Atlas of Relations Between Climatic Parameters and Distributions of Important Trees and Shrubs in North America—

Alaska Species and Ecoregions

By Robert S. Thompson, Katherine H. Anderson, Laura E. Strickland, Sarah L. Shafer, Richard T. Pelltier, *and* Patrick J. Bartlein

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Atlas of Relations Between Climatic Parameters and Distributions of Important Trees and Shrubs in North America— *Alaska Species and Ecoregions*

By Robert S. Thompson,[1] Katherine H. Anderson,[2] Laura E. Strickland,[1] Sarah L. Shafer,[3] Richard T. Pelltier,[1] *and* Patrick J. Bartlein[4]

Abstract

Climate is the primary factor in controlling the continental-scale distribution of plant species, although the relations between climatic parameters and species' ranges is only now beginning to be quantified. Preceding volumes of this atlas explored the continental-scale relations between climatic parameters and the distributions of woody plant species across all of the continent of North America. This volume presents similar information for important woody species, groups of species, and ecoregions in more detail for the State of Alaska. For these analyses, we constructed a 25-kilometer equal-area grid of modern climatic and bioclimatic parameters for North America from instrumental weather records. We obtained a digital representation of the geographic distribution of each species or ecoregion, either from a published source or by digitizing the published distributions ourselves. The presence or absence of each species or ecoregion was then determined for each point on the 25-kilometer grid, thus providing a basis for comparison of the climatic data with the geographic distribution of each species or ecoregion. The relations between climate and these distributions are presented in graphical and tabular form.

Introduction

Climate is a major control on the distribution of plant species, and the three preceding volumes of this atlas series (Thompson and others, 1999a, 1999b, 2000) explored the continental-scale relations between climate and the geographic ranges of woody plant species in North America, based largely on the species' distribution maps published by the U.S. Department of Agriculture Forest Service (Critchfield and Little, 1966; Little, 1971, 1976, 1977, 1981). Additional distribution maps were obtained from Bailey (1970), Benson and Darrow (1981), and Yang (1970). The third volume (Thompson and others, 2000) also provided an examination of the distributions of woody species in relation to climate within the State of Florida (based on the plant distribution maps in Little [1978]). To this point, our treatment of arctic and subarctic taxa has been limited, largely because detailed distribution maps of woody species are not available for much of Canada. However, Viereck and Little (1975) published detailed distribution maps for woody species within the State of Alaska, and in this volume we examine the relations between these distributions and climatic parameters solely for Alaska. In addition, we explore the relations between the distributions of ecoregions in Alaska as defined by Küchler (1985), Bailey (1998), and the World Wildlife Fund (Ricketts and others, 1999). The Küchler "potential natural vegetation" categories were defined prior to the development of the concept of ecoregions; but for the sake of simplicity, we refer to these categories as ecoregions in this volume.

The climatic (mean January, July, and annual temperature and precipitation) and bioclimatic (mean temperature of the coldest month, growing degree days [on a 5°C base], and a moisture index) data used here are the same as those used in the previous volumes (see Thompson and others, 1999a, for a review of the methodology). In Alaska, the mean temperature of the coldest month (MTCO) is usually equivalent to the mean January temperature. The concept of "growing degree days" (GDD5) was adopted from Midwestern agriculture studies (for example, Newman, 1980) and is a measure of the total accumulation of energy over the growing season. For this atlas, GDD5 represents the sum of the number of degrees per day above the base temperature (5°C) over the course of the year. The moisture index (α) represents the ratio between mean annual precipitation and mean annual potential evaporation (Thornthwaite and Mather, 1955, 1957; Willmott and others, 1985; Prentice and others 1992).

The 1951 to 1980 climate normals were taken from more than 8,000 weather stations across North America and interpolated onto an Albers equal-area grid with points evenly spaced 25 km apart (with elevation being considered in the climatic/bioclimatic interpolation scheme). There are few long-term weather records in northern Alaska, and the station data for this region were augmented with values digitized from the World Meteorological Organization atlas for North America (Steinhauser, 1979). Alaska occupies 2,120 grid points on the 25-km grid (out of the

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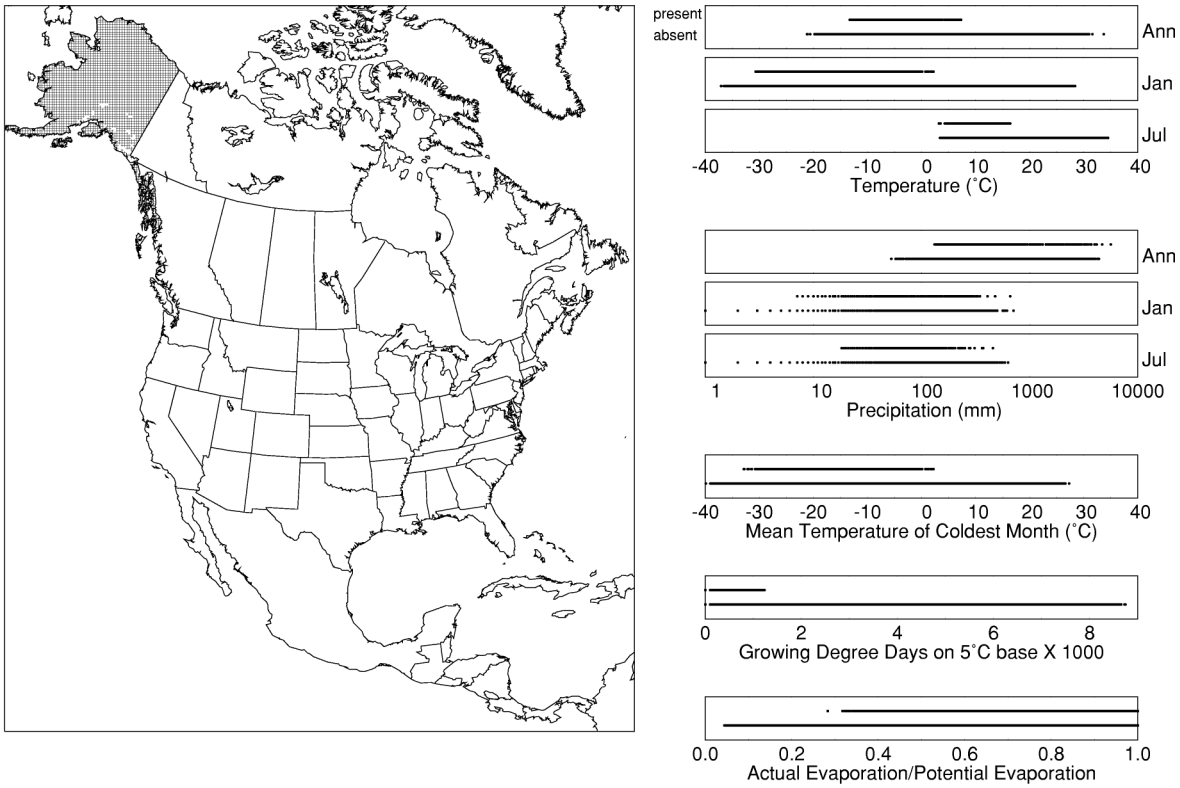
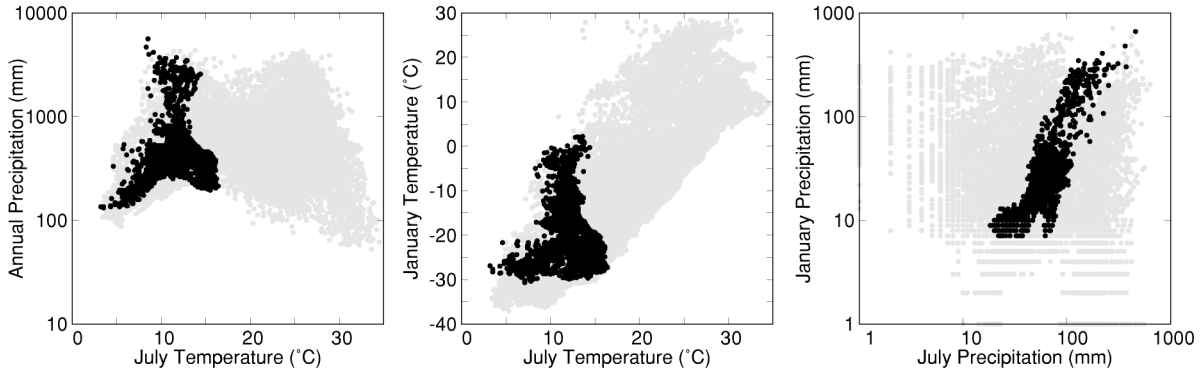
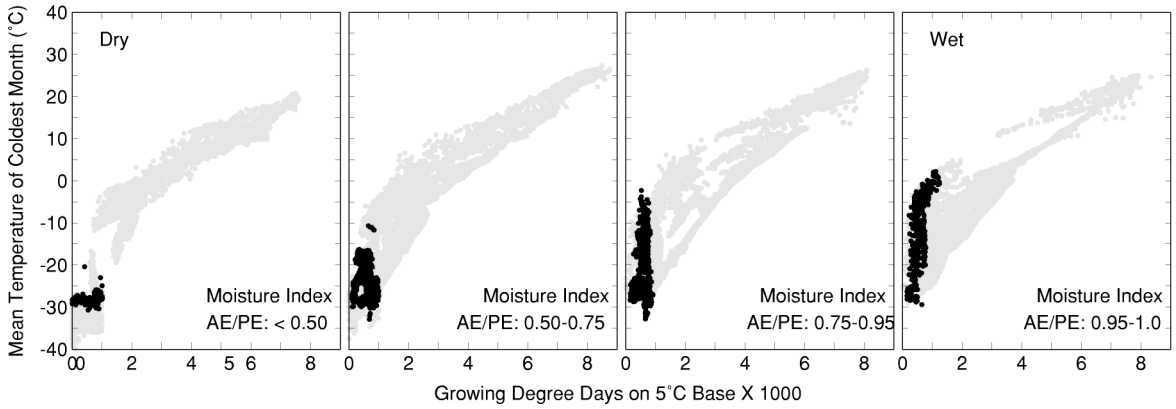
Alaska Area


present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20 30 40
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-40 -30 -20 -10 0 10 20 30 40
Mean Temperature of Coldest Month (˚C)
0 2 4 6 8
Growing Degree Days on 5˚C base X 1000
0.0 0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation


Annual Precipitation (mm)
10000
1000
100
10
0 10 20 30
July Temperature (˚C)
January Temperature (˚C)
30 20 10 0 -10 -20 -30 -40
0 10 20 30
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
1 10 100 1000
July Precipitation (mm)


Mean Temperature of Coldest Month (˚C)
40 30 20 10 0 -10 -20 -30 -40
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0 2 4 6 8
Growing Degree Days on 5˚C Base X 1000

32,311 grid points in the North American data set), and figure 1 illustrates the climatic and bioclimatic position of Alaska relative to the climate of North America. Temperature data from Alaska are shown in figures 2 and 3; precipitation data in figures 4 and 5, and bioclimatic data in figures 5, 6, and 7. Figure 8 illustrates the climate of Alaska on its own (not relative to all of North America as in figure 1); figure 8 displays the format used for all of the species, groups of species, and ecoregions in this volume of the atlas.

This volume has three sections: (1) This introduction (which includes tables with lists of the species and groups herein, species and groups in volumes 1650–A through 1650–D, and ecoregions of Alaska); (2) Alaskan woody species and groups of species; and (3) Alaskan ecoregions. For each species, group of species, or ecoregion we provide:

- a map of the distribution of the taxon or ecoregion on the 25-km grid points in Alaska; univariate, bivariate, and trivariate plots of the presence or absence of the entity in relation to climatic and bioclimatic variables;
- histograms for each taxon or ecoregion that display the percentage of the total number of grid points for the entity that are within a specified range of each climatic or bioclimatic variable; and
- tables of the data used for Alaska woody species, groups of species, or ecoregions that permit users to obtain quantitative information on the relations between the distribution of each taxon or ecoregion and climatic or bioclimatic parameters.

Figure 1 (facing page). The climate of Alaska on the 25-kilometer grid compared to the climate of all of North America. The black "+" signs on the map in the upper left corner show the grid points in Alaska that are included in the analyses in this volume. The "missing points" in southern Alaska represent glaciers (where woody species do not typically grow).

The nine narrow boxes to the right of the map show the distribution of the Alaskan grid points in relation to single climatic or bioclimatic variables compared to all grid points in North America. Key to abbreviations: Ann = Annual, Jan = January, Jul = July. The upper row of dots within each horizontal box represents Alaskan grid points, whereas the lower row represents grid points from elsewhere in North America.

The three panels in a row below the map show the climate of Alaska in relation to pairs of climatic or bioclimatic variables. Black dots represent grid points in Alaska, gray points represent grid points elsewhere in North America.

The set of four panels in the bottom row illustrates the climate of Alaska relative to that of all of North America in relation to the three bioclimatic variables. In this figure, each of the four boxes represents approximately 25 percent of the total number of grid points in North America in relation to the Moisture Index, ranging from the driest quartile on the left to the wettest quartile on the right. Within each box the mean temperature of the coldest month is arrayed on the vertical axis and growing degree days (5° Celsius base) on the horizontal axis. Black dots represent grid points in Alaska, gray points represent grid points elsewhere in North America. AE, actual evaporation; PE, potential evaporation.

Sources of Species and Ecoregion Data

Alaskan Species and Groups of Species

The distributions of important woody plant species were mapped in detail by the U.S. Department of Agriculture Forest Service (Viereck and Little, 1975; see table 1 in this volume for a list of species). All of these species also occur elsewhere in North America and, in some cases, Eurasia. Unfortunately, the distributions of these species have not been mapped in sufficient detail for our analyses outside of Alaska, and consequently we have chosen to confine our analysis of the relations between climatic parameters and plant distributions for these species solely to this State. Four of the 82 species (*Abies amabilis*, *Abies lasiocarpa*, *Taxus brevifolia*, *Salix hookeriana*) mapped in Viereck and Little (1975) occurred on fewer than five of the 2,120 25-km grid points in Alaska. Following the protocol used in previous volumes of this atlas, we considered these four species to have "minimal data," and we selected the nearest grid points to the digitized polygons for each species to associate climatic and bioclimatic parameters with the species (no histograms or tables were produced for these four species). As in previous volumes, where there are numerous species within a genus or family (or groups of families) we also analyzed these coarser taxonomic groups (table 2). Table 3 provides a list of all of the species and groups included in volumes A, B, C, and D of USGS Professional Paper 1650. Volumes A, B, and C provide species distributions on a North American base map; volume C also includes distributions within the State of Florida, and volume D presents species distributions only within the State of Alaska. Some species may appear in more than one volume. Table 3 also provides synonyms of the taxonomic names used in the original publications, and the volume(s) and page number(s) of USGS Professional Paper 1650 where each species and group can be found. The validity of botanical names was verified in Kartesz (1999) for hardwood species and Farjon (2001) for conifer species, except where footnoted in table 3.

Ecoregions

As mentioned previously, this volume includes an examination of the climatic characteristics of ecoregions under three different systems in Alaska. Table 4 lists the ecoregions included in this analysis: Level I ecoregions are listed in capital letters, Level II ecoregions are listed in mixed case (only letters of names capitalized), and Level III ecoregions are listed in italicized mixed case (Level I is the coarsest scale, and Level III is the finest scale; figure 9 depicts Level III ecoregions in Alaska). The Küchler (1985) ecoregions in Alaska were not presented in a hierarchical fashion in the original publication, and there are 10 Level III categories for this system in Alaska. The Bailey and World Wildlife Fund ecoregion systems are both *(Text continues on page 44)*

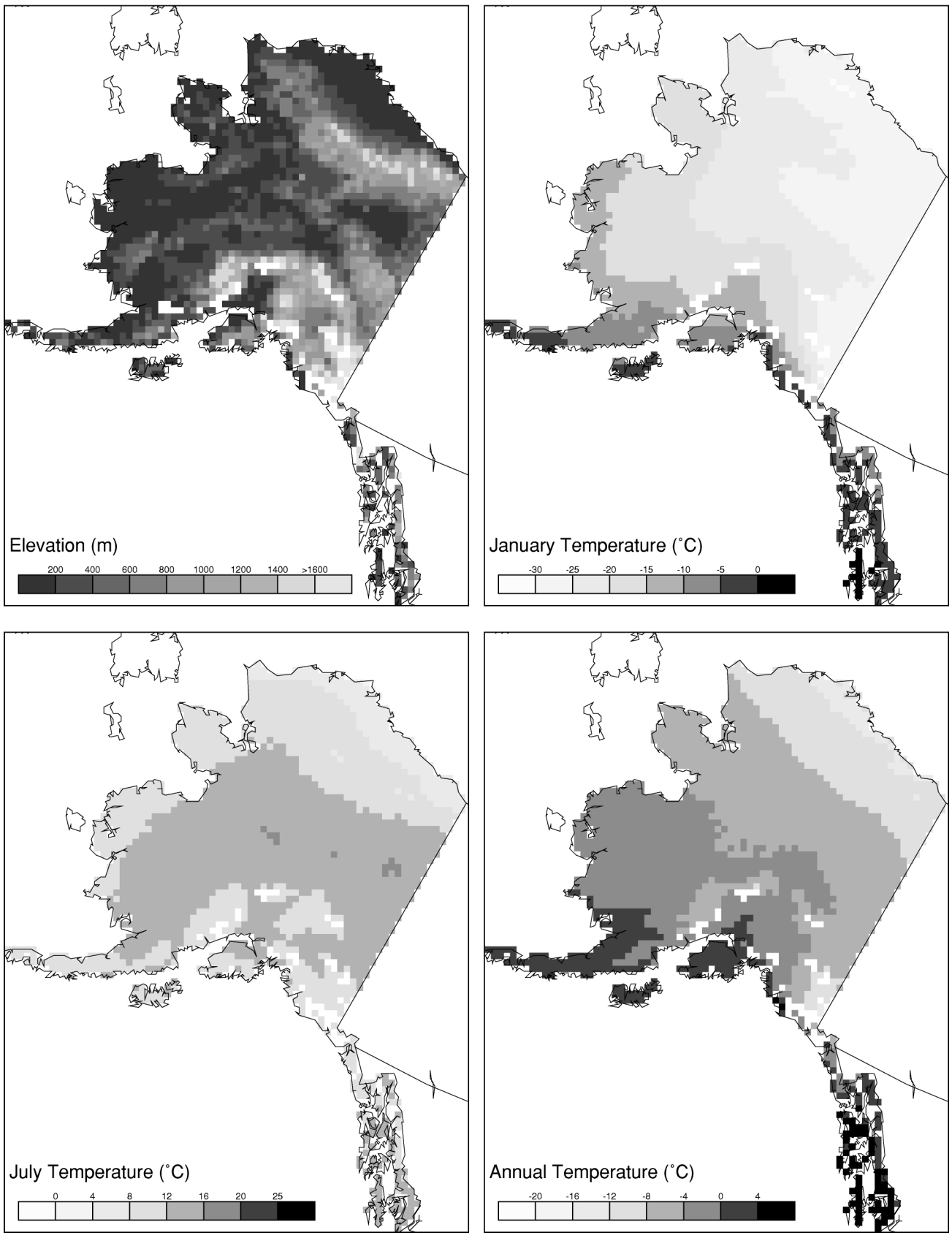


Figure 2. Maps of elevation and mean January, July, and annual temperature on the 25-kilometer grid for Alaska.

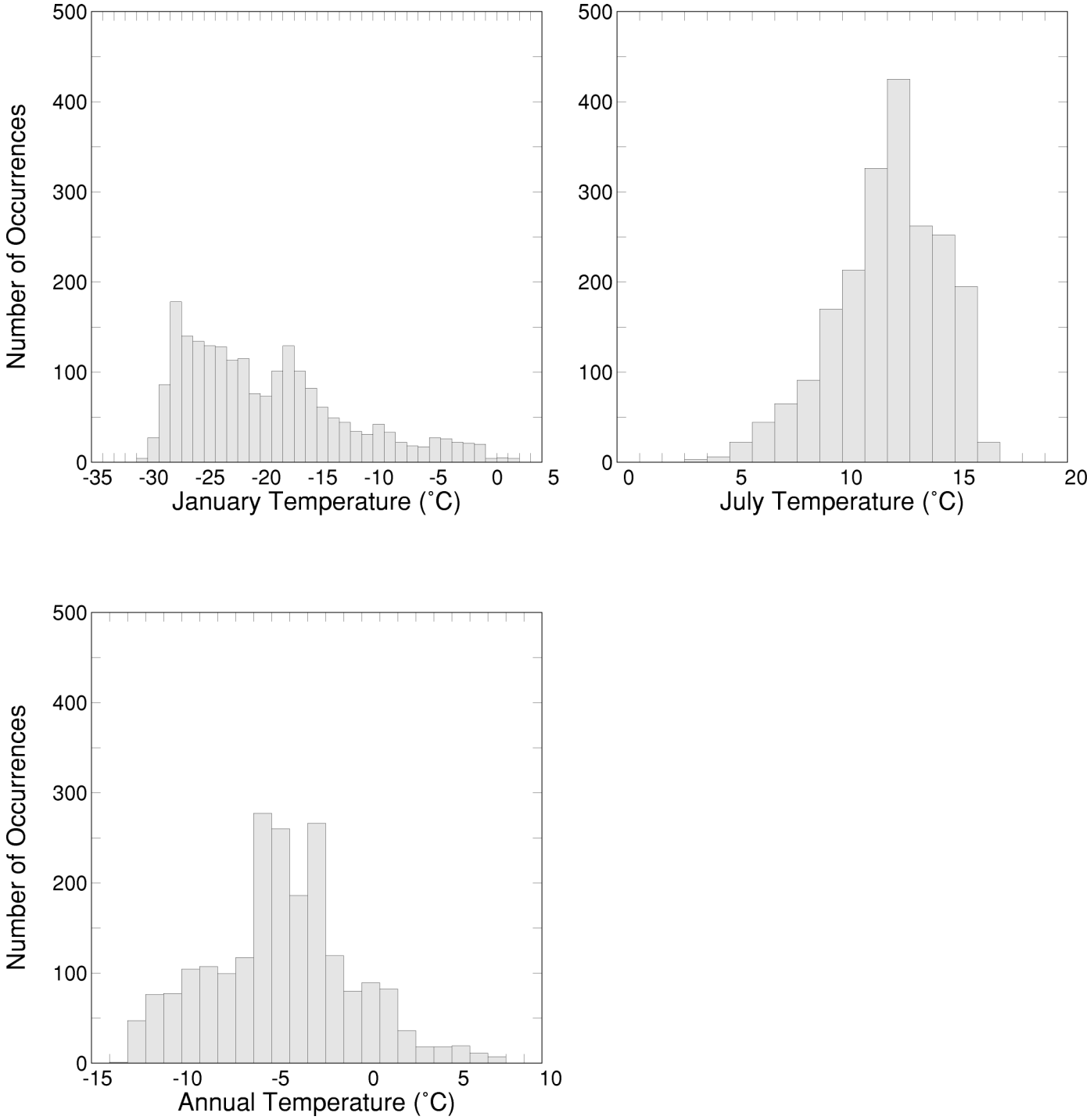


Figure 3. Histograms depicting the number of grid points (out of a total of 2,120) that occur for specified ranges of mean January, July, and annual temperature in Alaska.

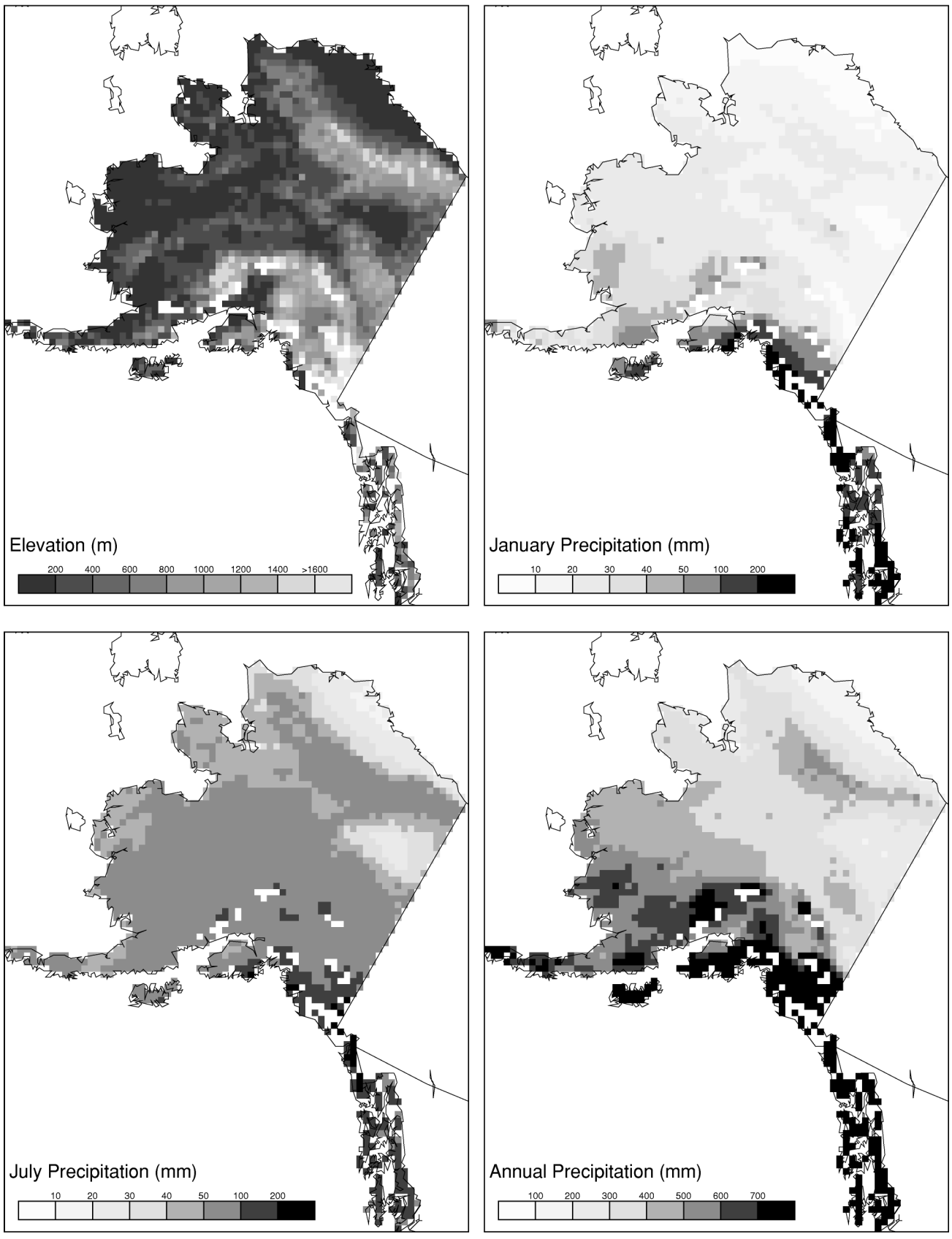


Figure 4. Maps of elevation and mean January, July, and annual precipitation on the 25-kilometer grid for Alaska.

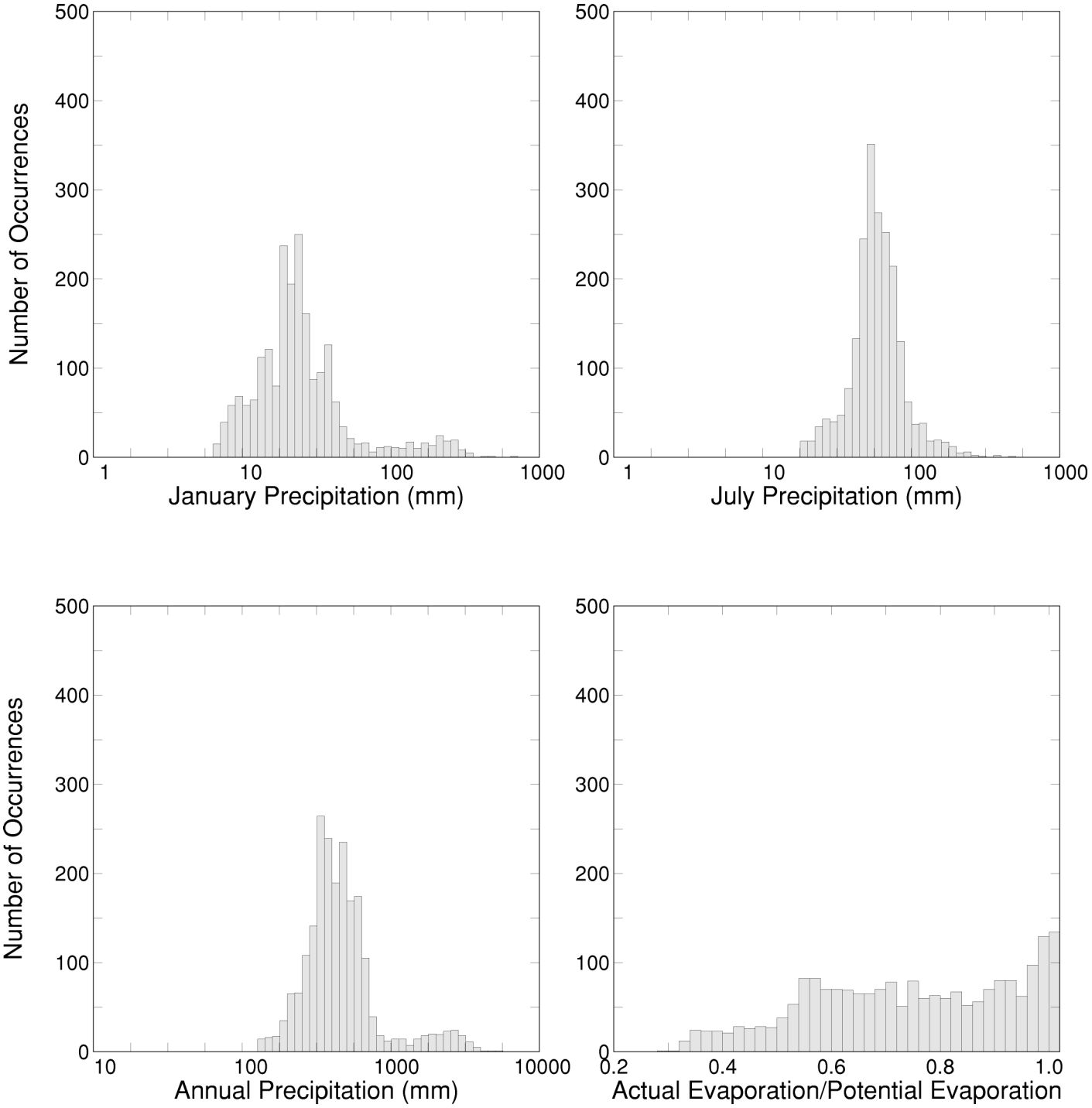


Figure 5. Histograms depicting the number of grid points (out of a total of 2,120) that occur for specified ranges of mean January, July, and annual precipitation (and the moisture index) in Alaska.

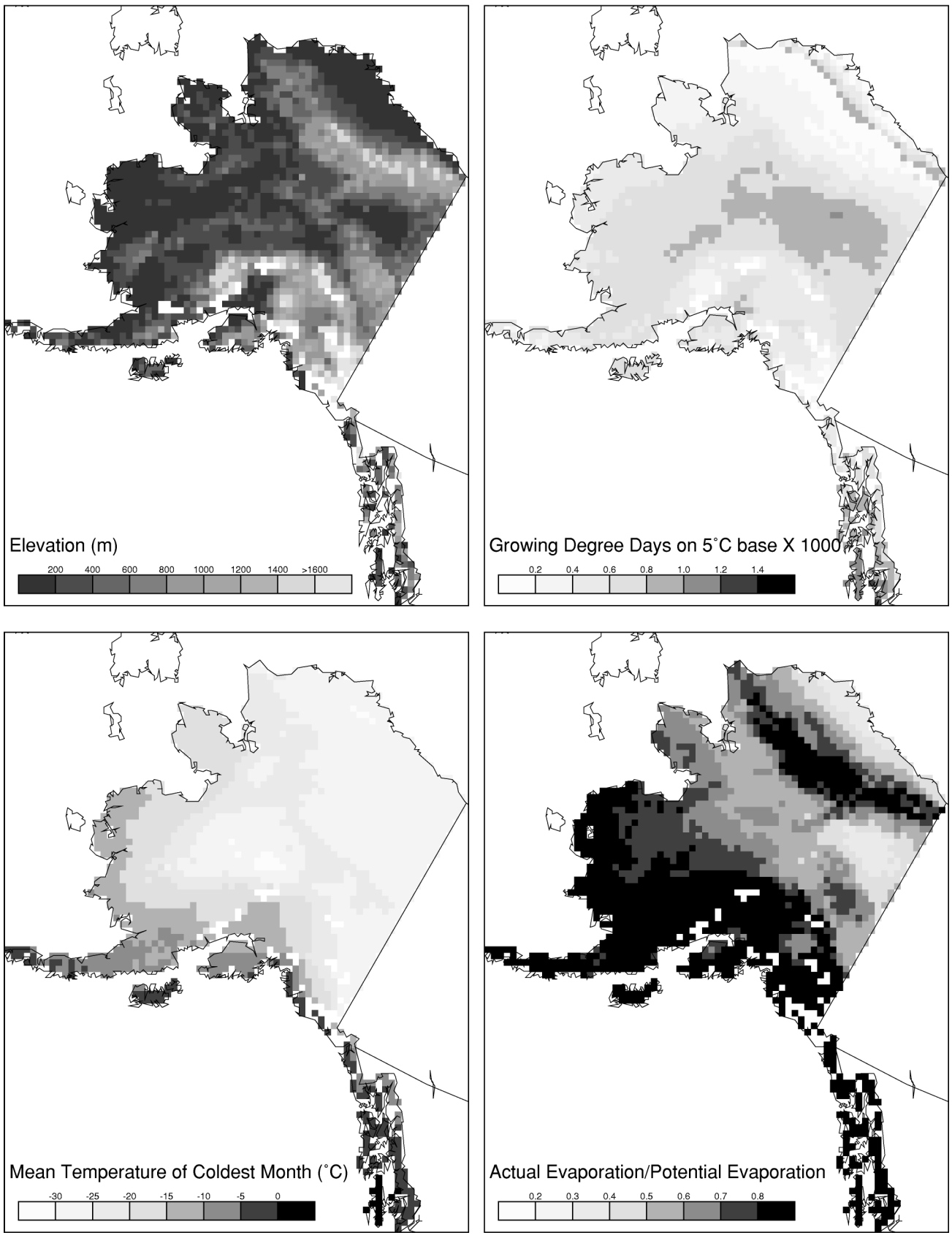


Figure 6. Maps of elevation and bioclimatic variables (growing degree days, mean temperature of the coldest month, and the moisture index [actual evaporation / potential evaporation]) on the 25-kilometer grid for Alaska.

