verticillata	CLAVER	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Lecidea granulosa	LECGRA	15	46.67	0.1547	0.346	0.089	0.577	-0.0	1.00
Peltigera aphthosa	PELAPH	15	20.00	0.0740	0.257	0.066	0.898	-0.0	1.00
Peltigera malacea	PELMAL	15	100.00	1.5140	1.335	0.345	0.214	0.01	5.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Stereocaulon alpinum	STEALP	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Bryoria spp.	BRYSPP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cetraria halei	CETHAL	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cetraria pinastri	CETPIN	15	100.00	0.6880	2.576	0.665	0.967	0.01	10.00
Evernia mesomorpha	EVEMES	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	33.33	0.0673	0.256	0.066	0.756	-0.0	1.00
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	53.33	0.0113	0.025	0.006	0.570	-0.0	0.10
Parmeliopsis hyperopta	PARHYP	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	33.33	0.0093	0.025	0.007	0.705	-0.0	0.10

BASED ON 36 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.359
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.457 (NATURAL LOGS)

36 OF THE 52 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 27.3067

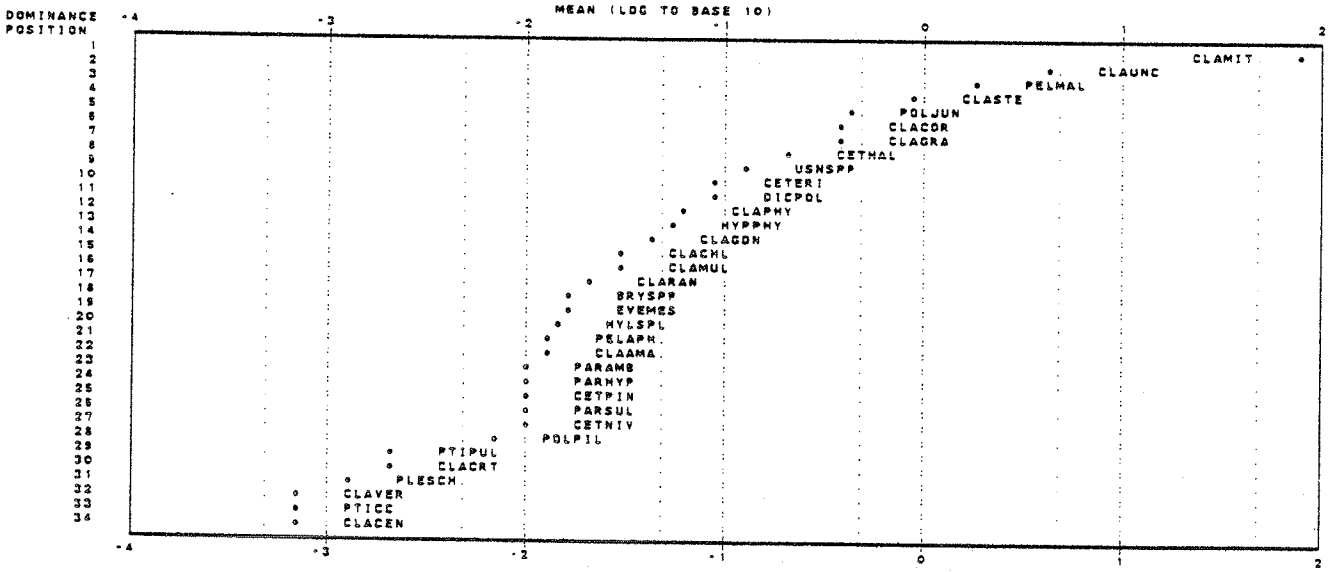


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 19
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S02N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	16	73.33	0.0853	0.255	0.066	0.772	+0.0	1.00
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	16	28.57	0.0147	0.035	0.008	0.613	+0.0	0.10
Orthodicranum flagillare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	16	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Pohlia nutans	POHNUT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	16	83.33	0.4353	0.479	0.124	0.284	+0.0	1.00
Polytrichum piliferum	POLPIL	16	13.33	0.0073	0.028	0.007	0.907	+0.0	0.10
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Ptilium crista-castrensis	PTICC	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Splachnum spp.	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	16	100.00	0.0880	0.032	0.008	0.083	0.01	0.10
Cetraria nivalis	CETNIV	16	40.00	0.0100	0.025	0.007	0.855	+0.0	0.10
Cladina mitis	CLAMIT	16	100.00	77.0000	7.270	1.877	0.024	60.00	85.00
Cladina rangiferina	CLARAN	16	20.00	0.0200	0.041	0.011	0.535	+0.0	0.10
Cladina stellaris	CLASTE	16	100.00	0.9073	0.875	0.226	0.249	0.01	2.00
Cladonia amaurocraea	CLAAMA	16	60.00	0.0120	0.025	0.006	0.535	+0.0	0.10
Cladonia capitata	CLACAP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cariosa	CLACAR	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia chlorophaea	CLACHL	16	73.33	0.0313	0.043	0.011	0.355	+0.0	0.10
Cladonia coccifera	CLACOC	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia coniocraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	16	100.00	0.4000	0.439	0.113	0.283	0.10	1.00
Cladonia crispata	CLACRP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	16	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia gonecha	CLAGON	16	86.67	0.0427	0.049	0.013	0.294	+0.0	0.10
Cladonia gracilis	CLAGRA	16	93.33	0.3860	0.587	0.152	0.391	+0.0	2.00
Cladonia multiformis	CLAMUL	16	53.33	0.0233	0.044	0.011	0.390	+0.0	0.10
Cladonia phyllophora	CLAPHY	16	80.00	0.0620	0.048	0.012	0.201	+0.0	0.10
Cladonia pyxidata	CLAPYX	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	16	86.67	4.2800	7.603	1.963	0.459	+0.0	25.00
Cladonia verticillata	CLAVER	16	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Lecidea granulosa	LECGRA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aphthosa	PELAPH	16	13.33	0.0133	0.035	0.009	0.681	+0.0	0.10
Peltigera malacea	PELMAL	16	93.33	1.8933	1.857	0.479	0.253	+0.0	5.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bryoria spp.	BRYSPP	16	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Cetraria halei	CETHAL	16	100.00	0.2080	0.323	0.083	0.401	0.01	1.00
Cetraria pinastri	CETPIN	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Evernia mesomorpha	EVEMES	16	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Hypogymnia physodes	HYPPHY	16	100.00	0.0520	0.048	0.012	0.231	0.01	0.10
Parmelia elegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	16	40.00	0.0100	0.025	0.007	0.855	+0.0	0.10
Parmeliopsis ambigua	PARAMB	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Parmeliopsis hyperopta	PARHYP	16	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp.	USNSPP	16	100.00	0.1300	0.246	0.063	0.486	0.01	1.00

BASED ON 34 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.801
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.531 (NATURAL LOGS)

34 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 86.1883

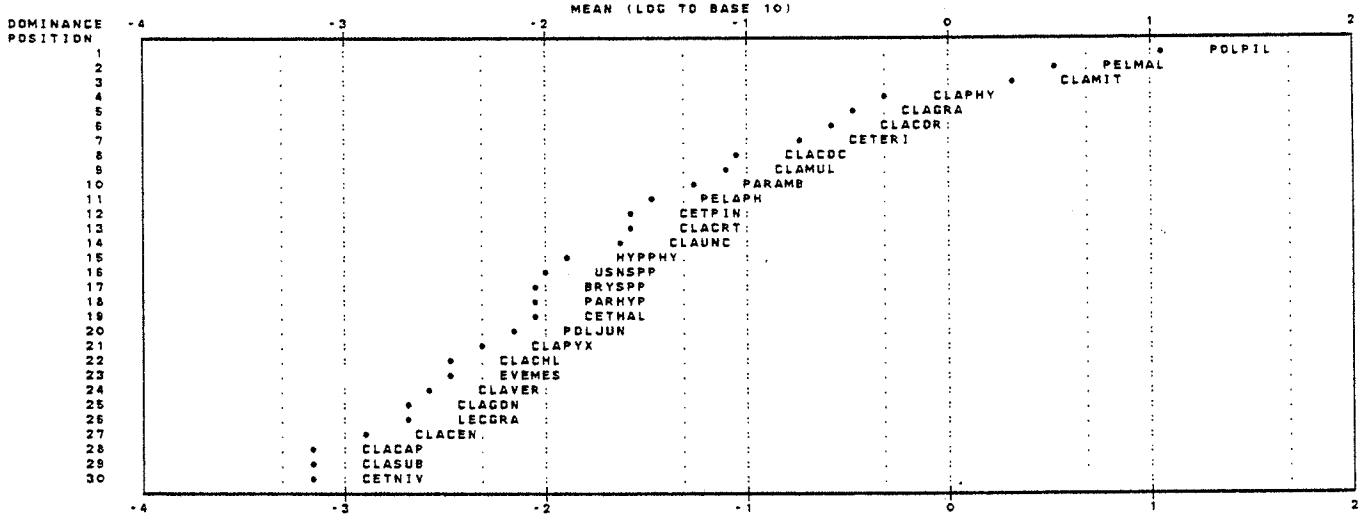


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 20
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S03N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	13.33	0.0073	0.025	0.007	0.907	-0.0	0.10
Polytrichum piliferum	POLPIL	15	100.00	11.8667	14.779	3.816	0.322	1.00	50.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Sphagnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	86.67	0.1827	0.335	0.086	0.473	-0.0	1.00
Cetraria nivalis	CETNIV	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	2.1333	1.248	0.322	0.151	1.00	5.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	13.33	0.0013	0.004	0.001	0.661	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia coccifera	CLACOC	15	100.00	0.0880	0.032	0.008	0.093	0.01	0.10
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	100.00	0.2747	0.533	0.138	0.501	0.01	2.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	80.00	0.0260	0.039	0.010	0.382	-0.0	0.10
Cladonia gonecha	CLAGON	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladonia gracilis	CLAGRA	15	100.00	0.3293	0.778	0.201	0.610	0.01	3.00
Cladonia multiformis	CLAMUL	15	46.67	0.0827	0.255	0.066	0.800	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	93.33	0.4600	0.593	0.153	0.333	-0.0	2.00
Cladonia pyxidata	CLAPYX	15	46.67	0.0047	0.005	0.001	0.286	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia uncialis	CLAUNC	15	46.67	0.0227	0.040	0.010	0.458	-0.0	0.10
Cladonia verticillata	CLAVER	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Lecidea granulosa	LECGRA	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Peltigera aphthosa	PELAPH	15	46.67	0.0347	0.048	0.012	0.357	-0.0	0.10
Peltigera malacea	PELMAL	15	93.33	3.5333	4.015	1.037	0.293	-0.0	15.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	93.33	0.0093	0.003	0.001	0.071	-0.0	0.01
Cetraria halei	CETHAL	15	86.67	0.0087	0.004	0.001	0.105	-0.0	0.01
Cetraria pinastri	CETPIN	15	100.00	0.0280	0.037	0.010	0.344	0.01	0.10
Evernia mesomorpha	EVEMES	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	73.33	0.0133	0.024	0.006	0.472	-0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmeliopsis ambigua	PARAMB	15	100.00	0.0520	0.046	0.012	0.231	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	86.67	0.0087	0.004	0.001	0.105	-0.0	0.01
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 30 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.430
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.252 (NATURAL LOGS)

