

1995-20XX Barrow Atqasuk ITEX Community Metadata.doc

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This file contains meta-data for files:

- 1995 Barrow Atqasuk ITEX Community v1.txt
- 1996 Barrow Atqasuk ITEX Community v1.txt
- 1997 Barrow Atqasuk ITEX Community v1.txt
- 2000 Barrow Atqasuk ITEX Community v1.txt
- 2007 Barrow Atqasuk ITEX Community v1.txt
- 2008 Barrow Atqasuk ITEX Community v1.txt
- 2012 Barrow Atqasuk ITEX Community v1.txt
- 2014 Barrow Atqasuk ITEX Community v1.txt
- 2017 Barrow Atqasuk ITEX Community v1.txt

These files contain data representing the community composition and structure of ITEX plots at Barrow and Atqasuk in a text tab delimited format. The data presented were collected on the second summer of the experiment, in 2000, during summers of 2007 or 2008, 2012, and 2017 for 48 plots (24 experiment open-top chamber plots and 24 control plots) at four sites (Atqasuk Wet Meadow, Atqasuk Dry Heath, Barrow Wet Meadow, and Barrow Dry Heath) and 2014 for 8 plots (4 control and 4 experimental) at two sites (Barrow Dry Heath and Atqasuk Dry Heath).

GENERAL INFORMATION

PI/DATA CONTACT= Webber, Patrick J (MSU 1994-2005)
Hollister, Robert D (GVSU 2005 onward)
FUNDING SOURCE AWARD # = NSF OPP 9714103, NSF OPP 0632263
DATA COVERAGE = START: 19950701; STOP: 20XX UTC
PLATFORM/SITE = Barrow, Alaska (71°19'N 156°37'W);
Atqasuk, Alaska (70°29'N 157°25'W)
INSTRUMENT = Point Frame with 100 points
DATA VERSION = 1.0 (26 September 2008), preliminary quality check only

DATA COLLECTION

The data were gathered by placing a Point Frame over each plot and recording the top and bottom species at each location in years prior to 2007 and every contact after then. The height of the top species was recorded relative to the ground at that location. The grids were spaced 7 cm apart and started at 3.5 cm from the edge of the square 70 cm frame. The species was recorded at each location along with its height relative to the ground surface. Occasionally it was difficult to distinguish which species was on the ground because there were several intertwined individuals, therefore preference was given to vascular plants, then lichens, and then mosses. Due to the limitations of field identification many species were lumped into larger taxa.

Caveats

The taxa provide are relatively robust, however even with the species lumping presented there may have been some difficulty with bryophytes and lichens. Prior to 2007 the sampling only involved the top and bottom hits. In 2007 or 2008, 2012, and 2017 all hits were recorded. The height of each hit was estimated for the first sampling (1995-1997). In 2014 only 8 plots from each dry site were sampled as soil samples were taken from these plots.

DATA DETAILS

A listing of the species associated with each taxa is listed below along with the source for the species nomenclature.

strTaxon	Taxon Name	Species Included
ACRMOS	Acrocarpous moss	Acrocarpous moss
ALECOM	Alectoria complex	Alectoria nigricans Alectoria ochroleuca Alectoria species Conicularia divergens Cornicularia divergens
ALGSPP	Algae species	Algae brown
ALOALP	Alopecurus alpinus	Alopecurus alpinus
ANEURA	Aneura	Aneura pinguis Riccia lobate
ANTFRI	Antennaria friesiana	Antennaria friesiana
ARCLAT	Arctagrostis latifolia	Arctagrostis latifolia
ARTBOR	Artemisia borealis	Artemisia borealis
AULACO	Aulacomnium	Aulacomnium palustre Aulacomnium species Aulacomnium turgidum
BARGRO	Bare ground	Bare ground Mineral soil Rock Stone
BARTRA	Bartramia	Bartramia ithyphylla
BETNAN	Betula nana	Betula nana
BRACHY	Brachythecium	Brachythecium turgidum
BRYCAP	Bryum capillare	Bryum capillare
BRYMNI	Bryum mniun complex	Bryum cyclophyllum Bryum pseudoargenteum Bryum species Bryum subneodamense Bryum teres Cinclidium latifolium Cinclidium subrotundum Plagiomnium ellipticum Pohlia cruda Pohlia nutans Pohlia species Rhizomnium andrewsianum