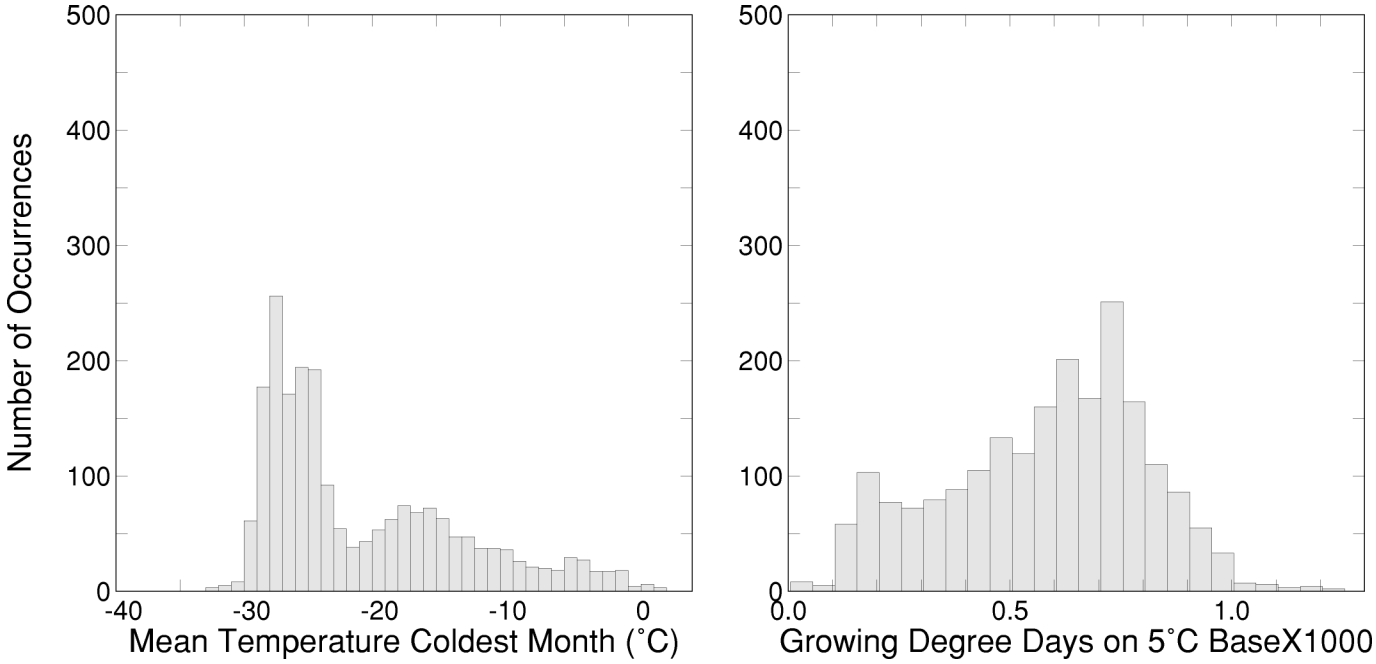


Figure 7. Histograms depicting the proportion of grid points (out of a total of 2,120) that occur for specified ranges of mean temperature of the coldest month and growing degree days (5° Celsius base) in Alaska.

Alaska

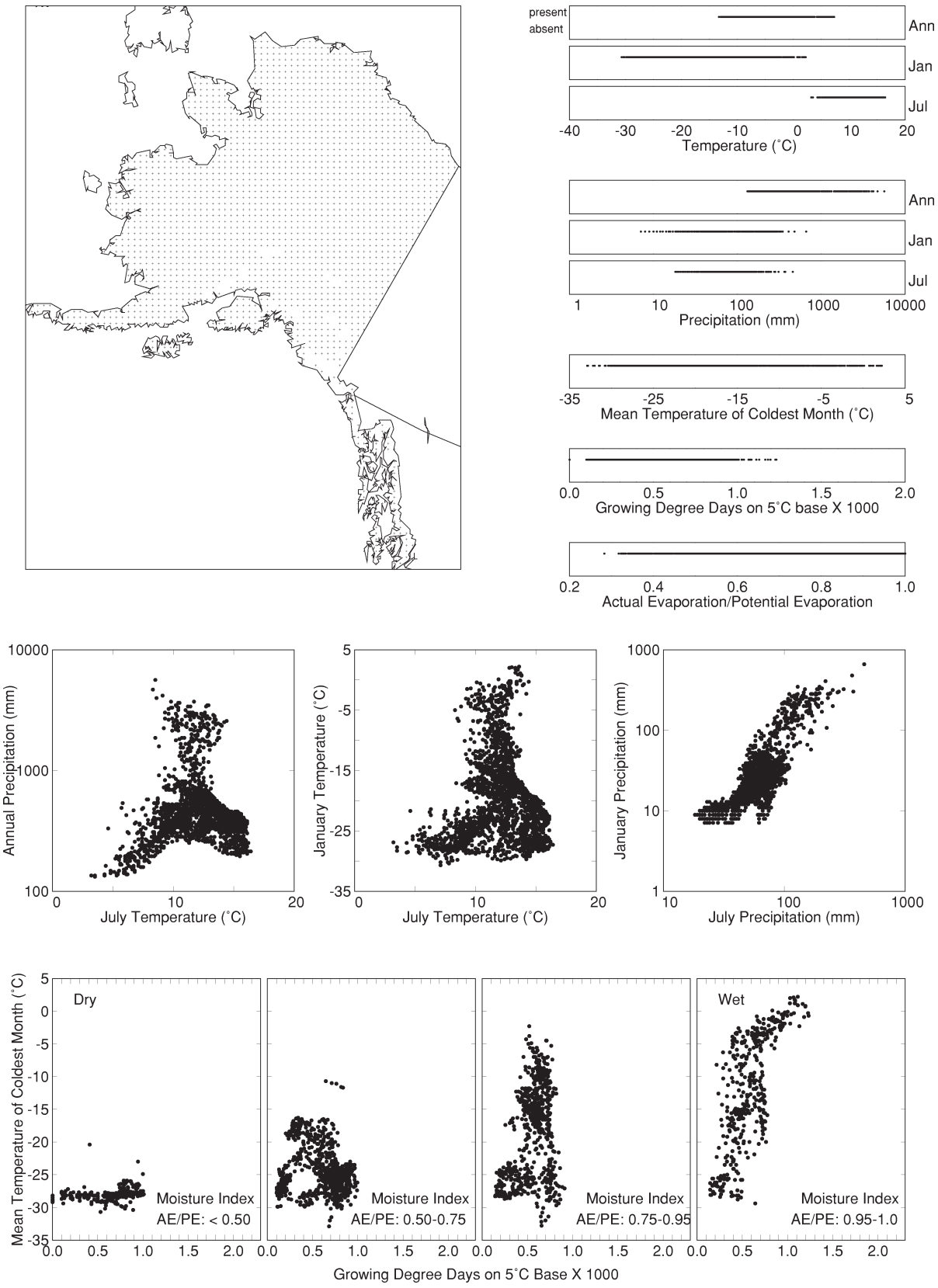


Figure 8. The climate of Alaska depicted in the same format as in figure 1, except that here the map and ranges of environmental variables reflect Alaska only. This figure is the template for the treatment of species, groups of species, and ecoregions in this volume.

Table 1. Species, genera, and other groups included in this volume.

Scientific Name	Common Name	Map or page number in Viereck and Little (1975)
Conifer Species		
Abies amabilis (Dougl.) Forbes	Pacific silver fir	9
Abies lasiocarpa (Hook.) Nutt.	subalpine fir	10
Chamaecyparis nootkatensis (D. Don) Spach	Alaska-cedar	12
Juniperus communis L.	common juniper	13
Juniperus horizontalis Moench	creeping juniper	14
Larix laricina (Du Roi) K. Koch	tamarack	3
Picea glauca (Moench) Voss	white spruce	5
Picea mariana (Mill.) B.S.P.	black spruce	4
Picea sitchensis (Bong.) Carr.	Sitka spruce	6
Pinus contorta Dougl.	lodgepole pine	2
Taxus brevifolia Nutt.	Pacific yew	1
Thuja plicata Donn	western redcedar	11
Tsuga heterophylla (Raf.) Sarg.	western hemlock	7
Tsuga mertensiana (Bong.) Carr.	mountain hemlock	8
Conifer Groups		
ABIES	fir	
CUPRESSACEAE	cedar, juniper	
JUNIPERUS	juniper	
PICEA	spruce	
TSUGA	hemlock	
Hardwood Species		
Acer glabrum var. *douglasii* (Hook.) Dipp.	Douglas maple	59
Alnus crispa (Ait.) Pursh	American green alder	37
Alnus rubra Bong.	red alder	39
Alnus sinuata (Reg.) Rydb.	Sitka alder	38
Alnus tenuifolia Nutt.	thinleaf alder	40
Amelanchier alnifolia (Nutt.) Nutt.	western serviceberry	48
Andromeda polifolia L.	bog-rosemary	65
Arceuthobium tsugense (Rosend.) G.N.Jones	hemlock dwarf-mistletoe	41
Arctostaphylos uva-ursi (L.) Spreng.	bearberry	66
Betula glandulosa Michx.	resin birch	35
Betula nana L.	dwarf arctic birch	34
Betula papyrifera Marsh.	paper birch	36
Chamaedaphne calyculata (L.) Moench	leatherleaf	67
Cladothamnus pyrolaeflorus Bong.	copperbush	68
Cornus stolonifera Michx.	red-osier dogwood	63

Table 1. Species, genera, and other groups included in this volume—*Continued*.

Scientific Name	Common Name	Map or page number in Viereck and Little (1975)
Hardwood Species—*Continued*		
Elaeagnus commutata Bernh.	siverberry	60
Empetrum nigrum L.	crowberry	64
Gaultheria shallon Pursh	salal	69
Kalmia polifolia Wang.	bog kalmia	70
Ledum decumbens (Ait.) Lodd.	narrow-leaf Labrador-tea	71
Ledum groenlandicum Oeder	Labrador-tea	72
Malus diversifolia (Bong.) Roem.	Oregon crab apple	49
Menziesia ferruginea Sm.	rusty menziesia	73
Myrica gale L.	sweetgale	33
Oplopanax horridus (Sm.) Miq.	devilsclub	62
Populus balsamifera L.	balsam poplar	15
Populus tremuloides Michx.	quaking aspen	17
Populus trichocarpa Torr. & Gray	black cottonwood	16
Potentilla fruticosa L.	bush cinquefoil	50
Rhododendron lapponicum (L.) Wahlenb.	Lapland rosebay	74
Ribes bracteosum Dougl.	stink currant	42
Ribes glandulosum Grauer	skunk currant	43
Ribes hudsonianum Richards.	northern black currant	44
Ribes lacustre (Pers.) Poir.	swamp gooseberry	45
Ribes laxiflorum Pursh	trailing black currant	46
Ribes triste Pall.	American red currant	47
Rosa acicularis Lindl.	prickly rose	51
Rosa nutkana Presl	Nootka rose	52
Rubus idaeus var. *strigosus* (Michx.) Maxim.	American red raspberry	53
Rubus parviflorus Nutt.	western thimbleberry	54
Rubus spectabilis Pursh	salmonberry	55
Salix alaxensis (Anderss.) Cov.	feltleaf willow	18
Salix arbusculoides Anderss.	littletree willow	19
Salix barclayi Anderss.	Barclay willow	20
Salix bebbiana Sarg.	Bebb willow	21
Salix glauca L.	grayleaf willow	22
Salix hookeriana Barratt	Hooker willow	23
Salix interior Rowlee	sandbar willow	24
Salix lanata ssp. *richardsonii* (Hook.) A. Skwortz.	Richardson willow	25
Salix lasiandra Benth.	Pacific willow	26

Table 1. Species, genera, and other groups included in this volume—*Continued*.

Scientific Name	Common Name	Map or page number in Viereck and Little (1975)
Hardwood Species—*Continued*		
Salix monticola Bebb	park willow	27
Salix novae-angliae Anderss.	tall blueberry willow	28
Salix planifolia ssp. *pulchra* (Cham.) Argus	diamondleaf willow	29
Salix reticulata L.	netleaf willow	30
Salix scouleriana Barratt	Scouler willow	31
Salix sitchensis Sanson	Sitka willow	32
Sambucus callicarpa Greene	Pacific red elder	81
Shepherdia canadensis (L.) Nutt.	buffaloberry	61
Sorbus scopulina Greene	Greene mountain-ash	56
Sorbus sitchensis Roem.	Sitka mountain-ash	57
Spiraea beauverdiana Schneid.	Beauverd spirea	58
Vaccinium alaskaense Howell	Alaska blueberry	75
Vaccinium caespitosum Michx.	dwarf blueberry	76
Vaccinium ovalifolium Sm.	early blueberry	77
Vaccinium parvifolium Sm.	red huckleberry	78
Vaccinium uliginosum L.	bog blueberry	79
Vaccinium vitis-idaea L.	mountain-cranberry	80
Viburnum edule (Michx.) Raf.	high bushcranberry	82

Hardwood Groups	
ALNUS	alder
BETULA	birch
ERICACEAE	heath
ERICACEAE/*EMPETRUM*	heath and crowberry
LEDUM	Labrador-tea
POPULUS	poplar, cotonwood, aspen
RIBES	currant, gooseberry
ROSA	rose
RUBUS	raspberry, thimbleberry, salmonberry
SALIX	willow
SORBUS	mountain-ash
VACCINIUM	blueberry, cranberry, huckleberry

Table 2. Species grouped in genera, families, or larger groups included in this volume.

CONIFERS
ABIES: *Abies amabilis, Abies lasiocarpa*
CUPRESSACEAE: *Chamaecyparis nootkatensis, Juniperus communis, Juniperus horizontalis, Thuja plicata*
JUNIPERUS: *Juniperus communis, Juniperus horizontalis*
PICEA: *Picea glauca, Picea mariana*
TSUGA: *Tsuga heterophylla, Tsuga mertensiana*

HARDWOODS
ALNUS: *Alnus crispa, Alnus rubra, Alnus sinuata, Alnus tenuifolia*
BETULA: *Betula glandulosa, Betula nana, Betula papyrifera*
ERICACEAE: *Andromeda polifolia, Arctostaphylos uva-ursi, Chamaedaphne calyculata, Cladothamnus pyrolaeflorus, Gaultheria shallon, Kalmia polifolia, Ledum decumbens, Ledum groenlandicum, Menziesia ferruginea, Rhododendron lapponicum, Vaccinium alaskaense, Vaccinium caespitosum, Vaccinium ovalifolium, Vaccinium parvifolium, Vaccinium uliginosum, Vaccinium vitis-idaea*
ERICACEAE/*EMPETRUM*: the 16 species in the Ericaceae (above) plus *Empetrum nigrum*
LEDUM: *Ledum decumbens, Ledum groenlandicum*
POPULUS: *Populus balsamifera, Populus tremuloides, Populus trichocarpa*
RIBES: *Ribes bracteosum, Ribes glandulosum, Ribes hudsonianum, Ribes lacustre, Ribes laxiflorum, Ribes triste*
ROSA: *Rosa acicularis, Rosa nutkana*
RUBUS: *Rubus idaeus var. strigosus, Rubus parviflorus, Rubus spectabilis*
SALIX: *Salix alaxensis, Salix arbusculoides, Salix barclayi, Salix bebbiana, Salix glauca, Salix hookeriana, Salix interior, Salix lanata* ssp. *richardsonii, Salix lasiandra, Salix monticola, Salix novae-angliae, Salix planifolia* ssp. *pulchra, Salix reticulata, Salix scouleriana, Salix sitchensis*
SORBUS: *Sorbus scopulina, Sorbus sitchensis*
VACCINIUM: *Vaccinium alaskaense, Vaccinium caespitosum, Vaccinium ovalifolium, Vaccinium parvifolium, Vaccinium uliginosum, Vaccinium vitis-idaea*

Table 3. Botanical names of species and groups of species in volumes A, B, C, and D of USGS Professional Paper 1650, as they appear in the original published sources of species distribution maps. Synonyms are listed for species that have since changed names. Validity of botanical names verified in Kartesz (1999) for hardwoods, and Farjon (2001) for conifers, except where footnoted.

Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
CONIFER SPECIES				
Abies amabilis (Dougl.) Forbes	-----	Pinaceae	Pacific silver fir	A-39, D-49
Abies balsamea (L.) Mill.	-----	Pinaceae	balsam fir	A-40
Abies bracteata D. Don	-----	Pinaceae	bristlecone fir	A-41
Abies concolor (Gord. & Glend.) Lindl.	-----	Pinaceae	white fir	A-42
Abies fraseri (Pursh) Poir.	-----	Pinaceae	Fraser fir	A-43
Abies grandis (Dougl.) Lindl.	-----	Pinaceae	grand fir	A-44
Abies lasiocarpa (Hook.) Nutt.	-----	Pinaceae	subalpine fir	A-45, D-50
Abies magnifica A. Murr.	-----	Pinaceae	California red fir	A-46
Abies procera Rehd.	-----	Pinaceae	noble fir	A-47
Chamaecyparis lawsoniana (A. Murr.) Parl.	-----	Cupressaceae	Port-Orford-cedar	A-48
Chamaecyparis nootkatensis (D. Don) Spach	-----	Cupressaceae	Alaska-cedar	A-49, D-51
Chamaecyparis thyoides (L.) B.S.P.	-----	Cupressaceae	Atlantic white-cedar	A-50
Cupressus arizonica Greene	-----	Cupressaceae	Arizona cypress	A-51
Cupressus bakeri Jeps.	-----	Cupressaceae	Modoc cypress	A-52
Cupressus goveniana Gord.	-----	Cupressaceae	Gowen cypress	A-53
Cupressus guadalupensis S. Wats.	-----	Cupressaceae	Tecate cypress	A-54
Cupressus macnabiana A. Murr.	-----	Cupressaceae	MacNab cypress	A-55
Cupressus macrocarpa Hartw.	-----	Cupressaceae	Monterey cypress	A-56
Cupressus sargentii Jeps.	-----	Cupressaceae	Sargent cypress	A-57
Juniperus ashei Buchholz	-----	Cupressaceae	Ashe juniper	A-58
Juniperus californica Carr.	-----	Cupressaceae	California juniper	A-59
Juniperus communis L.	-----	Cupressaceae	common juniper	A-60, D-52
Juniperus deppeana Steud.	-----	Cupressaceae	alligator juniper	A-61
Juniperus erythrocarpa Cory	*Juniperus coahuilensis* (Martinez) Gaussen ex R. P. Adams	Cupressaceae	redberry juniper	C-15
Juniperus flaccida Schlecht.	-----	Cupressaceae	drooping juniper	A-62
Juniperus horizontalis Moench	-----	Cupressaceae	creeping juniper	A-63, D-53
Juniperus monosperma (Engelm.) Sarg.	-----	Cupressaceae	one-seed juniper	A-64
Juniperus occidentalis Hook.	-----	Cupressaceae	western juniper	A-65

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
CONIFER SPECIES—*Continued*				
Juniperus osteosperma (Torr.) Little	-----	Cupressaceae	Utah juniper	A-66
Juniperus pinchotii Sudw.	-----	Cupressaceae	Pinchot juniper	A-67
Juniperus scopulorum Sarg.	-----	Cupressaceae	Rocky Mountain juniper	A-68
Juniperus silicicola (Small) Bailey	*Juniperus virginiana* var. *silicicola* (Small) E. Murray	Cupressaceae	southern redcedar	A-69
Juniperus virginiana L.	-----	Cupressaceae	eastern redcedar	A-70
Larix laricina (Du Roi) K. Koch	-----	Pinaceae	tamarack	A-71, D-54
Larix lyallii Parl.	-----	Pinaceae	subalpine larch	A-72
Larix occidentalis Nutt.	-----	Pinaceae	western larch	A-73
Libocedrus decurrens Torr.	*Calocedrus decurrens* (Torr.) Florin	Cupressaceae	incense-cedar	A-74
Picea breweriana S. Wats.	-----	Pinaceae	Brewer spruce	A-75
Picea chihuahuana Martínez	-----	Pinaceae	Chihuahua spruce	C-16
Picea engelmannii Parry	-----	Pinaceae	Engelmann spruce	A-76
Picea glauca (Moench) Voss	-----	Pinaceae	white spruce	A-77, D-55
Picea mariana (Mill.) B. S. P.	-----	Pinaceae	black spruce	A-78, D-56
Picea pungens Engelm.	-----	Pinaceae	blue spruce	A-79
Picea rubens Sarg.	-----	Pinaceae	red spruce	A-80
Picea sitchensis (Bong.) Carr.	-----	Pinaceae	Sitka spruce	A-81, D-57
Pinus albicaulis Engelm.	-----	Pinaceae	whitebark pine	A-82
Pinus aristata Engelm.	-----	Pinaceae	bristlecone pine	A-83
Pinus attenuata Lemm.	-----	Pinaceae	knobcone pine	A-84
Pinus ayacahuite Ehrenb.	-----	Pinaceae	Mexican white pine	A-85
Pinus balfouriana Grev. & Balf.	-----	Pinaceae	foxtail pine	A-86
Pinus banksiana Lamb.	-----	Pinaceae	jack pine	A-87
Pinus caribaea Morelet	-----	Pinaceae	Caribbean pine	A-88
Pinus cembroides Zucc.	-----	Pinaceae	Mexican pinyon	A-89
Pinus clausa (Chapm.) Vasey	-----	Pinaceae	sand pine	A-90
Pinus contorta Dougl.	-----	Pinaceae	lodgepole pine	A-91, D-58
Pinus cooperi C. E. Blanco	*Pinus arizonica* var. *cooperi* (C. E. Blanco) Farjon	Pinaceae	Cooper pine	A-92
Pinus coulteri D. Don	-----	Pinaceae	Coulter pine	A-93
Pinus douglasiana Martínez	-----	Pinaceae	Douglas pine	A-94
Pinus durangensis Martínez	-----	Pinaceae	Durango pine	A-95

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
CONIFER SPECIES—*Continued*				
Pinus echinata Mill.	-----	Pinaceae	shortleaf pine	A-96
Pinus edulis Engelm.	-----	Pinaceae	pinyon	A-97
Pinus elliottii Engelm.	-----	Pinaceae	slash pine	A-98
Pinus engelmannii Carr.	-----	Pinaceae	Apache pine	A-99
Pinus flexilis James	-----	Pinaceae	limber pine	A-100
Pinus glabra Walt.	-----	Pinaceae	spruce pine	A-101
Pinus greggii Engelm.	-----	Pinaceae	Gregg pine	A-102
Pinus hartwegii Lindl.	-----	Pinaceae	Hartweg pine	A-103
Pinus jeffreyi Grev. & Balf.	-----	Pinaceae	Jeffrey pine	A-104
Pinus lambertiana Dougl.	-----	Pinaceae	sugar pine	A-105
Pinus lawsonii Roezl	-----	Pinaceae	Lawson pine	A-106
Pinus leiophylla Schiede & Deppe	-----	Pinaceae	Chihuahua pine	A-107
Pinus longaeva Bailey	-----	Pinaceae	Intermountain bristlecone pine	A-108
Pinus lumholtzii Robins. & Fern.	-----	Pinaceae	Lumholtz pine	A-109
Pinus michoacana Martínez	*Pinus devoniana* Lindl.	Pinaceae	Michoacán pine	A-110
Pinus monophylla Torr. & Frém.	-----	Pinaceae	singleleaf pinyon	A-111
Pinus montezumae Lamb.	-----	Pinaceae	Montezuma pine	A-112
Pinus monticola Dougl.	-----	Pinaceae	western white pine	A-113
Pinus muricata D. Don	-----	Pinaceae	bishop pine	A-114
Pinus nelsonii Shaw	-----	Pinaceae	Nelson pinyon	A-115
Pinus oocarpa Schiede	-----	Pinaceae	Nicaraguan pitch pine; ocote pine	A-116
Pinus palustris Mill.	-----	Pinaceae	longleaf pine	A-117
Pinus patula Schiede & Deppe	-----	Pinaceae	Mexican weeping pine	A-118
Pinus pinceana Gord.	-----	Pinaceae	Pince pinyon	A-119
Pinus ponderosa Laws.	-----	Pinaceae	ponderosa pine	A-120
Pinus pringlei Shaw	-----	Pinaceae	Pringle pine	A-121
Pinus pseudostrobus Lindl.	-----	Pinaceae	False Weymouth pine	A-122
Pinus pungens Lamb.	-----	Pinaceae	Table-Mountain pine	A-123
Pinus quadrifolia Parl.	-----	Pinaceae	Parry pinyon	A-124
Pinus radiata D. Don	-----	Pinaceae	Monterey pine	A-125
Pinus resinosa Ait.	-----	Pinaceae	red pine	A-126
Pinus rigida Mill.	-----	Pinaceae	pitch pine	A-127

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
CONIFER SPECIES—*Continued*				
Pinus sabiniana Dougl.	*Pinus sabineana* Douglas ex D. Don	Pinaceae	Digger pine	A-128
Pinus serotina Michx.	-----	Pinaceae	pond pine	A-129
Pinus strobiformis Engelm.	-----	Pinaceae	southwestern white pine	A-130
Pinus strobus L.	-----	Pinaceae	eastern white pine	A-131
Pinus taeda L.	-----	Pinaceae	loblolly pine	A-132
Pinus teocote Schiede & Deppe	-----	Pinaceae	Twisted -leaves pine; Aztec pine	A-133
Pinus torreyana Parry	-----	Pinaceae	Torrey pine	A-134
Pinus virginiana Mill.	-----	Pinaceae	Virginia pine	A-135
Pinus washoensis Mason & Stockwell	*Pinus ponderosa* var. *ponderosa*	Pinaceae	Washoe pine	A-136
Pseudotsuga macrocarpa (Vasey) Mayr	-----	Pinaceae	bigcone Douglas-fir	A-137
Pseudotsuga menziesii (Mirb.) Franco	-----	Pinaceae	Douglas-fir	A-138
Sequoia sempervirens (D. Don) Endl.	-----	Taxodiaceae	redwood	A-139
Sequoiadendron giganteum (Lindl.) Buckholz	-----	Taxodiaceae	giant sequoia	A-140
Taxodium distichum (L.) Rich.	-----	Taxodiaceae	baldcypress	A-141
Taxodium mucronatum Ten.	-----	Taxodiaceae	Montezuma baldcypress	A-142
Taxus brevifolia Nutt.	-----	Taxaceae	Pacific yew	A-143, D-59
Taxus canadensis Marsh.	-----	Taxaceae	Canada yew	A-144
Taxus floridana Nutt.	-----	Taxaceae	Florida yew	A-145
Thuja occidentalis L.	-----	Cupressaceae	northern white-cedar	A-146
Thuja plicata Donn	-----	Cupressaceae	western redcedar	A-147, D-60
Torreya californica Torr.	-----	Taxaceae	California torreya	A-148
Torreya taxifolia Arn.	-----	Taxaceae	Florida torreya	A-149
Tsuga canadensis (L.) Carr.	-----	Pinaceae	eastern hemlock	A-150
Tsuga caroliniana Engelm.	-----	Pinaceae	Carolina hemlock	A-151
Tsuga heterophylla (Raf.) Sarg.	-----	Pinaceae	western hemlock	A-152, D-61
Tsuga mertensiana (Bong.) Carr.	-----	Pinaceae	mountain hemlock	A-153, D-62
CONIFER GROUPS				
ABIES	-----	Pinaceae	fir	A-157, D-63
ABIES EAST	-----	Pinaceae	fir in eastern North America	A-158

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
CONIFER GROUPS—*Continued*				
ABIES WEST	-----	Pinaceae	fir in western North America	A-159
CUPRESSACEAE	-----		cedar juniper	D-64
CUPRESSACEAE EAST	-----		cedar family in eastern North America	A-160
JUNIPERUS	-----	Cupressaceae	juniper	A-161, D-65
JUNIPERUS BOREAL	-----	Cupressaceae	boreal juniper	A-162
JUNIPERUS EAST	-----	Cupressaceae	juniper in eastern North America	A-163
JUNIPERUS WEST	-----	Cupressaceae	juniper in western North America	A-164
JUNIPERUS WEST WOODLAND	-----	Cupressaceae	woodland juniper in western North America	A-165
LARIX	-----	Pinaceae	larch	A-166
LARIX/PSEUDOTSUGA	-----	Pinaceae	larch and Douglas-fir	A-167
PICEA	-----	Pinaceae	spruce	A-168, D-66
PICEA NORTH/EAST	-----	Pinaceae	spruce in northern and eastern North America	A-169
PICEA WEST	-----	Pinaceae	spruce in western North America	A-170
PICEA WEST INTERIOR	-----	Pinaceae	spruce in interior western North America	A-171
PINUS	-----	Pinaceae	pine	A-172
PINUS EAST	-----	Pinaceae	pine in eastern North America	A-173
PINUS NORTHEAST	-----	Pinaceae	pine in northeastern North America	A-174
PINUS NORTHEAST YELLOW	-----	Pinaceae	yellow pine in northeastern North America	A-175
PINUS SOUTHEAST	-----	Pinaceae	pine in southeastern North America	A-176
PINUS WEST	-----	Pinaceae	pine in western North America	A-177
PINUS WEST PINYONS	-----	Pinaceae	pinyon pine in western North America	A-179
PINUS WEST WHITE	-----	Pinaceae	white pine in western North America	A-178
PINUS WEST YELLOW	-----	Pinaceae	yellow pine in western North America	A-180
PSEUDOTSUGA	-----	Pinaceae	Douglas-fir	A-181
TAXODIUM	-----	Taxodiaceae	baldcypress	A-182
TCT (Taxaceae-Cupressaceae-Taxodiaceae)	-----		yew, cedar, and baldcypress families	A-183

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CONIFER GROUPS—*Continued*				
TCT EAST	-----		TCT in eastern North America	A-184
TCT WEST	-----		TCT in western North America	A-185
TSUGA	-----	Pinaceae	hemlock	A-186, D-67
TSUGA EAST	-----	Pinaceae	hemlock in eastern North America	A-187
TSUGA WEST	-----	Pinaceae	hemlock in western North America	A-188
HARDWOOD SPECIES				
Acacia berlandieri Benth.	-----	Fabaceae	Berlandier acacia	C-17
Acacia choriophylla Benth.	-----	Fabaceae	cinnecord	C (FL)-379
Acacia farnesiana (L.) Willd.	-----	Fabaceae	sweet acacia	C-18
Acacia greggii A. Gray	-----	Fabaceae	catclaw acacia	B-13
Acacia rigidula Benth.	-----	Fabaceae	blackbrush acacia	C-19
Acacia roemeriana Scheele	-----	Fabaceae	Roemer acacia	C-20
Acacia tortuosa (L.) Willd.	-----	Fabaceae	twisted acacia	C-21
Acacia wrightii Benth.	*Acacia greggii* var. *wrightii* (Benth.) Isely	Fabaceae	Wright acacia	C-22
Acer barbatum Michx.	-----	Aceraceae	Florida maple	B-14
Acer circinatum Pursh	-----	Aceraceae	vine maple	B-15
Acer glabrum Torr.	-----	Aceraceae	Rocky Mountain maple	B-16
Acer glabrum var *douglasii* (Hook.) Dipp.	-----	Aceraceae	Douglas maple	D-68
Acer grandidentatum Nutt.	-----	Aceraceae	bigtooth maple	B-17
Acer leucoderme Small	-----	Aceraceae	chalk maple	B-18
Acer macrophyllum Pursh	-----	Aceraceae	bigleaf maple	B-19
Acer negundo L.	-----	Aceraceae	boxelder	B-20
Acer nigrum Michx. f.	-----	Aceraceae	black maple	B-21
Acer pensylvanicum L.	-----	Aceraceae	striped maple	B-22
Acer rubrum L.	-----	Aceraceae	red maple	B-23
Acer saccharinum L.	-----	Aceraceae	silver maple	B-24
Acer saccharum Marsh.	-----	Aceraceae	sugar maple	B-25
Acer spicatum Lam.	-----	Aceraceae	mountain maple	B-26
Acoelorrhaphe wrightii (Griseb. & H. Wendl.) H. Wendl.	*Acoelorraphe wrightii* (Griseb. & H. Wendl.) H. Wendl. ex Becc.	Arecaceae	paurotis-palm	C (FL)-379
Aesculus californica (Spach) Nutt.	-----	Hippocastanaceae	California buckeye	B-27