30 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 19.1927

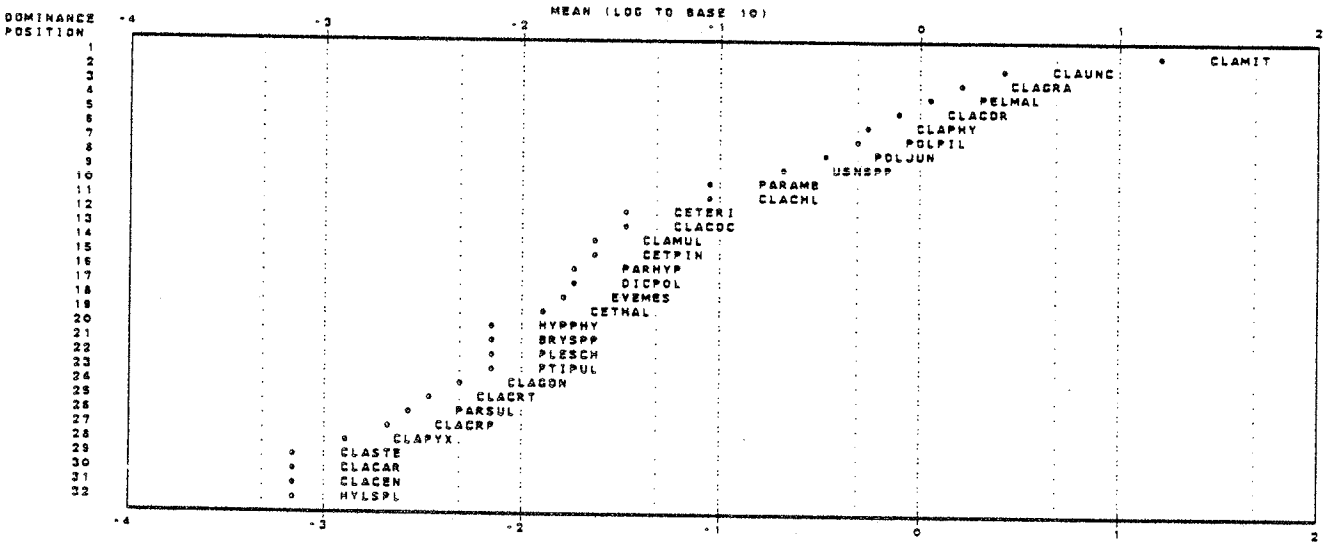


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 21
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE SO4N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	16	53.33	0.0173	0.034	0.009	0.505	-0.0	0.10
Dicranum scoparium	DICSCO	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	16	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Orthodicranum flagillare	ORTFLA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	16	13.33	0.0073	0.026	0.007	0.907	-0.0	0.10
Ponlia nutans	PONNUT	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	16	53.33	0.3480	0.610	0.157	0.452	-0.0	2.00
Polytrichum piliferum	POLPIL	16	86.67	0.5073	0.809	0.157	0.310	-0.0	2.00
Ptilidium ciliare	PTICIL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	16	13.33	0.0073	0.026	0.007	0.907	-0.0	0.10
Ptilium crista-castrensis	PTICC	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	16	53.33	0.0353	0.047	0.012	0.347	-0.0	0.10
Cetraria nivalis	CETNIV	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	16	100.00	15.3413	23.931	6.179	0.403	0.01	80.00
Cladina rangiferina	CLARAN	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	16	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cariosa	CLACAR	16	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cenotea	CLACEN	16	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia chlorophaea	CLACHL	16	73.33	0.0853	0.255	0.066	0.772	-0.0	1.00
Cladonia coccifera	CLACOC	16	93.33	0.0333	0.042	0.011	0.323	-0.0	0.10
Cladonia coniocraea	CLACON	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	16	80.00	0.8220	1.066	0.275	0.335	-0.0	3.00
Cladonia crispata	CLACRP	16	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladonia cristatella	CLACRT	16	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia gonecha	CLAGON	16	46.67	0.0047	0.005	0.001	0.286	-0.0	0.01
Cladonia gracilis	CLAGRA	16	93.33	1.5613	2.148	0.554	0.355	-0.0	8.00
Cladonia multiformis	CLAMUL	16	46.67	0.0227	0.040	0.010	0.459	-0.0	0.10
Cladonia phyllophora	CLAPHY	16	93.33	0.5200	0.599	0.155	0.297	-0.0	2.00
Cladonia pyxidata	CLAPYX	16	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia squamosa	CLASQU	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	16	80.00	2.4673	3.466	0.885	0.360	-0.0	10.00
Cladonia verticillata	CLAVER	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	16	73.33	1.1467	1.344	0.347	0.303	-0.0	4.00
Peltigera pulverulenta	PELPUL	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	16	73.33	0.0073	0.005	0.001	0.161	-0.0	0.01
Cetraria halei	CETHAL	16	73.33	0.0133	0.024	0.006	0.472	-0.0	0.10
Cetraria pinastri	CETPIN	16	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Evernia mesomorpha	EVEMES	16	33.33	0.0153	0.035	0.009	0.563	-0.0	0.10
Hypogymnia physodes	HYPPHY	16	73.33	0.0073	0.005	0.001	0.161	-0.0	0.01
Parmelia elegantula	PARELE	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	16	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Parmeliopsis ambigua	PARAMB	16	93.33	0.0673	0.254	0.086	0.752	-0.0	1.00
Parmeliopsis hyperopta	PARHYP	16	60.00	0.0180	0.034	0.009	0.482	-0.0	0.10
Platismatia glauca	PLAGLA	16	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	16	86.67	0.2133	0.556	0.144	0.673	-0.0	2.00

BASED ON 32 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.453
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.345 (NATURAL LOGS)

32 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 23.3433

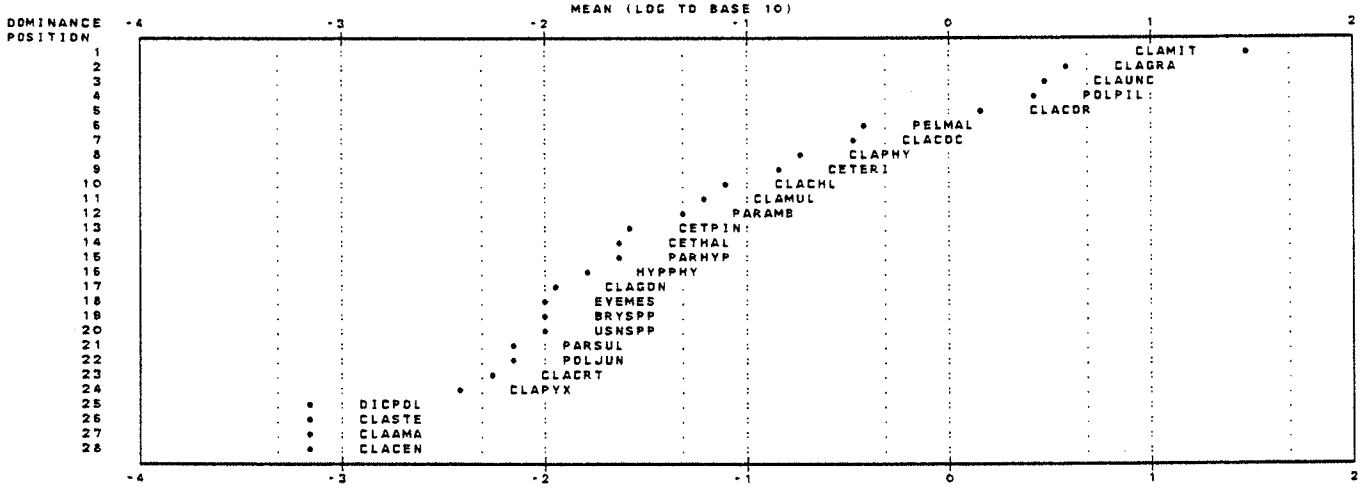


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 22
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 502

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Polytrichum piliferum	POLPIL	15	100.00	2.8000	1.971	0.509	0.182	1.00	8.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	100.00	0.1480	0.238	0.061	0.415	0.01	1.00
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	15	100.00	30.4667	27.785	7.177	0.236	2.00	85.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia carlosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	26.67	0.0747	0.257	0.066	0.890	-0.0	1.00
Cladonia coccifera	CLACOC	15	100.00	0.3280	0.421	0.108	0.331	0.01	1.00
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	100.00	1.4133	1.037	0.268	0.189	0.10	4.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	53.33	0.0053	0.005	0.001	0.250	-0.0	0.01
Cladonia gonecha	CLAGON	15	46.67	0.0107	0.025	0.007	0.610	-0.0	0.10
Cladonia gracilis	CLAGRA	15	100.00	3.8000	2.484	0.641	0.169	1.00	10.00
Cladonia multiformis	CLAMUL	15	66.67	0.0607	0.050	0.013	0.212	-0.0	0.10
Cladonia phyllophora	CLAPHY	15	66.67	0.1747	0.338	0.087	0.500	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	86.67	3.0207	5.142	1.328	0.440	-0.0	20.00
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	15	53.33	0.3667	0.803	0.207	0.566	-0.0	3.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0280	0.037	0.010	0.344	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.0160	0.023	0.006	0.375	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	73.33	0.0073	0.005	0.001	0.181	-0.0	0.01
Parmeliopsis ambigua	PARAMB	15	100.00	0.0460	0.046	0.012	0.256	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 28 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.524
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.112 (NATURAL LOGS)

28 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 42.8540

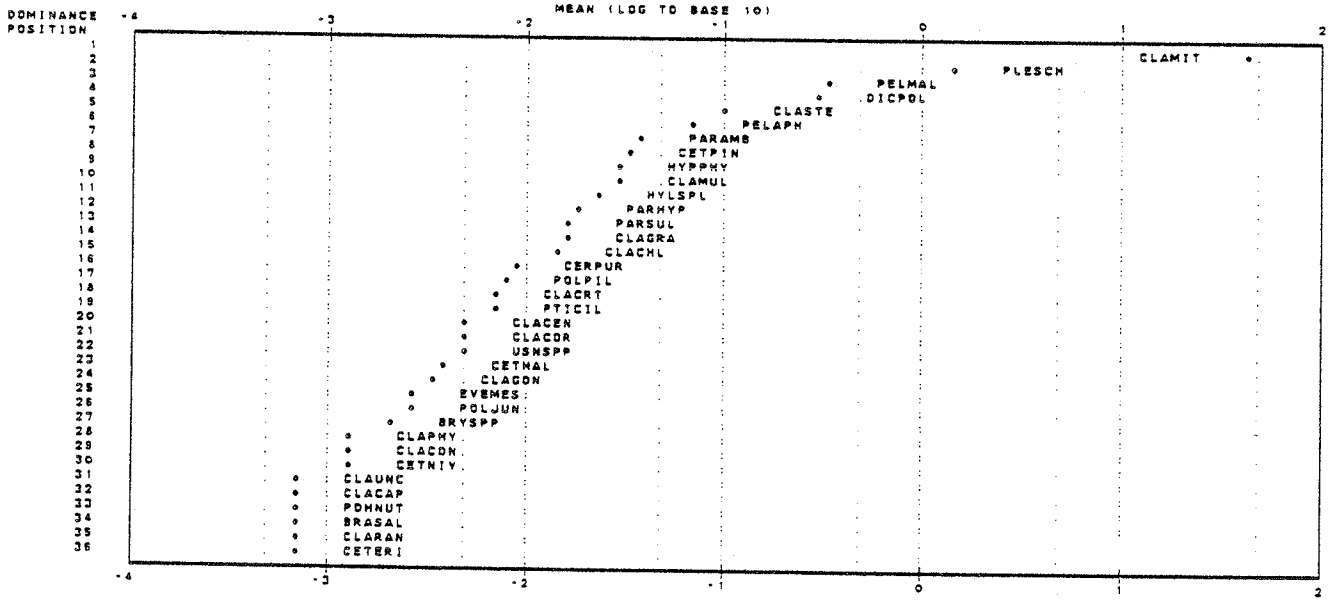


Athbasca Oil Sands Ecological Monitering: August 1982 Surveys 04/02/83 PAGE 23
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOSA2525 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S03

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Ceratodon purpureus	CERPUR	15	26.67	0.0087	0.026	0.007	0.783	-0.0	0.10
Dicranum polysetum	DICPOL	15	93.33	0.3093	0.433	0.112	0.361	-0.0	1.00
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	40.00	0.0220	0.041	0.010	0.476	-0.0	0.10
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	73.33	1.4280	3.840	0.992	0.694	-0.0	15.00
Ponlia nutans	POHNUT	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Polytrichum juniperinum	POLJUN	15	26.67	0.0027	0.006	0.001	0.443	-0.0	0.01
Polytrichum piliferum	POLPIL	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Ptilidium ciliare	PTICIL	15	13.33	0.0073	0.026	0.007	0.907	-0.0	0.10
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Solachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cetraria nivalis	CETNIV	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	40.8067	29.125	7.520	0.184	0.10	85.00
Cladina rangiferina	CLARAN	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladina stellaris	CLASTE	15	73.33	0.1033	0.252	0.065	0.630	-0.0	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	46.67	0.0047	0.005	0.001	0.286	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	80.00	0.0140	0.024	0.006	0.445	0.0	0.10
Cladonia coccifera	CLACOC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia coniocraea	CLACON	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia cornuta	CLACOR	15	46.67	0.0047	0.005	0.001	0.286	-0.0	0.01
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	73.33	0.0073	0.005	0.001	0.161	-0.0	0.01
Cladonia gonecha	CLAGON	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia gracilis	CLAGRA	15	33.33	0.0153	0.035	0.009	0.583	-0.0	0.10
Cladonia multiformis	CLAMUL	15	60.00	0.0300	0.044	0.011	0.378	-0.0	0.10
Cladonia phyllophora	CLAPHY	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	13.33	0.0733	0.258	0.067	0.907	-0.0	1.00
Peltigera malacea	PELMAL	15	40.00	0.3640	1.040	0.268	0.738	-0.0	4.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cetraria halei	CETHAL	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cetraria pinastri	CETPIN	15	93.33	0.0333	0.042	0.011	0.323	-0.0	0.10
Evernia mesomorpha	EVEMES	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	66.67	0.0307	0.044	0.011	0.366	-0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	40.00	0.0150	0.034	0.008	0.555	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	73.33	0.0373	0.046	0.012	0.319	-0.0	0.10
Parmeliopsis hyperopta	PARHYP	15	53.33	0.0173	0.034	0.009	0.505	-0.0	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	46.67	0.0047	0.005	0.001	0.286	-0.0	0.01