		Rhizomnium species
BRYOER	Bryoerythrophyllum	Bryoerythrophyllum recurvirostre
CALLIE	Calliergon	Calliergon giganteum
		Calliergon richardsonii
		Calliergon sarmentosum
		Calliergon species
		Orthothecium chryseon
CAMPYL	Campylium	Campylium stellatum
		Campylium stellatum
CARAQU	Carex aquatilis complex	Carex aquatilis
		Carex rariflora
		Carex rotundata
		Carex stans
		Carex subspathacea
CARBIG	Carex bigelowii	Carex bigelowii
CARPRA	Cardamine pratensis	Cardamine pratensis
CASTET	Cassiope tetragona	Cassiope tetragona
CERAST	Cerastium	Cerastium beeringianum
CETCUC	Cetraria cucullata complex	Asahinea chrysantha
		Cetraria cucullata
		Cetraria nivalis
CETISL	Cetraria islandica complex	Cetraria delisei
		Cetraria ericetorum
		Cetraria islandica
		Cetraria laevigata
		Cetraria richardsonii
CETUNI	Cetraria unidentified	Cetraria species
CHABAS	Flux chamber base	Chamber base
CHRTET	Chrysosplenium tetrandrum	Chrysosplenium tetrandrum
CLACOM	Cladonia complex	Cladina mitis
		Cladonia amaurocraea
		Cladonia coccifera
		Cladonia cornuta
		Cladonia crustose
		Cladonia gracilis
		Cladonia pyxidata
		Cladonia small yellow
		Cladonia species
		Cladonia squasmosa
		Cladonia uncialis
CLADINA	Cladina complex	Cladina rangiferina
COCOFF	Cochlearia officinalis	Cochlearia officinalis
CONOST	Conostomum	Conostomum tetragonum

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CRULIC	Crustose lichen	Caloplaca species Crustose lichen Crustose lichen
DACTYL	Dactylina	Dactylina arctica
DIALAP	Diapensia lapponica	Diapensia lapponica
DICCOM	Dicranum complex	Dicranella species Dicranum acutifolium Dicranum angustum Dicranum elongatum Dicranum spadiceum Dicranum species Dicranum species Distichium capillaceum Distichium inclinatum Distichium species Ditrichum flexicaule Kiaeria glacialis
DRALAC	Draba lactea	Draba lactea
DRAMIC	Draba micropetala	Draba micropetala
DRECOM	Drepanocladus complex	Calliergon black Drepanocladus badius Drepanocladus brevifolius Drepanocladus exannulata Drepanocladus fluitans Drepanocladus revolvens Drepanocladus uncinatus Drepanolcladus species Drepanolcladus species Drepanolcladus species
DUPFIS	Dupontia fisheri	Dupontia fisheri Dupontia psilosantha
EQUIPM	Equipment	Probe
ERiang	Eriophorum angustifolium	Eriophorum angustifolium Eriophorum triste
ERIRUS	Eriophorum russeolum complex	Eriophorum russeolum Eriophorum scheuchzeri
FEATHE	Bird feather	Bird feather
FISSID	Fissidans	Fissidans species
FUNGIX	Fungi spp	Mushroom
HIEALP	Hierochloe alpina	Hierochloe alpina
HOLEXX	Hole	Ground hole
HYLOCO	Hylocomium	Hylocomium splendens
JUNBIG	Juncus biglumis	Juncus biglumis

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LEALIV	Leafy liverwort	Anastrophyllum minutum
		Anastrophyllum saxicola
		Black ground
		Black organic crust
		Blepharostoma trichophyllum
		Brown organic crust
		Cephaloziella arctica
		Cephaloziella spp
		Chyloscyphus fragilis
		Green hair
		Grey ground
		Gymnocolea inflata
		Gymnomitrium Species
		Hepatic leafy
		Leafy liverwort
		Leafy liverwort
		Leafy liverwort
		Leicolea rutheana
		Orthocaulis kunceanus
		Orthocaulis quadrilobus
		Sphenolobus minutus
		Tritomaria quinquedentata
LEDPAL	Ledum palustre	Ledum palustre
LITTER	Leaf Litter	Dead material
		Leaf litter
LUZARC	Luzula arctica	Luzula arctica
LUZCON	Luzula confusa	Luzula confusa
LUZWAH	Luzula wahlenbergii	Luzula wahlenbergii
MEESIA	Meesia	Meesia triquetra
		Meesia uliginosa
MINOBT	Minuartia obtusiloba	Minuartia obtusiloba
MISSIN	Missing Data	Missing data
NOSTOC	Nostoc	Nostoc species
ONCOPH	Oncophorus	Oncophorus species
		Oncophorus virens
		Oncophorus wahlenbergii
OXYDIG	Oxyria digyna	Oxyria digyna
PAPHUL	Papaver hultenii	Papaver hultenii
		Papaver lapponicum
PARMEL	Parmelia complex	Hypogymnia rugosa
		Hypogymnia subobscura
		Parmelia omphalodes
		Parmelia species