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Aesculus glabra Willd.	-----	Hippocastanaceae	Ohio buckeye	B-28
Aesculus octandra Marsh.	*Aesculus flava* Ait.	Hippocastanaceae	yellow buckeye	B-29
Aesculus parviflora Walt.	-----	Hippocastanaceae	bottlebrush buckeye	C-23
Aesculus pavia L.	-----	Hippocastanaceae	red buckeye	C-24
Aesculus sylvatica Bartr.	-----	Hippocastanaceae	painted buckeye	C-25
Agave utahensis Engelm.	-----	Agavaceae	Utah agave	B-30
Alnus crispa (Ait.) Pursh	*Alnus viridis* ssp. *sinuata* (Regel) A. & D. Löve	Betulaceae	American green alder	D-69
Alnus maritima (Marsh.) Mühl.	-----	Betulaceae	seaside alder	B-31
Alnus oblongifolia Torr.	-----	Betulaceae	Arizona alder	B-32
Alnus rhombifolia Nutt.	-----	Betulaceae	white alder	B-33
Alnus rubra Bong.	-----	Betulaceae	red alder	B-34, D-70
Alnus rugosa (Du Roi) Spreng.	*Alnus incana* ssp. *rugosa* (Du Roi) Clausen	Betulaceae	speckled alder	B-35
Alnus serrulata (Ait.) Willd.	-----	Betulaceae	hazel alder	B-36
Alnus sinuata (Reg.) Rydb.	*Alnus viridis* ssp. *sinuata* (Regel) A. & D. Löve	Betulaceae	Sitka alder	B-37, D-71
Alnus tenuifolia Nutt.	*Alnus incana* ssp. *tenuifolia* (Nutt.) Breitung	Betulaceae	thinleaf alder	B-38, D-72
Alvaradoa amorphoides Liebm.	-----	Simaroubaceae	Mexican alvaradoa	C (FL)-379
Amelanchier alnifolia (Nutt.) Nutt.	-----	Rosaceae	western serviceberry	B-39, D-73
Amelanchier arborea (Michx. f.) Fern.	-----	Rosaceae	downy serviceberry	B-40
Amelanchier interior Nielsen	-----	Rosaceae	inland serviceberry	C-26
Amelanchier sanguinea (Pursh) DC.	-----	Rosaceae	roundleaf serviceberry	C-27
Amelanchier utahensis Koehne	-----	Rosaceae	Utah serviceberry	B-41
Amphitecna latifolia (Mill.) A. H. Gentry	-----	Bignoniaceae	black-calabash	C (FL)-379
Amyris balsamifera L.	-----	Rutaceae	balsam torchwood	C (FL)-379
Amyris elemifera L.	-----	Rutaceae	torchwood	C (FL)-379
Andromeda polifolia L.	-----	Ericaceae	bog-rosemary	D-74
Annona glabra L.	-----	Annonaceae	pond-apple	C (FL)-379
Aralia spinosa L.	-----	Araliaceae	devils-walkingstick	C-28
Arbutus arizonica (A. Gray) Sarg.	-----	Ericaceae	Arizona madrone	B-42

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Arbutus menziesii Pursh	-----	Ericaceae	Pacific madrone	B-43
Arbutus texana Buckl.	*Arbutus xalapensis* Kunth.	Ericaceae	Texas madrone	B-44
Arceuthobium tsugense (Rosend.) G. N. Jones	-----	Loranthaceae	hemlock dwarf-mistletoe	D-75
Arctostaphylos pringlei Parry	-----	Ericaceae	Pringle manzanita	B-45
Arctostaphylos uva-ursi (L.) Spreng.	-----	Ericaceae	bearberry	D-76
Ardisia escallonioides Schiede & Deppe[2]	-----	Myrsinaceae	marlberry	C (FL)-379
Artemisia tridentata Nutt.	-----	Asteraceae	big sagebrush	B-46
Asimina triloba (L.) Dunal	-----	Annonaceae	pawpaw	C-29
Avicennia germinans (L.) L.	-----	Verbenaceae	black-mangrove	C-30
Baccharis halimifolia L.	-----	Asteraceae	eastern baccharis	C-31
Betula alleghaniensis Britton	-----	Betulaceae	yellow birch	B-47
Betula glandulosa Michx.	*Betula nana* L.	Betulaceae	resin birch	D-77
Betula lenta L.	-----	Betulaceae	sweet birch	B-48
Betula nana L.	-----	Betulaceae	dwarf arctic birch	B-49, D-78
Betula nigra L.	-----	Betulaceae	river birch	B-50
Betula occidentalis Hook.	-----	Betulaceae	water birch	B-51
Betula papyrifera Marsh.	-----	Betulaceae	paper birch	B-52, D-79
Betula populifolia Marsh.	-----	Betulaceae	gray birch	B-53
Betula uber (Ashe) Fern.	-----	Betulaceae	Ashe birch	C-32
Bourreria ovata Miers	*Bourreria succulenta* Jacq.	Boraginaceae	Bahama strongbark	C (FL)-379
Bumelia celastrina H. B. K.	*Sideroxylon celastrinum* (Kunth) T. D. Pennington	Sapotaceae	saffron-plum	C-33
Bumelia lanuginosa (Michx.) Pers.	*Sideroxylon lanuginosum* ssp. *lanuginosum*	Sapotaceae	gum bumelia	C-34
Bumelia lycioides (L.) Pers.	*Sideroxylon lycioides* L.	Sapotaceae	buckthorn bumelia	C-35
Bumelia tenax (L.) Willd.	*Sideroxylon tenax* L.	Sapotaceae	tough bumelia	C-36
Bursera fagaroides (H. B. K.) Engler	-----	Burseraceae	fragrant bursera	B-54
Bursera microphylla A. Gray	-----	Burseraceae	elephanttree	B-55
Bursera simaruba (L.) Sarg.	-----	Burseraceae	gumbo-limbo	C (FL)-379
Byrsonima lucida DC.	-----	Malpighiaceae	key byrsonima	C (FL)-379
Caesalpinia mexicana A. Gray	-----	Fabaceae	Mexican poinciana	C-37
Calyptranthes pallens Griseb.	-----	Myrtaceae	pale lidflower	C (FL)-379

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Calyptranthes zuzygium (L.) Sw.	-----	Myrtaceae	myrtle-of-the-river	C (FL)-380
Canella winterana (L.) Gaertn.[2]	-----	Canellaceae	canella	C (FL)-380
Canotia holacantha Torr.	-----	Celastraceae	canotia	B-56
Capparis cynophallophora L.	-----	Capparaceae	Jamaica caper	C (FL)-380
Capparis flexuosa (L.) L.	-----	Capparaceae	limber caper	C (FL)-380
Carpinus caroliniana Walt.	-----	Betulaceae	American hornbeam	B-57
Carya aquatica (Michx. f.) Nutt.	-----	Juglandaceae	water hickory	B-58
Carya cordiformis (Wangenh.) K. Koch	-----	Juglandaceae	bitternut hickory	B-59
Carya floridana Sarg.	-----	Juglandaceae	scrub hickory	B-60
Carya glabra (Mill.) Sweet	-----	Juglandaceae	pignut hickory	B-61
Carya illinoensis (Wangenh.) K. Koch	*Carya illinoinensis* (Wangenh.) K. Koch	Juglandaceae	pecan	B-62
Carya laciniosa (Michx. f.) Loud.	-----	Juglandaceae	shellbark hickory	B-63
Carya myristicaeformis (Michx. f.) Nutt.	*Carya myristiciformis* (Michx. f.) Nutt.	Juglandaceae	nutmeg hickory	B-64
Carya ovata (Mill.) K. Koch	-----	Juglandaceae	shagbark hickory	B-65
Carya pallida (Ashe) Engl. & Graebn.	-----	Juglandaceae	sand hickory	B-66
Carya texana Buckl.	-----	Juglandaceae	black hickory	B-67
Carya tomentosa Nutt.	*Carya alba* (L.) Nutt. ex Ell.	Juglandaceae	mockernut hickory	B-68
Castanea alnifolia Nutt.	*Castanea pumila* var. *pumila*	Fagaceae	Florida chinkapin	B-69
Castanea dentata (Marsh.) Borkh.	-----	Fagaceae	American chestnut	B-70
Castanea ozarkensis Ashe.	*Castanea pumila* var. *ozarkensis* (Ashe) Tucker	Fagaceae	Ozark chinkapin	B-71
Castanea pumila Mill.	-----	Fagaceae	Allegheny chinkapin	B-72
Castanopsis chrysophylla (Dougl.) A. DC.	*Chrysolepis chrysophylla* var. *chrysophylla*	Fagaceae	golden chinkapin	B-73
Catalpa bignonioides Walt.	-----	Bignoniaceae	southern catalpa	C-38
Catalpa speciosa Warder	-----	Bignoniaceae	northern catalpa	C-39
Ceanothus arboreus Greene	-----	Rhamnaceae	feltleaf ceanothus	C-40
Ceanothus spinosus Nutt.	-----	Rhamnaceae	spiny ceanothus	C-41
Ceanothus thyrsiflorus Eschsch.	-----	Rhamnaceae	blueblossom	C-42
Celtis laevigata Willd.	-----	Ulmaceae	sugarberry	B-74
Celtis lindheimeri Engelm.	-----	Ulmaceae	Lindheimer hackberry	C-43

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Celtis occidentalis L.	-----	Ulmaceae	hackberry	B-75
Celtis reticulata Torr.	*Celtis laevigata* var. *reticulata* (Torr.) L. Benson	Ulmaceae	netleaf hackberry	B-76
Celtis tenuifolia Nutt.	-----	Ulmaceae	Georgia hackberry	C-44
Cephalanthus occidentalis L.	-----	Rubiaceae	common buttonbush	C-45
Cercidium floridum Benth.	*Parkinsonia florida* (Benth. ex Gray) S. Wats.	Fabaceae	blue paloverde	B-77
Cercidium macrum Johnst.	*Parkinsonia texana* var. *macra* (I. M. Johnston) Isely	Fabaceae	border paloverde	B-78
Cercidium microphyllum (Torr.) Rose & Johnst.	*Parkinsonia microphylla* Torr.	Fabaceae	yellow paloverde	B-79
Cercis canadensis L.	-----	Fabaceae	eastern redbud	C-46
Cercis occidentalis Torr.	*Cercis canadensis* var. *texensis* (S. Wats.) M. Hopkins	Fabaceae	California redbud	C-47
Cercocarpus betuloides Nutt.	*Cercocapus montanus* var. *glaber* (S. Wats.) F. L. Martin	Rosaceae	birchleaf cercocarpus	B-80
Cercocarpus breviflorus A. Gray	*Cercocapus montanus* var. *paucidentatus* (S. Wats.) F. L. Martin	Rosaceae	hairy cercocarpus	B-81
Cercocarpus ledifolius Nutt.	-----	Rosaceae	curlleaf cercocarpus	B-82
Cereus giganteus Engelm.	*Carnegia gigantea* (Engelm.) Britt. & Rose	Cactaceae	saguaro	B-83
Cereus robinii (Lem.) L. Benson	*Pilosocereus robinii* var. *robinii*	Cactaceae	key tree-cactus	C (FL)-380
Chamaedaphne calyculata (L.) Moench	-----	Ericaceae	leatherleaf	D-80
Chilopsis linearis (Cav.) Sweet	-----	Bignoniaceae	desert-willow	B-84
Chionanthus virginicus L.	-----	Oleaceae	fringetree	C-48
Chrysobalanus icaco L.	-----	Chrysobalanaceae	cocoplum	C (FL)-380
Chrysophyllum oliviforme L.	-----	Sapotaceae	satinleaf	C (FL)-380
Citharexylum berlandieri Robinson	-----	Verbenaceae	Berlandier fiddlewood	C-49
Citharexylum fruticosum L.	-----	Verbenaceae	Florida fiddlewood	C (FL)-380
Cladothamnus pyrolaeflorus Bong.	*Elliottia pyroliflorus* (Bong.) S. W. Brim & P. F. Stevens	Ericaceae	copperbush	D-81
Cladrastis kentukea (Dum.-Cours.) Rudd	-----	Fabaceae	yellowwood	C-50
Clethra acuminata Michx.	-----	Clethraceae	cinnamon clethra	C-51
Cliftonia monophylla (Lam.) Britton	-----	Cyrillaceae	buckwheat-tree	C-52

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Coccoloba diversifolia Jacq.	-----	Polygonaceae	pigeon-plum	C (FL)-380
Coccoloba uvifera (L.) L.	-----	Polygonaceae	seagrape	C (FL)-380
Coccothrinax argentata (Jacq.) Bailey	-----	Arecaceae	Florida silverpalm	C (FL)-380
Colubrina arborescens (Mill.) Sarg.	-----	Rhamnaceae	coffee colubrina	C (FL)-380
Colubrina cubensis (Jacq.) Brongn.	-----	Rhamnaceae	Cuba colubrina	C (FL)-381
Colubrina elliptica (Sw.) Briz. & Stern	-----	Rhamnaceae	soldierwood	C (FL)-381
Condalia globosa Johnst.	-----	Rhamnaceae	bitter condalia	C-53
Condalia hookeri M. C. Johnst.	-----	Rhamnaceae	bluewood	C-54
Conocarpus erectus L.	-----	Combretaceae	button-mangrove	C (FL)-381
Cordia boissieri A. DC.	-----	Boraginaceae	anacahuita	C-55
Cordia sebestena L.	-----	Boraginaceae	Geiger-tree	C (FL)-381
Cornus alternifolia L. f.	-----	Cornaceae	alternate-leaf dogwood	C-56
Cornus drummondii C. A. Meyer	-----	Cornaceae	roughleaf dogwood	C-57
Cornus florida L.	-----	Cornaceae	flowering dogwood	B-85
Cornus glabrata Benth.	-----	Cornaceae	brown dogwood	C-58
Cornus nuttallii Audubon	-----	Cornaceae	Pacific dogwood	C-59
Cornus occidentalis (Torr. & Gray) Coville	*Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg	Cornaceae	western dogwood	C-60
Cornus racemosa Lam.	-----	Cornaceae	gray dogwood	C-61
Cornus rugosa Lam.	-----	Cornaceae	roundleaf dogwood	C-62
Cornus sessilis Torr.	-----	Cornaceae	blackfruit dogwood	C-63
Cornus stolonifera Michx.	*Cornus sericea* ssp. *sericea*	Cornaceae	red-osier dogwood	B-86, D-82
Cornus stricta Lam.	*Cornus foemina* P. Mill.	Cornaceae	stiffcornel dogwood	C-64
Corylus cornuta Marsh.	-----	Betulaceae	beaked hazel	B-87
Cotinus obovatus Raf.	-----	Anacardiaceae	American smoketree	C-65
Cowania mexicana D. Don	*Purshia mexicana* (D. Don) Henrickson	Rosaceae	cliffrose	B-88
Crataegus chrysocarpa Ashe	-----	Rosaceae	fireberry hawthorn	C-66
Crataegus columbiana Howell	*Crataegus douglasii* var. *douglasii*	Rosaceae	Columbia hawthorn	C-67
Crataegus douglasii Lindl.	-----	Rosaceae	black hawthorn	C-68
Crataegus erythropoda Ashe	-----	Rosaceae	Cerro hawthorn	C-69

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Crataegus saligna Greene	-----	Rosaceae	willow hawthorn	C-70
Crataegus succulenta Schrad.	-----	Rosaceae	fleshy hawthorn	C-71
Crataegus tracyi Ashe	-----	Rosaceae	Tracy hawthorn	C-72
Crossopetalum rhacoma Crantz	-----	Celastraceae	Florida crossopetalum	C (FL)-381
Cyrilla racemiflora L.	-----	Cyrillaceae	swamp cyrilla	C-73
Dalea spinosa A. Gray	*Psorothamnus spinosus* (Gray) Barneby	Fabaceae	smokethorn	B-89
Diospyros texana Scheele	-----	Ebenaceae	Texas persimmon	C-74
Diospyros virginiana L.	-----	Ebenaceae	common persimmon	B-90
Dipholis salicifolia (L.) A. DC.	*Sideroxylon salicifolium* (L.) Lam.	Sapotaceae	willow bustic	C (FL)-381
Dodonaea viscosa (L.) Jacq.	-----	Sapindaceae	hopbush	B-91
Drypetes diversifolia Krug & Urban	-----	Euphorbiaceae	milkbark	C (FL)-381
Drypetes lateriflora (Sw.) Krug & Urban	-----	Euphorbiaceae	Guiana-plum	C (FL)-381
Ehretia anacua (Mier & Berland.) Johnst.	-----	Boraginaceae	anaqua	C-75
Elaeagnus commutata Bernh.	-----	Elaeagnaceae	siverberry	D-83
Elliottia racemosa Mühl.	-----	Ericaceae	elliottia	C-76
Empetrum nigrum L.	-----	Empetraceae	crowberry	D-84
Erythrina flabelliformis Kearney	-----	Fabaceae	southwestern coralbean	B-92
Erythrina herbacea L.	-----	Fabaceae	eastern coralbean	C-77
Esenbeckia berlandieri Baill.	-----	Rutaceae	Berlandier esenbeckia	C-78
Eugenia axillaris (Sw.) Willd.	-----	Myrtaceae	white stopper	C (FL)-381
Eugenia confusa DC.	-----	Myrtaceae	redberry stopper	C (FL)-381
Eugenia foetida Pers.	-----	Myrtaceae	boxleaf stopper	C (FL)-381
Eugenia rhombea (Berg) Krug & Urban	-----	Myrtaceae	red stopper	C (FL)-381
Euonymus atropurpureus Jacq.[1]	-----	Celastraceae	eastern wahoo	C-79
Euonymus occidentalis Nutt.	-----	Celastraceae	western wahoo	C-80
Exostema caribaeum (Jacq.) Roem. & Schult.	-----	Rubiaceae	princewood	C (FL)-382
Exothea paniculata (Juss.) Radlk.	-----	Sapindaceae	inkwood	C (FL)-382
Eysenhardtia polystachya (Ortega) Sarg.[2]	-----	Fabaceae	kidneywood	C-81
Eysenhardtia texana Scheele	-----	Fabaceae	Texas kidneywood	C-82

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Fagus grandifolia Ehrh.	-----	Fagaceae	American beech	B-93
Ficus aurea Nutt.	-----	Moraceae	Florida strangler fig	C (FL)-382
Ficus citrifolia Mill.	-----	Moraceae	shortleaf fig	C (FL)-382
Forestiera acuminata (Michx.) Poir.	-----	Oleaceae	swamp-privet	C-83
Forestiera angustifolia Torr.	-----	Oleaceae	Texas forestiera	C-84
Forestiera phillyreoides (Benth.) Torr.	*Forestiera shrevei* Standl.	Oleaceae	desert-olive forestiera	B-94
Forestiera segregata (Jacq.) Krug & Urban	-----	Oleaceae	Florida-privet	C-85
Franklinia alatamaha Bartr.	-----	Theaceae	franklinia	C-86
Fraxinus americana L.	-----	Oleaceae	white ash	B-95
Fraxinus anomala Torr.	-----	Oleaceae	singleleaf ash	B-96
Fraxinus berlandieriana A. DC.	-----	Oleaceae	Berlandier ash	B-97
Fraxinus caroliniana Mill.	-----	Oleaceae	Carolina ash	B-98
Fraxinus cuspidata Torr.	-----	Oleaceae	fragrant ash	B-99
Fraxinus dipetala Hook. & Arn.	-----	Oleaceae	two-petal ash	B-100
Fraxinus gooddingii Little	-----	Oleaceae	Goodding ash	B-101
Fraxinus greggii A. Gray	-----	Oleaceae	Gregg ash	B-102
Fraxinus latifolia Benth.	-----	Oleaceae	Oregon ash	B-103
Fraxinus nigra Marsh.	-----	Oleaceae	black ash	B-104
Fraxinus papillosa Lingelsh.	-----	Oleaceae	Chihuahua ash	B-105
Fraxinus pennsylvanica Marsh.	-----	Oleaceae	green ash	B-106
Fraxinus profunda (Bush) Bush	-----	Oleaceae	pumpkin ash	B-107
Fraxinus quadrangulata Michx.	-----	Oleaceae	blue ash	B-108
Fraxinus texensis (A. Gray) Sarg.	-----	Oleaceae	Texas ash	B-109
Fraxinus velutina Torr.	-----	Oleaceae	velvet ash	B-110
Fremontodendron californicum (Torr.) Cov.	-----	Sterculiaceae	California fremontia	B-111
Fremontodendron mexicanum (Davidson) Macbr.	-----	Sterculiaceae	Mexican fremontia	B-112
Garrya elliptica Dougl.	-----	Garryaceae	wavyleaf silktassel	C-87
Gaultheria shallon Pursh	-----	Ericaceae	salal	D-85
Genipa clusiifolia (Jacq.) Griseb.	*Casasia clusiifolia* (Jacq.) Urban	Rubiaceae	seven-year-apple	C (FL)-382
Gleditsia aquatica Marsh.	-----	Fabaceae	waterlocust	C-88

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HARDWOOD SPECIES—*Continued*				
Gleditsia triacanthos L.	-----	Fabaceae	honeylocust	B-113
Gordonia lasianthus (L.) Ellis	-----	Theaceae	loblolly-bay	C-89
Guaiacum angustifolium Engelm.[1]	-----	Zygophyllaceae	Texas lignumvitae	C-90
Guaiacum sanctum L.[1]	-----	Zygophyllaceae	roughbark lignumvitae	C (FL)-382
Guapira discolor (Spreng.) Little	-----	Nyctaginaceae	blolly	C (FL)-382
Guettarda elliptica Sw.	-----	Rubiaceae	elliptic-leaf velvetseed	C (FL)-382
Guettarda scabra (L.) Vent.	-----	Rubiaceae	roughleaf velvetseed	C (FL)-382
Gymnanthes lucida Sw.	-----	Euphorbiaceae	oysterwood	C (FL)-382
Gymnocladus dioicus (L.) K. Koch	-----	Fabaceae	Kentucky coffeetree	C-91
Halesia carolina L.	-----	Styracaceae	Carolina silverbell	C-92
Halesia diptera Ellis	-----	Styracaceae	two-wing silverbell	C-93
Halesia parviflora Michx.	*Halesia carolina* L.	Styracaceae	little silverbell	C-94
Hamamelis virginiana L.	-----	Hamamelidaceae	witch-hazel	C-95
Hamelia patens Jacq.	-----	Rubiaceae	scarletbush	C (FL)-382
Helietta parvifolia (A. Gray) Benth.	-----	Rutaceae	barreta	C-96
Hippomane mancinella L.	-----	Euphorbiaceae	manchineel	C (FL)-382
Holacantha emoryi A. Gray	*Castela emoryi* (Gray) Moran & Felger	Simaroubaceae	holacantha	B-114
Hypelate trifoliata Sw.	-----	Sapindaceae	hypelate	C (FL)-383
Ilex ambigua (Michx.) Torr.	-----	Aquifoliaceae	Carolina holly	C-97
Ilex amelanchier M. A. Curt.	-----	Aquifoliaceae	sarvis holly	C-98
Ilex cassine L.	-----	Aquifoliaceae	dahoon	C-99
Ilex coriacea (Pursh) Chapm.	-----	Aquifoliaceae	large gallberry	C-100
Ilex decidua Walt.	-----	Aquifoliaceae	possumhaw	C-101
Ilex krugiana Loes.	-----	Aquifoliaceae	tawnyberry holly	C (FL)-383
Ilex laevigata (Pursh) Gray	-----	Aquifoliaceae	smooth winterberry	C-102
Ilex longipes Chapm.	-----	Aquifoliaceae	Georgia holly	C (FL)-383
Ilex montana Torr. & Gray	-----	Aquifoliaceae	mountain winterberry	C-103
Ilex myrtifolia Walt.	-----	Aquifoliaceae	myrtle dahoon	C-104
Ilex opaca Ait.	-----	Aquifoliaceae	American holly	B-115
Ilex verticillata (L.) Gray	-----	Aquifoliaceae	common winterberry	B-116
Ilex vomitoria Ait.	-----	Aquifoliaceae	yaupon	C-105

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Illicium floridanum Ellis	-----	Illiciaceae	Florida anise-tree	C-106
Illicium parviflorum Michx.	-----	Illiciaceae	yellow anise-tree	C-107
Jacquinia keyensis Mez	-----	Theophrastaceae	joewood	C (FL)-383
Juglans californica S. Wats.	-----	Juglandaceae	California walnut	B-117
Juglans cinerea L.	-----	Juglandaceae	butternut	B-118
Juglans hindsii Jeps.	-----	Juglandaceae	Hinds walnut	B-119
Juglans major (Torr.) Heller	-----	Juglandaceae	Arizona walnut	B-120
Juglans microcarpa Berlandier	-----	Juglandaceae	little walnut	B-121
Juglans nigra L.	-----	Juglandaceae	black walnut	B-122
Kalmia latifolia L.	-----	Ericaceae	mountain-laurel	B-123
Kalmia polifolia Wang.	-----	Ericaceae	bog kalmia	D-86
Koeberlinia spinosa Zucc.	-----	Capparaceae	allthorn	B-124
Krugiodendron ferreum (Vahl) Urban	-----	Rhamnaceae	leadwood	C (FL)-383
Laguncularia racemosa (L.) Gaertn. f.	-----	Combretaceae	white-mangrove	C (FL)-383
Larrea divaricata Cav.	*Larrea tridentata* (Sesse & Moc. ex DC.) Coville	Zygophyllaceae	creosote bush	B-125
Ledum decumbens (Ait.) Lodd.	*Ledum palustre* ssp. *decumbens* (Ait.) Hulten	Ericaceae	narrow-leaf Labrador-tea	D-87
Ledum groenlandicum Oeder	-----	Ericaceae	Labrador-tea	D-88
Leitneria floridana Chapm.	-----	Leitneriaceae	corkwood	C-108
Leucaena pulverulenta (Schlecht.) Benth.	-----	Fabaceae	great leadtree	C-109
Leucaena retusa Benth.	-----	Fabaceae	littleleaf leadtree	C-110
Licaria triandra (Sw.) Kosterm.	-----	Lauraceae	Florida licaria	C (FL)-383
Liquidambar styraciflua L.	-----	Hamamelidaceae	sweetgum	B-126
Liriodendron tulipifera L.	-----	Magnoliaceae	yellow-poplar	B-127
Lithocarpus densiflorus (Hook. & Arn.) Rehd.	-----	Fagaceae	tanoak	B-128
Lyonia ferruginea Nutt.	-----	Ericaceae	tree lyonia	B-129
Lyonothamnus floribundus A. Gray	-----	Rosaceae	Lyontree	C-111
Lysiloma latisiliquum (L.) Benth.	-----	Fabaceae	Bahama lysiloma	C (FL)-383
Lysiloma microphylla Benth.	*Lysiloma microphyllum* Benth.	Fabaceae	littleleaf lysiloma	C-112
Maclura pomifera (Raf.) Schneid.	-----	Moraceae	Osage-orange	B-130

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Magnolia acuminata L.	-----	Magnoliaceae	cucumbertree	B-131
Magnolia ashei Weatherby	-----	Magnoliaceae	Ashe magnolia	C-113
Magnolia fraseri Walt.	-----	Magnoliaceae	Fraser magnolia	C-114
Magnolia grandiflora L.	-----	Magnoliaceae	southern magnolia	B-132
Magnolia macrophylla Michx.	-----	Magnoliaceae	bigleaf magnolia	C-115
Magnolia pyramidata Bartr.	-----	Magnoliaceae	pyramid magnolia	C-116
Magnolia tripetala L.	-----	Magnoliaceae	umbrella magnolia	C-117
Magnolia virginiana L.	-----	Magnoliaceae	sweetbay	B-133
Malus angustifolia (Ait.) Michx.	-----	Rosaceae	southern crab apple	C-118
Malus coronaria (L.) Mill.	-----	Rosaceae	sweet crab apple	C-119
Malus diversifolia (Bong.) Roem.	*Malus fusca* (Raf.) Schneid.	Rosaceae	Oregon crab apple	C-120, D-89
Malus ioensis (Wood) Britton	-----	Rosaceae	prairie crab apple	C-121
Manilkara bahamensis (Baker) Lam & Meeuse	*Manilkara jaimiqui* ssp. *emarginata* (L.) Cronq.	Sapotaceae	wild-dilly	C (FL)-383
Mastichodendron foetidissimum (Jacq.) Cronq.	*Sideroxylon foetidissimum* Jacq.	Sapotaceae	false-mastic	C (FL)-383
Maytenus phyllanthoides Benth.	-----	Celastraceae	Florida mayten	C (FL)-383
Menziesia ferruginea Sm.	-----	Ericaceae	rusty menziesia	D-90
Metopium toxiferum (L.) Krug & Urban	-----	Anacardiaceae	Florida poisontree	C (FL)-383
Morus microphylla Buckl.	-----	Moraceae	Texas mulberry	B-134
Morus rubra L.	-----	Moraceae	red mulberry	B-135
Myrcianthes fragrans (Sw.) McVaugh	-----	Myrtaceae	twinberry stopper	C (FL)-384
Myrica californica Cham.	*Morella californica* (Cham. & Schlect.) Wilbur	Myricaceae	Pacific bayberry	C-122
Myrica cerifera L.	*Morella cerifera* (L.) Small.	Myricaceae	southern bayberry	C-123
Myrica gale L.	-----	Myricaceae	sweetgale	D-91
Myrica heterophylla Raf.	*Morella caroliniensis* (P. Mill) Small	Myricaceae	evergreen bayberry	B-136
Myrica inodora Bartr.	*Morella inodora* (Bartr.) Small	Myricaceae	odorless bayberry	B-137
Myrica pensylvanica Loisel.	*Morella pensylvanica* (Mirbel) Kartesz	Myricaceae	northern bayberry	B-138
Nectandra coriacea (Sw.) Griseb.	-----	Lauraceae	Florida nectandra	C (FL)-384
Nemopanthus collinus (Alexander) R. C. Clark	*Ilex collina* Alexander	Aquifoliaceae	mountain-holly	C-124
Nolina bigelovii (Torr.) S. Wats.	-----	Agavaceae	Bigelow nolina	B-139

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HARDWOOD SPECIES—*Continued*				
Nyssa aquatica L.	-----	Cornaceae	water tupelo	B-140
Nyssa ogeche Bartr.	-----	Cornaceae	Ogeechee tupelo	B-141
Nyssa sylvatica Marsh.	-----	Cornaceae	black tupelo, blackgum	B-142
Olneya tesota A. Gray	-----	Fabaceae	tesota	B-143
Oplopanax horridus (Sm.) Miq.	-----	Araliaceae	devilsclub	D-92
Opuntia fulgida Engelm.	-----	Cactaceae	jumping cholla	B-144
Osmanthus americanus (L.) Benth. & Hook. f.	-----	Oleaceae	devilwood	C-125
Ostrya chisosensis Correll	*Ostrya virginiana* var. *chisosensis* (Correll) Henrickson, comb. nov. ined.	Betulaceae	Chisos hophornbean	C-126
Ostrya knowltonii Cov.	-----	Betulaceae	Knowlton hophornbeam	B-145
Ostrya virginiana (Mill.) K. Koch	-----	Betulaceae	eastern hophornbeam	B-146
Oxydendrum arboreum (L.) DC.	-----	Ericaceae	sourwood	C-127
Parkinsonia aculeata L.	-----	Fabaceae	Jerusalem-thorn	C-128
Persea borbonia (L.) Spreng.	-----	Lauraceae	redbay	C-129
Photinia arbutifolia Lindl.	*Heteromeles arbutifolia* var. *arbutifolia*	Rosaceae	Christmas-berry	C-130
Picramnia pentandra Sw.	-----	Simaroubaceae	bitterbush	C (FL)-384
Pinckneya pubens Michx.	*Pinckneya bracteata* (Bartr.) Raf.	Rubiaceae	pinckneya	C-131
Piscidia piscipula (L.) Sarg.	-----	Fabaceae	Florida fishpoison-tree	C (FL)-384
Pistacia texana Swingle	*Pistacia mexicana* Kunth	Anacardiaceae	Texas pistache	C-132
Pithecellobium flexicaule (Benth.) Coult.	*Ebenopsis ebano* (Berl.) Barneby & Grimes	Fabaceae	ebony blackbead	C-133
Pithecellobium guadalupense (Pers.) Chapm.	*Pithecellobium keyense* Britt. ex Britt. & Rose	Fabaceae	Guadeloupe blackbead	C (FL)-384
Pithecellobium pallens (Benth.) Standl.	*Havardia pallens* (Benth.) Britt. & Rose	Fabaceae	huajillo	C-134
Pithecellobium unguis-cati (L.) Mart.	-----	Fabaceae	catclaw blackbead	C (FL)-384
Planera aquatica J. F. Gmel.	-----	Ulmaceae	planertree	C-135
Platanus occidentalis L.	-----	Platanaceae	American sycamore	B-147
Platanus racemosa Nutt.	-----	Platanaceae	California sycamore	C-136
Platanus wrightii S. Wats.	-----	Platanaceae	Arizona sycamore	C-137
Populus angustifolia James	-----	Salicaceae	narrowleaf cottonwood	C-138
Populus arizonica Sarg.	*Populus fremontii* ssp. *fremontii*	Salicaceae	Arizona cottonwood	C-139

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Populus balsamifera L.	-----	Salicaceae	balsam poplar	B-148, D-93
Populus deltoides Bartr.	-----	Salicaceae	eastern cottonwood	C-140
Populus fremontii S. Wats.	-----	Salicaceae	Fremont cottonwood	B-149
Populus grandidentata Michx.	-----	Salicaceae	bigtooth aspen	B-150
Populus heterophylla L.	-----	Salicaceae	swamp cottonwood	B-151
Populus hinckleyana Correll	*Populus* x *hinckleyana* Correll (pro sp.)	Salicaceae	Hinckley cottonwood	C-141
Populus tremuloides Michx.	-----	Salicaceae	quaking aspen	B-152, D-94
Populus trichocarpa Torr. & Gray	*Populus balsamifera* ssp. *trichocarpa* (Torr. & Gray ex Hook.) Brayshaw	Salicaceae	black cottonwood	C-142, D-95
Potentilla fruticosa L.	-----	Rosaceae	bush cinquefoil	D-96
Prosopis juliflora (Sw.) DC.	-----	Fabaceae	mesquite	B-153
Prosopis pubescens Benth.	-----	Fabaceae	screwbean mesquite	B-154
Prunus alleghaniensis Porter	-----	Rosaceae	Allegheny plum	C-143
Prunus americana Marsh.	-----	Rosaceae	American plum	C-144
Prunus angustifolia Marsh.	-----	Rosaceae	Chickasaw plum	C-145
Prunus caroliniana (Mill.) Ait.	-----	Rosaceae	Carolina laurelcherry	C-146
Prunus emarginata Dougl.	-----	Rosaceae	bitter cherry	C-147
Prunus fremontii S. Wats.	-----	Rosaceae	desert apricot	C-148
Prunus hortulana Bailey	-----	Rosaceae	hortulan plum	C-149
Prunus ilicifolia (Nutt.) D. Dietr.	-----	Rosaceae	hollyleaf cherry	C-150
Prunus lyonii (Eastw.) Sarg.	*Prunus ilicifolia* ssp. *lyonii* (Eastw.) Raven	Rosaceae	Catalina cherry	C-151
Prunus mexicana Wats.	-----	Rosaceae	Mexican plum	C-152
Prunus munsoniana Wight & Hedr.	-----	Rosaceae	wildgoose plum	C-153
Prunus myrtifolia (L.) Urban	-----	Rosaceae	West Indies cherry	C (FL)-384
Prunus nigra Ait.	-----	Rosaceae	Canada plum	C-154
Prunus pensylvanica L. f.	-----	Rosaceae	pin cherry	C-155
Prunus serotina Ehrh.	-----	Rosaceae	black cherry	B-155
Prunus subcordata Benth.	-----	Rosaceae	Klamath plum	C-156
Prunus umbellata Ell.	-----	Rosaceae	flatwoods plum	C-157
Prunus virginiana L.	-----	Rosaceae	common chokecherry	C-158
Pseudophoenix sargentii H. Wendl. ex Sarg.	-----	Arecaceae	buccaneer-palm	C (FL)-384