BASED ON 36 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.867
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.321 (NATURAL LOGS)

36 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 43.3567

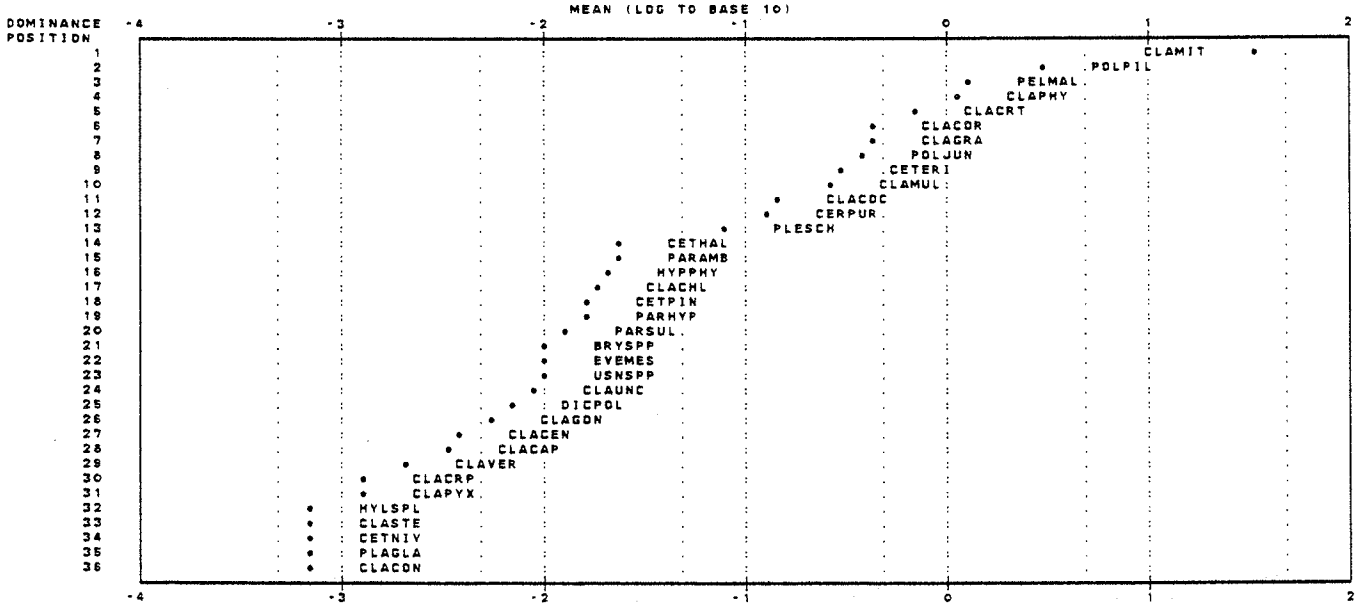


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 24
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE SO4

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	6.67	0.1333	0.516	0.133	1.000	-0.0	2.00
Dicranum polysetum	DICPOL	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	20.00	0.0740	0.257	0.066	0.898	-0.0	1.00
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	86.67	0.3820	0.701	0.181	0.474	-0.0	2.00
Polytrichum piliferum	POLPIL	15	86.67	3.0073	4.083	1.054	0.351	-0.0	15.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	80.00	0.3020	0.438	0.113	0.374	-0.0	1.00
Cetraria nivalis	CETNIV	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	35.0073	22.348	5.770	0.165	0.01	75.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.0193	0.033	0.009	0.441	-0.0	0.10
Cladonia coccifera	CLACOC	15	73.33	0.1513	0.346	0.089	0.591	-0.0	1.00
Cladonia coniocraea	CLACON	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cornuta	CLACOR	15	80.00	0.4400	0.475	0.123	0.278	-0.0	1.00
Cladonia crispata	CLACRP	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia cristatella	CLACRT	15	80.00	0.5740	2.580	0.666	0.988	-0.0	10.00
Cladonia gonecha	CLAGON	15	53.33	0.0053	0.006	0.001	0.250	-0.0	0.01
Cladonia gracilis	CLAGRA	15	93.33	0.4353	0.479	0.124	0.284	-0.0	1.00
Cladonia multiformis	CLAMUL	15	93.33	0.2613	0.384	0.099	0.380	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	86.67	1.1467	0.815	0.210	0.183	-0.0	2.00
Cladonia pyxidata	CLAPYX	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	33.33	0.0093	0.025	0.007	0.705	-0.0	0.10
Cladonia verticillata	CLAVER	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	15	86.67	1.2140	1.066	0.275	0.227	-0.0	3.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0160	0.023	0.006	0.375	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	93.33	0.0213	0.032	0.008	0.388	-0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	60.00	0.0120	0.025	0.006	0.535	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0160	0.023	0.006	0.375	0.01	0.10
Platismatia glauca	PLAGLA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Usnea spp.	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 36 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.657
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.904 (NATURAL LOGS)

36 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 43.4240

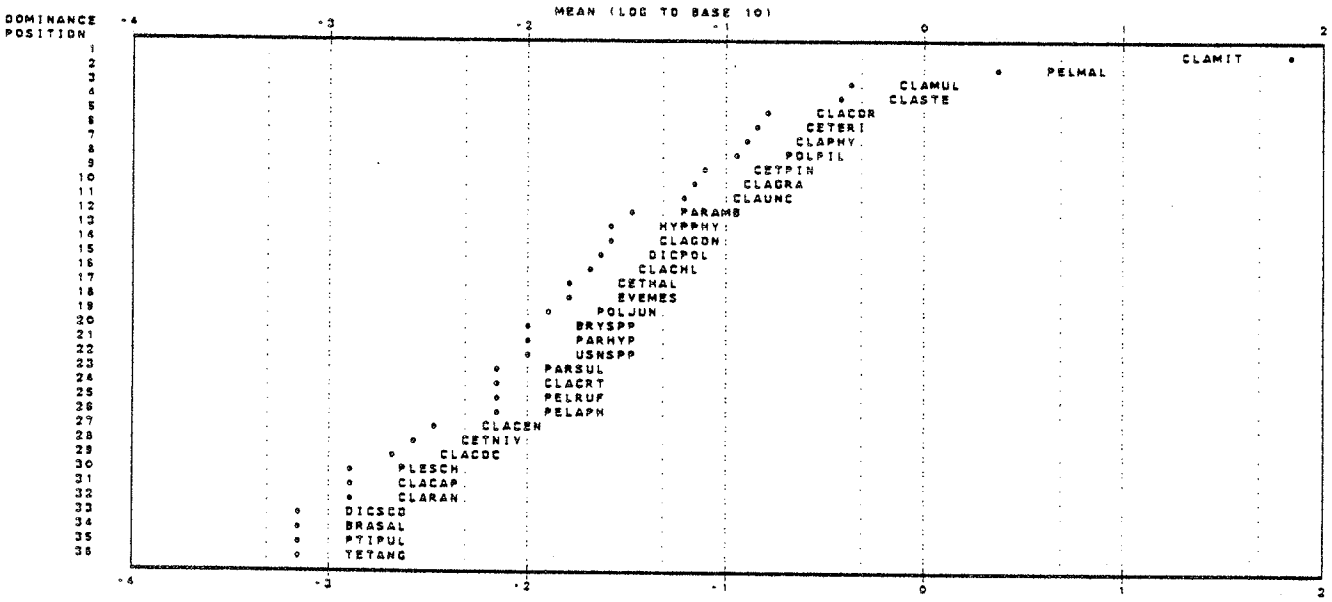


Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 25
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S05

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Dicranum polysetum	DICPOL	15	60.00	0.0240	0.040	0.010	0.426	+0.0	0.10
Dicranum scoparium	DICSCO	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Ponlia nutans	PONNUT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	15	60.00	0.0120	0.025	0.006	0.535	+0.0	0.10
Polytrichum piliferum	POLPIL	15	86.67	0.1067	0.251	0.065	0.597	+0.0	1.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Tomanthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	15	86.67	0.1407	0.241	0.062	0.442	+0.0	1.00
Cetraria nivalis	CETNIV	15	26.67	0.0027	0.005	0.001	0.443	+0.0	0.01
Cladina mitis	CLAMIT	15	100.00	65.0000	15.492	4.000	0.061	35.00	80.00
Cladina rangiferina	CLARAN	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladina stellaris	CLASTE	15	93.33	0.3753	0.458	0.118	0.316	+0.0	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia capitata	CLACAP	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	15	33.33	0.0033	0.005	0.001	0.378	+0.0	0.01
Cladonia chlorophaea	CLACHL	15	80.00	0.0200	0.033	0.008	0.423	+0.0	0.10
Cladonia coccifera	CLACOC	15	20.00	0.0020	0.004	0.001	0.535	+0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	15	93.33	0.1533	0.236	0.061	0.397	+0.0	1.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	15	66.67	0.0067	0.005	0.001	0.189	+0.0	0.01
Cladonia gonecha	CLAGON	15	73.33	0.0253	0.039	0.010	0.396	+0.0	0.10
Cladonia gracilis	CLAGRA	15	80.00	0.0680	0.047	0.012	0.178	+0.0	0.10
Cladonia multiformis	CLAMUL	15	100.00	0.4640	0.462	0.119	0.252	0.01	1.00
Cladonia phyllophora	CLAPHY	15	86.67	0.1347	0.243	0.063	0.466	+0.0	1.00
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	15	80.00	0.0620	0.048	0.012	0.201	+0.0	0.10
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aphthosa	PELAPH	15	6.67	0.0067	0.025	0.007	1.000	+0.0	0.10
Peltigera malacea	PELMAL	15	100.00	2.4733	1.044	0.269	0.109	0.10	4.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	15	6.67	0.0067	0.025	0.007	1.000	+0.0	0.10
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0820	0.037	0.010	0.117	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Hypogymnia physodes	HYPPHY	15	100.00	0.0280	0.037	0.010	0.344	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	15	66.67	0.0067	0.005	0.001	0.189	+0.0	0.01
Parmeliopsis ambigua	PARAMB	15	100.00	0.0340	0.041	0.011	0.313	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp.	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 38 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.883
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.336 (NATURAL LOGS)