PEATXX	Peat	Peat
PEDKAN	Pedicularis kanei	Pedicularis kanei
PEDSUD	Pedicularis sudetica	Pedicularis sudetica
PELCOM	Peltigera complex	Lobaria linita
		Nephroma expallidum
		Nephroma spp.
		Peltigera aphthosa
		Peltigera canina
		Peltigera leucophlebia
		Peltigera malacea
		Peltigera rufescens
		Peltigera species
		Solorina crocea
		Sticta arctica
PERUSA	Pertusariaceae complex	Grey organic crust
		Ochrolechia species
		Organic crust
		Pertusaria species
		White organic crust
PETFRI	Petasites frigidus	Petasites frigidus
PLATAG	Plant tag	Salix pen
		Salix tag
		Wire
POACEA	Poaceae complex	Calamagrostis holmii
		Festuca brachyphylla
		Grass
		Hierochloe pauciflora
		Poa arctica
		Poa spp
		Poa viviparum
POGONA	Pogonatum	Pogonatum
		Pogonatum dentatum
		Pogonatum dentatum
POITAG	Point frame tag	Point frame tag
POLBIS	Polygonum bistorta	Polygonum bistorta
POLCOM	Polytrichum complex	Polytrichum alpinum
		Polytrichum hyperboreum
		Polytrichum jenseii
		Polytrichum juniperum
		Polytrichum piliiferum
		Polytrichum species
		Polytrichum species
		Polytrichum species

		Polytrichum strictum
		Timmia austriaca
POLVIV	Polygonum viviparum	Polygonum viviparum
POOBIR	Bird poop	Bird poop
POOCAR	Caribou poo	Cariboo poo
		Caribou poop
POOFOX	Fox poo	Fox poop
POOGOO	Goose poo	Goose poop
POOLEM	Lemming poo	Lemming poop
POOOWL	Owl pellet	Owl pellet
POOPTA	Ptarmigan poo	Ptarmigan poop
POTHYP	Potentilla hyparctica	Potentilla hyparctica
PSOHYP	Psoroma hypnorum	Psoroma hypnorum
PTILID	Ptilidium	Ptilidium ciliare
RACOMI	Racomitrium	Racomitrium canescens
		Racomitrium lanuginosum
RANNIV	Ranunculus nivalis	Ranunculus nivalis
RHYTID	Rhytidium	Rhytidium rugosum
SALPHL	Salix phlebophylla	Salix phlebophylla
SALPOL	Salix polaris	Salix polaris
		Salix polaris
SALPUL	Salix pulchra	Salix pulchra
SALROT	Salix rotundifolia	Salix rotundifolia
SAXCER	Saxifraga cernua	Saxifraga cernua
SAXFOL	Saxifraga foliolosa	Saxifraga foliolosa
SAXHIE	Saxifraga hieracifolia	Saxifraga hieracifolia
SAXHIR	Saxifraga hirculus	Saxifraga hirculus
SAXPUN	Saxifraga punctata	Saxifraga punctata
SCAPAN	Scapania	Scapania paludicolla
		Scapania paludicolla
SENATR	Senecio atropurpureus	Senecio atropurpureus
SIPHUL	Siphula	Siphula ceratites
SPHAER	Sphaerophorus	Sphaerophorus globosus
SPHAGN	Sphagnum	Sphagnum
		Sphagnum
		Sphagnum compactum
		Sphagnum imbricatum
		Sphagnum moss
		Sphagnum warnstorffii
STAKEX	Stake	Stake
STELLA	Stellaria	Stellaria humifusa
		Stellaria laeta
STEREO	Stereocaulon	Stereocaulon alpinum

		Stereocaulon species
THAMNO	Thamnolia	Thamnolia
		Thamnolia subuliformis
TOMENT	Tomenthypnum	Tomenthypnum nitens
TORTEL	Tortella	Tortella torulosa
TRISPI	Trisetum spicatum	Trisetum spicatum
UNIBRY	Unidentified bryophyte	Dead moss
		Moss species
UNIGRA	Unidentified graminoid	Graminoid
UNILIC	Unidentified lichen	Lichen species
VACVIT	Vaccinium vitis-idaea	Vaccinium vitis-idaea
XXXXXX	Empty field	Empty field

Vascular Plants

Hulten, E. 1968. Flora of Alaska and Neighboring Territories A Manual of the Vascular Plants. Stand University Press. Stanford, California pp. 1008.