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Psidium longipes (Berg) McVaugh	-----	Myrtaceae	long-stalk stopper	C (FL)-384
Ptelea crenulata Greene	-----	Rutaceae	California hoptree	C-159
Ptelea trifoliata L.	-----	Rutaceae	common hoptree	B-156
Quercus agrifolia Née	-----	Fagaceae	California live oak	B-157
Quercus ajoensis C. H. Muller	-----	Fagaceae	Ajo oak	B-158
Quercus alba L.	-----	Fagaceae	white oak	B-159
Quercus arizonica Sarg.	-----	Fagaceae	Arizona white oak	B-160
Quercus arkansana Sarg.	-----	Fagaceae	Arkansas oak	B-161
Quercus bicolor Willd.	-----	Fagaceae	swamp white oak	B-162
Quercus chapmanii Sarg.	-----	Fagaceae	Chapman oak	B-163
Quercus chrysolepis Liebm.	-----	Fagaceae	canyon live oak	B-164
Quercus coccinea Muenchh.	-----	Fagaceae	scarlet oak	B-165
Quercus douglasii Hook. & Arn.	-----	Fagaceae	blue oak	B-166
Quercus dunnii Kellogg	-----	Fagaceae	Dunn oak	B-167
Quercus durandii Buckl.	*Quercus sinuata* var. *sinuata*	Fagaceae	Durand oak	B-168
Quercus ellipsoidalis E. J. Hill	-----	Fagaceae	northern pin oak	B-169
Quercus emoryi Torr.	-----	Fagaceae	Emory oak	B-170
Quercus engelmannii Greene	-----	Fagaceae	Engelmann oak	B-171
Quercus falcata Michx.	-----	Fagaceae	southern red oak	B-172
Quercus gambelii Nutt.	-----	Fagaceae	Gambel oak	B-173
Quercus garryana Dougl.	-----	Fagaceae	Oregon white oak	B-174
Quercus georgiana M. A. Curtis	-----	Fagaceae	Georgia oak	B-175
Quercus glaucoides Mart. & Gal.	*Quercus laceyi* Small	Fagaceae	Lacey oak	B-176
Quercus graciliformis C. H. Muller	-----	Fagaceae	Chisos oak	B-177
Quercus gravesii Sudw.	-----	Fagaceae	Graves oak, also Q. tardifolia C. H. Muller, lateleaf oak	B-178
Quercus grisea Liebm.	-----	Fagaceae	gray oak	B-179
Quercus havardii Rydb.	-----	Fagaceae	Havard oak	B-180
Quercus hypoleucoides A. Camus	-----	Fagaceae	silverleaf oak	B-181
Quercus ilicifolia Wangenh.	-----	Fagaceae	bear oak	B-182
Quercus imbricaria Michx.	-----	Fagaceae	shingle oak	B-183
Quercus incana Bartr.	-----	Fagaceae	bluejack oak	B-184

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Quercus kelloggii Newb.	-----	Fagaceae	California black oak	B-185
Quercus laevis Walt.	-----	Fagaceae	turkey oak	B-186
Quercus laurifolia Michx.	-----	Fagaceae	laurel oak	B-187
Quercus lobata Née	-----	Fagaceae	California white oak	B-188
Quercus lyrata Walt.	-----	Fagaceae	overcup oak	B-189
Quercus macdonaldii Greene	*Quercus* x *macdonaldii* Greene (pro. sp.)	Fagaceae	McDonald oak	B-190
Quercus macrocarpa Michx.	-----	Fagaceae	bur oak	B-191
Quercus marilandica Muenchh.	-----	Fagaceae	blackjack oak	B-192
Quercus michauxii Nutt.	-----	Fagaceae	swamp chestnut oak	B-193
Quercus mohriana Buckl.	-----	Fagaceae	Mohrs oak	B-194
Quercus muehlenbergii Engelm.	-----	Fagaceae	chinkapin oak	B-195
Quercus myrtifolia Willd.	-----	Fagaceae	myrtle oak	B-196
Quercus nigra L.	-----	Fagaceae	water oak	B-197
Quercus nuttallii Palmer	*Quercus texana* Buckl.	Fagaceae	Nuttall oak	B-198
Quercus oblongifolia Torr.	-----	Fagaceae	Mexican blue oak	B-199
Quercus oglethorpensis Duncan	-----	Fagaceae	Oglethorpe oak	B-200
Quercus palustris Muenchh.	-----	Fagaceae	pin oak	B-201
Quercus phellos L.	-----	Fagaceae	willow oak	B-202
Quercus prinus L.	-----	Fagaceae	chestnut oak	B-203
Quercus pungens Liebm.	-----	Fagaceae	sandpaper oak	B-204
Quercus rubra L.	-----	Fagaceae	northern red oak	B-205
Quercus rugosa Née	-----	Fagaceae	netleaf oak	B-206
Quercus shumardii Buckl.	-----	Fagaceae	Shumard oak	B-207
Quercus stellata Wangenh.	-----	Fagaceae	post oak	B-208
Quercus tomentella Engelm.	-----	Fagaceae	island live oak	C-160
Quercus toumeyi Sarg.	-----	Fagaceae	Toumey oak	B-209
Quercus turbinella Greene	-----	Fagaceae	shrub live oak	B-210
Quercus velutina Lam.	-----	Fagaceae	black oak	B-211
Quercus virginiana Mill.	-----	Fagaceae	live oak	B-212
Quercus wislizeni A. DC.	-----	Fagaceae	interior live oak	B-213
Rapanea punctata (Lam.) Lundell	*Myrsine floridana* A. DC.	Myrsinaceae	Florida rapanea	C (FL)-384
Reynosia septentrionalis Urban	-----	Rhamnaceae	darling-plum	C (FL)-384

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Rhamnus betulaefolia Greene	*Frangula betulifolia* ssp. *betulifolia*	Rhamnaceae	birchleaf buckthorn	B-214
Rhamnus californica Eschsch.	*Frangula californica* ssp. *californica*	Rhamnaceae	California buckthorn	B-215
Rhamnus caroliniana Walt.	*Frangula caroliniana* (Walt.) Gray	Rhamnaceae	Carolina buckthorn	C-161
Rhamnus crocea Nutt.	-----	Rhamnaceae	hollyleaf buckthorn	B-216
Rhamnus purshiana DC.	*Frangula purshiana* (DC.) Cooper	Rhamnaceae	cascara buckthorn	B-217
Rhizophora mangle L.	-----	Rhizophoraceae	mangrove	C-162
Rhododendron catawbiense Michx.	-----	Ericaceae	Catawba rhododendron	C-163
Rhododendron lapponicum (L.) Wahlenb.	-----	Ericaceae	Lapland rosebay	D-97
Rhododendron macrophyllum D. Don	-----	Ericaceae	Pacific rhododendron	B-218
Rhododendron maximum L.	-----	Ericaceae	rosebay rhododendron	C-164
Rhus choriophylla Woot. & Standl.	*Rhus virens* var. *choriophylla* (Woot. & Standl.) L. Benson	Anacardiaceae	Mearns sumac	B-219
Rhus copallina L.[2]	-----	Anacardiaceae	shining sumac	C-165
Rhus glabra L.	-----	Anacardiaceae	smooth sumac	B-220
Rhus integrifolia (Nutt.) Benth. & Hook. f.	-----	Anacardiaceae	lemonade sumac	C-166
Rhus kearneyi Barkley	-----	Anacardiaceae	Kearney sumac	C-167
Rhus lanceolata (A. Gray) Britton	-----	Anacardiaceae	prairie sumac	C-168
Rhus laurina Nutt.	*Malosma laurina* (Nutt.) Nutt. ex Abrams	Anacardiaceae	laurel sumac	C-169
Rhus microphylla Engelm.	-----	Anacardiaceae	littleleaf sumac	B-221
Rhus ovata S. Wats.	-----	Anacardiaceae	sugar sumac	B-222
Rhus typhina L.	-----	Anacardiaceae	staghorn sumac	C-170
Ribes bracteosum Dougl.	-----	Grossulariaceae	stink currant	D-98
Ribes glandulosum Grauer	-----	Grossulariaceae	skunk currant	D-99
Ribes hudsonianum Richards.	-----	Grossulariaceae	northern black currant	D-100
Ribes lacustre (Pers.) Poir.	-----	Grossulariaceae	swamp gooseberry	D-101
Ribes laxiflorum Pursh	-----	Grossulariaceae	trailing black currant	D-102
Ribes triste Pall.	-----	Grossulariaceae	American red currant	D-103

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Robinia kelseyi Hutchins.	*Robinia hispida* var. *kelseyi* (Cowell ex Hutchinson) Isely	Fabaceae	Kelsey locust	C-171
Robinia neomexicana A. Gray	-----	Fabaceae	New Mexican locust	B-223
Robinia pseudoacacia L.	-----	Fabaceae	black locust	B-224
Robinia viscosa Vent.	-----	Fabaceae	clammy locust	C-172
Rosa acicularis Lindl.	-----	Rosaceae	prickly rose	D-104
Rosa nutkana Presl	-----	Rosaceae	Nootka rose	D-105
Roystonea elata (Bartr.) F. Harper	-----	Arecaceae	Florida royalpalm	C (FL)-384
Rubus idaeus var. *strigosus* (Michx.) Maxim.	*Rubus idaeus* ssp. *strigosus* (Michx.) Focke	Rosaceae	American red raspberry	D-106
Rubus parviflorus Nutt.	-----	Rosaceae	western thimbleberry	D-107
Rubus spectabilis Pursh	-----	Rosaceae	salmonberry	D-108
Sabal mexicana Mart.	-----	Arecaceae	Mexican palmetto	C-173
Sabal minor (Jacq.) Pers.	-----	Arecaceae	dwarf palmetto	C-174
Sabal palmetto (Walt.) Lodd.	-----	Arecaceae	cabbage palmetto	B-225
Salix alaxensis (Anderss.) Cov.	-----	Salicaceae	feltleaf willow	B-226, D-109
Salix amygdaloides Anderss.	-----	Salicaceae	peachleaf willow	C-175
Salix arbusculoides Anderss.	-----	Salicaceae	littletree willow	B-227, D-110
Salix barclayi Anderss.	-----	Salicaceae	Barclay willow	D-111
Salix bebbiana Sarg.	-----	Salicaceae	Bebb willow	C-176, D-112
Salix bonplandiana H. B. K.	-----	Salicaceae	Bonpland willow	C-177
Salix caroliniana Michx.	-----	Salicaceae	Coastal Plain willow	C-178
Salix discolor Mühl.	-----	Salicaceae	pussy willow	C-179
Salix exigua Nutt.	-----	Salicaceae	coyote willow	C-180
Salix floridana Chapm.	-----	Salicaceae	Florida willow	C-181
Salix fluviatilis Nutt.	-----	Salicaceae	river willow	C-182
Salix geyeriana Anderss.	-----	Salicaceae	Geyer willow	C-183
Salix glauca L.	-----	Salicaceae	grayleaf willow	D-113
Salix hindsiana Benth.	*Salix exigua* Nutt.	Salicaceae	Hinds willow	C-184
Salix hookeriana Barratt	-----	Salicaceae	Hooker willow	C-185, D-114
Salix interior Rowlee	-----	Salicaceae	sandbar willow	D-115
Salix laevigata Bebb	-----	Salicaceae	red willow	C-186
Salix lanata ssp. *richardsonii* (Hook.) A. Skwortz.	*Salix richardsonii* Hook.	Salicaceae	Richarson willow	D-116

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Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Salix lasiandra Benth.	*Salix lucida* ssp. *lasiandra* (Benth.) E. Murr.	Salicaceae	Pacific willow	C-187, D-117
Salix lasiolepis Benth.	-----	Salicaceae	arroyo willow	C-188
Salix lucida Mühl.	-----	Salicaceae	shining willow	C-189
Salix mackenzieana (Hook.) Barratt	*Salix prolixa* Anderss.	Salicaceae	Mackenzie willow	C-190
Salix monticola Bebb	-----	Salicaceae	park willow	D-118
Salix nigra Marsh.	-----	Salicaceae	black willow	C-191
Salix novae-angliae Anderss.	*Salix pseudomyrsinites* Anderss.	Salicaceae	tall blueberry willow	D-119
Salix pellita Anderss.	-----	Salicaceae	satiny willow	C-192
Salix petiolaris J. E. Sm.	-----	Salicaceae	meadow willow	C-193
Salix planifolia ssp. *pulchra* (Cham.) Argus	*Salix pulchra* Cham.	Salicaceae	diamondleaf willow	D-120
Salix pyrifolia Anderss.	-----	Salicaceae	balsam willow	C-194
Salix reticulata L.	-----	Salicaceae	netleaf willow	D-121
Salix scouleriana Barratt	-----	Salicaceae	Scouler willow	C-195, D-122
Salix sericea Marsh.	-----	Salicaceae	silky willow	C-196
Salix sessilifolia Nutt.	*Salix exigua* Nutt.	Salicaceae	northwest willow	C-197
Salix sitchensis Sanson	-----	Salicaceae	Sitka willow	C-198, D-123
Salix taxifolia H. B. K.	-----	Salicaceae	yewleaf willow	C-199
Salix tracyi Ball	*Salix lasiolepis* var. *lasiolepis*	Salicaceae	Tracy willow	C-200
Sambucus callicarpa Greene	*Sambucus racemosa* var. *racemosa*	Caprifoliaceae	Pacific red elder	C-201, D-124
Sambucus canadensis L.	*Sambucus nigra* ssp. *canadensis* (L.) R. Bolli	Caprifoliaceae	American elder	C-202
Sambucus glauca Nutt.	*Sambucus nigra* ssp. *caerulea* (Raf.) R. Bolli	Caprifoliaceae	blueberry elder	C-203
Sambucus melanocarpa A. Gray	*Sambucus racemosa* var. *melanocarpa* (Gray) McMinn	Caprifoliaceae	blackbead elder	C-204
Sambucus mexicana Presl.	*Sambucus nigra* ssp. *canadensis* (L.) R. Bolli	Caprifoliaceae	Mexican elder	B-228
Sambucus velutina Durand & Hilgard	*Sambucus nigra* spp. *caerulea* (Raf.) R. Bolli	Caprifoliaceae	velvet elder	C-205
Sapindus drummondii Hook. & Arn.	*Sapindus saponaria* var. *drummondii* (Hook. & Arn.) L. Benson	Sapindaceae	western soapberry	C-206
Sapindus saponaria L.	-----	Sapindaceae	wingleaf soapberry	C-207
Sapium biloculare (S. Wats.) Pax	*Sebastiana bilocularis* S. Wats.	Euphorbiaceae	jumping-bean sapium	B-229

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HARDWOOD SPECIES—*Continued*				
Sassafras albidum (Nutt.) Nees	-----	Lauraceae	sassafras	B-230
Schaefferia frutescens Jacq.	-----	Celastraceae	Florida-boxwood	C (FL)-385
Schoepfia chrysophylloides (A. Rich.) Planch.	*Schoepfia schreberi* J. F. Gmel.	Olacaceae	graytwig	C (FL)-385
Serenoa repens (Bartr.) Small	-----	Arecaceae	saw-palmetto	C-208
Shepherdia argentea (Pursh) Nutt.	-----	Elaeagnaceae	silver buffaloberry	B-231
Shepherdia canadensis (L.) Nutt.	-----	Elaeagnaceae	buffaloberry	D-125
Simarouba glauca DC.	-----	Simaroubaceae	paradise-tree	C (FL)-385
Solanum erianthum D. Don	-----	Solanaceae	mullein nightshade	C-209
Sophora affinis Torr. & Gray	-----	Fabaceae	Texas sophora	C-210
Sophora secundiflora (Ortega) Lag.	-----	Fabaceae	mescalbean	C-211
Sorbus americana Marsh.	-----	Rosaceae	American mountain-ash	C-212
Sorbus decora (Sarg.) Schneid.	-----	Rosaceae	showy mountain-ash	C-213
Sorbus scopulina Greene	-----	Rosaceae	Greene mountain-ash	C-214, D-126
Sorbus sitchensis Roem.	-----	Rosaceae	Sitka mountain-ash	C-215, D-127
Spiraea beauverdiana Schneid.[2]	-----	Rosaceae	Beauverd spirea	D-128
Staphylea bolanderi A. Gray	-----	Staphyleaceae	Sierra bladdernut	C-216
Staphylea trifolia L.	-----	Staphyleaceae	American bladdernut	C-217
Stewartia malacodendron L.	-----	Theaceae	Virginia stewartia	C-218
Stewartia ovata (Cav.) Weatherby	-----	Theaceae	mountain stewartia	C-219
Styrax americana Lam.	*Styrax americanus* Lam.	Styracaceae	American snowbell	C-220
Styrax grandifolia Ait.	*Styrax grandifolius* Ait.	Styracaceae	bigleaf snowbell	C-221
Styrax platanifolia Engelm.	*Styrax platanifolius* Engelm. ex Torr.	Styracaceae	sycamore-leaf snowbell	C-222
Suriana maritima L.	-----	Surianaceae	baycedar	C (FL)-385
Swietenia mahagoni (L.) Jacq.	-----	Meliaceae	West Indies mahogany	C (FL)-385
Symplocos tinctoria (L.) L'Hér.	-----	Symplocaceae	common sweetleaf	C-223
Tetrazygia bicolor (Mill.) Cogn.	-----	Melastomataceae	Florida tetrazygia	C (FL)-385
Thrinax morrisii H. Wendl.	-----	Arecaceae	key thatchpalm	C (FL)-385
Thrinax radiata Lodd. ex J. A. & J. H. Schult.	-----	Arecaceae	Florida thatchpalm	C (FL)-385
Tilia americana L.	-----	Tiliaceae	American basswood	B-232
Tilia caroliniana Mill.	-----	Tiliaceae	Carolina basswood	C-224

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HARDWOOD SPECIES—*Continued*				
Tilia heterophylla Vent.	*Tilia americana* var. *heterophylla* (Vent.) Loud.	Tiliaceae	white basswood	B-233
Toxicodendron vernix (L.) Kuntze	-----	Anacardiaceae	poison-sumac	C-225
Trema lamarckiana (Roem. & Schult.) Blume	*Trema lamarckianum* (J. A. Schultes) Blume	Ulmaceae	West Indies trema	C (FL)-385
Trema micrantha (L.) Blume	*Trema micranthum* (L.) Blume	Ulmaceae	Florida trema	C (FL)-385
Ulmus alata Michx.	-----	Ulmaceae	winged elm	B-234
Ulmus americana L.	-----	Ulmaceae	American elm	B-235
Ulmus crassifolia Nutt.	-----	Ulmaceae	cedar elm	B-236
Ulmus rubra Mühl.	-----	Ulmaceae	slippery elm	B-237
Ulmus serotina Sarg.	-----	Ulmaceae	September elm	B-238
Ulmus thomasii Sarg.	-----	Ulmaceae	rock elm	B-239
Umbellularia californica (Hook. & Arn.) Nutt.	-----	Lauraceae	California-laurel	B-240
Ungnadia speciosa Endl.	-----	Sapindaceae	Mexican-buckeye	C-226
Vaccinium alaskaense Howell	*Vaccinium ovalifolium* Sm.	Ericaceae	Alaska blueberry	D-129
Vaccinium arboreum Marsh.	-----	Ericaceae	tree sparkleberry	C-227
Vaccinium caespitosum Michx.	-----	Ericaceae	dwarf blueberry	D-130
Vaccinium ovalifolium Sm.	-----	Ericaceae	early blueberry	D-131
Vaccinium parvifolium Sm.	-----	Ericaceae	red huckleberry	D-132
Vaccinium uliginosum L.	-----	Ericaceae	bog blueberry	D-133
Vaccinium vitis-idaea L.	-----	Ericaceae	mountain-cranberry	D-134
Vauquelinia californica (Torr.) Sarg.	-----	Rosaceae	Torrey vauquelinia	B-241
Vauquelinia pauciflora Standl.	*Vauquelinia californica* ssp. *pauciflora* (Standl.) Hess & Henrickson	Rosaceae	fewflower vauquelinia	C-228
Viburnum edule (Michx.) Raf.	-----	Caprifoliaceae	high bushcranberry	D-135
Viburnum lentago L.	-----	Caprifoliaceae	nannyberry	C-229
Viburnum nudum L.	-----	Caprifoliaceae	possumhaw viburnum	C-230
Viburnum obovatum Walt.	-----	Caprifoliaceae	Walter viburnum	C-231
Viburnum prunifolium L.	-----	Caprifoliaceae	blackhaw	C-232
Viburnum rufidulum Raf.	-----	Caprifoliaceae	rusty blackhaw	C-233
Viburnum trilobum Marsh.	*Viburnum opulus* var. *americanum* Ait.	Caprifoliaceae	American cranberrybush	C-234

Table 3. Botanical names of species and groups of species in volumes A, B, C, and D of USGS Professional Paper 1650, as they appear in the original published sources of species distribution maps. Synonyms are listed for species that have since changed names. Validity of botanical names verified in Kartesz (1999) for hardwoods, and Farjon (2001) for conifers, except where footnoted—*Continued*.

Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD SPECIES—*Continued*				
Washingtonia filifera (Linden) H. Wendl.	-----	Arecaceae	California washingtonia	B-242
Ximenia americana L.	-----	Olacaceae	tallowwood	C (FL)-385
Yucca aloifolia L.	-----	Agavaceae	aloe yucca	C-235
Yucca brevifolia Engelm.	-----	Agavaceae	Joshua-tree	B-243
Yucca carnerosana (Trel.) McKelvey[2]	-----	Agavaceae	Carneros yucca	B-244
Yucca elata Engelm.	-----	Agavaceae	soaptree yucca	B-245
Yucca faxoniana Sarg.	-----	Agavaceae	Faxon yucca	B-246
Yucca gloriosa L.	-----	Agavaceae	moundlily yucca	C-236
Yucca mohavensis Sarg.	*Yucca schidigera* Roezl ex Ortgies	Agavaceae	Mohave yucca	B-247
Yucca rostrata Engelm.	*Yucca thompsoniana* Trel.	Agavaceae	beaked yucca	B-248
Yucca schottii Engelm.	-----	Agavaceae	Schotts yucca	B-249
Yucca torreyi Shafer	-----	Agavaceae	Torrey yucca	B-250
Yucca treculeana Carr.	-----	Agavaceae	Trecul yucca	B-251
Zanthoxylum americanum Mill	-----	Rutaceae	common prickly-ash	C-237
Zanthoxylum clava-herculis L.	-----	Rutaceae	Hercules-club	C-238
Zanthoxylum coriaceum A. Rich.	-----	Rutaceae	Biscayne prickly-ash	C (FL)-385
Zanthoxylum fagara (L.) Sarg.	-----	Rutaceae	lime prickly-ash	C-239
Zanthoxylum hirsutum Buckl.	-----	Rutaceae	Texas Hercules-club	C-240
HARDWOOD GROUPS				
ACER	-----	Aceraceae	maple	B-255
ACER EAST	-----	Aceraceae	maple in eastern North America	B-256
ACER WEST	-----	Aceraceae	maple in western North America	B-257
AESCULUS	-----	Hippocastanaceae	buckeye	C-241
ALNUS	-----	Betulaceae	alder	B-258, D-136
ALNUS EAST	-----	Betulaceae	alder in eastern North America	B-259
ALNUS WEST	-----	Betulaceae	alder in western North America	B-260
BETULA	-----	Betulaceae	birch	B-261, D-137
CARYA	-----	Juglandaceae	hickory	B-262
CASTANEA	-----	Fagaceae	chestnut	B-263
CATALPA	-----	Bignoniaceae	catalpa	C-242
ERICACEAE	-----		heath	D-138

Table 3. Botanical names of species and groups of species in volumes A, B, C, and D of USGS Professional Paper 1650, as they appear in the original published sources of species distribution maps. Synonyms are listed for species that have since changed names. Validity of botanical names verified in Kartesz (1999) for hardwoods, and Farjon (2001) for conifers, except where footnoted—*Continued*.

Scientific Name	Currently accepted scientific name (synonym)	Family Name	Common Name	Volume and Page Number
HARDWOOD GROUPS—*Continued*				
ERICACEAE/*EMPETRUM*	-----		heath and crowberry	D-139
FRAXINUS	-----	Oleaceae	ash	B-264
FRAXINUS EAST	-----	Oleaceae	ash in eastern North America	B-265
FRAXINUS WEST	-----	Oleaceae	ash in western North America	B-266
JUGLANS	-----	Juglandaceae	walnut	B-267
JUGLANS EAST	-----	Juglandaceae	walnut in eastern North America	B-268
JUGLANS WEST	-----	Juglandaceae	walnut in western North America	B-269
LEDUM	-----	Ericaceae	Labrador-tea	D-140
MAGNOLIA	-----	Magnoliaceae	magnolia	C-243
OSTRYA/CARPINUS	-----	Betulaceae	hornbeam/hophornbeam	B-270
PLATANUS	-----	Platanaceae	sycamore	C-244
POPULUS	-----	Salicaceae	poplar, cotonwood, aspen	C-245, D-141
QUERCUS	-----	Fagaceae	oak	B-271
QUERCUS EAST	-----	Fagaceae	oak in eastern North America	B-272
QUERCUS WEST	-----	Fagaceae	oak in western North America	B-273
RIBES	-----	Grossulariaceae	currant, gooseberry	D-142
ROSA	-----	Rosaceae	rose	D-143
RUBUS	-----	Rosaceae	raspberry, thimbleberry, salmonberry	D-144
SALIX	-----	Salicaceae	willow	D-145
SORBUS	-----	Rosaceae	mountain-ash	D-146
STEWARTIA	-----	Theaceae	stewartia	C-246
TILIA	-----	Tiliaceae	basswood	B-274, C-247
ULMUS	-----	Ulmaceae	elm	B-275
VACCINIUM	-----	Ericaceae	blueberry, cranberry, huckleberry	D-147

[1] Validity of botanical names was verified in Kartesz (2006).

[2] Validity of botanical names was verified in Missouri Botanical Garden (2006).

Table 4. Ecoregions included in this volume. Level I ecoregions (the broadest categories) are listed in all capital letters, Level II (the middle level of detail) in mixed case letters, and Level III (the most detailed categories) in mixed case and italic letters.

Level I	Level II	Level III
Küchler		
NOT APPLICABLE	Not applicable	Potential Natural Vegetation
Not applicable	Not applicable	*Hemlock-spruce forest (Tsuga-Picea)*
Not applicable	Not applicable	*Spruce-birch forest (Picea-Betula)*
Not applicable	Not applicable	*Black spruce forest (Picea)*
Not applicable	Not applicable	*Muskeg (Eriophorum-Sphagnum-Betula)*
Not applicable	Not applicable	*Alder thickets (Alnus)*
Not applicable	Not applicable	*Cottonsedge tundra (Eriophorum)*
Not applicable	Not applicable	*Watersedge tundra (Carex)*
Not applicable	Not applicable	*Dryas meadows and barren (Dryas-Carex-Betula)*
Not applicable	Not applicable	*Aleutian meadows (Calamagrostis-Anemone)*
Not applicable	Not applicable	*Aleutian heath and barren (Empetrum-Vaccinium)*
Bailey		
DOMAIN	Division	Province
POLAR DOMAIN	Tundra Division	*Tundras*
POLAR DOMAIN	Tundra Mountains	*Tundra - polar desert*
POLAR DOMAIN	Tundra Mountains	*Tundra - meadow*
POLAR DOMAIN	Tundra Mountains	*Oceanic meadow - heath*
POLAR DOMAIN	Subarctic Division	*Forest-tundras and open woodlands*
POLAR DOMAIN	Subarctic Mountains	*Open woodland - tundra*
POLAR DOMAIN	Subarctic Mountains	*Tayga - tundra, medium*
POLAR DOMAIN	Subarctic Mountains	*Tayga - tundra, high*
HUMID TEMPERATE DOMAIN	Marine Mountains	*Forest - meadow, medium*
HUMID TEMPERATE DOMAIN	Marine Mountains	*Forest - meadow, high*
World Wildlife Fund		
	Major Habitat Types	Ecoregion
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	Coniferous Forests	*Northern Pacific Coastal Forest*
BOREAL FOREST, TAIGA AND TUNDRA	Boreal Forest/Taiga	*Interior Alaska/Yukon Lowland Taiga*
BOREAL FOREST, TAIGA AND TUNDRA	Boreal Forest/Taiga	*Alaska Peninsula Montane Taiga*
BOREAL FOREST, TAIGA AND TUNDRA	Boreal Forest/Taiga	*Cook Inlet Taiga*
BOREAL FOREST, TAIGA AND TUNDRA	Boreal Forest/Taiga	*Copper Plateau Taiga*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Beringia Lowland Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Beringia Upland Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Alaska/St. Elias Range Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Pacific Coastal Mountain Tundra and Ice Fields*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Interior Yukon/Alaska Alpine Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Ogilvie/MacKenzie Alpine Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Brooks/British Range Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Arctic Foothills Tundra*
BOREAL FOREST, TAIGA AND TUNDRA	Tundra	*Arctic Coastal Tundra*

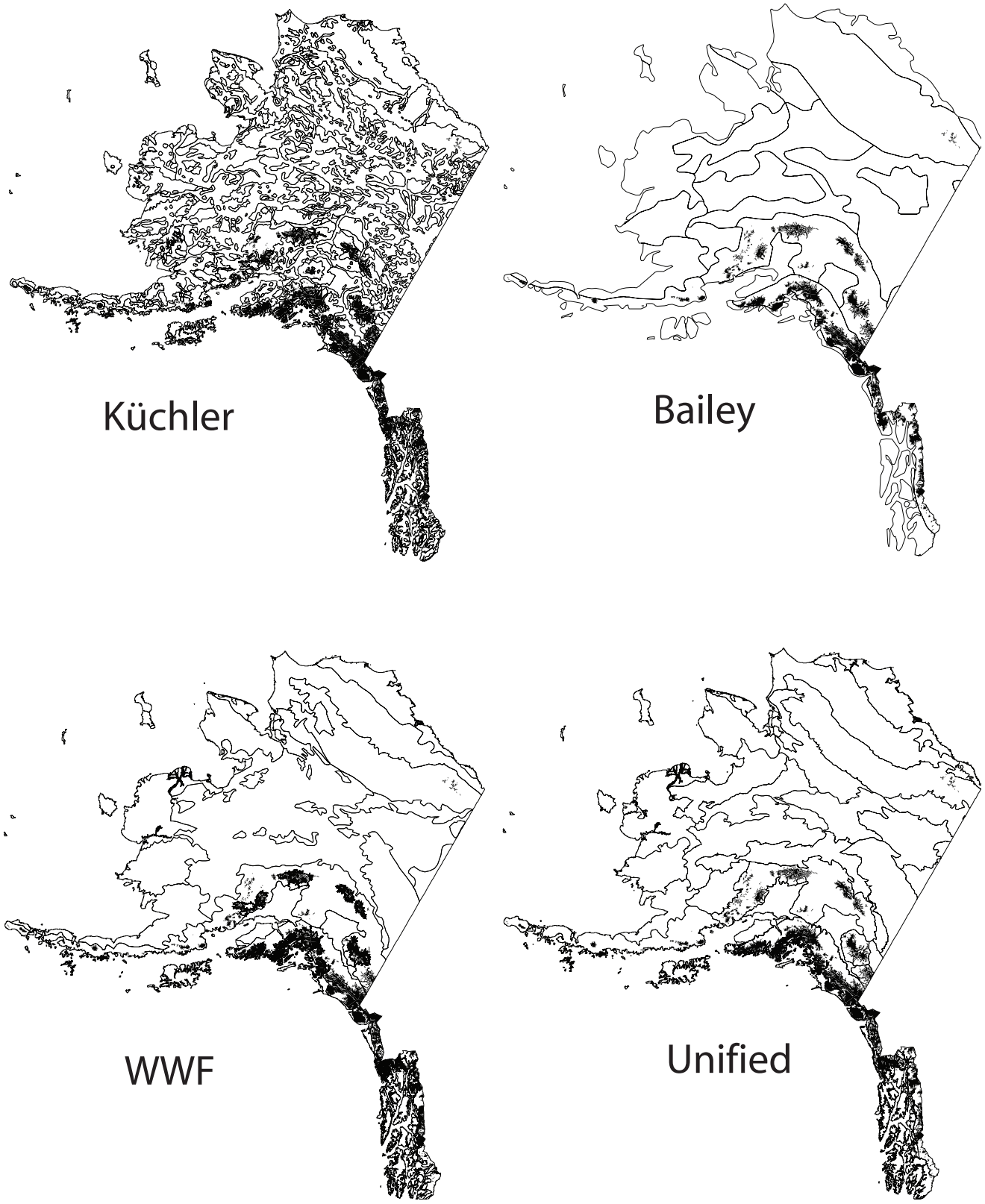

Figure 9. Comparison of the Level III (most detailed) ecoregion boundaries for Alaska among the Küchler (1985), Bailey (1998), World Wildlife Fund (WWF) (Ricketts and others, 1999), and Unified Ecoregions (Nowacki and others, 2002) classification systems. The Küchler "Potential Natural Vegetation" categories are at a much finer scale than those of the other three approaches. Note the overall similarity of the patterns between the Bailey and WWF ecoregions (and to the Unified Ecoregions, which combines aspects of the two approaches). Glaciers are shown in black (distribution of glaciers from Alaska Department of Natural Resources, Land Records Information Section, 1990; may be downloaded from: ftp://ftp.dnr.state.ak.us/asgdc/adnr/glcr2mil.zip).

organized in a three-level hierarchy, with the Bailey system having two "domains" at the coarsest level (Level I), five mid-level Level II "divisions," and nine finest-scale Level III "provinces." The World Wildlife Fund ecoregion system in Alaska has 2 Level I categories, 3 Level II "major habitat types" (MHTs), and 14 Level III "ecoregions."