38 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 70.2967



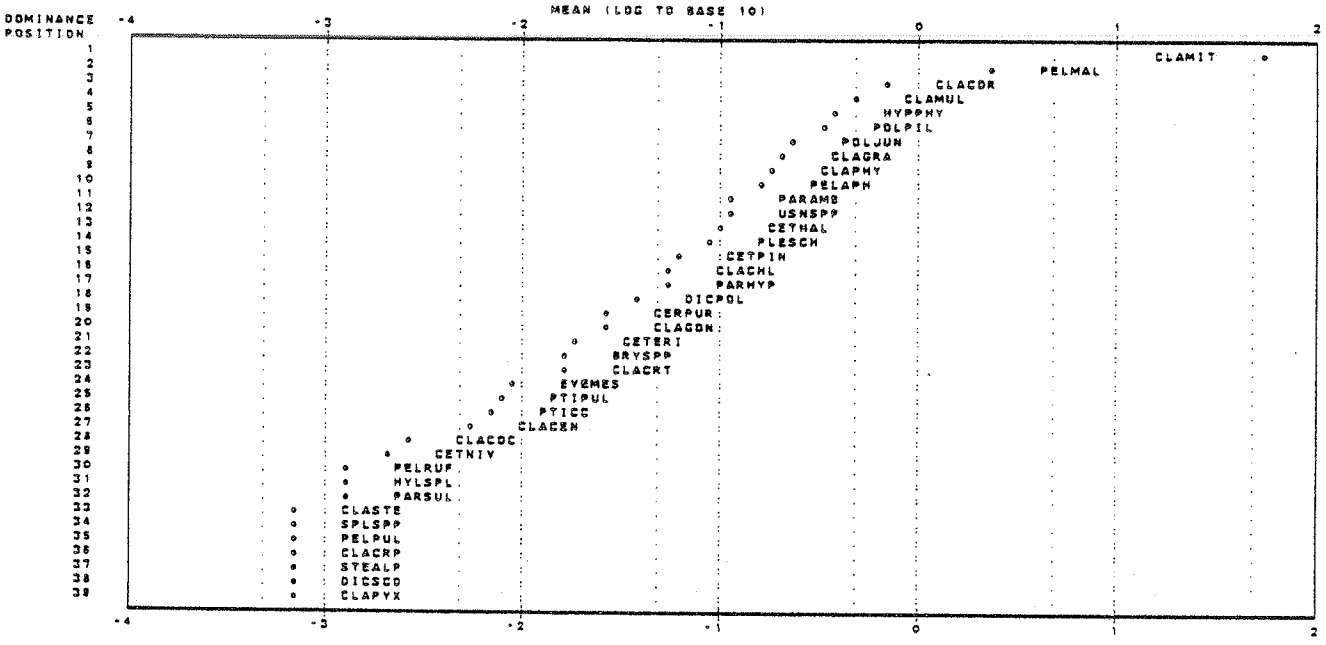
Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 26
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82525 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 507

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	26.67	0.0267	0.046	0.012	0.443	-0.0	0.10
Dicranum polysetum	DICPOL	15	73.33	0.0373	0.046	0.012	0.319	-0.0	0.10
Dicranum scoparium	DICSCO	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	40.00	0.0880	0.256	0.066	0.750	-0.0	1.00
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	80.00	0.2480	0.392	0.101	0.408	-0.0	1.00
Polytrichum piliferum	POLPIL	15	60.00	0.3480	0.478	0.124	0.355	-0.0	1.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Ptilium crista-castrensis	PTICC	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Splachnum spp.	SPLSPP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	53.33	0.0173	0.034	0.009	0.505	-0.0	0.10
Cetraria nivalis	CETNIV	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladina mitis	CLAMIT	15	100.00	52.0000	20.685	5.341	0.103	20.00	75.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	53.33	0.0053	0.005	0.001	0.250	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	80.00	0.0560	0.048	0.013	0.225	-0.0	0.10
Cladonia coccifera	CLACOC	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	100.00	0.7133	0.678	0.175	0.245	0.10	2.00
Cladonia crispata	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRT	15	93.33	0.0153	0.024	0.006	0.397	-0.0	0.10
Cladonia gonecha	CLAGON	15	73.33	0.0253	0.039	0.010	0.386	-0.0	0.10
Cladonia gracilis	CLAGRA	15	100.00	0.2140	0.320	0.083	0.386	0.01	1.00
Cladonia multiformis	CLAMUL	15	100.00	0.4600	0.456	0.118	0.256	0.10	1.00
Cladonia phyllophora	CLAPHY	15	86.67	0.1887	0.332	0.086	0.455	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	33.33	0.1533	0.346	0.089	0.583	-0.0	1.00
Peltigera malacea	PELMAL	15	100.00	2.3400	1.532	0.396	0.169	0.10	5.00
Peltigera pulverulenta	PELPUL	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Peltigera rufescens	PELRUF	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Stereocaulon alpinum	STEALP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Bryoria spp.	BRYSPP	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Cetraria halei	CETHAL	15	100.00	0.1060	0.251	0.065	0.612	0.01	1.00
Cetraria pinastri	CETPIN	15	100.00	0.0580	0.046	0.012	0.207	0.01	0.10
Evernia mesomorpha	EVEMES	15	93.33	0.0093	0.003	0.001	0.071	-0.0	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.3767	0.594	0.153	0.407	0.01	2.00
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Parmeliopsis ambigua	PARAMB	15	100.00	0.1180	0.248	0.064	0.543	0.01	1.00
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0520	0.046	0.012	0.231	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.1120	0.250	0.064	0.576	0.01	1.00

BASED ON 39 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.811
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.552 (NATURAL LOGS)

39 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 57.8127

Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 27
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE SO7

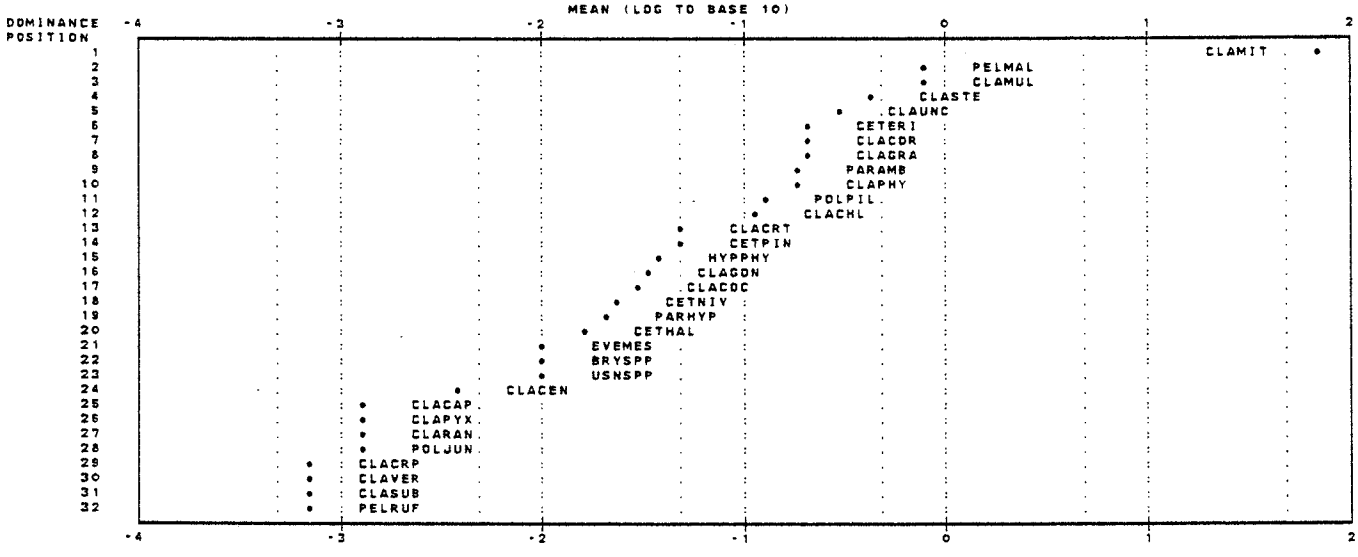


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 28
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S08

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Polytrichum piliferum	POLPIL	15	80.00	0.1280	0.246	0.063	0.495	-0.0	1.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	100.00	0.2140	0.320	0.083	0.386	0.01	1.00
Cetraria nivalis	CETNIV	15	66.67	0.0247	0.038	0.010	0.411	-0.0	0.10
Cladina mitis	CLAMIT	15	100.00	70.3333	11.721	3.026	0.043	50.00	90.00
Cladina rangiferina	CLARAN	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladina stellaris	CLASTE	15	100.00	0.4420	0.473	0.122	0.276	0.01	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.1153	0.249	0.064	0.558	-0.0	1.00
Cladonia coccifera	CLACOC	15	46.67	0.0287	0.045	0.012	0.403	-0.0	0.10
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	93.33	0.2133	0.320	0.083	0.388	-0.0	1.00
Cladonia crispata	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRT	15	93.33	0.0513	0.047	0.012	0.237	-0.0	0.10
Cladonia gonecha	CLAGON	15	86.67	0.0327	0.042	0.011	0.333	-0.0	0.10
Cladonia gracilis	CLAGRA	15	93.33	0.2073	0.324	0.084	0.403	-0.0	1.00
Cladonia multiformis	CLAMUL	15	86.67	0.7407	0.446	0.115	0.155	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	60.00	0.1740	0.339	0.087	0.503	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia uncialis	CLAUNC	15	73.33	0.3140	0.573	0.148	0.471	-0.0	2.00
Cladonia verticillata	CLAVER	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera malacea	PELMAL	15	66.67	0.8133	1.072	0.277	0.340	-0.0	4.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0160	0.023	0.006	0.375	0.01	0.10
Cetraria pinastri	CETPIN	15	100.00	0.0460	0.046	0.012	0.256	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.0400	0.044	0.011	0.283	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmeliopsis ambigua	PARAMB	15	93.33	0.1773	0.337	0.087	0.491	-0.0	1.00
Parmeliopsis hyperopta	PARHYP	15	93.33	0.0213	0.032	0.008	0.388	-0.0	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01

BASED ON 32 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.898
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.332 (NATURAL LOGS)

32 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 74.1753

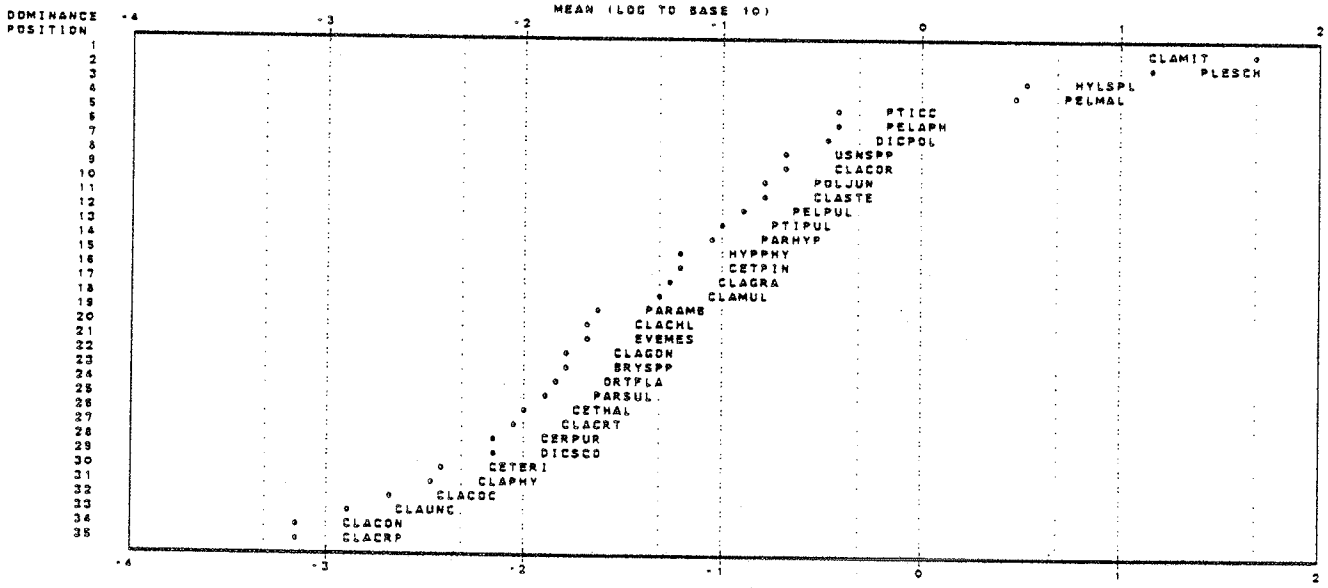


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 39
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS42825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE 509