Lichens

Esslinger, T.L. and R.S. Egan. 1995. A sixth checklist of the lichen-forming, lichenicolus, and allied fungi of the continental United States and Canada. The Bryologist 98:467-549.

Liverworts

Stotler, R. and B. Crandall-Stotler. 1977. A checklist of the Liverworts and Hornworts of north America. The Bryologist 80(3):406-428.

Mosses

Anderson, L.E., H.A Crum, and W.R. Buck. 1990. List of the Mosses of North America north of Mexico. The Bryologist 93(4):448-499.

Sphagnum

Anderson, L.E. 1990. A checklist of Sphagnum in North America north of Mexico. The Bryologist 93(4):500-501.

DATA FORMAT

The following prefixes have been used to designate data type.

str - indicates string (text) data

ysn - indicates yes or no data

dtm - indicates date time data

num - indicates numeric data

All string data within a column contain the same number of characters. The meaning of each character is defined at each position by stating the length of the identifier with a numeric and placing all the data codes used within parentheses directly after the numeric. For example:

strYear - year of recording

4(1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2007, 2008, 2012, 2014, 2017)

The above example describes a column that represents the year the data was recorded, it is string data that is always four characters in length and the only data codes used are 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2007, 2008, 2012, 2014, 2017.

COLUMN DESCRIPTIONS

strUTC - universal time constant (UTC)

year 4(1995-2017)

month 2(06-08)

day 2(01-31)

strIdLo - the location of the recording

site 1(B=Barrow Alaska, A=Atqasuk Alaska)

community 1(D=Dry Heath Tundra, W=Wet Meadow Tundra)

treatment 1(C=Control, E=Open-Top Chamber)

plot 2(01-24)

strSitCom - the site and community

site 1(B=Barrow Alaska, A=Atqasuk Alaska)

community 1(D=Dry Heath Tundra, W=Wet Meadow Tundra)

strTrea - treatment 1(C=Control, E=Open-Top Chamber)

strPlot - plot 2(01-24)

numYear - the year of the recording (1995-2017)

numJulian - Julian day of year(1-366)

numMonth - month of the year (6-8)

numNS - location of point along the North/South axis

numEW - location of point along the East/West axis

strLev - level of the hit 1(1-7; most hits where only 1)

strType - type of hit 1(F=Feces, G=Ground, H=Human, L=Litter,
N=Non vascular, U=Unknown, V=Vascular)

strBFun - broad functional type 4(ALGA=Algae, BARE=Bare

Ground, BRYO=Bryophyte, CHAM=Flux Chamber Base, DSHR=Woody

deciduous, ESHR=Woody evergreen, FORB=Forb, FUNG=Fungus,

GRAM=Graminoid, LICH=Lichen, LITT=Leaf Litter, MISS=Missing Data,

PLTA=Plant Tag, POOP=Feces, POTA=Point Frame Tag, PROB=Probe)

strNFun - narrow functional group 4(ACRO=Acrocarpous Moss,

ALGA=Algae, BARE=Bare Ground, CAGR=Caespitose Graminoid,

CHAM=Flux Chamber Base, CRUS=Crustose Lichen, CUFO=Cushion Forb,

DESH=Deciduous Shrub, ERFO=Errect Forb, EVSH=Evergreen Shrub,

FOLI=Foliose Lichen, FRUT=Fruticose Lichen, FUNG=Fungus, LEAF=Leafy

liverwort, LITT=Leaf Litter, MAFO=Mat Forb, MISS=Missing Data,

PLEU=Pleurocarpous Moss, PLTA=Plant Tag, POOP=Feces, POTA=Point

Frame Tag, PROB=Probe, ROFO=Rossette Forb, SIGR=Single Graminoid,

SPHA=Sphagnum Moss, THAL=Thalloid Liverwort, UNBR=Unidentified

Bryophyte, UNGR=Unidentified Graminoid, UNLI=Unidentified Lichen)

strTaxon - taxon 6(see listing above)

strStatus - status 1(L=Live, D=Dead, O=Other)

numHeight - height of the hit relative to the ground at that point (cm) (estimated in years 94-97)

numGround - distance of the ground from the level point frame (cm)

NOTE

-999.9 - indicates missing data