Küchler Ecoregions. Küchler (1985) reconstructed the "potential natural vegetation" of Alaska, and we digitized this map for inclusion in our ecoregion analysis. Küchler (1985) defined potential natural vegetation ". . . as the vegetation that would exist today if man were removed from the scene and if the plant succession after his removal were telescoped into a single moment." He viewed Alaska as a special case, where ". . . remoteness and a very sparse population have combined to preserve the vegetation. Even extensive fires cannot hide the potential natural vegetation, which is severely limited to relatively few types by extremely harsh environmental conditions. Introduced species are few, and disturbed vegetation types return to their original state when given an opportunity. One of the outstanding characteristics of the Alaskan vegetation is its uniformity over very large areas."

Bailey Ecoregions. Robert G. Bailey (1998) of the U.S. Department of Agriculture Forest Service defined a three-tiered hierarchy of ecoregions for North America, and under this system, the two broadest categories ". . . domains, and within them divisions, are based largely on the broad ecological climate zones . . . ." (Bailey, 1998, p. 1) as defined by Köppen (1931) and modified by Trewartha (1968). There are four domains (Level I) in North America, two of which (polar and humid temperate) occur in Alaska. Within the domains, there are 15 divisions (Level II) in North America (5 of which occur in Alaska, 4 in the polar domain and 1 in the humid temperate domain), based largely on the seasonality of climate or the degree of aridity or coldness. Finer scale categories (Level III) within the divisions (again largely based on climatic differences) are called provinces, that ". . . largely correspond to major plant formations . . ., which are delimited on the basis of macro features of the vegetation by concentrating on the life-forms of the plants" (Bailey, 1998, p. 2). Mountain regions with significant altitudinal zonation of climate and vegetation are classified as "mountain provinces." There are seven polar domain provinces and two humid temperate domain provinces in Alaska. To maintain consistency with the next volume of this atlas (1650–E), which examines ecoregions across North America, we chose Bailey (1998) over the similar (but Alaska only) map by Nowacki and Brock (1995).

World Wildlife Fund Ecoregions. As described in Ricketts and others (1999), the World Wildlife Fund (WWF) ecoregions for Alaska are based on (and slightly simplified from) the work of Gallant and others (1995), which followed the approach developed by James M. Omernik of the U.S. Environmental Protection Agency. Again, to maintain consistency with the next volume of the atlas (1650–E) we decided to use the WWF ecoregions (which are consistent with those used in Canada and the conterminous United States) instead of the Gallant and others (1995) ecoregions (which pertain only to Alaska). The WWF ecoregions were not defined in the same manner as those of Bailey (1998). Instead, the researchers considered ". . . a suite of environmental characteristics, regardless of the level of hierarchic resolution, rather than assigning importance to a single environmental characteristic per level of classification hierarchy" (Gallant and others, 1995, p. 2). The environmental characteristics considered included ". . . climate, physiography, surficial and bedrock geology, soils, permafrost, glaciation, hydrology, and current and potential vegetation" (Gallant and others, 1995, p. 3–4). Ecoregion boundaries were determined qualitatively by delimiting areas where there are unique combinations of the environmental characteristics listed previously. There are three levels in the WWF ecoregion scheme: the broadest scale categories have no formal designation (and we refer to them as Level I categories); the middle scale categories (Level II) are referred to as "Major Habitat Types" (MHTs), which are then subdivided into ecoregions (Level III). "MHTs are not geographically defined units; rather, they refer to the dynamics of ecological systems and to the broad vegetative structures and patterns of species diversity that define them. In this way they are roughly equivalent to biomes" (Ricketts and others, 1999, p. 13–14). At the finest scale, "An ecoregion is defined as a relatively large area of land or water that contains a geographically distinct assemblage of natural communities. These communities (1) share a large majority of their species, dynamics, and environmental conditions, and (2) function together effectively as a conservation unit at global and continental scales . . . ." (Ricketts and others, 1999, p. 7).

Unified Ecoregions. Nowacki and others (2002) produced an ecoregion classification for Alaska that combined the Bailey and Omernik approaches to ecoregion mapping. The Level III ecoregions of this "Unified Ecoregions" approach are shown in figure 9, and the reader can make a visual comparison with the boundaries of the Küchler, Bailey, and WWF Level III ecoregions. The major boundaries among the Bailey, WWF, and Unified systems are similar, although the level of detail varies among them. We did not analyze the climatic data related to the Unified Ecoregions, as the major information is already captured in the Bailey and WWF analyses.

Internet Availability

This volume is available online (http://pubs.usgs.gov/pp/p1650-d/). Electronic versions (including ArcInfo coverages) for Alaskan ecoregions are available at the following sites:

Potential Natural Vegetation:
Küchler (1985):
http://esp.cr.usgs.gov/data/atlas/kuchler/alaska/

Ecoregions Defined Using the Bailey Approach:
Bailey (1998):
http://www.fs.fed.us/institute/ecoregions/eco_download.html
Nowacki and Brock (1995):
http://agdc.usgs.gov/data/usgs/erosafo/ecoreg/ecoreg.html

Ecoregions Defined Using the Omernik Approach:
Ricketts and others (1999):
http://worldwildlife.org/science/data/terreco.cfm

Gallant and others (1995):
http://agdc.usgs.gov/data/usgs/erosafo/ecoreg/ecoreg.html

Unified Ecoregions:
Nowacki and others (2002):
http://agdc.usgs.gov/data/usgs/erosafo/ecoreg/ecoreg.html

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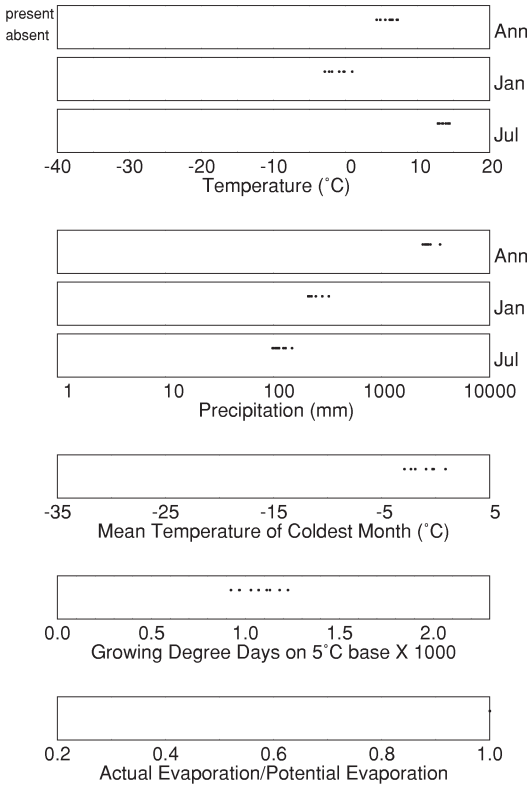
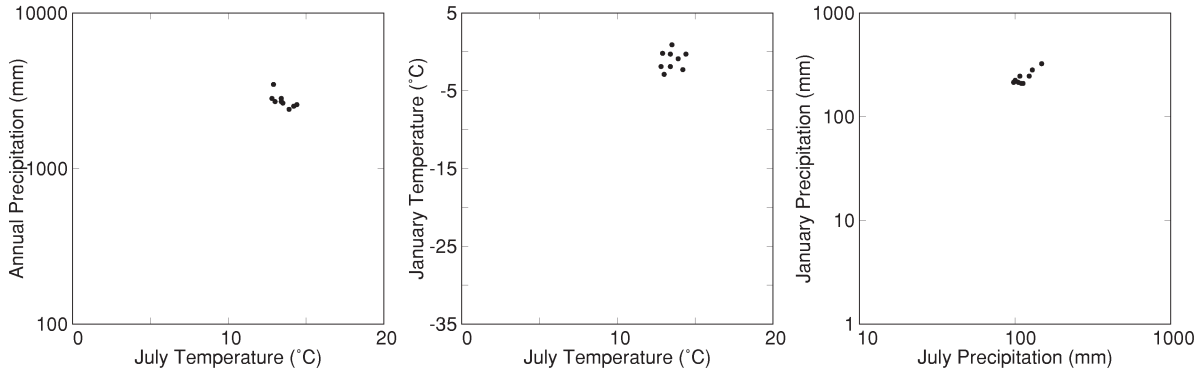
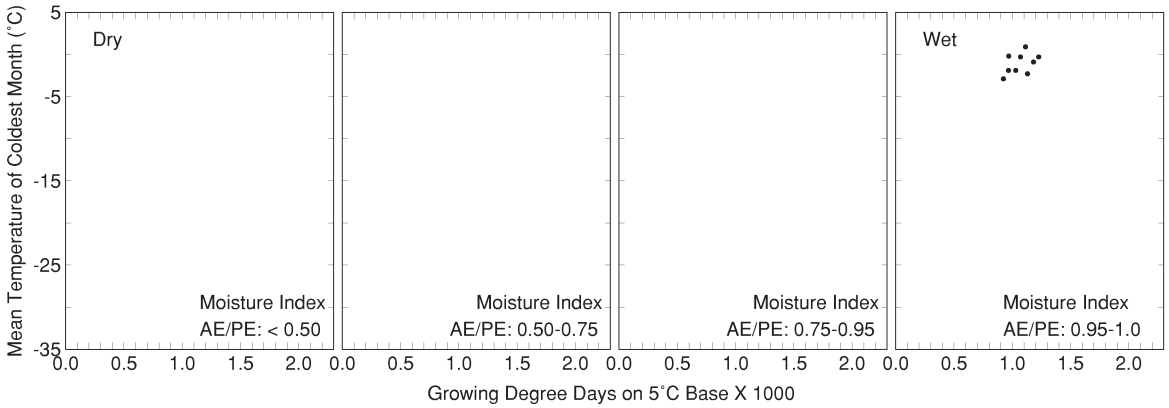
Alaska Species, Genera, and Groups—Graphical Displays

Abies amabilis (minimal data - nearest grid points used with environmental parameters)







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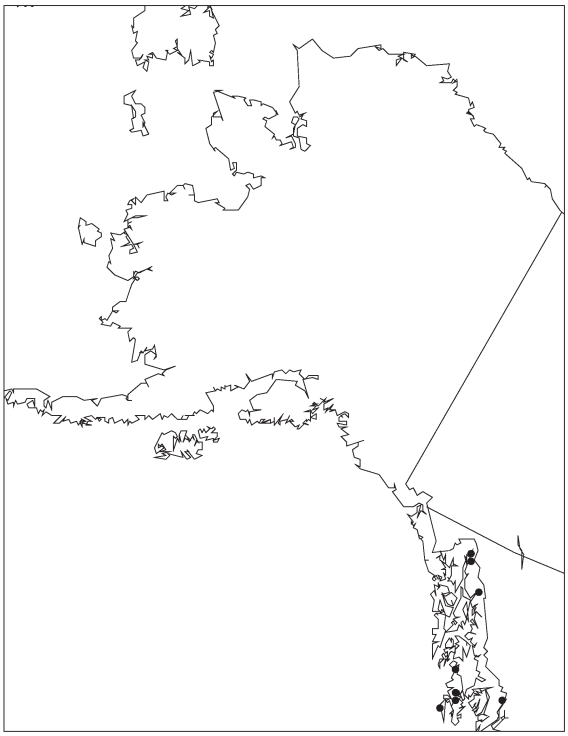
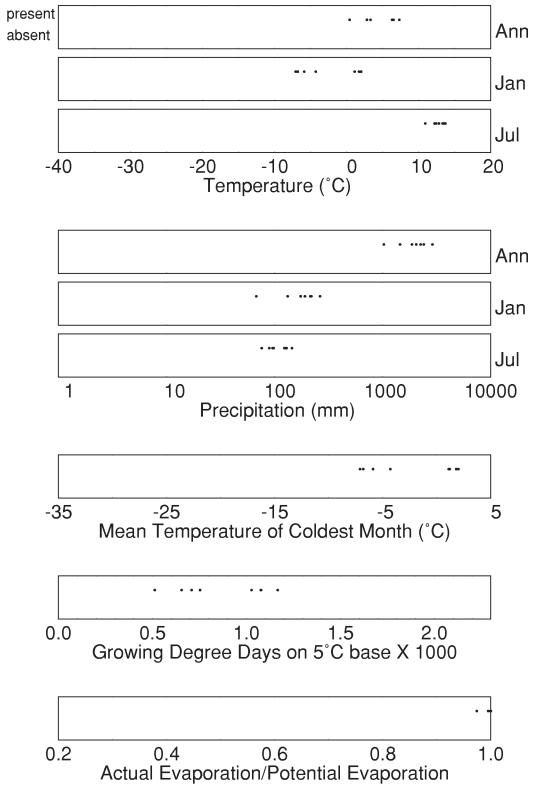
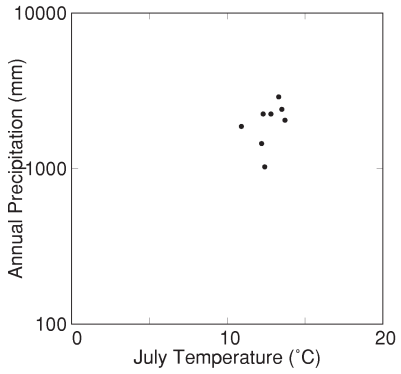
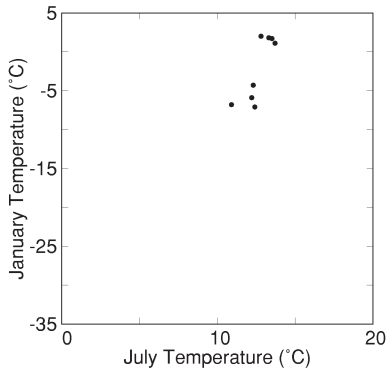
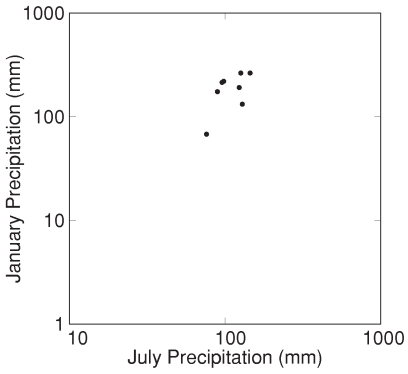
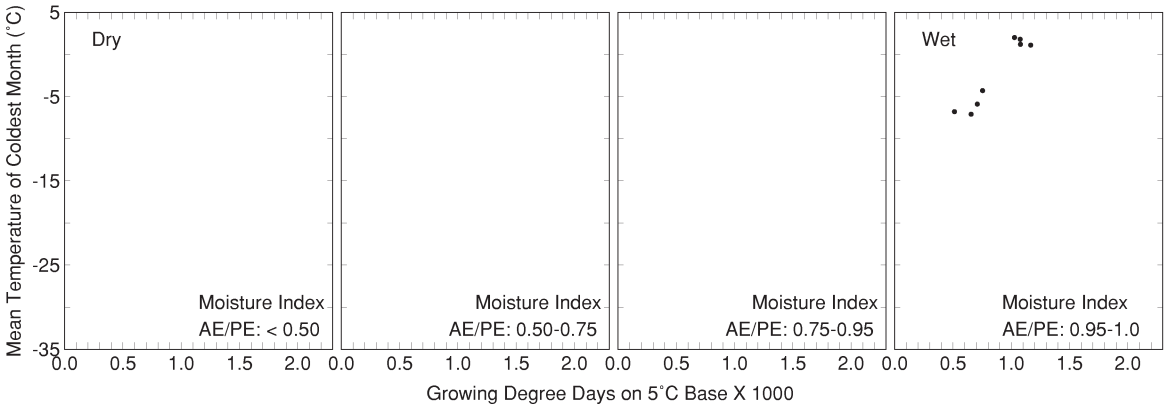