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Dicranum polysetum	DICPOL	15	86.67	0.3207	0.425	0.110	0.343	-0.0	1.00
Dicranum scoparium	DICSCO	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	80.00	3.2147	5.431	1.402	0.438	-0.0	20.00
Orthodicranum flagillare	ORTFLA	15	20.00	0.0140	0.035	0.009	0.646	-0.0	0.10
Pleurozium schreberi	PLESCH	15	100.00	14.8573	19.430	5.017	0.337	0.01	65.00
Ponlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	73.33	0.1700	0.508	0.131	0.772	-0.0	2.00
Polytrichum piliferum	POLPIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	80.00	0.1020	0.253	0.065	0.640	-0.0	1.00
Ptilium crista-castrensis	PTICC	15	86.67	0.3613	0.562	0.196	0.431	-0.0	2.00
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	15	100.00	50.6000	25.585	6.584	0.135	2.00	85.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	33.33	0.1533	0.346	0.089	0.583	-0.0	1.00
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia chlorophaea	CLACHL	15	86.67	0.0207	0.032	0.008	0.405	-0.0	0.10
Cladonia coccifera	CLACOC	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Cladonia coniocraea	CLACON	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cornuta	CLACOR	15	100.00	0.1960	0.328	0.085	0.433	0.01	1.00
Cladonia crispata	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRT	15	26.67	0.0087	0.026	0.007	0.763	-0.0	0.10
Cladonia gonecha	CLAGON	15	46.67	0.0167	0.034	0.008	0.529	-0.0	0.10
Cladonia gracilis	CLAGRA	15	80.00	0.0850	0.048	0.013	0.225	-0.0	0.10
Cladonia multiformis	CLAMUL	15	93.33	0.0513	0.047	0.012	0.237	-0.0	0.10
Cladonia phyllophora	CLAPHY	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	13.33	0.0013	0.004	0.001	0.581	-0.0	0.01
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aonthosa	PELAPH	15	53.33	0.3800	0.803	0.156	0.433	-0.0	2.00
Peltigera malacea	PELMAL	15	93.33	2.9333	2.631	0.679	0.232	-0.0	10.00
Peltigera pulverulenta	PELPUL	15	6.67	0.1333	0.516	0.133	1.000	-0.0	2.00
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0150	0.023	0.006	0.375	0.01	0.10
Cetraria halei	CETHAL	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria pinastri	CETPIN	15	100.00	0.0580	0.046	0.012	0.207	0.01	0.10
Evernia mesomorpha	EVEMES	15	86.67	0.0207	0.032	0.008	0.405	-0.0	0.10
Hypogymnia physodes	HYPPHY	15	100.00	0.0640	0.048	0.012	0.184	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	80.00	0.0120	0.025	0.006	0.535	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0840	0.253	0.065	0.896	0.01	1.00
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.2020	0.328	0.084	0.417	0.01	1.00

BASED ON 35 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.511
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.049 (NATURAL LOGS)

35 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 74.3933

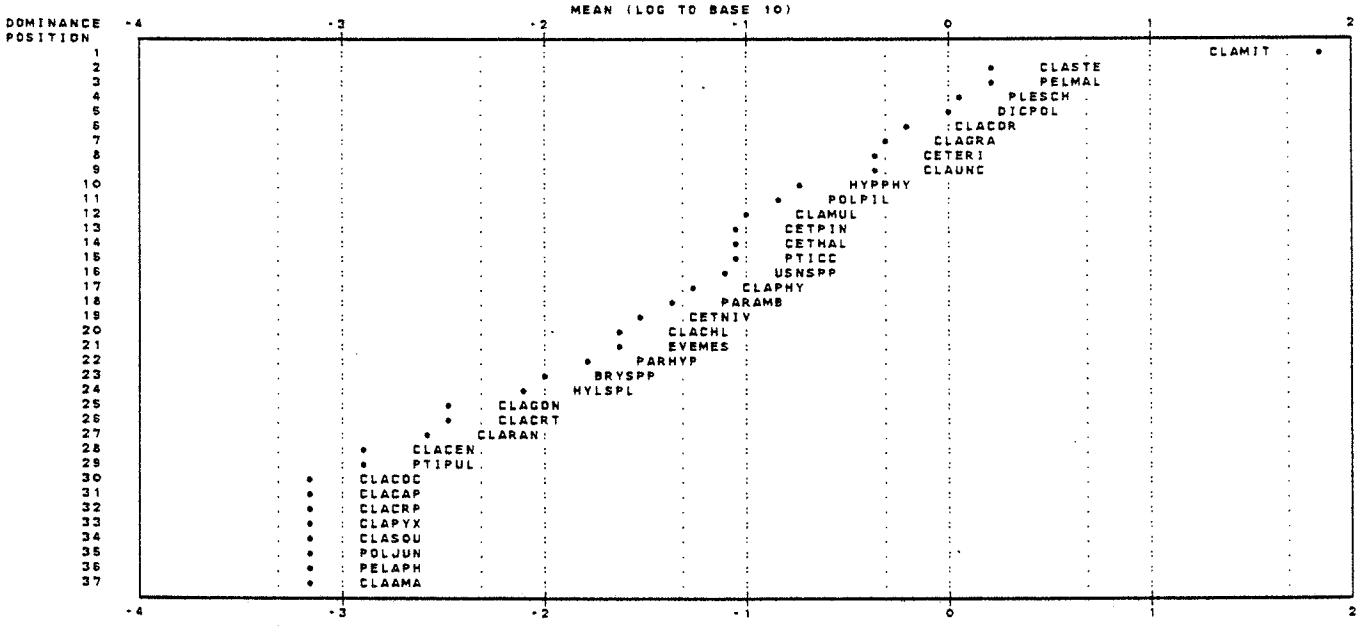


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 30
Descriptive Statistics for Each Species Variable and Each Stand
FILE AOS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	93.33	0.9533	0.676	0.175	0.183	-0.0	2.00
Dicranum scoparium	DICSCO	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	86.67	1.0867	1.011	0.261	0.240	-0.0	3.00
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Polytrichum piliferum	POLPIL	15	26.67	0.1467	0.348	0.090	0.613	-0.0	1.00
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Ptilium crista-castrensis	PTICC	15	40.00	0.0880	0.256	0.066	0.750	-0.0	1.00
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	100.00	0.4540	0.462	0.119	0.263	0.01	1.00
Cetraria nivalis	CETNIV	15	53.33	0.0293	0.044	0.011	0.390	-0.0	0.10
Cladina mitis	CLAMIT	15	100.00	70.3333	8.121	2.097	0.030	50.00	80.00
Cladina rangiferina	CLARAN	15	26.67	0.0027	0.005	0.001	0.443	-0.0	0.01
Cladina stellaris	CLASTE	15	100.00	1.6133	1.164	0.301	0.186	0.10	5.00
Cladonia amaurocraea	CLAAMA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia capitata	CLACAP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	60.00	0.0240	0.040	0.010	0.425	-0.0	0.10
Cladonia coccifera	CLACOC	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	100.00	0.5473	0.696	0.180	0.278	0.01	2.00
Cladonia crispata	CLACRP	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia cristatella	CLACRT	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia gonecha	CLAGON	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia gracilis	CLAGRA	15	100.00	0.4667	0.588	0.152	0.325	0.10	2.00
Cladonia multiformis	CLAMUL	15	46.67	0.0947	0.254	0.066	0.694	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	73.33	0.0553	0.060	0.013	0.231	-0.0	0.10
Cladonia pyxidata	CLAPYX	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia squamosa	CLASQU	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	100.00	0.4360	0.478	0.123	0.283	0.01	1.00
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Peltigera malacea	PELMAL	15	100.00	1.6133	0.885	0.229	0.142	0.10	3.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0880	0.254	0.066	0.746	0.01	1.00
Cetraria pinastri	CETPIN	15	100.00	0.0940	0.253	0.065	0.696	0.01	1.00
Evernia mesomorpha	EVEMES	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Hypogymnia physodes	HYPPHY	15	100.00	0.1780	0.337	0.087	0.488	0.01	1.00
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmeliopsis ambigua	PARAMB	15	93.33	0.0453	0.046	0.012	0.264	-0.0	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0160	0.023	0.006	0.375	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.0820	0.255	0.066	0.803	0.01	1.00

BASED ON 37 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.802
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.588 (NATURAL LOGS)

37 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 78.6027

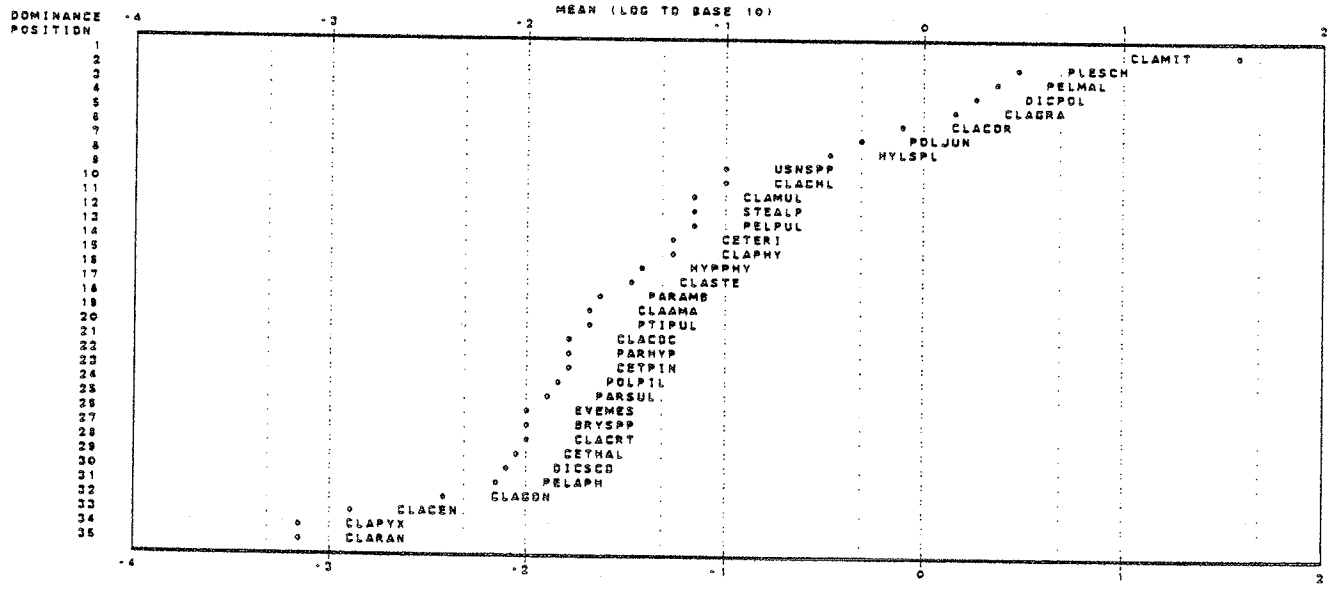


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 31
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S12

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Dicranum polysetum	DICPOL	15	100.00	1.9400	1.269	0.328	0.169	0.10	5.00
Dicranum scoparium	DICSCO	15	20.00	0.0080	0.026	0.007	0.829	-0.0	0.10
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	40.00	0.3540	0.892	0.230	0.651	-0.0	3.00
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	86.67	3.0733	4.522	1.168	0.380	-0.0	15.00
Ponlia nutans	PONNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	73.33	0.5013	0.898	0.232	0.462	-0.0	3.00
Polytrichum piliferum	POLPIL	15	20.00	0.0140	0.035	0.009	0.646	-0.0	0.10
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	26.67	0.0207	0.041	0.011	0.514	-0.0	0.10
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	73.33	0.0553	0.060	0.013	0.231	-0.0	0.10
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	15	100.00	39.5333	24.488	6.323	0.180	8.00	80.00
Cladina rangiferina	CLARAN	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladina stellaris	CLASTE	15	53.33	0.0353	0.047	0.012	0.347	-0.0	0.10
Cladonia amaurocraea	CLAAMA	15	33.33	0.0213	0.041	0.011	0.485	-0.0	0.10
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.0973	0.253	0.065	0.672	-0.0	1.00
Cladonia coccifera	CLACOC	15	46.67	0.0187	0.034	0.009	0.528	-0.0	0.10
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cornuta	CLACOR	15	93.33	0.7667	0.667	0.172	0.225	-0.0	2.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	40.00	0.0100	0.023	0.007	0.655	-0.0	0.10
Cladonia gonecha	CLAGON	15	40.00	0.0040	0.005	0.001	0.327	-0.0	0.01
Cladonia gracilis	CLAGRA	15	100.00	1.4200	0.878	0.227	0.160	0.10	3.00
Cladonia multiformis	CLAMUL	15	73.33	0.0733	0.046	0.012	0.161	-0.0	0.10
Cladonia phyllophora	CLAPHY	15	73.33	0.0553	0.060	0.013	0.231	-0.0	0.10
Cladonia pyxidata	CLAPYX	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonis subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	6.67	0.0087	0.026	0.007	1.000	-0.0	0.10
Peltigera malacea	PELMAL	15	93.33	2.4133	1.939	0.501	0.207	-0.0	7.00
Peltigera pulverulenta	PELPUL	15	6.67	0.0867	0.258	0.067	1.000	-0.0	1.00
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	6.67	0.0867	0.258	0.067	1.000	-0.0	1.00
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	93.33	0.0093	0.003	0.001	0.071	-0.0	0.01
Cetraria pinastri	CETPIN	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.0400	0.044	0.011	0.283	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	80.00	0.0120	0.025	0.006	0.535	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0180	0.023	0.006	0.375	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.1060	0.251	0.065	0.612	0.01	1.00