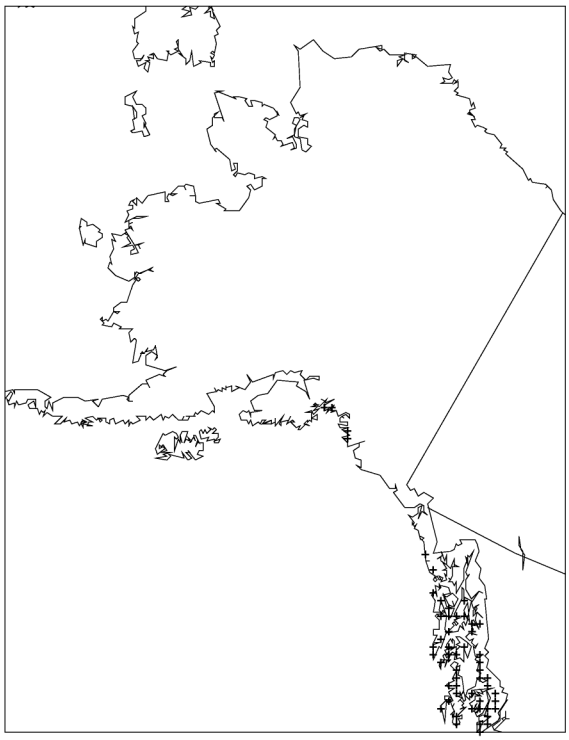


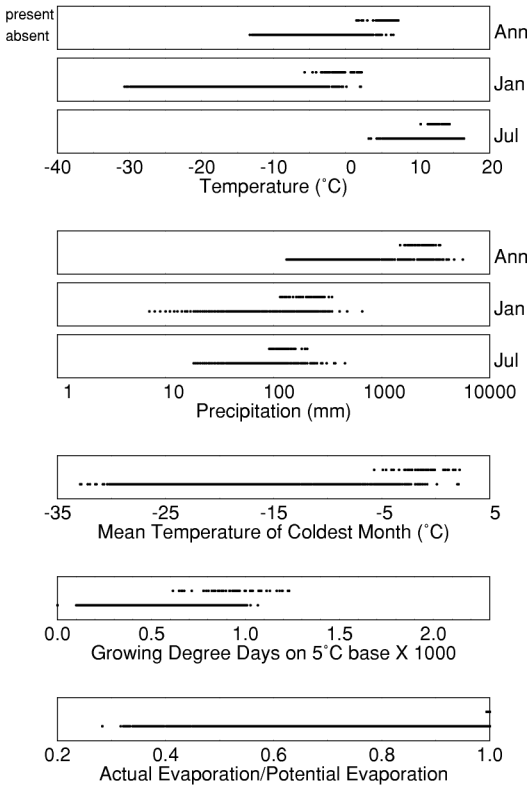


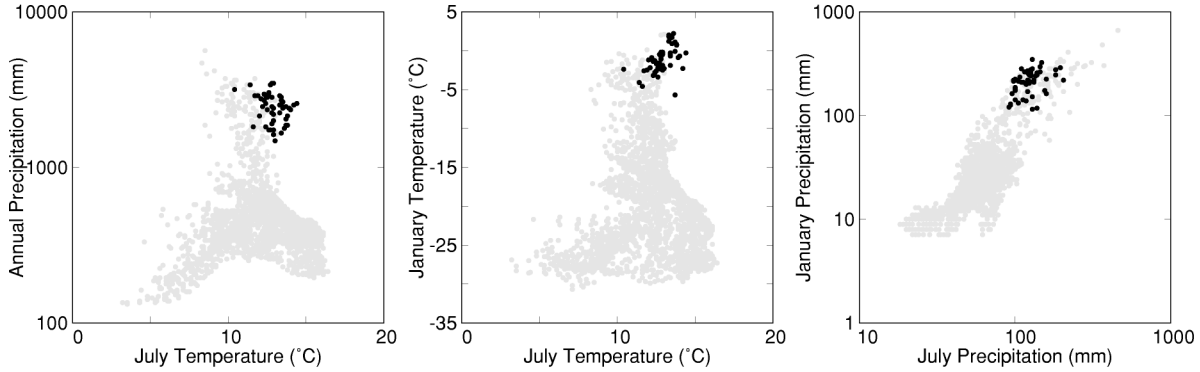


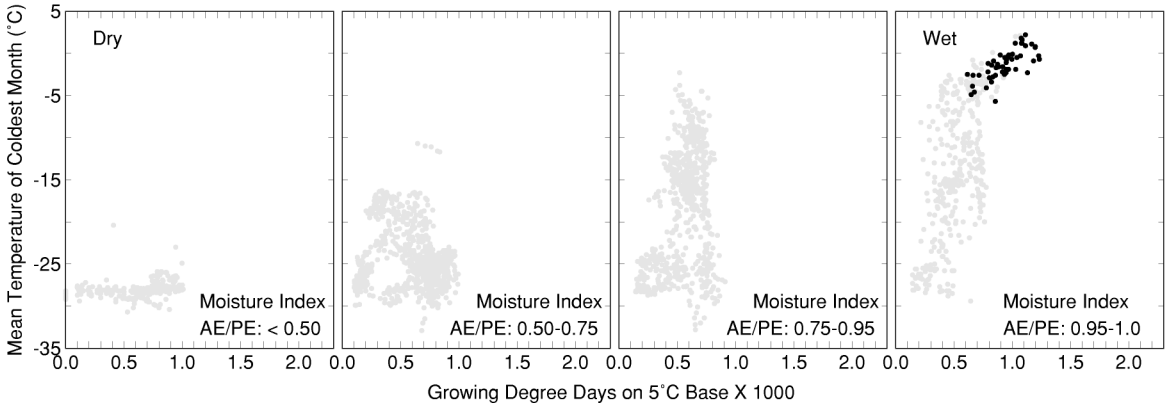


Chamaecyparis nootkatensis

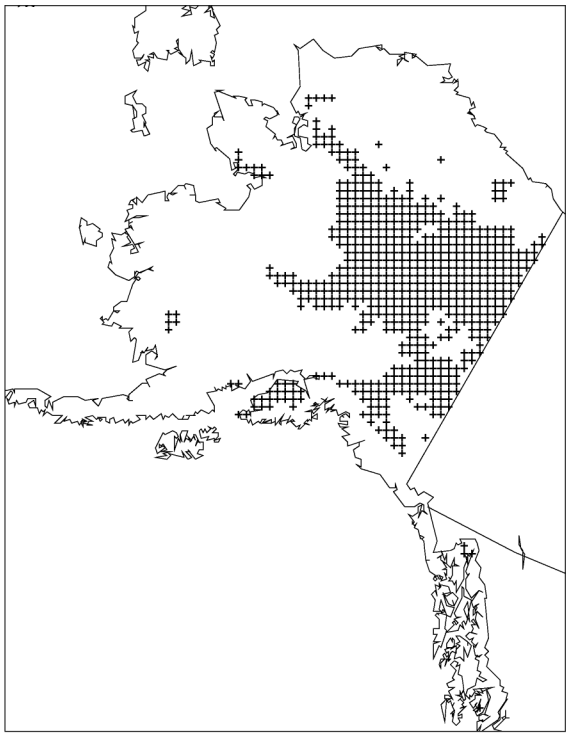


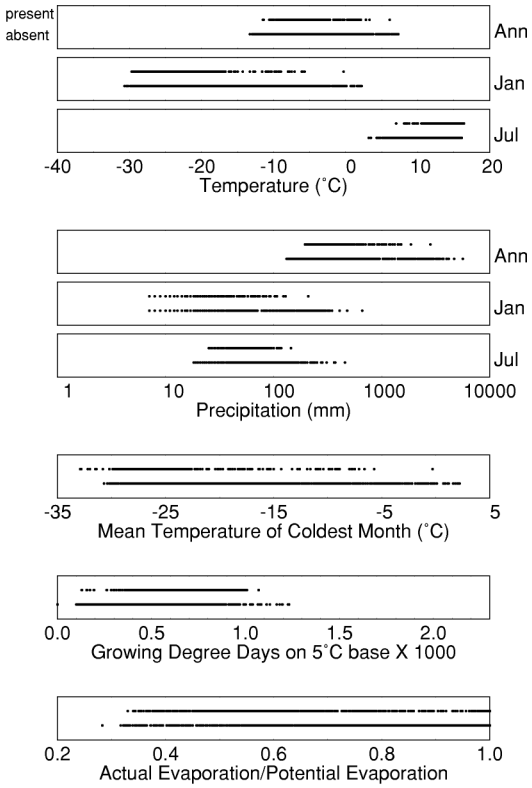


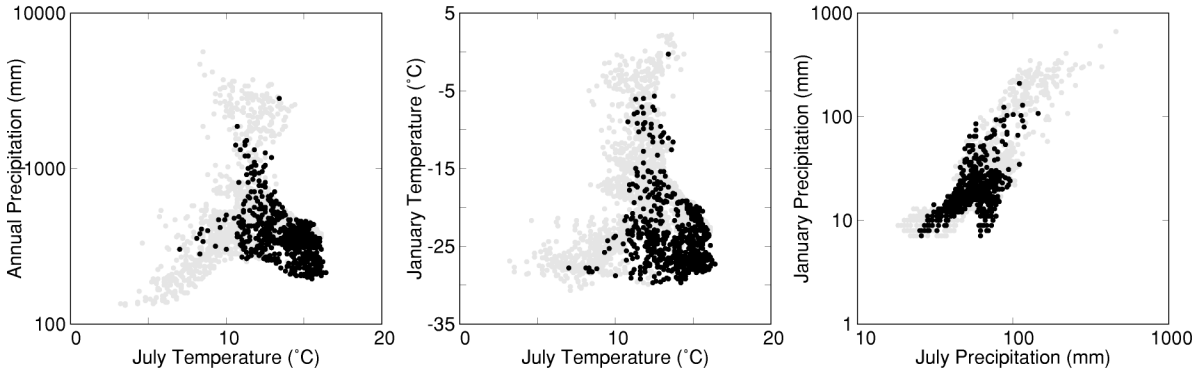


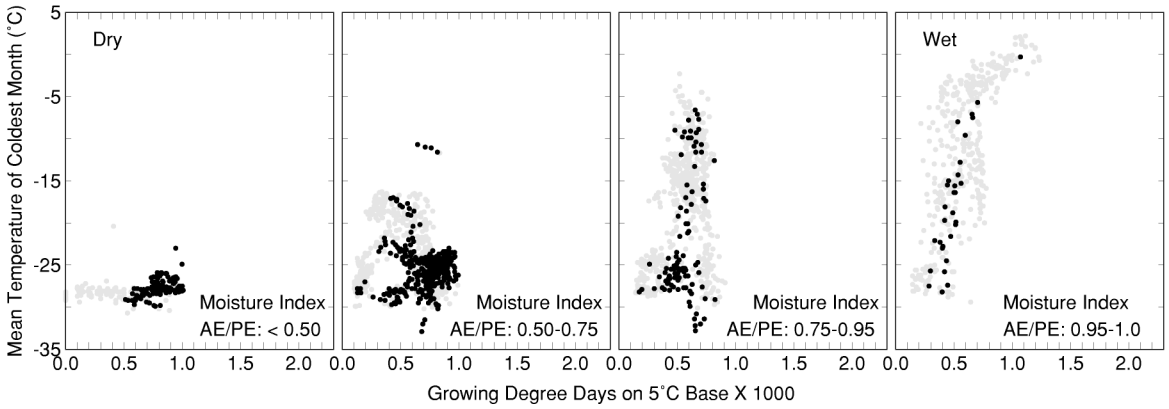


Juniperus communis

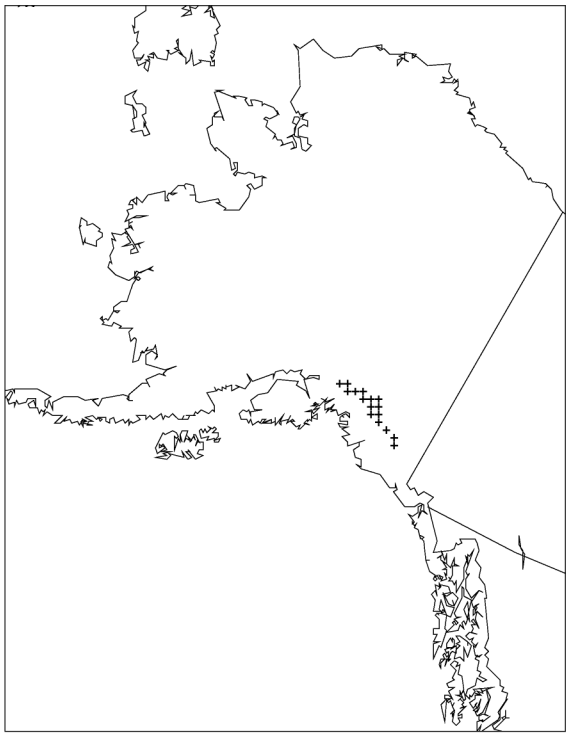


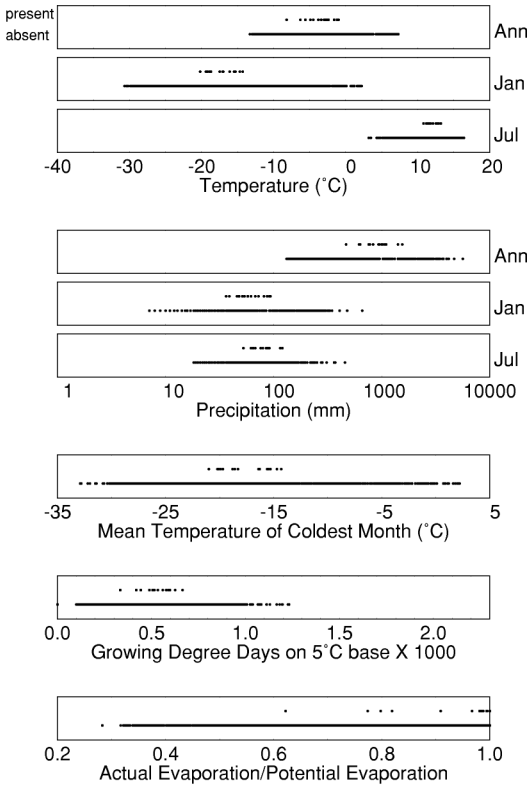


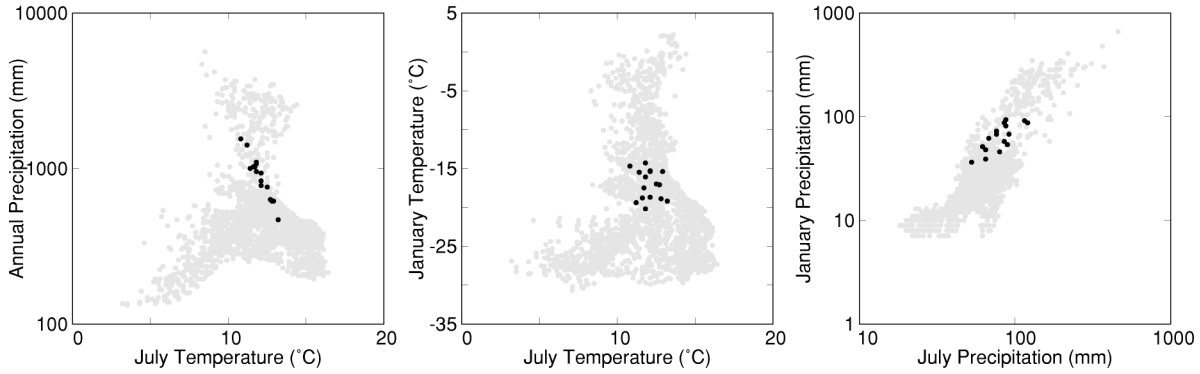


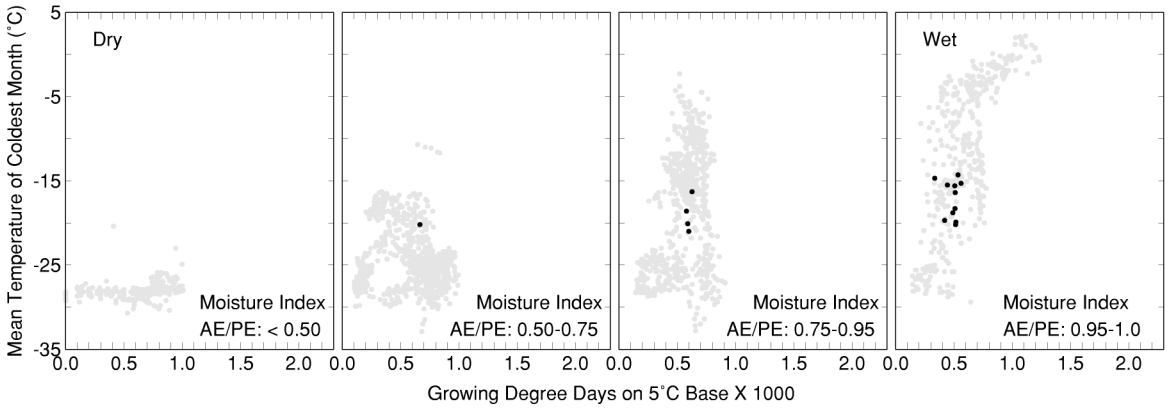


Juniperus horizontalis

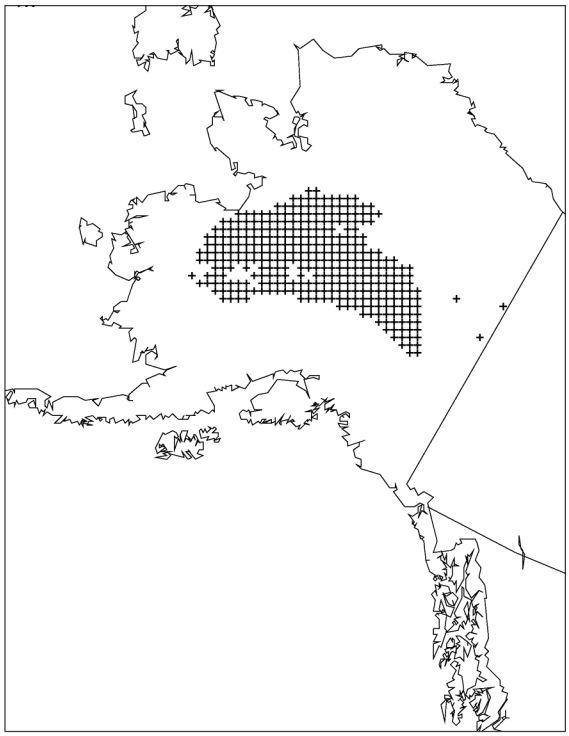


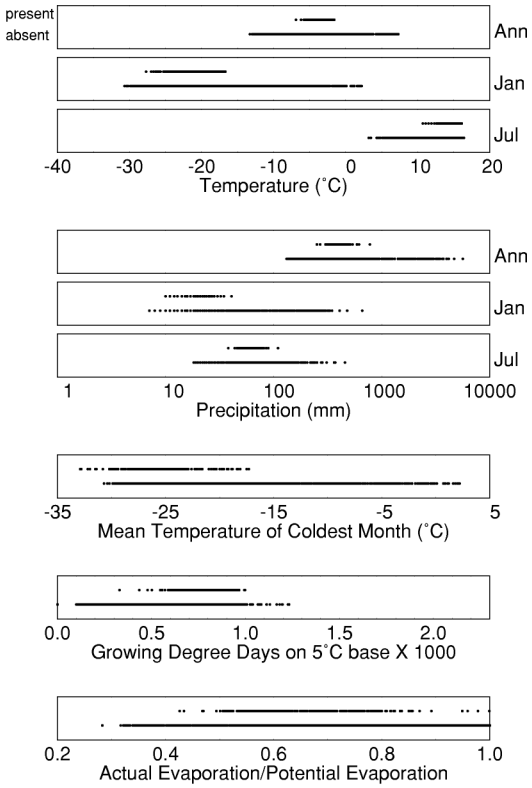


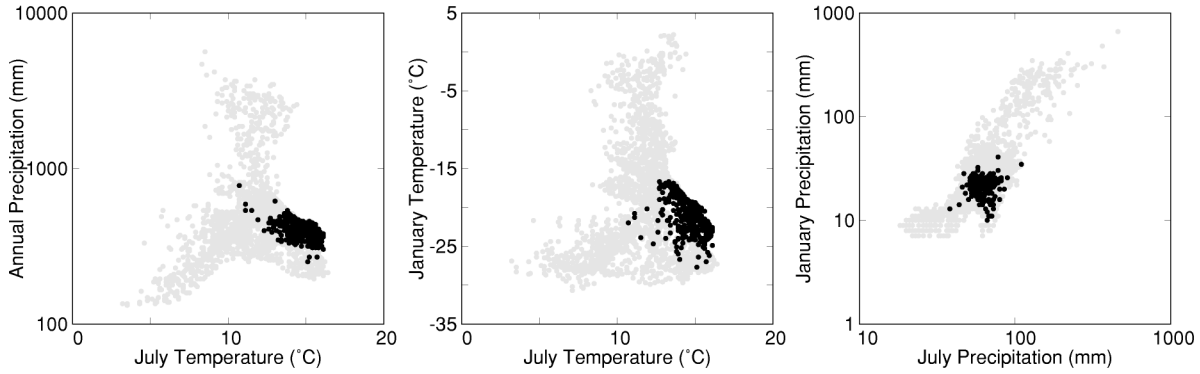


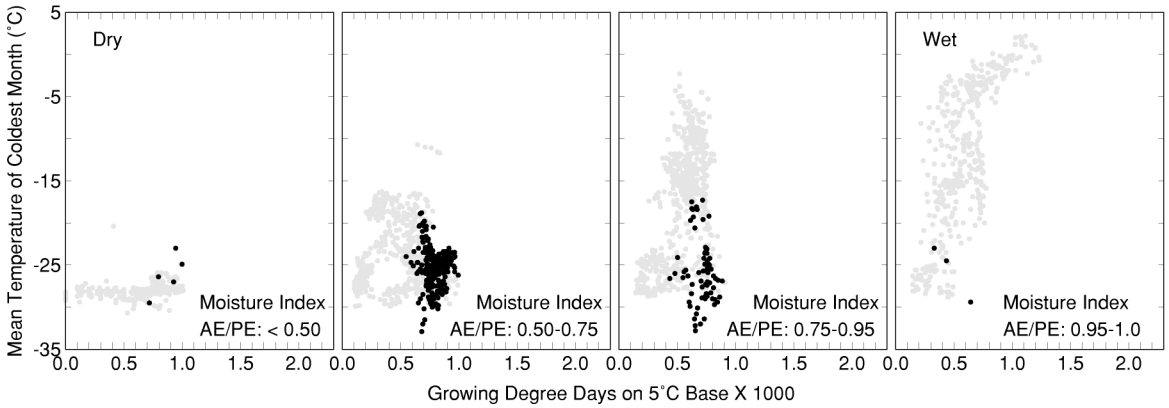


Larix laricina

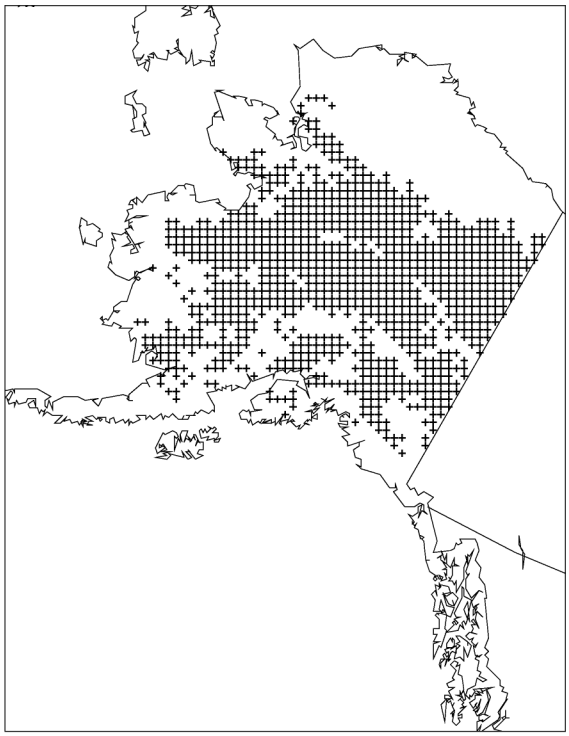


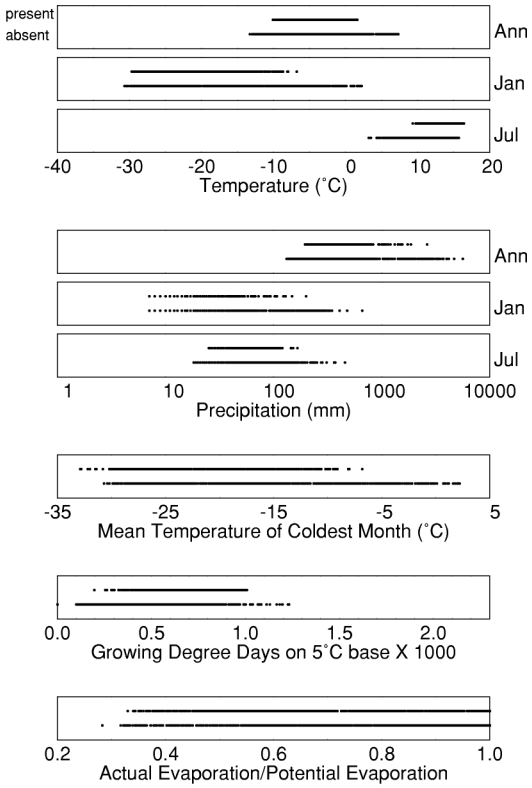


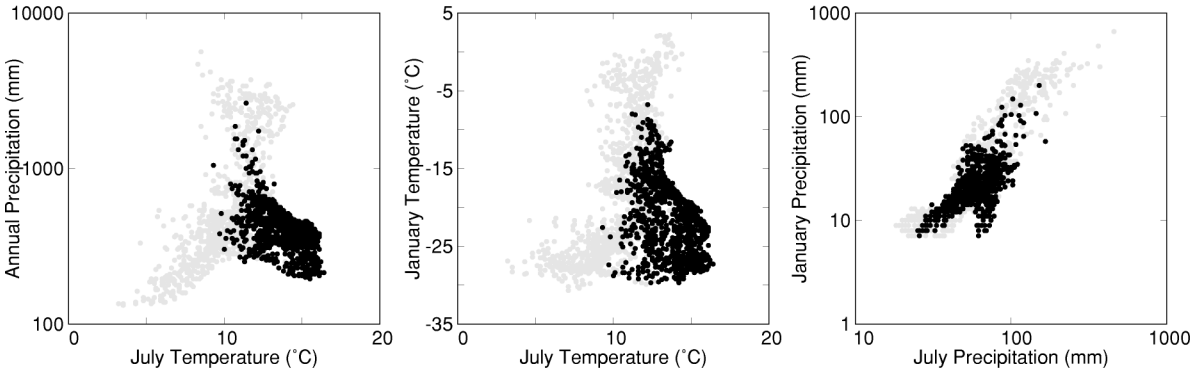


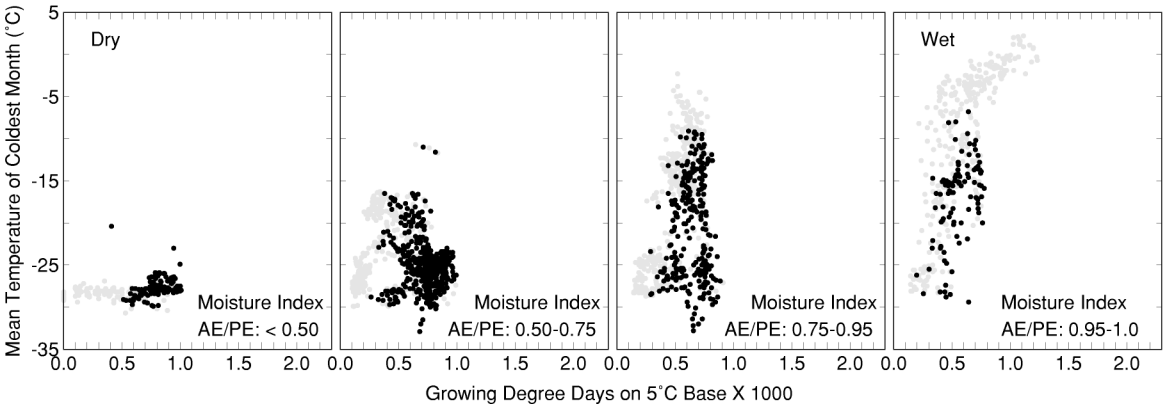


Picea glauca

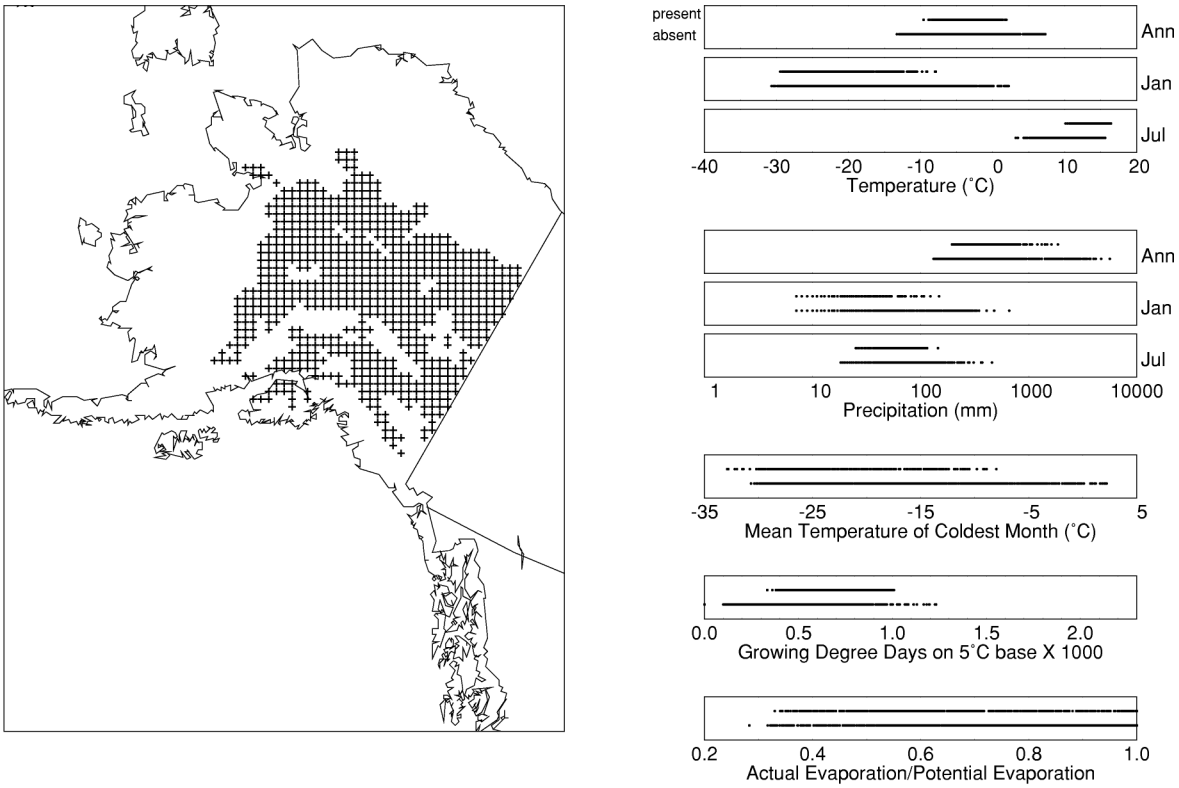


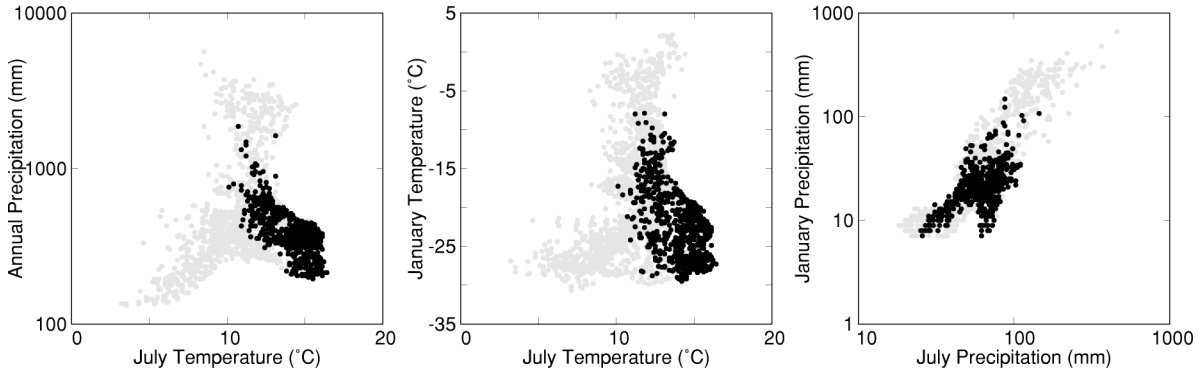


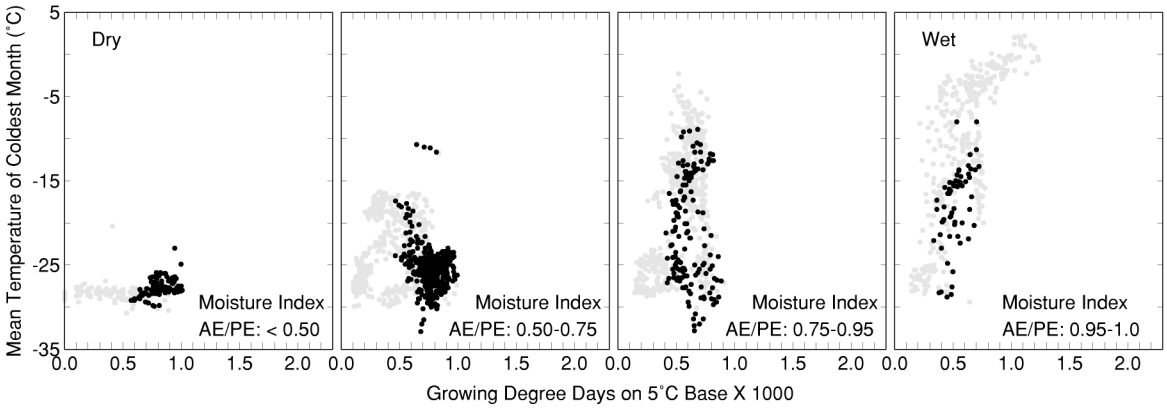




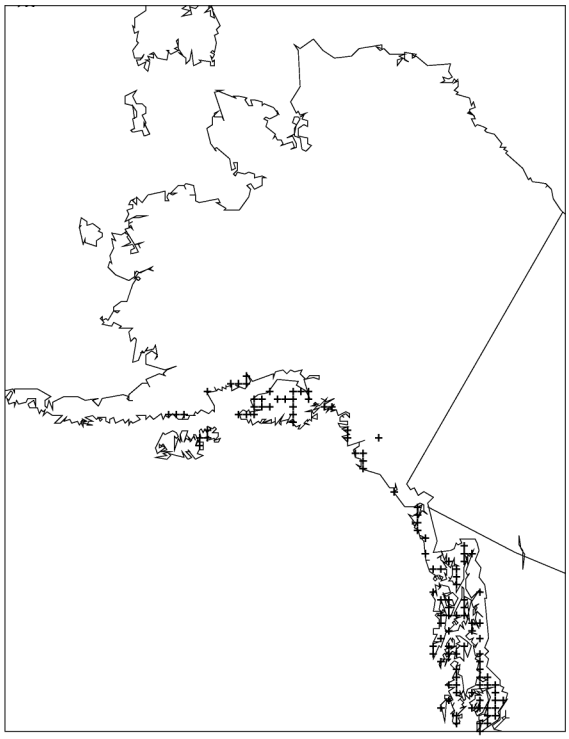
Picea mariana

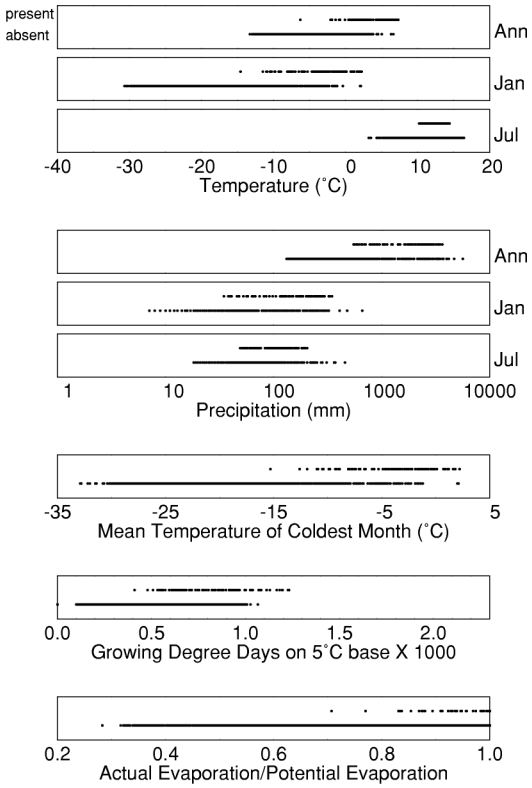


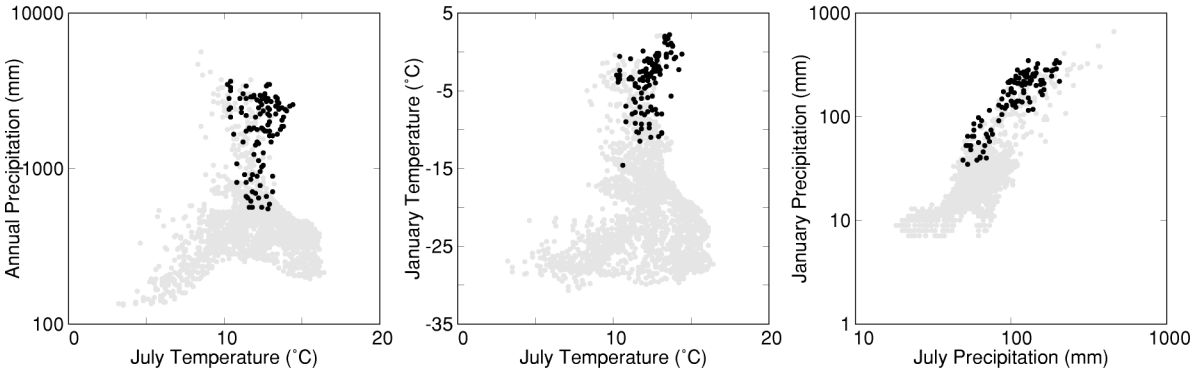


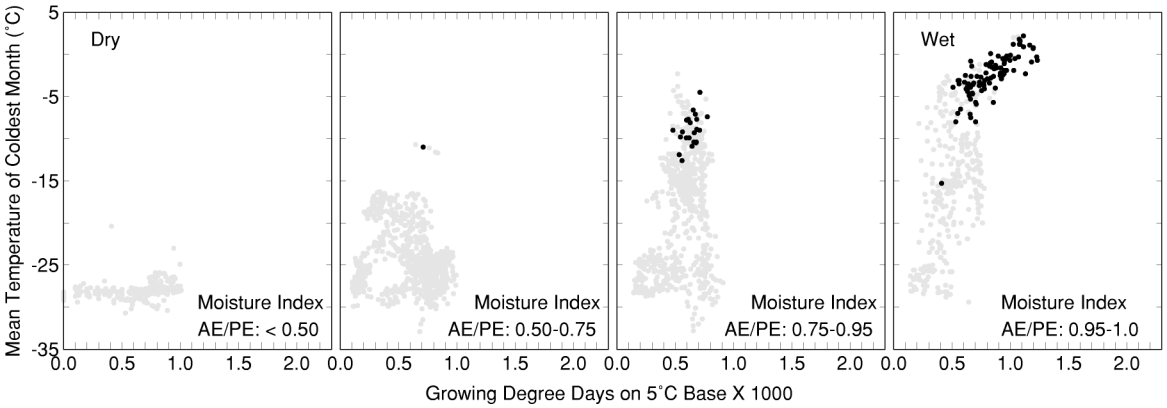


Picea sitchensis

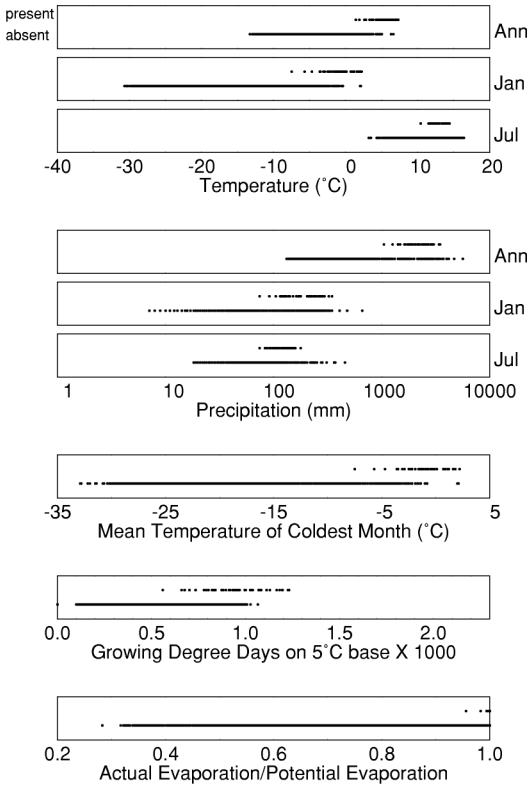


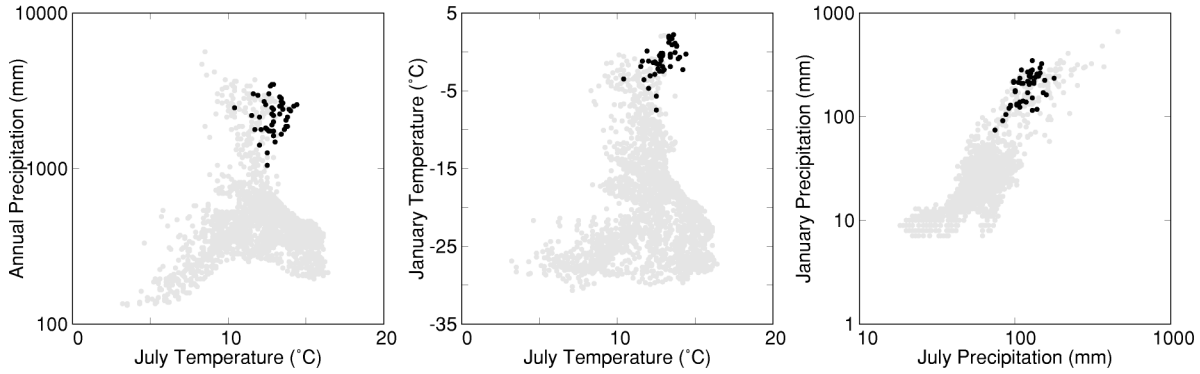


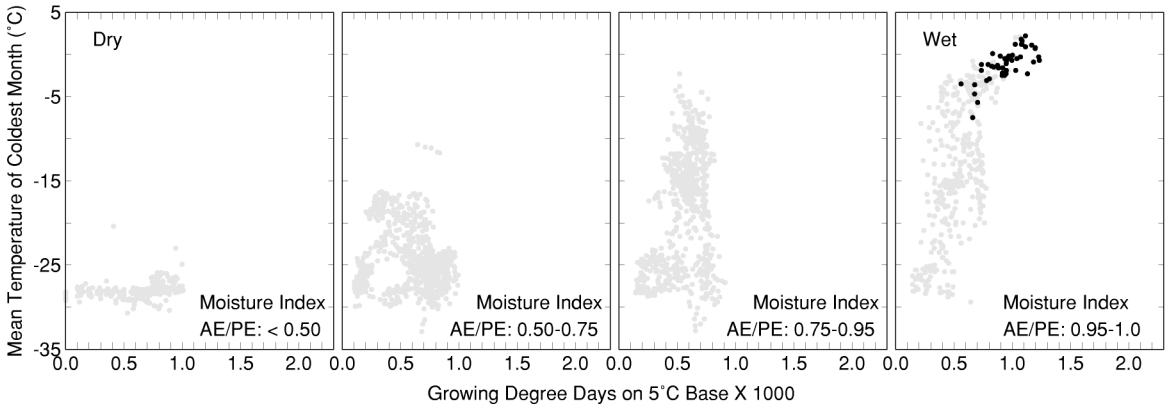




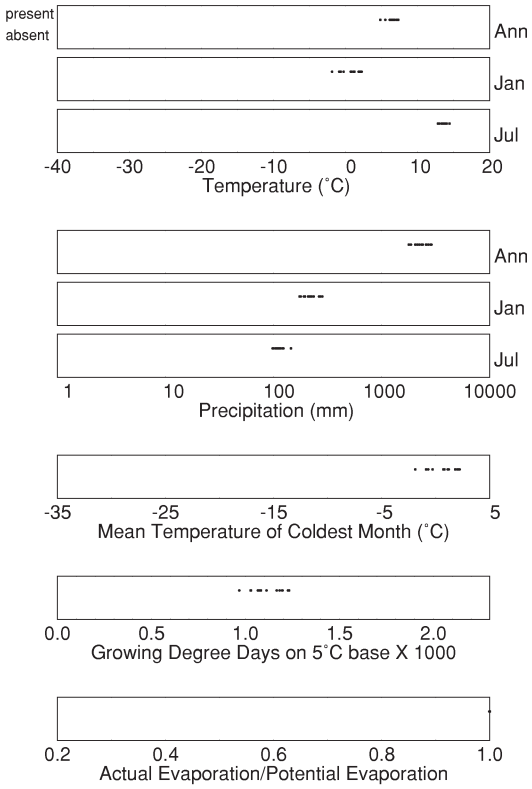
Pinus contorta

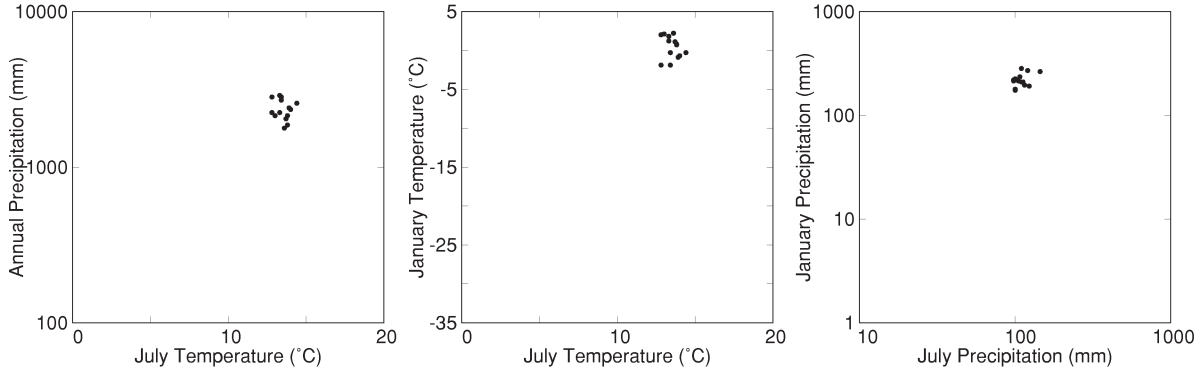


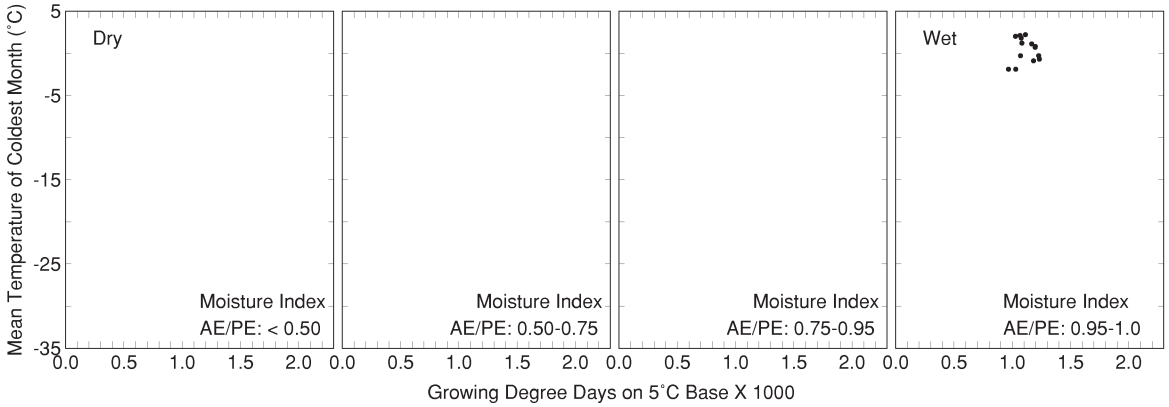




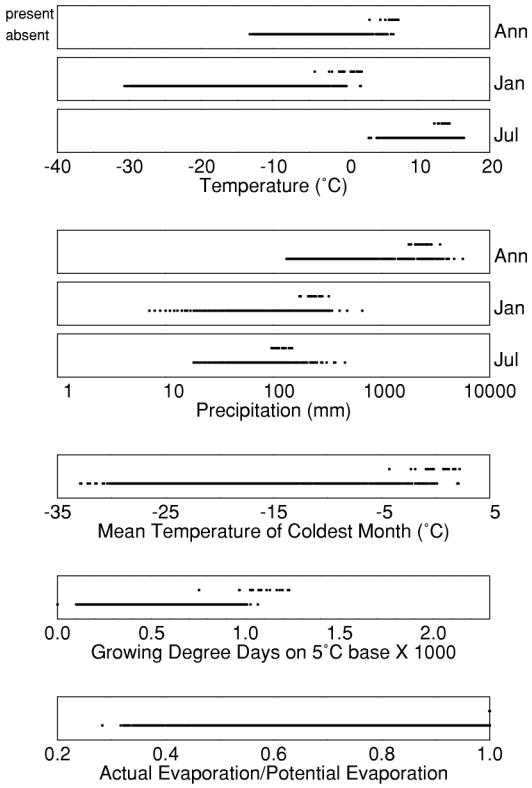
Taxus brevifolia (minimal data - nearest grid points used with environmental parameters)