BASED ON 35 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.614
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 0.987 (NATURAL LOGS)

35 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 59.7973

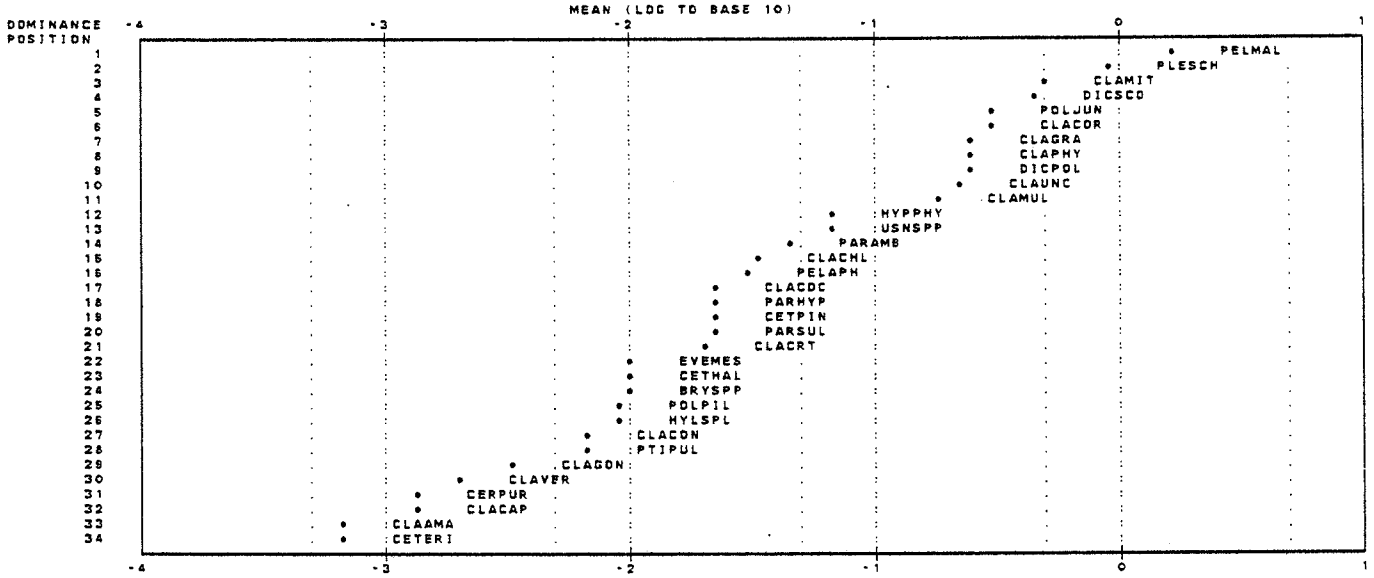


Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 32
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S14

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Brachythecium salebrosum	BRASAL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ceratodon purpureus	CERPUR	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Dicranum polysetum	DICPOL	15	73.33	0.2353	0.398	0.103	0.437	-0.0	1.00
Dicranum scoparium	DICSCO	15	73.33	0.4413	0.892	0.230	0.522	-0.0	3.00
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Hylocomium splendens	HYLSPL	15	26.67	0.0087	0.026	0.007	0.763	-0.0	0.10
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Pleurozium schreberi	PLESCH	15	53.33	0.8333	1.163	0.300	0.322	-0.0	4.00
Pohlia nutans	POHNUT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Polytrichum juniperinum	POLJUN	15	80.00	0.3147	0.572	0.148	0.470	-0.0	2.00
Polytrichum piliferum	POLPIL	15	33.33	0.0093	0.025	0.007	0.705	-0.0	0.10
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Ptilidium pulcherrimum	PTIPUL	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Ptilium crista-castrensis	PTICC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Splachnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cetraria ericetorum	CETERI	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina mitis	CLAMIT	15	100.00	0.4820	0.802	0.233	0.474	0.01	3.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladina stellaris	CLASTE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia amaurocraea	CLAAMA	15	6.67	0.0007	0.003	0.001	1.000	-0.0	0.01
Cladonia capitata	CLACAP	15	13.33	0.0013	0.004	0.001	0.681	-0.0	0.01
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cenotea	CLACEN	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia chlorophaea	CLACHL	15	80.00	0.0320	0.043	0.011	0.344	-0.0	0.10
Cladonia coccifera	CLACOC	15	46.67	0.0227	0.040	0.010	0.459	-0.0	0.10
Cladonia coniocraea	CLACON	15	6.67	0.0067	0.026	0.007	1.000	-0.0	0.10
Cladonia cornuta	CLACOR	15	73.33	0.2893	0.445	0.115	0.397	-0.0	1.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia cristatella	CLACRT	15	73.33	0.0193	0.033	0.008	0.441	-0.0	0.10
Cladonia gonecha	CLAGON	15	33.33	0.0033	0.005	0.001	0.378	-0.0	0.01
Cladonia gracilis	CLAGRA	15	93.33	0.2493	0.391	0.101	0.405	-0.0	1.00
Cladonia multiformis	CLAMUL	15	93.33	0.1833	0.334	0.086	0.471	-0.0	1.00
Cladonia phyllophora	CLAPHY	15	73.33	0.2353	0.398	0.103	0.437	-0.0	1.00
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Cladonia uncialis	CLAUNC	15	93.33	0.2260	0.552	0.143	0.631	-0.0	2.00
Cladonia verticillata	CLAVER	15	20.00	0.0020	0.004	0.001	0.535	-0.0	0.01
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera aphthosa	PELAPH	15	46.67	0.0287	0.046	0.012	0.403	-0.0	0.10
Peltigera malacea	PELMAL	15	100.00	1.6733	1.035	0.267	0.160	0.10	4.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Peltigera rufescens	PELRUF	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Stereocaulon alpinum	STEALP	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Bryoria spp.	BRYSPP	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria halei	CETHAL	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Cetraria pinastri	CETPIN	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Evernia mesomorpha	EVEMES	15	100.00	0.0100	0.0	0.0	0.0	0.01	0.01
Hypogymnia physodes	HYPPHY	15	100.00	0.0640	0.046	0.012	0.184	0.01	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Parmelia sulcata	PARSUL	15	93.33	0.0213	0.032	0.008	0.388	-0.0	0.10
Parmeliopsis ambigua	PARAMB	15	100.00	0.0460	0.046	0.012	0.256	0.01	0.10
Parmeliopsis hyperopta	PARHYP	15	100.00	0.0220	0.032	0.008	0.372	0.01	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0
Usnea spp.	USNSPP	15	100.00	0.0640	0.046	0.012	0.184	0.01	0.10

BASED ON 34 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.141
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 2.402 (NATURAL LOGS)

34 OF THE 62 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 5.6880



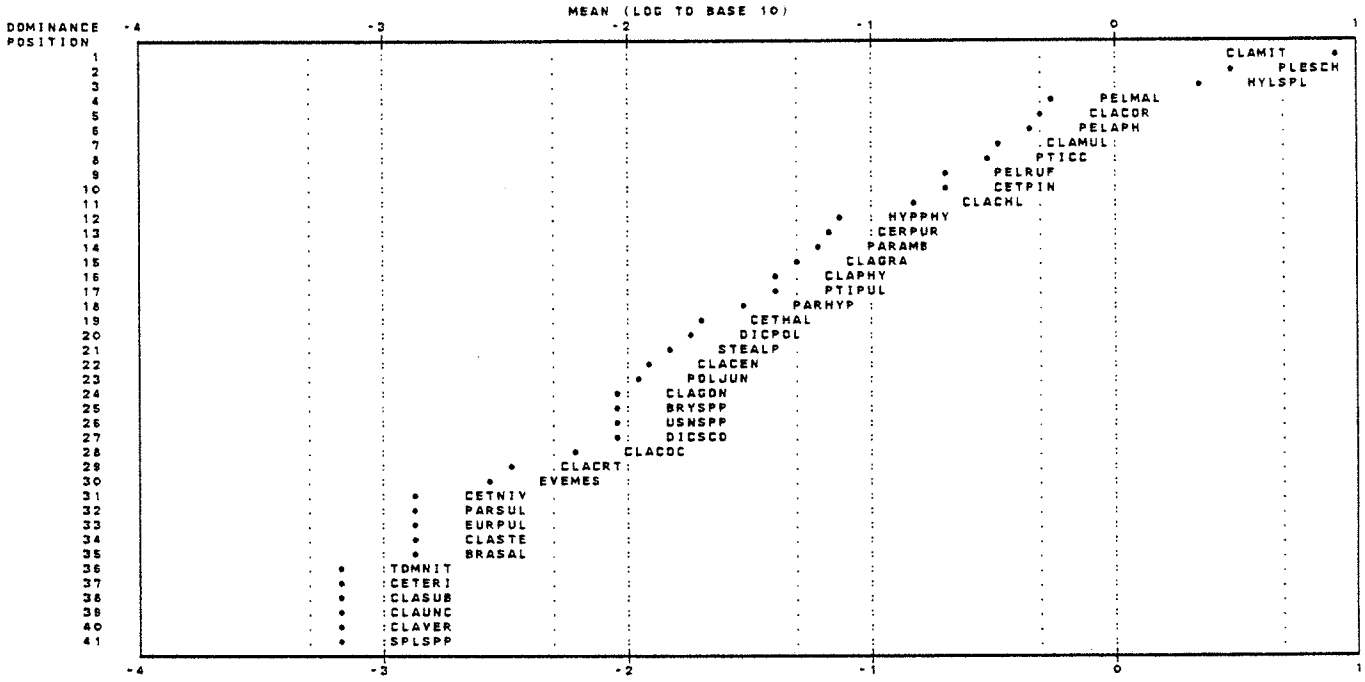
Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 33
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS&2825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Ceratodon purpureus	CERPUR	15	13.33	0.0673	0.258	0.067	0.989	+0.0	1.00
Dicranum polysetum	DICPOL	15	60.00	0.0180	0.034	0.009	0.482	+0.0	0.10
Dicranum scoparium	DICSCO	15	26.67	0.0067	0.026	0.007	0.763	+0.0	0.10
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Hylocomium splendens	HYLSPL	15	93.33	2.2020	1.725	0.952	0.437	+0.0	15.00
Orthodicranum flagillare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	15	100.00	3.0867	2.437	0.629	0.204	0.10	8.00
Ponlia nutans	PONNUT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Polytrichum juniperinum	POLJUN	15	53.33	0.0113	0.025	0.006	0.570	+0.0	0.10
Polytrichum pilliferum	POLPIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	15	60.00	0.0420	0.049	0.013	0.302	+0.0	0.10
Ptilium crista-castrensis	PTICC	15	80.00	0.3080	0.434	0.112	0.364	+0.0	1.00
Splachnum spp.	SPLSPP	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cetraria nivalis	CETNIV	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladina mitis	CLAMIT	15	100.00	8.0747	9.610	2.481	0.307	0.01	35.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina stellaris	CLASTE	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	15	60.00	0.0120	0.025	0.006	0.535	+0.0	0.10
Cladonia chlorophaea	CLACHL	15	33.33	0.1420	0.515	0.133	0.936	+0.0	2.00
Cladonia coccifera	CLACOC	15	60.00	0.0060	0.005	0.001	0.214	+0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	15	93.33	0.5140	0.604	0.156	0.303	+0.0	2.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	15	33.33	0.0033	0.008	0.001	0.378	+0.0	0.01
Cladonia gonecha	CLAGON	15	33.33	0.0093	0.025	0.007	0.705	+0.0	0.10
Cladonia gracilis	CLAGRA	15	80.00	0.0500	0.048	0.013	0.251	+0.0	0.10
Cladonia multiformis	CLAMUL	15	100.00	0.3340	0.416	0.107	0.322	0.01	1.00
Cladonia phyllophora	CLAPHY	15	66.67	0.0427	0.049	0.013	0.294	+0.0	0.10
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonis subulata	CLASUB	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia uncialis	CLAUNC	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia verticillata	CLAVER	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aphthosa	PELAPH	15	66.67	0.4280	0.815	0.210	0.491	+0.0	3.00
Peltigera malacea	PELMAL	15	46.67	0.5333	0.640	0.165	0.310	+0.0	2.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	15	46.67	0.2087	0.410	0.108	0.504	+0.0	1.00
Stereocaulon alpinum	STEALP	15	26.67	0.0147	0.035	0.009	0.613	+0.0	0.10
Bryoria spp.	BRYSPP	15	86.67	0.0087	0.004	0.001	0.105	+0.0	0.01
Cetraria halei	CETHAL	15	86.67	0.0207	0.032	0.008	0.405	+0.0	0.10
Cetraria pinastri	CETPIN	15	100.00	0.2020	0.326	0.084	0.417	0.01	1.00
Evernia mesomorpha	EVEMES	15	26.67	0.0027	0.006	0.001	0.443	+0.0	0.01
Hypogymnia physodes	HYPPHY	15	93.33	0.0753	0.042	0.011	0.145	+0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	15	13.33	0.0013	0.004	0.001	0.881	+0.0	0.01
Parmeliopsis ambigua	PARAMB	15	86.67	0.0627	0.049	0.012	0.195	+0.0	0.10
Parmeliopsis hyperopta	PARHYP	15	73.33	0.0313	0.043	0.011	0.355	+0.0	0.10
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp.	USNSPP	15	86.67	0.0067	0.004	0.001	0.105	+0.0	0.01