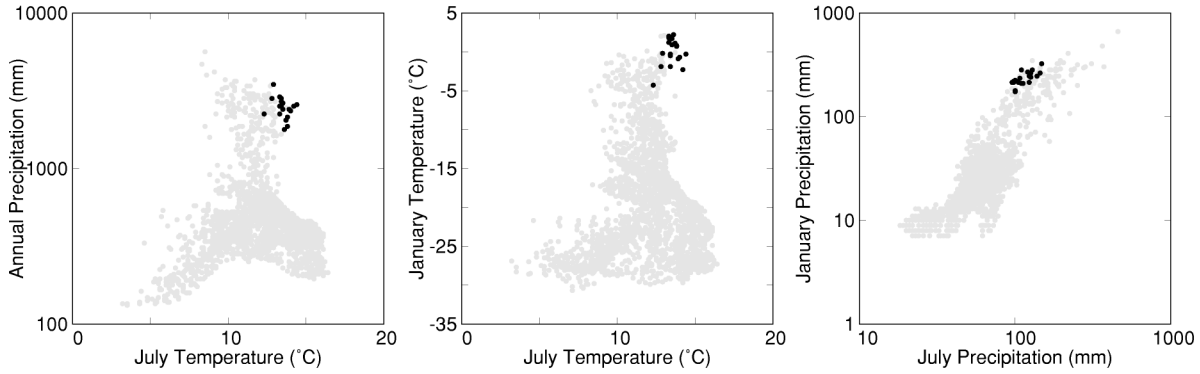


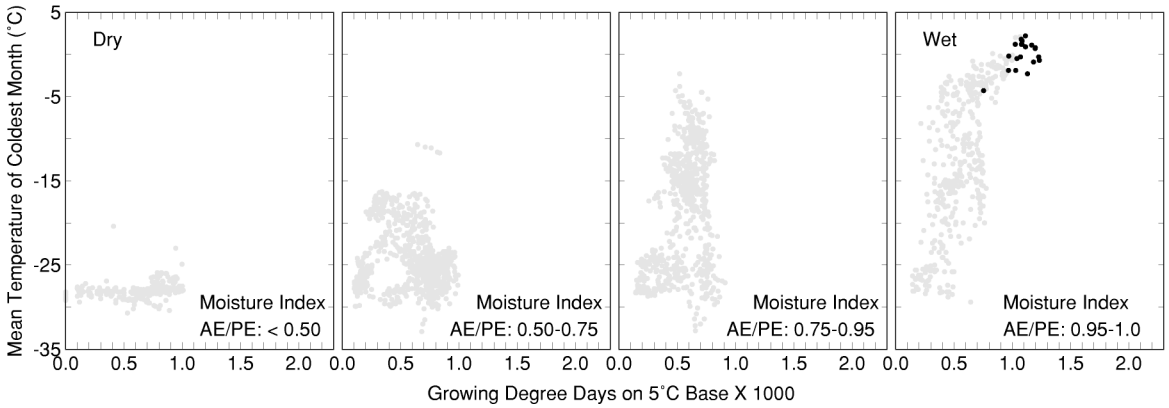




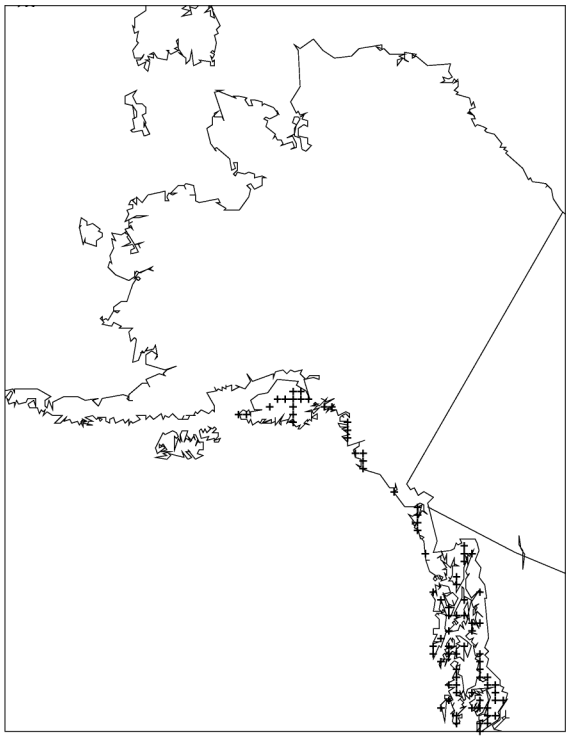
Thuja plicata

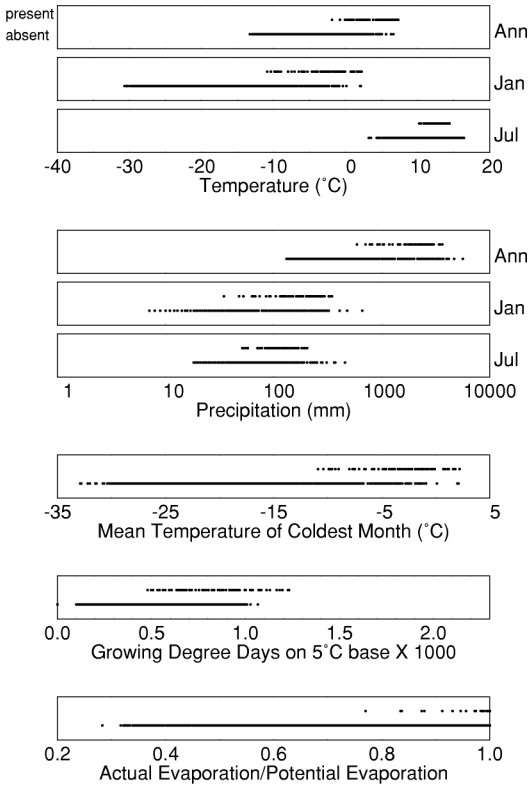


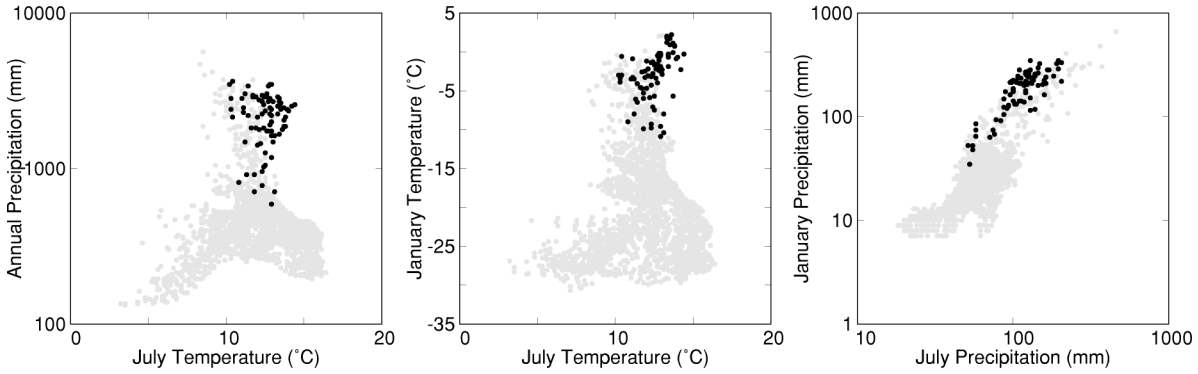


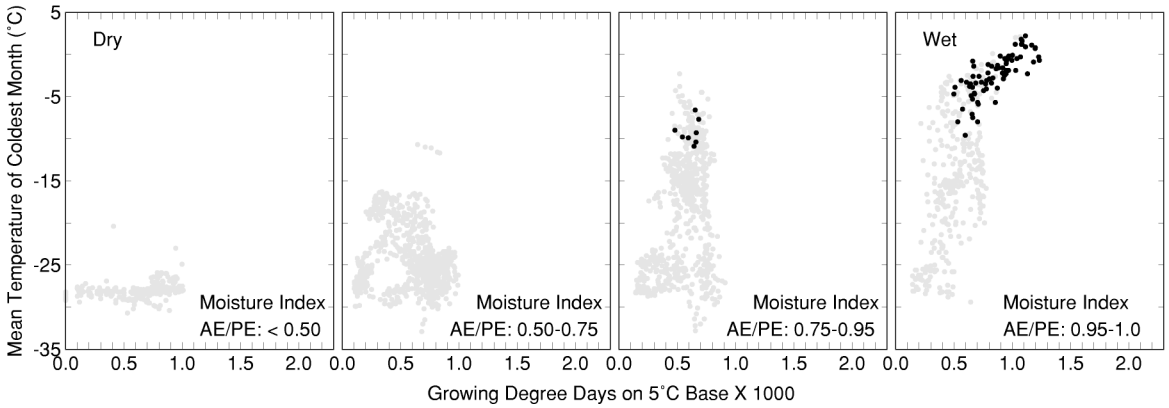


Tsuga heterophylla

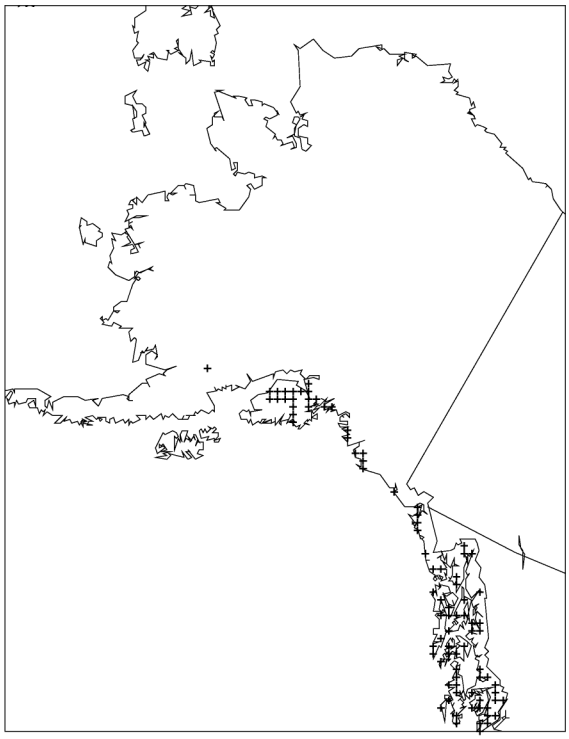


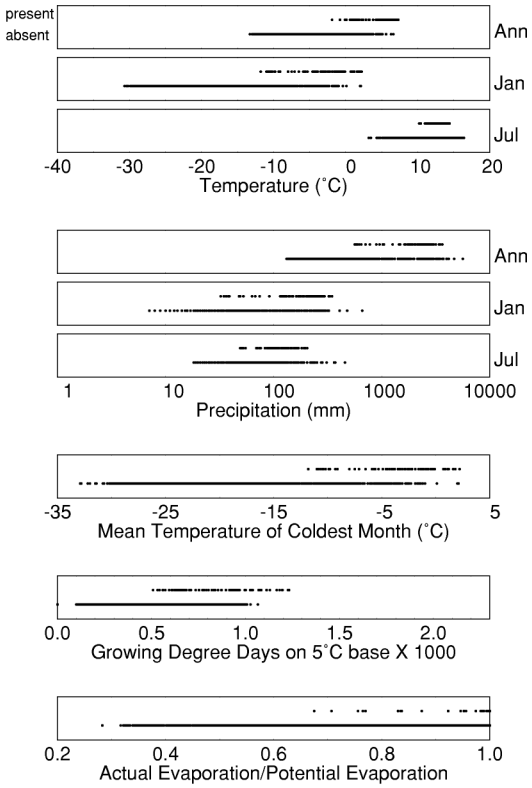


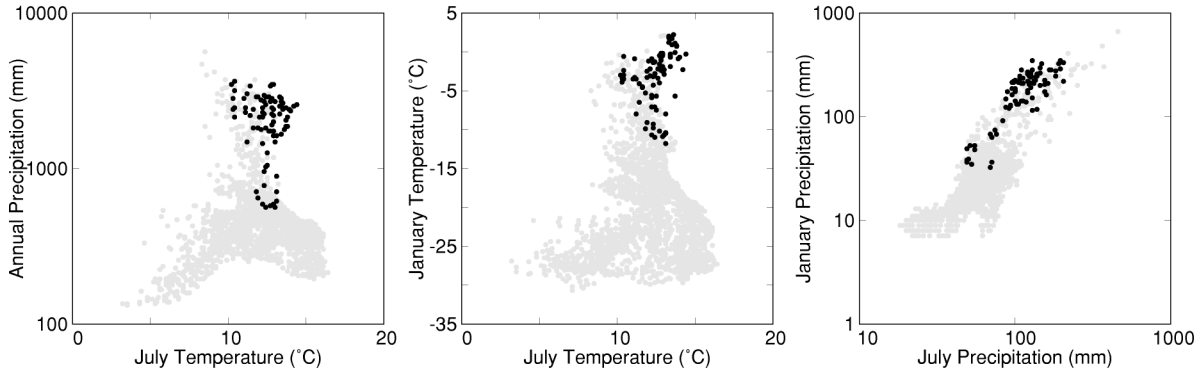


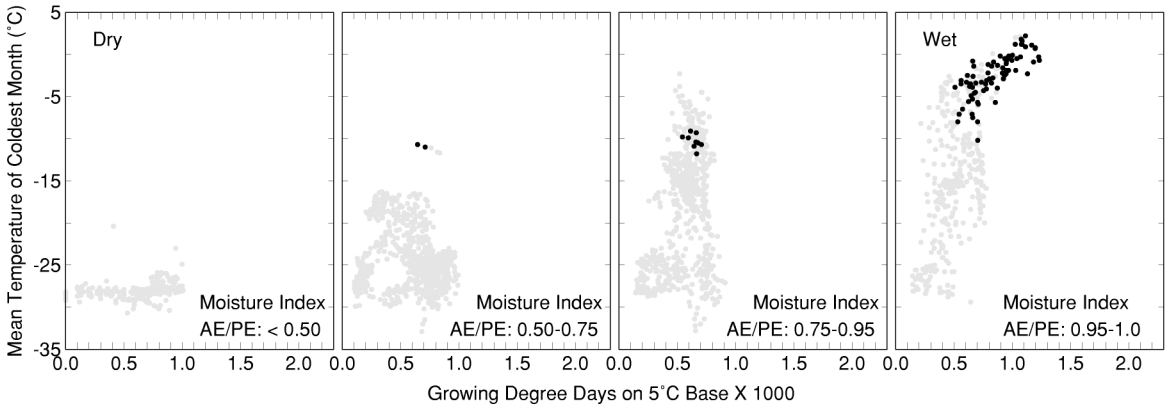


Tsuga mertensiana

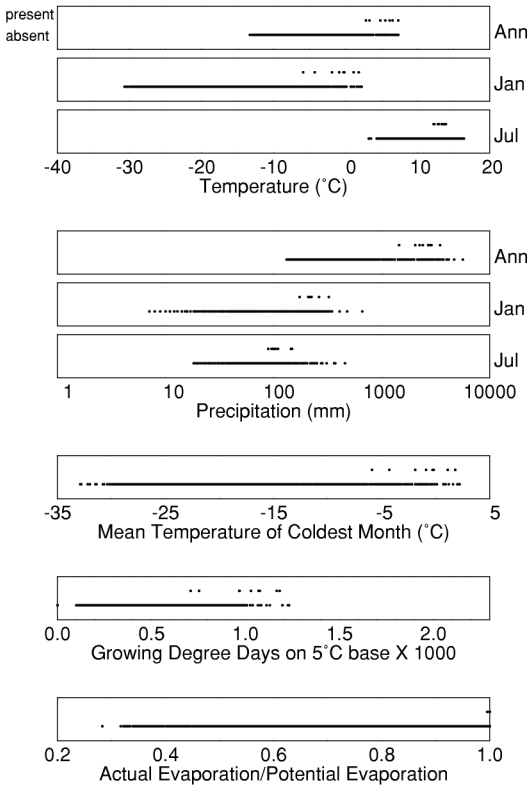


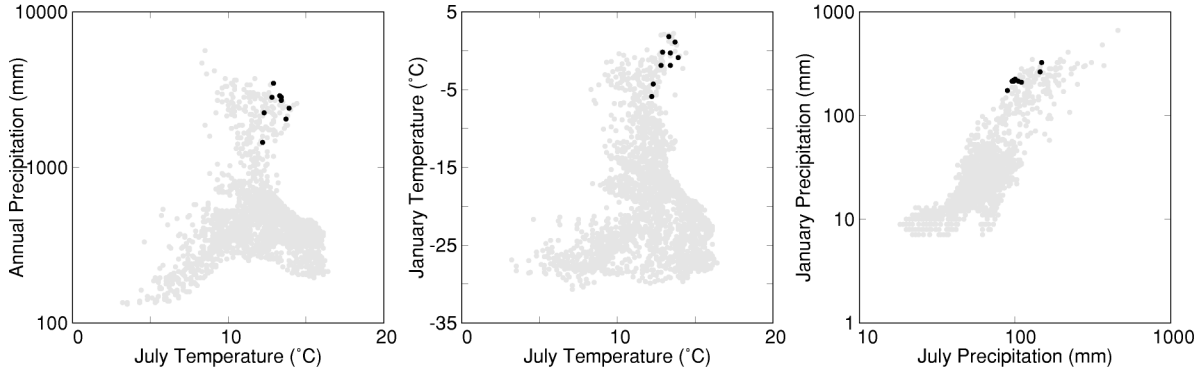


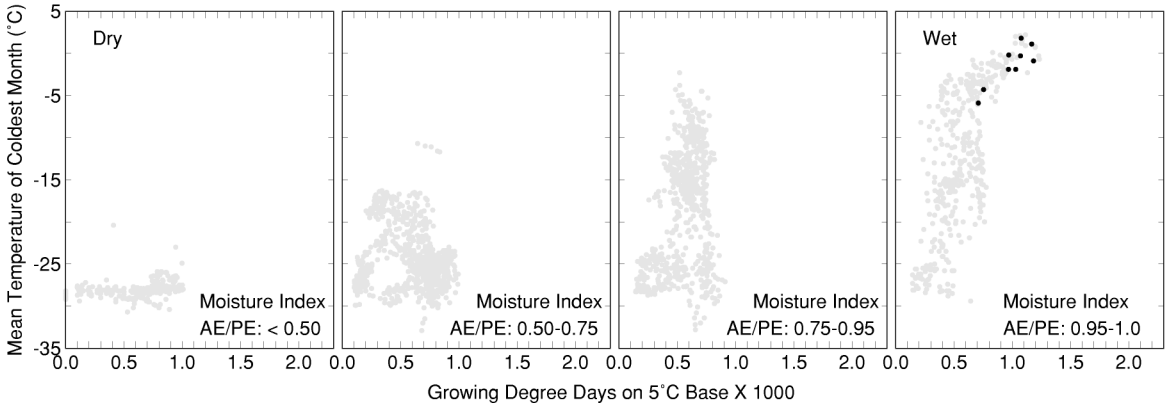




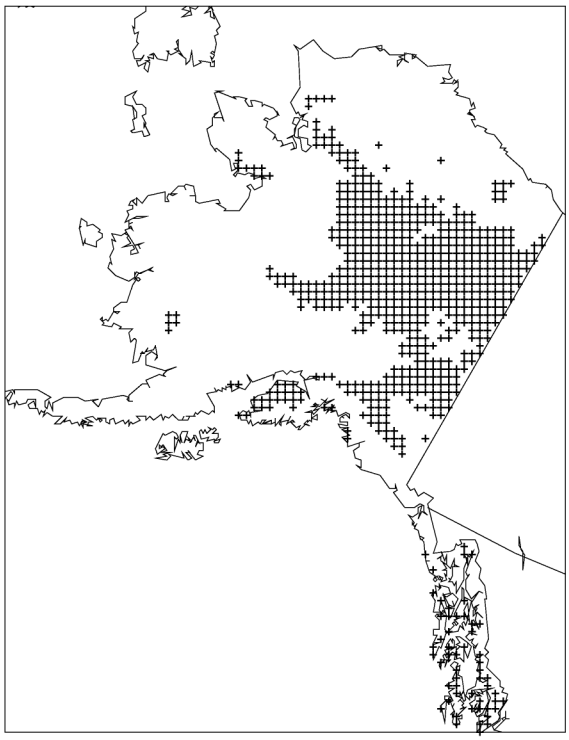
ABIES

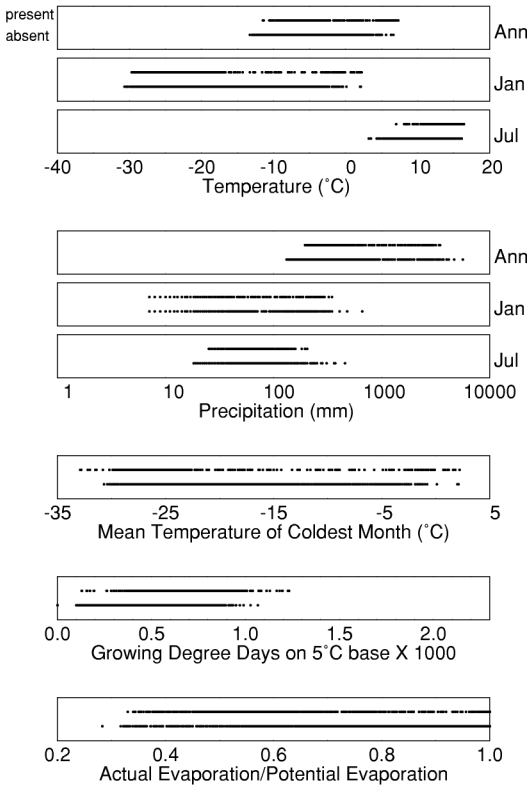

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

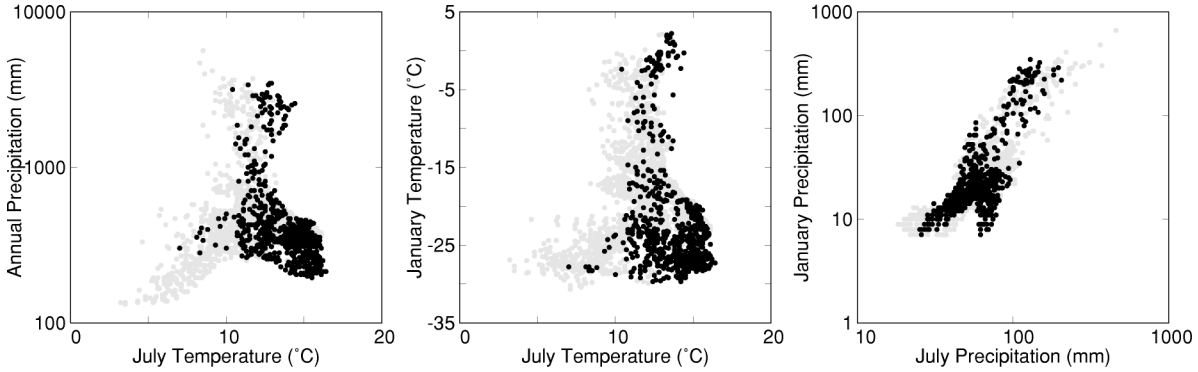

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

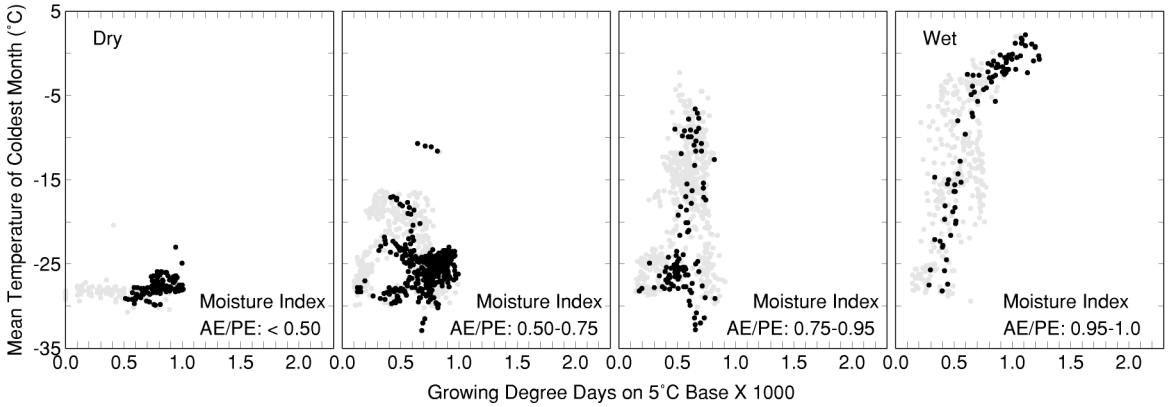

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

CUPRESSACEAE

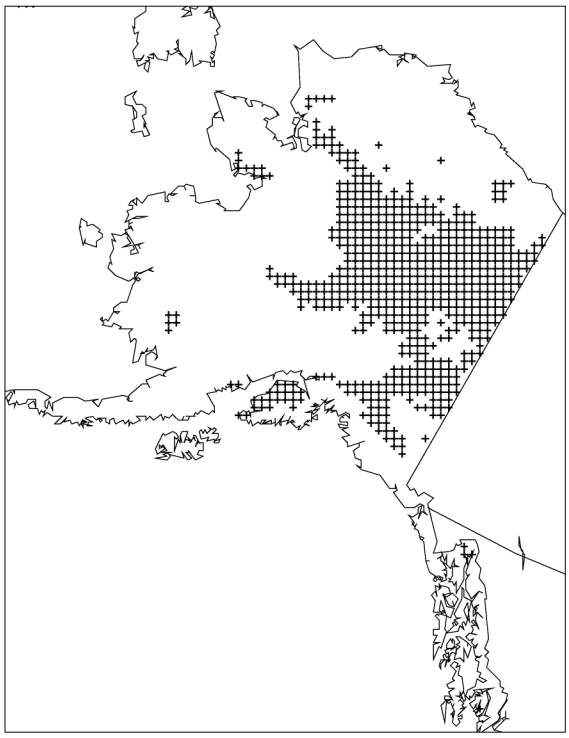


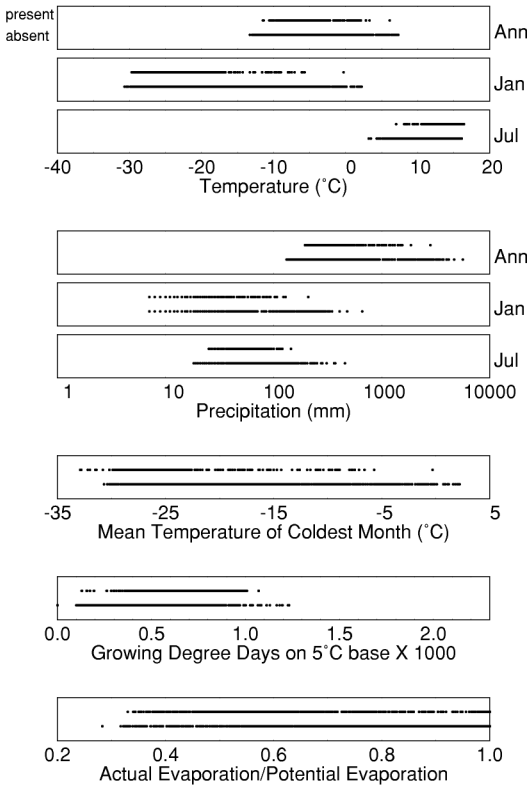


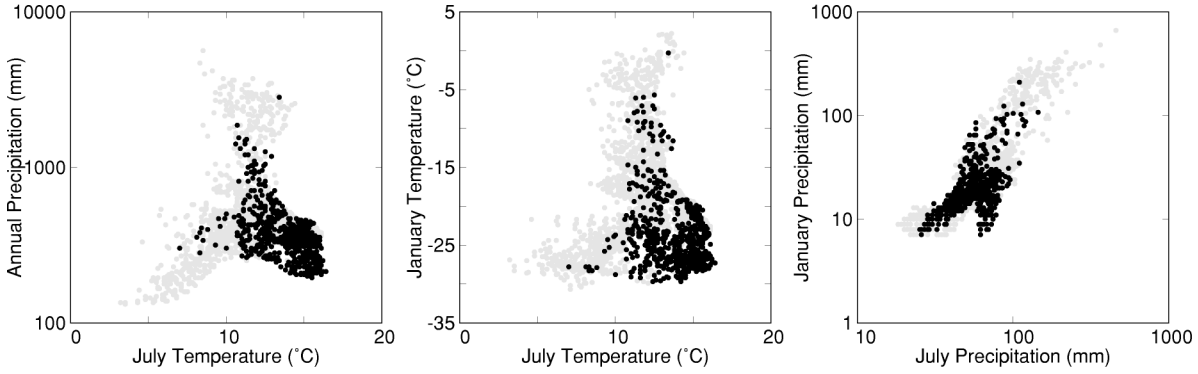


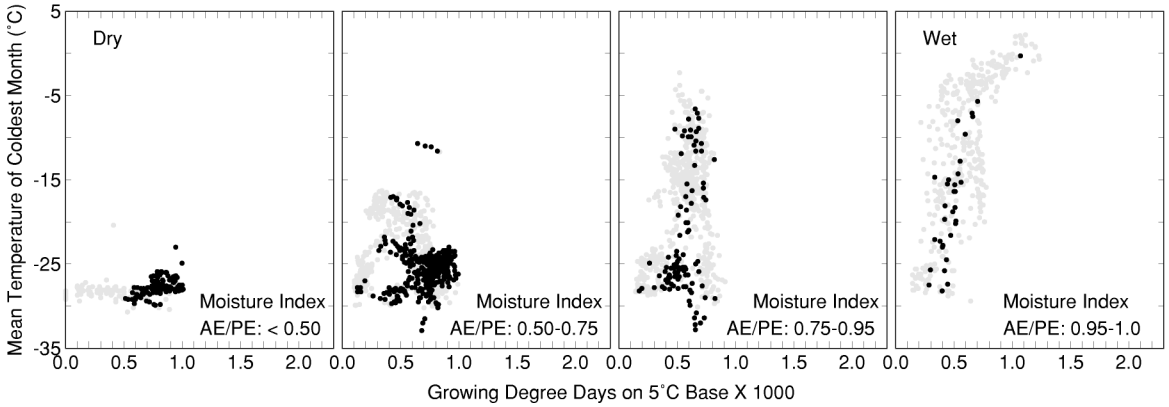


JUNIPERUS

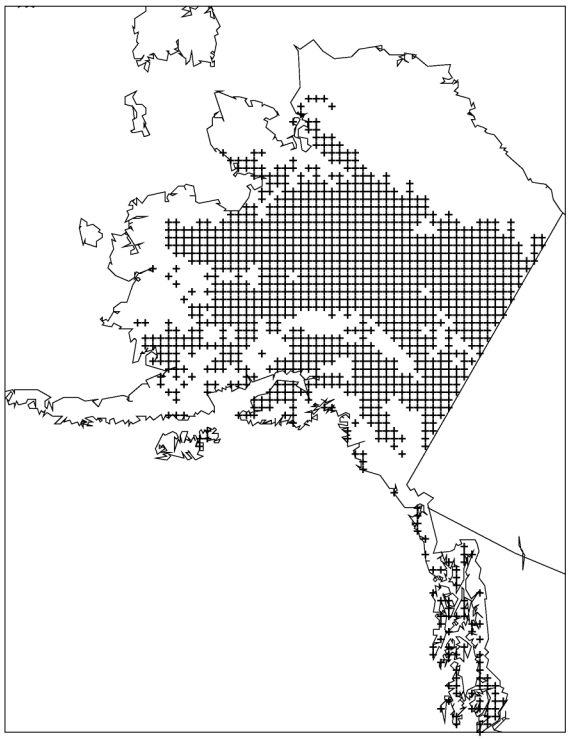


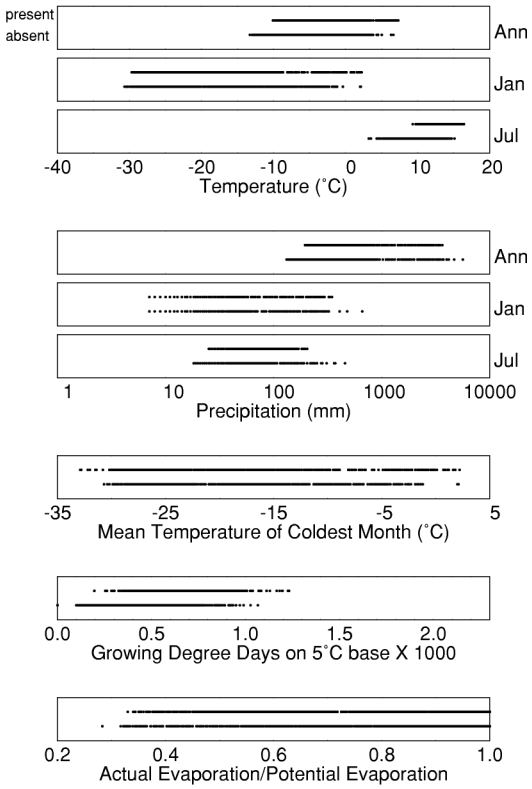

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

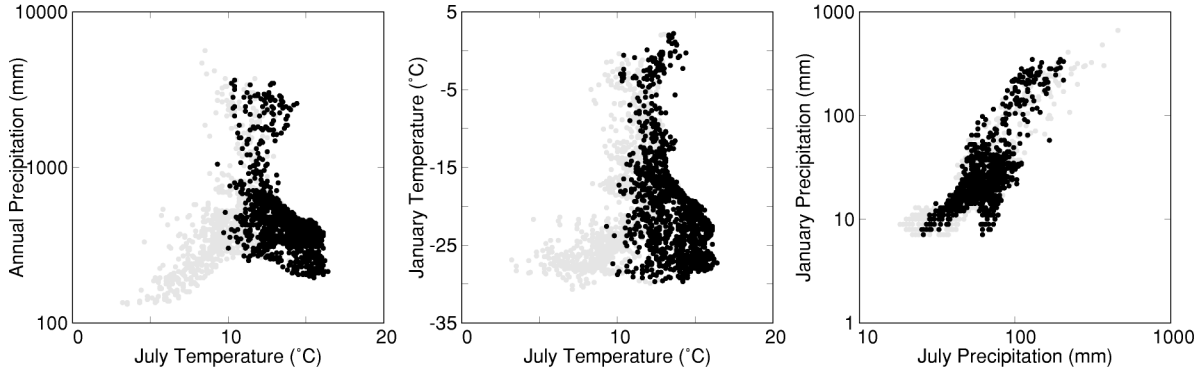

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

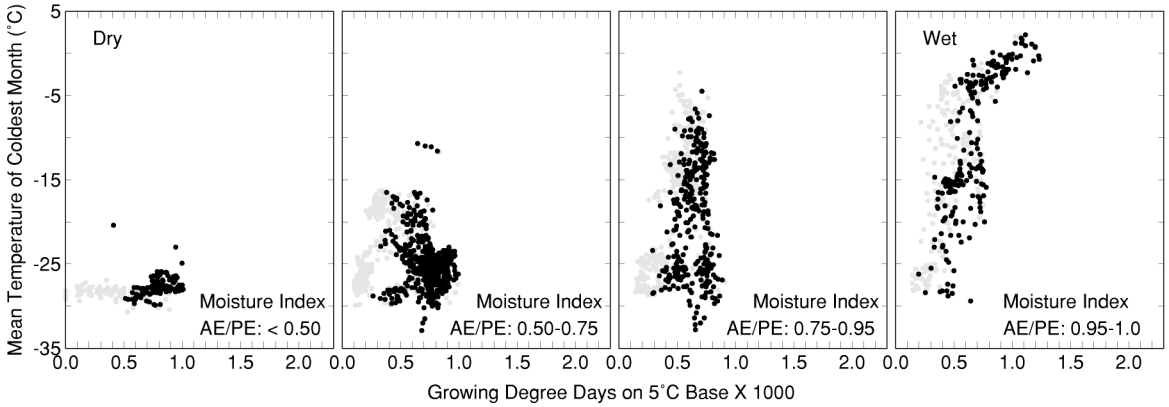

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

PICEA

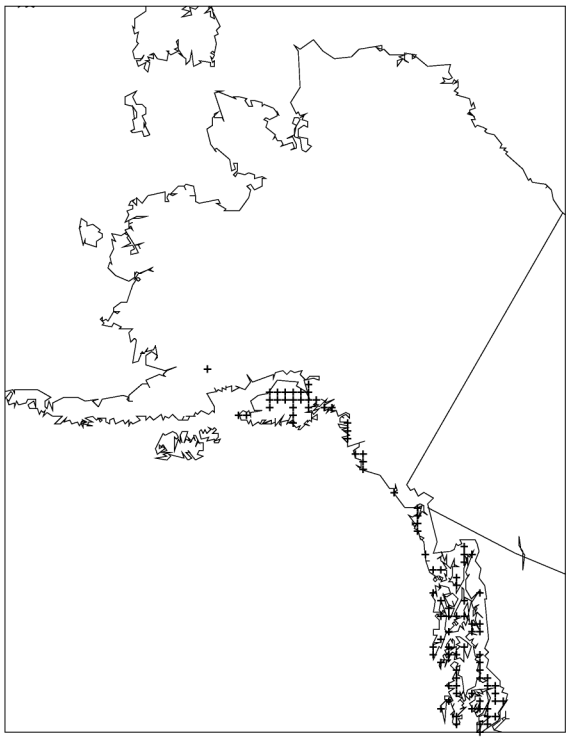