BASED ON 41 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.295
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.736 (NATURAL LOGS)

41 OF THE 82 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 16.5383

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 34
Descriptive Statistics for Each Species Variable and Each Stand
FILE ADS82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S15

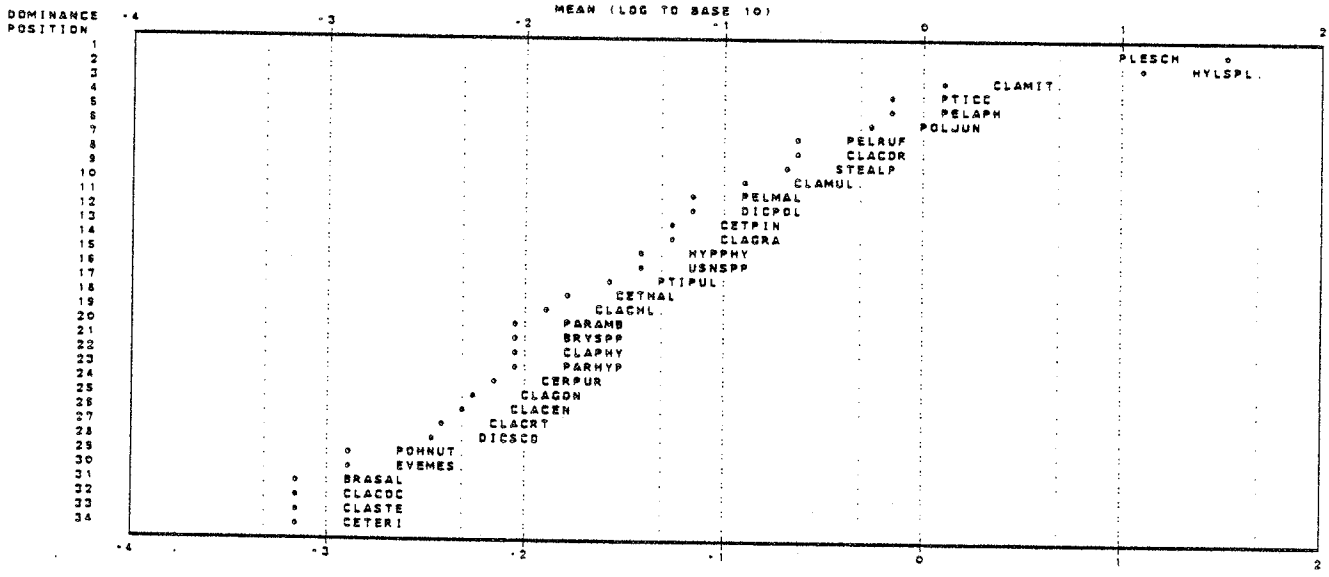


Athabasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 35
Descriptive Statistics for Each Species Variable and Each Stand
FILE A0582825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Aulacomnium palustre	AULPAL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Brachythecium salebrosum	BRASAL	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Ceratodon purpureus	CERPUR	15	6.67	0.0067	0.026	0.007	1.000	+0.0	0.10
Dicranum polysetum	DICPOL	15	73.33	0.0673	0.048	0.012	0.184	+0.0	0.10
Dicranum scoparium	DICSCO	15	33.33	0.0033	0.005	0.001	0.378	+0.0	0.01
Ditrichum flexicaule	DITFLE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Drepanocladus uncinatus	DREUNC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Eurhynchium pulchellum	EURPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Hylocomium splendens	HYLSPL	15	100.00	12.4067	9.247	2.388	0.192	0.10	30.00
Orthodicranum flagellare	ORTFLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Pleurozium schreberi	PLESCH	15	100.00	33.7333	21.429	5.533	0.164	3.00	65.00
Pohlia nutans	POHNUT	15	13.33	0.0013	0.004	0.001	0.561	+0.0	0.01
Polytrichum juniperinum	POLJUN	15	100.00	0.5763	0.806	0.208	0.362	0.01	3.00
Polytrichum piliferum	POLPIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium ciliare	PTICIL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Ptilidium pulcherrimum	PTIPUL	15	40.00	0.0280	0.045	0.012	0.416	+0.0	0.10
Ptilium crista-castrensis	PTICC	15	86.67	0.7060	1.324	0.342	0.483	+0.0	5.00
Sphagnum spp.	SPLSPP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tetraplodon angustatus	TETANG	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Tomenthypnum nitens	TOMNIT	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria cucullata	CETCUC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cetraria ericetorum	CETERI	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cetraria nivalis	CETNIV	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina mitis	CLAMIT	15	100.00	1.2213	1.123	0.290	0.237	0.01	3.00
Cladina rangiferina	CLARAN	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladina stellaris	CLASTE	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia amaurocraea	CLAAMA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia capitata	CLACAP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cariosa	CLACAR	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cenotea	CLACEN	15	46.67	0.0047	0.005	0.001	0.286	+0.0	0.01
Cladonia chlorophaea	CLACHL	15	73.33	0.0133	0.024	0.006	0.472	+0.0	0.10
Cladonia coccifera	CLACOC	15	6.67	0.0007	0.003	0.001	1.000	+0.0	0.01
Cladonia coniocraea	CLACON	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cornuta	CLACOR	15	80.00	0.2300	0.401	0.103	0.450	+0.0	1.00
Cladonia crispata	CLACRP	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia cristatella	CLACRT	15	40.00	0.0040	0.005	0.001	0.327	+0.0	0.01
Cladonia gonecha	CLAGON	15	53.33	0.0053	0.005	0.001	0.250	+0.0	0.01
Cladonia gracilis	CLAGRA	15	80.00	0.0560	0.048	0.013	0.225	+0.0	0.10
Cladonia multiformis	CLAMUL	15	86.67	0.1287	0.245	0.063	0.482	+0.0	1.00
Cladonia phyllophora	CLAPHY	15	33.33	0.0093	0.025	0.007	0.705	+0.0	0.10
Cladonia pyxidata	CLAPYX	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia squamosa	CLASQU	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia subulata	CLASUB	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia uncialis	CLAUNC	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Cladonia verticillata	CLAVER	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Lecidea granulosa	LECGRA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera aphthosa	PELAPH	15	86.67	0.8880	0.704	0.182	0.264	+0.0	2.00
Peltigera malacea	PELMAL	15	13.33	0.0673	0.258	0.067	0.989	+0.0	1.00
Peltigera pulverulenta	PELPUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Peltigera rufescens	PELRUF	15	86.67	0.2407	0.398	0.102	0.424	+0.0	1.00
Stereocaulon alpinum	STEALP	15	53.33	0.2153	0.407	0.105	0.488	+0.0	1.00
Bryoria spp.	BRYSPP	15	93.33	0.0093	0.003	0.001	0.071	+0.0	0.01
Cetraria halei	CETHAL	15	93.33	0.0153	0.024	0.006	0.397	+0.0	0.10
Cetraria pinastri	CETPIN	15	93.33	0.0573	0.047	0.012	0.213	+0.0	0.10
Evernia mesomorpha	EVEMES	15	13.33	0.0013	0.004	0.001	0.561	+0.0	0.01
Hypogymnia physodes	HYPPHY	15	93.33	0.0393	0.044	0.011	0.292	+0.0	0.10
Parmelia elegantula	PARELE	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmelia sulcata	PARSUL	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Parmeliopsis ambigua	PARAMB	15	93.33	0.0093	0.003	0.001	0.071	+0.0	0.01
Parmeliopsis hyperopta	PARHYP	15	86.67	0.0087	0.004	0.001	0.105	+0.0	0.01
Platismatia glauca	PLAGLA	15	0.0	0.0	0.0	0.0	0.0	+0.0	+0.0
Usnea spp.	USNSPP	15	93.33	0.0393	0.044	0.011	0.292	+0.0	0.10

BASED ON 34 POSITIVE MEANS: SIMPSON'S INDEX OF DOMINANCE CONCENTRATION, C = 0.506
SHANNON-WEAVER INDEX OF DIVERSITY, H' = 1.027 (NATURAL LOGS)

34 OF THE 52 VARIABLES HAVE POSITIVE MEANS, WHICH SUM TO 50.5867



Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 37
Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S01N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	7.0247	10.223	2.640	0.376	0.04	30.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	1.4000	0.828	0.214	0.153	1.00	4.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	19.4726	15.831	4.088	0.210	1.17	51.32
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.5333	2.200	0.568	0.054	6.00	14.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.8093	2.561	0.661	0.817	0.01	10.00
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	2.8333	1.782	0.463	0.158	1.00	7.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	20.2820	16.233	4.191	0.207	1.33	51.35
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	13.4667	1.846	0.477	0.035	10.00	16.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	27.3066	21.070	5.440	0.199	1.43	65.45
Richness per Plot of All Spp.	TOTALRP	15	100.00	14.8667	1.807	0.467	0.031	11.00	17.00

Athbasca Oil Sands Ecological Monitoring: August 1982 Surveys 04/02/83 PAGE 38
Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S02N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	0.5467	0.833	0.183	0.299	0.01	2.11
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	2.4667	1.125	0.291	0.118	1.00	4.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	86.1806	5.631	1.454	0.017	72.44	91.63
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	11.1333	1.060	0.274	0.025	9.00	13.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.4620	0.403	0.104	0.225	0.17	1.35
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.4000	0.507	0.131	0.016	8.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	86.6426	5.645	1.457	0.017	72.61	91.98
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	19.5333	1.060	0.274	0.014	17.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	86.1883	5.750	1.485	0.017	72.74	92.00
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.0000	1.927	0.498	0.023	18.00	25.00

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Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S03N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	11.8740	14.775	3.815	0.321	1.00	50.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	1.1333	0.352	0.091	0.080	1.00	2.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	7.1853	4.266	1.101	0.153	1.47	18.43
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.7333	1.438	0.371	0.035	9.00	13.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.1333	0.073	0.019	0.142	0.06	0.25
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.7333	0.961	0.248	0.027	4.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	7.3187	4.287	1.107	0.151	1.54	18.68
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	17.4667	1.598	0.413	0.024	14.00	20.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	19.1927	14.889	3.844	0.200	3.54	55.51
Richness per Plot of All Spp.	TOTALRP	15	100.00	18.8000	1.595	0.412	0.022	15.00	21.00

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Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S04N

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	0.8880	0.835	0.216	0.243	0.01	3.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	2.2667	1.163	0.300	0.132	1.00	4.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	22.0687	25.600	6.610	0.300	0.04	85.25
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.2000	2.274	0.587	0.064	4.00	13.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.3867	0.652	0.168	0.436	0.03	2.26
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	6.2000	1.821	0.470	0.076	3.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	22.4553	25.412	6.561	0.282	0.32	85.29
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	15.4000	2.613	0.675	0.044	12.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	23.3433	25.168	6.499	0.278	1.21	85.39
Richness per Plot of All Spp.	TOTALRP	15	100.00	17.6667	3.063	0.791	0.045	13.00	24.00

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Descriptive Statistics for Each Synthetic Variable
FILE AOS82B2S (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S02

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	2.8073	1.972	0.509	0.181	1.00	8.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	1.1333	0.352	0.091	0.080	1.00	2.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	38.8753	30.465	7.871	0.197	4.42	97.51
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.6000	1.183	0.306	0.032	8.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.1713	0.117	0.030	0.177	0.08	0.45
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.7333	0.458	0.118	0.014	8.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	40.0466	30.484	7.873	0.197	4.52	97.59
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.3333	1.447	0.374	0.020	16.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	42.8540	30.172	7.790	0.182	6.52	98.59
Richness per Plot of All Spp.	TOTALRP	15	100.00	19.4667	1.407	0.363	0.019	17.00	22.00

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Descriptive Statistics for Each Synthetic Variable
FILE AOS82B2S (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S03

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	1.7873	4.094	1.057	0.591	0.01	16.11
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.0667	1.163	0.300	0.098	1.00	5.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	41.4233	29.178	7.534	0.182	0.24	86.07
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	5.5667	1.988	0.513	0.077	3.00	9.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.1460	0.096	0.025	0.167	0.01	0.35
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	4.6000	1.993	0.515	0.112	1.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	41.5713	29.181	7.535	0.181	0.38	86.09
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	11.2667	2.463	0.636	0.056	4.00	14.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	43.3586	27.902	7.204	0.166	2.39	86.20
Richness per Plot of All Spp.	TOTALRP	15	100.00	14.3333	2.610	0.674	0.047	6.00	18.00

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Descriptive Statistics for Each Synthetic Variable
FILE AOS82B2S (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S04

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	3.6040	4.137	1.068	0.296	0.11	15.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	2.1333	0.352	0.091	0.043	2.00	3.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	39.6800	22.696	5.860	0.148	0.15	78.31
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.7333	2.915	0.753	0.070	8.00	15.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.1400	0.068	0.018	0.126	0.08	0.28
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.5000	0.737	0.190	0.022	7.00	10.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	39.8200	22.659	5.851	0.147	0.43	78.39
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	19.3333	2.890	0.895	0.036	15.00	24.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	43.4238	24.842	5.414	0.146	1.44	86.46
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.4667	2.542	0.882	0.032	17.00	28.00

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FILE AOS82B2S (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S05

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	93.33	0.1467	0.251	0.065	0.435	0.0	1.03
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	93.33	2.2667	1.163	0.300	0.132	0.0	4.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	69.8073	15.854	4.094	0.059	39.54	85.54
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	11.8000	2.187	0.567	0.048	7.00	15.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.2127	0.083	0.021	0.101	0.04	0.38
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.6667	0.488	0.126	0.015	8.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	70.1499	15.863	4.096	0.058	39.72	85.72
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	20.2667	2.404	0.621	0.031	15.00	23.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	70.2986	15.838	4.105	0.058	39.85	85.73
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.5333	2.386	0.616	0.027	18.00	26.00

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Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S07

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	0.7653	0.549	0.142	0.185	0.03	1.42
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.3333	1.988	0.513	0.154	1.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	56.1979	20.835	5.380	0.096	23.23	80.43
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.5667	1.345	0.347	0.033	8.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.8493	1.053	0.272	0.320	0.17	4.33
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.0667	0.458	0.118	0.015	7.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	57.0473	20.536	5.302	0.093	24.30	80.68
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.7333	1.438	0.371	0.020	16.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	57.8126	20.623	5.325	0.092	24.50	80.96
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.0667	2.865	0.740	0.034	18.00	26.00

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Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S08

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	86.67	0.1283	0.245	0.063	0.488	0.0	1.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	86.67	0.9333	0.458	0.118	0.127	0.0	2.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	73.7153	11.540	2.979	0.040	52.46	91.55
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	12.4667	1.767	0.456	0.037	10.00	16.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.3307	0.386	0.100	0.301	0.08	1.34
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	7.8667	0.352	0.091	0.012	7.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	74.0459	11.338	2.928	0.040	52.63	91.63
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	20.3333	1.952	0.504	0.025	17.00	24.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	74.1753	11.249	2.905	0.039	52.73	91.73
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.2667	1.981	0.511	0.024	18.00	25.00

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Descriptive Statistics for Each Synthetic Variable
FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S09

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	18.0633	24.660	6.367	0.334	0.02	88.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.0000	1.309	0.338	0.068	2.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	54.7413	28.071	7.248	0.132	2.03	90.16
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	8.4000	1.882	0.486	0.058	4.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.4987	0.589	0.152	0.305	0.08	2.34
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.4667	0.743	0.192	0.023	7.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	55.2400	28.090	7.253	0.131	2.30	90.43
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	16.8667	1.685	0.435	0.026	13.00	19.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	74.3033	20.265	5.232	0.070	30.68	94.97
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.8667	2.356	0.608	0.028	18.00	26.00

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FILE ADS82B25 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S10

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	2.2847	1.297	0.335	0.147	1.00	5.00
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	2.8667	1.187	0.307	0.107	1.00	5.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	75.7826	8.415	2.173	0.029	53.22	84.27
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	10.8667	1.922	0.496	0.046	7.00	15.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.5353	0.813	0.210	0.392	0.07	3.14
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	7.9333	0.258	0.067	0.008	7.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	76.3179	7.917	2.044	0.027	56.36	84.62
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.8000	1.897	0.490	0.026	15.00	23.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	78.6026	7.579	1.957	0.025	58.45	85.72
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.8667	2.127	0.549	0.025	19.00	25.00

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Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S12

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	5.9113	5.461	1.410	0.239	0.21	20.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.4667	0.915	0.236	0.068	2.00	5.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	44.6446	24.930	6.437	0.144	12.32	86.33
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	8.4000	1.183	0.306	0.033	6.00	12.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.2413	0.259	0.069	0.288	0.07	1.08
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	6.5333	0.640	0.185	0.018	7.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	44.8860	24.928	6.436	0.143	12.40	86.87
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	17.8333	1.580	0.408	0.023	16.00	21.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	50.7973	26.568	6.860	0.135	13.42	89.32
Richness per Plot of All Spp.	TOTALRP	15	100.00	21.4000	2.063	0.533	0.025	19.00	26.00

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FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S14

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	1.9507	1.973	0.509	0.261	0.10	6.02
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	3.6000	1.454	0.375	0.404	1.00	6.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	3.4660	2.243	0.579	0.167	0.18	9.22
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.6000	2.028	0.524	0.055	6.00	14.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.2693	0.128	0.033	0.123	0.09	0.54
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.9333	0.258	0.067	0.007	8.00	9.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	3.7353	2.222	0.574	0.154	0.48	8.58
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	18.5333	1.995	0.515	0.028	15.00	23.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	5.6860	3.134	0.809	0.142	1.45	12.78
Richness per Plot of All Spp.	TOTALRP	15	100.00	22.1333	2.446	0.631	0.029	18.00	27.00

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FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S15

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	5.7480	5.710	1.474	0.257	0.22	24.10
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.2867	1.223	0.316	0.080	4.00	7.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	10.3780	10.260	2.648	0.255	0.43	37.34
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	9.0000	1.964	0.507	0.056	5.00	13.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	100.00	0.4133	0.287	0.074	0.179	0.15	1.14
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	100.00	8.5333	1.846	0.477	0.073	1.00	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	10.7813	10.382	2.681	0.248	0.77	38.48
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	15.5333	2.722	0.703	0.045	10.00	19.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	16.5333	10.382	2.682	0.162	5.71	44.79
Richness per Plot of All Spp.	TOTALRP	15	100.00	20.8000	3.189	0.823	0.040	14.00	25.00

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Descriptive Statistics for Each Synthetic Variable
FILE A0S82825 (CREATION DATE = 04/02/83) Sixteen Stand Tables of 1982 Bryoid Cover % Data (25m2)
SUBFILE S16

LABEL	VARIABLE	N	FREQ %	MEAN	STD DEV	STD ERR	STD ERR /MEAN	MINIMUM	MAXIMUM
Bryophyte Cover % per Plot	BRYOPHCV	15	100.00	47.5306	26.523	6.874	0.145	6.33	80.13
Bryophyte Spp. Richness per Plot	BRYOPHRP	15	100.00	5.8000	1.404	0.363	0.065	4.00	8.00
Terr. Lichen Cover % per Plot	LCHTERCV	15	100.00	2.8860	2.305	0.595	0.206	0.18	8.22
Terr. Lichen Spp. Richness per Plot	LCHTERRP	15	100.00	6.3333	1.877	0.485	0.058	5.00	11.00
Epiph. Lichen Cover % per Plot	LCHEPICV	15	93.33	0.1800	0.112	0.029	0.161	0.0	0.44
Epiph. Lichen Spp. Richness per Plot	LCHEPIRP	15	93.33	6.8000	1.082	0.486	0.074	0.0	8.00
Lichen Cover % per Plot	LCHALLCV	15	100.00	3.0860	2.248	0.581	0.189	0.32	8.22
Lichen Spp. Richness per Plot	LCHALLRP	15	100.00	14.9333	2.374	0.613	0.041	10.00	18.00
Cover % per Plot of All Spp.	TOTALCV	15	100.00	50.5966	26.323	6.796	0.134	9.84	83.25
Richness per Plot of All Spp.	TOTALRP	15	100.00	20.5333	3.159	0.816	0.040	14.00	25.00

7.2 ANNOTATED LIST OF COLOR SLIDES

Only slides of the four new stands are included and they have been selected to illustrate the same features pointed out in the First Report.

Slides for 1983 Report

Slide Number	Permanent Plot Number	Annotation
1	New-1	Air oblique of permanent plot. White corner posts visible in reference stand.
2	New-1	Ground lateral of reference stand with widely spaced *Pinus banksiana*, extensive *Arctostaphylos uva-ursi* mats, and developing lichen carpet.
3	New-1	Detail of a large *Arctostaphylos uva-ursi* mat in which a young *Picea glauca* tree is growing, along with scattered plants of *Vaccinium myrtilloides*, *Anemone patens* and *Oryzopsis pungens*. Note charred wood residues.
4	New-1	Detail of terrestrial bryophytes and lichens with scattered *Cladina mitis*, *Cladonia chlorophaea* and *Polytrichum piliferum* most abundant.
5	New-2	Air oblique of permanent plot. Survey staff with white tape are visible in upper part of picture.
6	New-2	Ground lateral of reference stand with numerous stunted *Pinus banksiana* trees, well-developed lichen carpet, and moderately abundant epiphytic lichens.
7	New-2	Detail of *Vaccinium vitis-idaea* plants in thick lichen carpet dominated by *Cladina mitis*.

Annotated List of Color Sli Continued

Slide Number	Permanent Plot Number	Annotation
8	New-2	Detail of terrestrial lichens with *Cladina mitis* forming an almost continuous carpet, *Cladina stellaris* colony in center, and some *Cetraria nivalis* in lower right (paler yellow cf. *C. mitis*).
9	New-3	Air oblique of permanent plot. White corner posts visible in reference stand.
10	New-3	Ground lateral of reference stand with young *Pinus banksiana* trees and extensive *Arctostaphylos uva-ursi* mats.
11	New-3	Detail of ground surface with scattered *Maianthemum canadense* leaves in a matrix of lichens and pine detritus.
12	New-3	Close-up of terrestrial bryophytes and lichens with *Polytrichum piliferum* abundant, *Cetraria ericetorum* in center (tan color), and several *Cladonia* species.
13	New-4	Air oblique of permanent plot. White corner posts visible in reference stand.
14	New-4	Ground lateral of reference stand with clumps of old and young *Pinus banksiana* trees and patchy *Arctostaphylos uva-ursi* on the lichen-dominated forest floor.
15	New-4	Detail of understory plants, with *Vaccinium myrtilloides* at right and *V. vitis-idaea* at left, in a loosely knit lichen carpet composed mainly of *Cladina mitis* with some *Cladonia cornuta*.

Annotated List of Color Slides Concluded

Slide Number	Permanent Plot Number	Annoation
16	New-3	Reference stand being established in Permanent Plot No. New-3 on 5 August 1982.
17	New-4	Wedge being sawn from a fire-scarred tree to determine dates of fires and stand origin date.
18	1	Corner posts re-located in reference stand no. 1 burned over in 1981. Young trees were killed but their tops were not burned.
19	11	Corner posts re-located in reference stand no. 11 burned over in 1981. Mature trees were killed by a combined ground and patchy crown fire. Note re-sprouting *Alnus crispa* upper left and *Rosa acicularis* lower left.
20	11	Close-up of burned over forest floor in reference stand no. 11 with seedlings of *Pinus banksiana* and other fire-adapted plants, including the annuals *Geranium bicknellii* and a species being grown in the University of Alberta Greenhouse for positive identification.

7.3 COLOR SLIDES

The 20 color slides supplied with the original set of reports are inserted in one clear plastic page at the end of the report. These slides may be viewed at the Research Management Division, Alberta Department of the Environment.

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