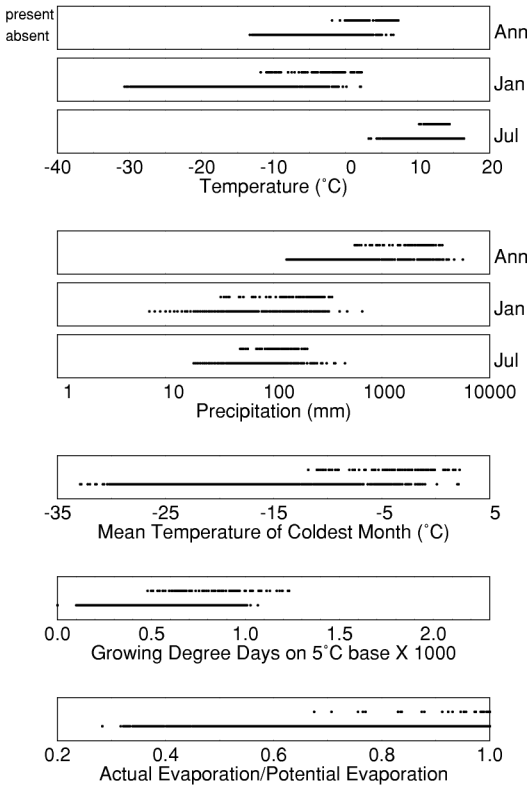

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

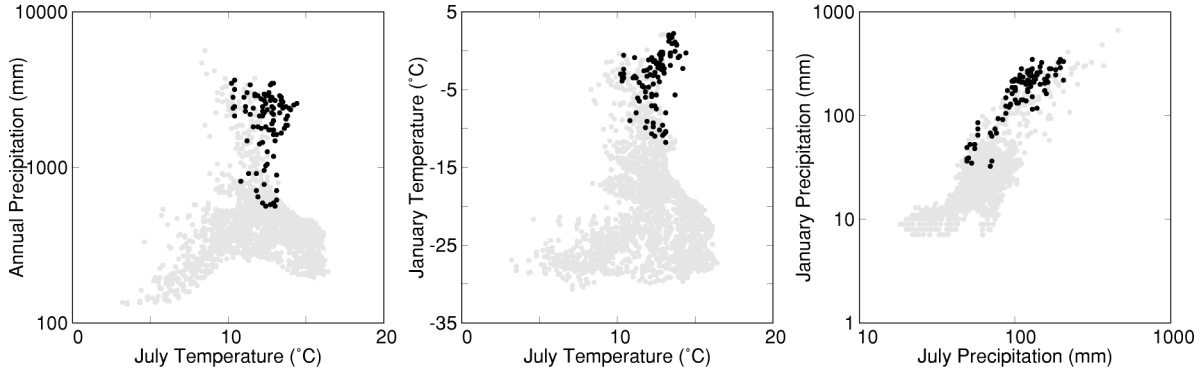

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

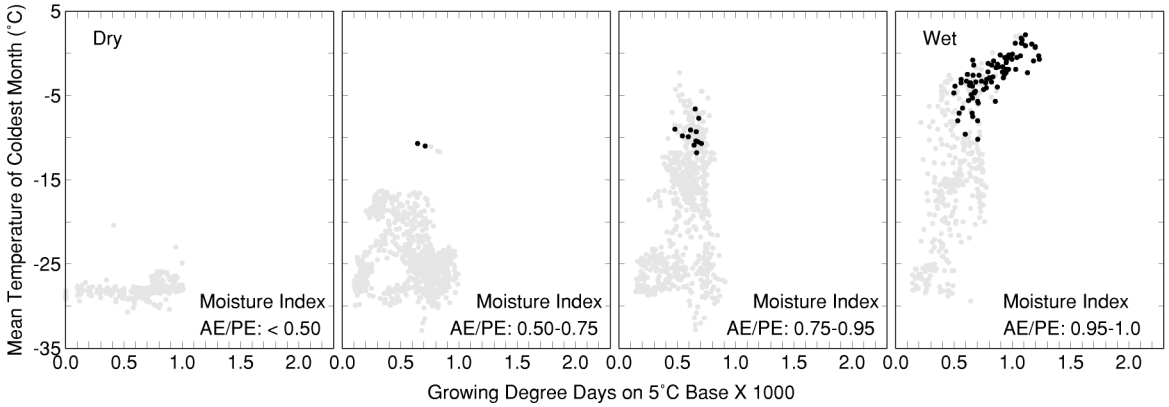

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

TSUGA

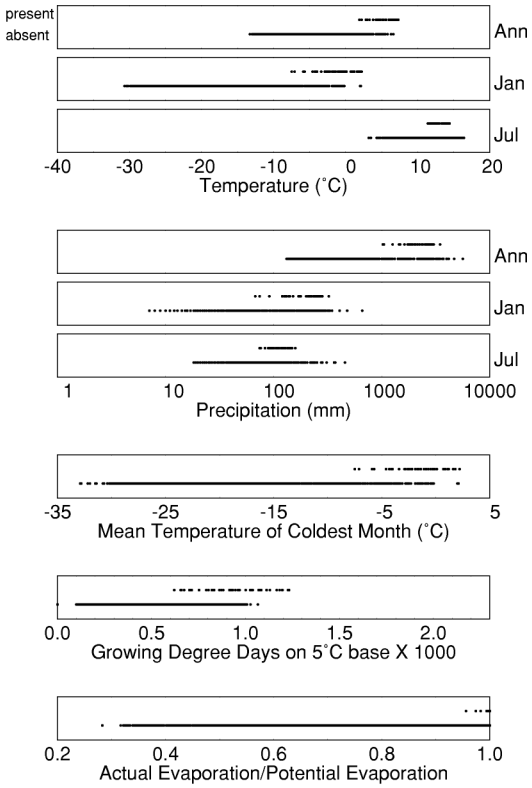


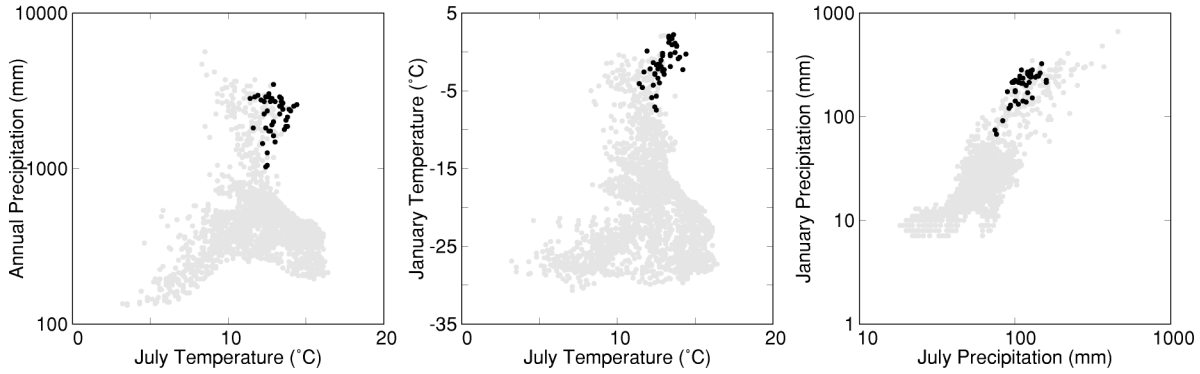

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

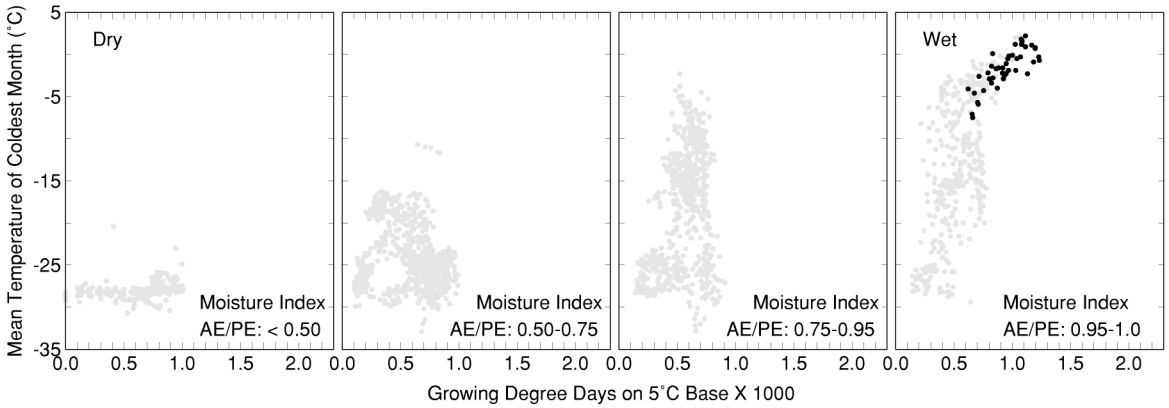

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)


Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

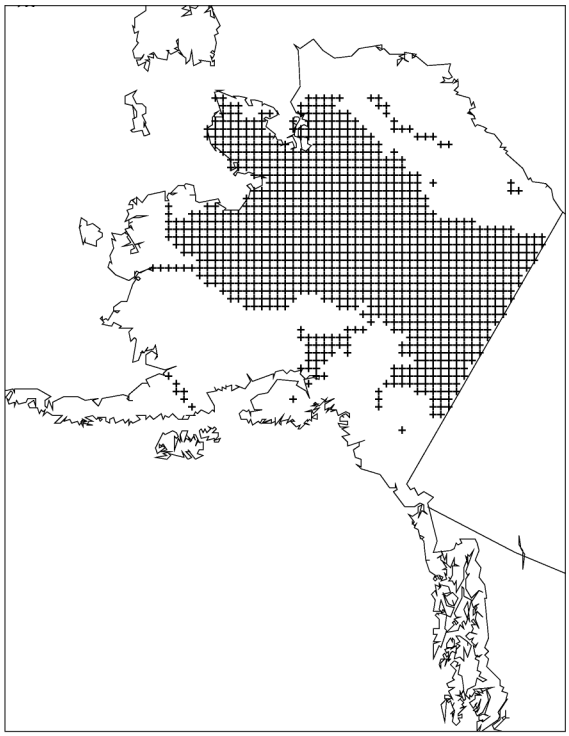
Acer glabrum var. douglasii

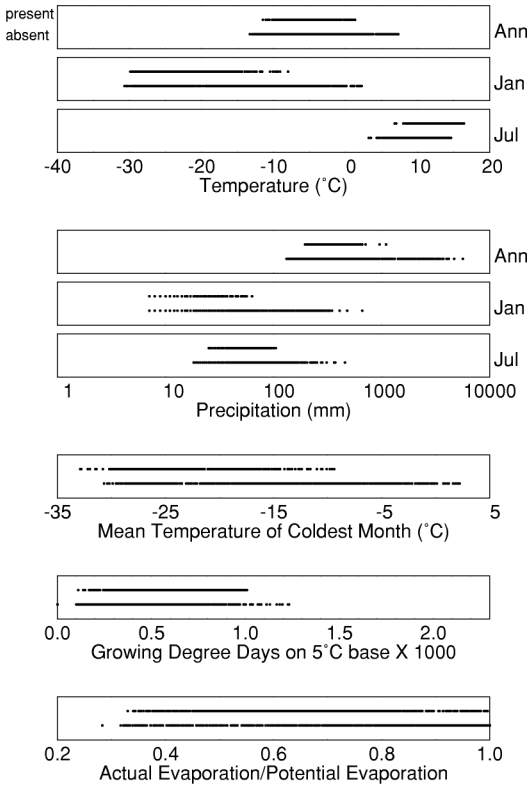


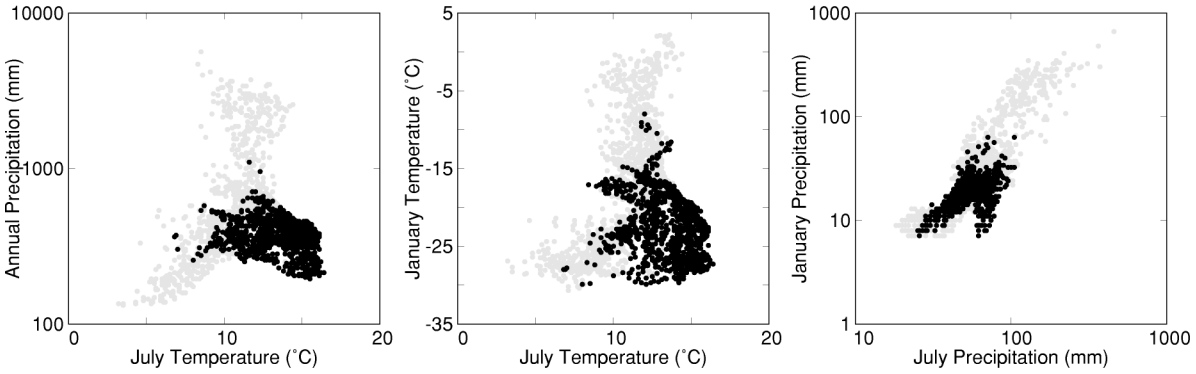


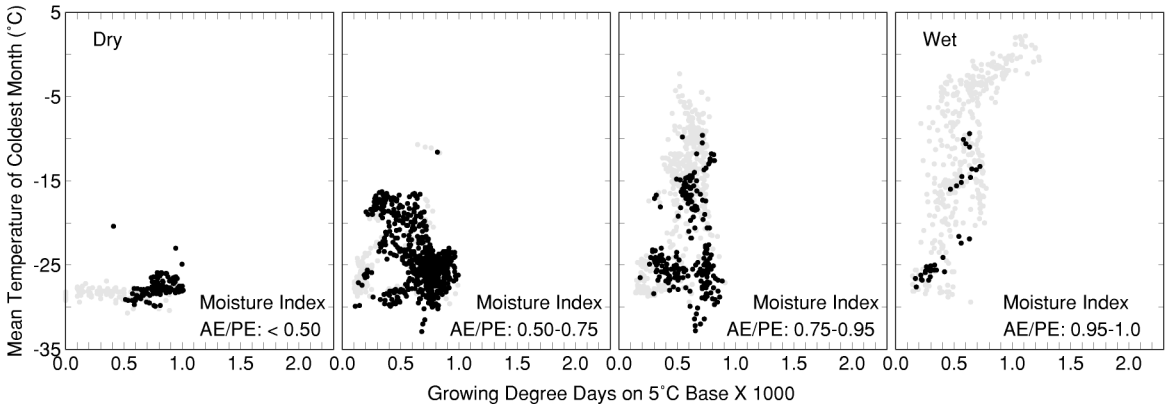


Alnus crispa

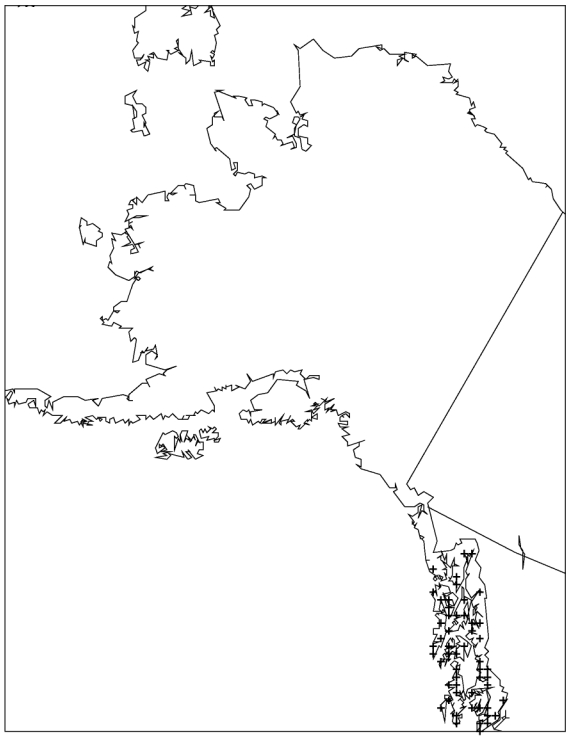


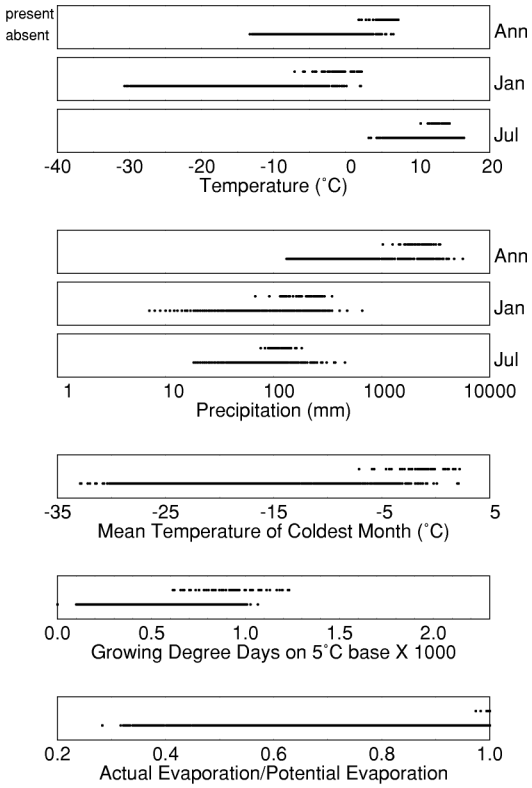


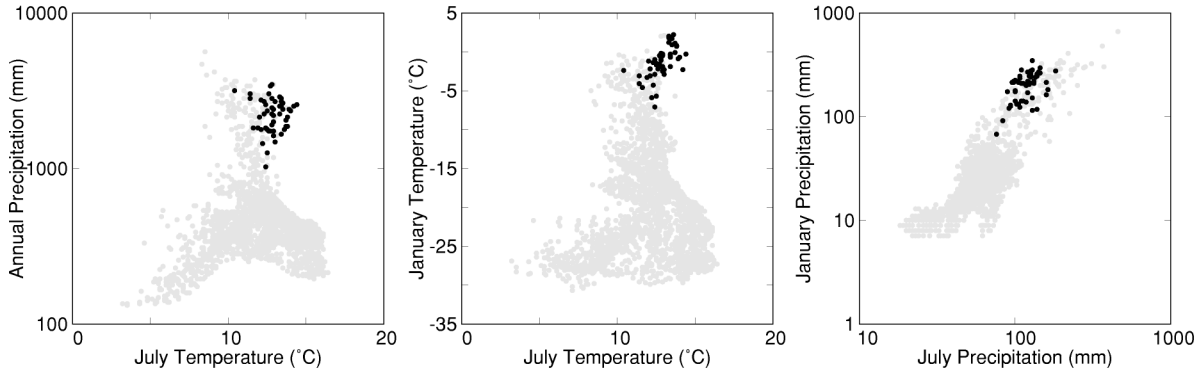


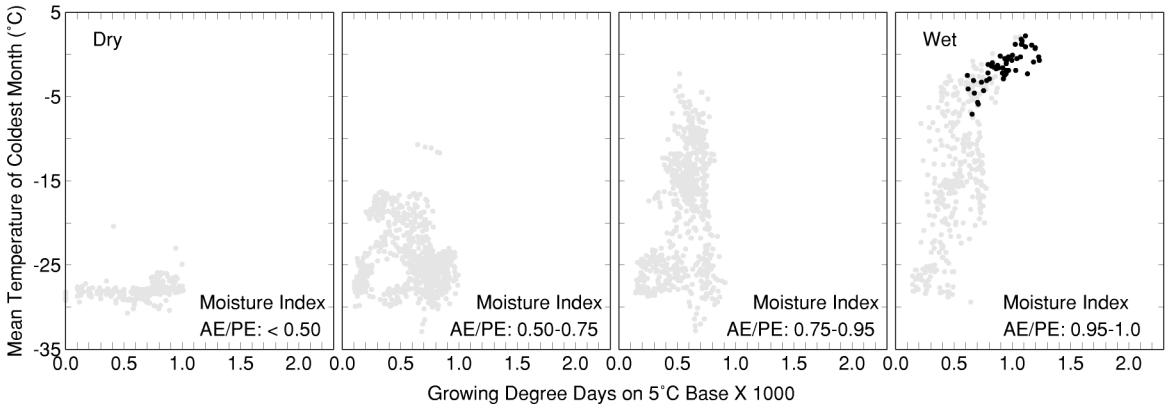


Alnus rubra

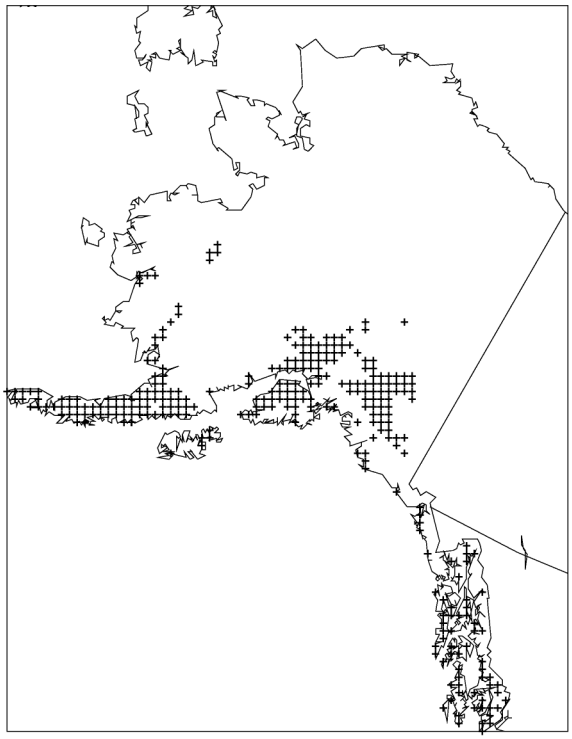


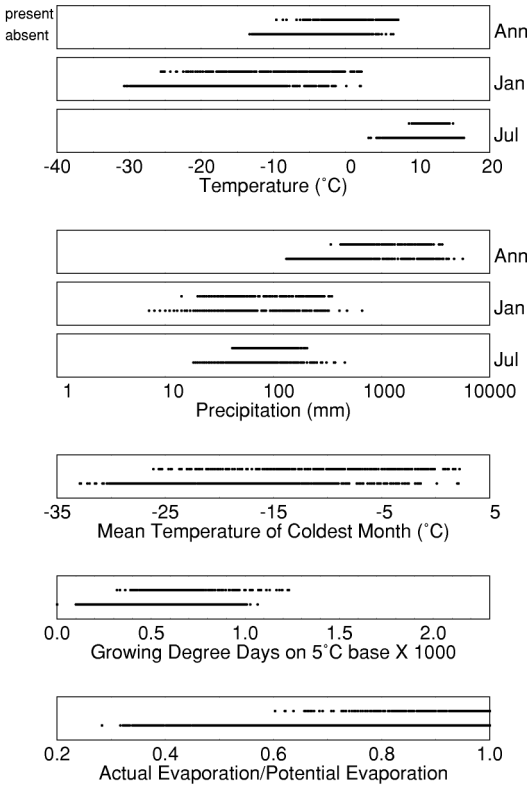

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

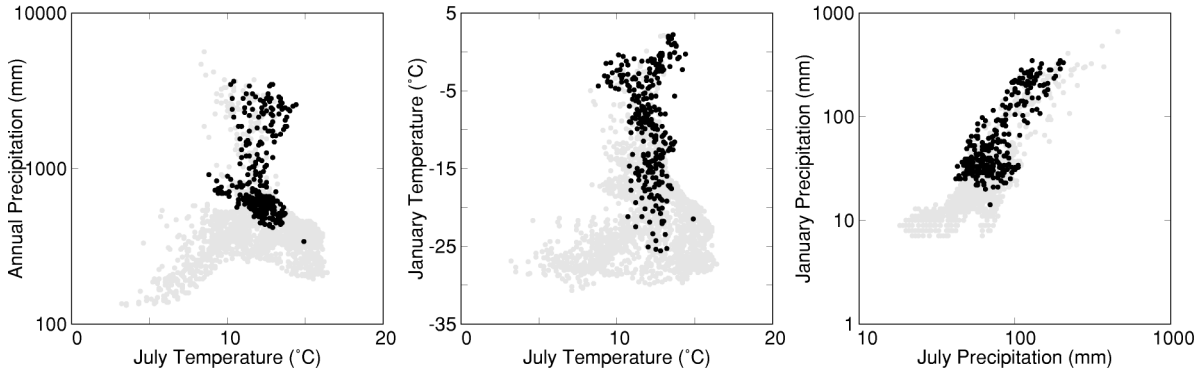

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

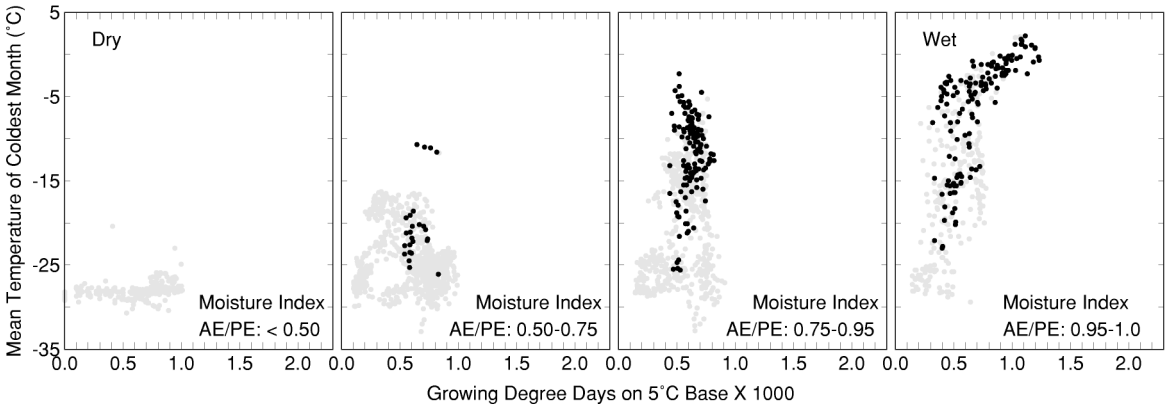

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

Alnus sinuata

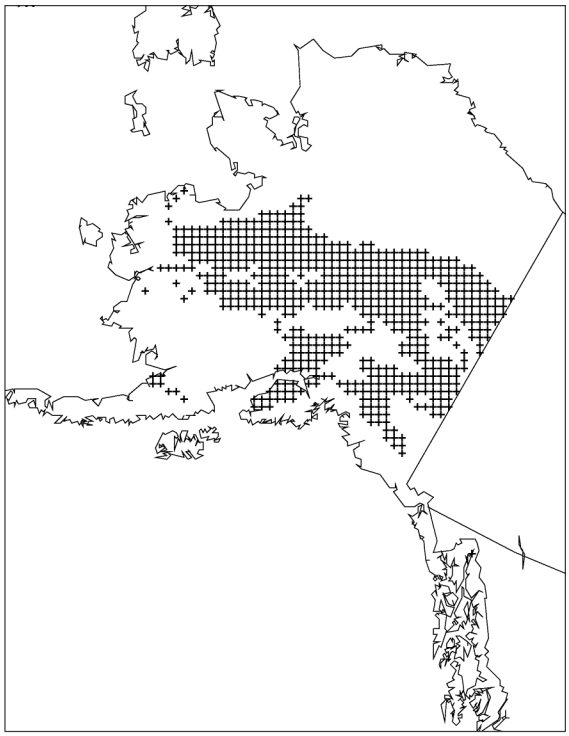


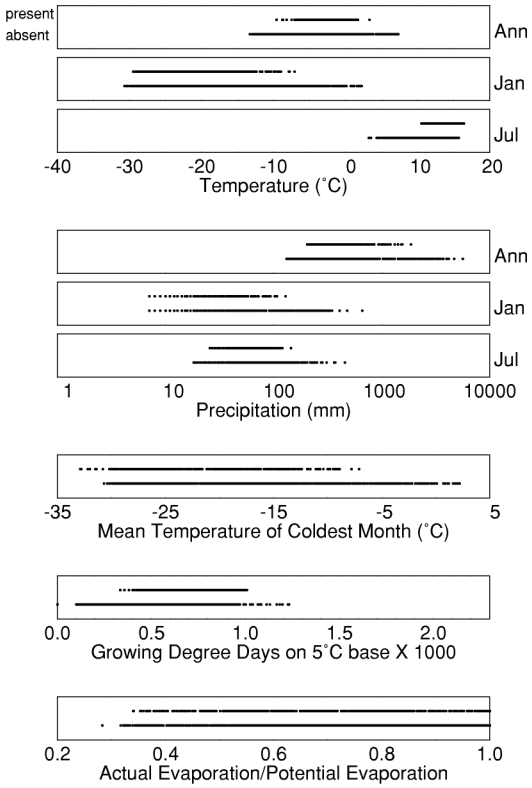


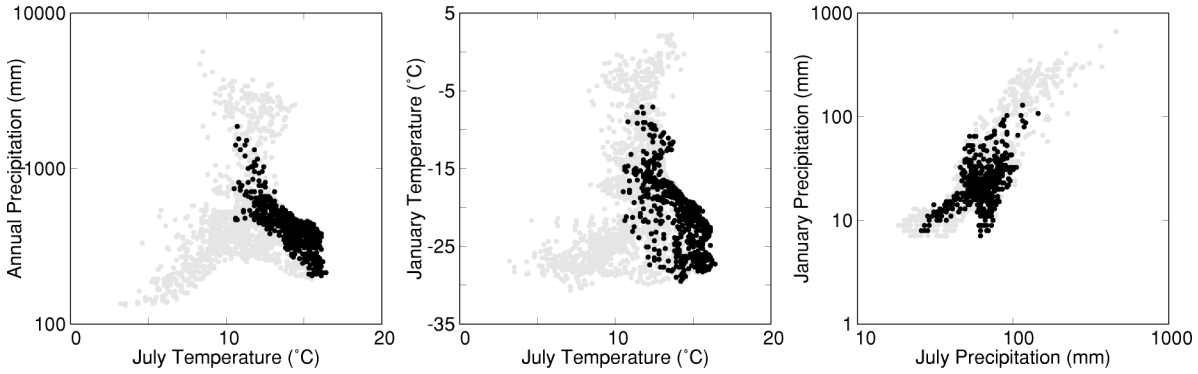


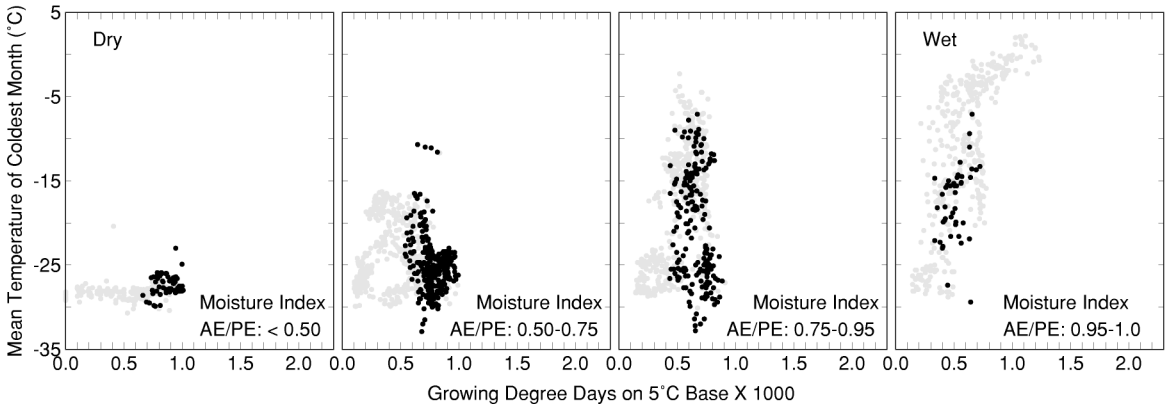


Alnus tenuifolia

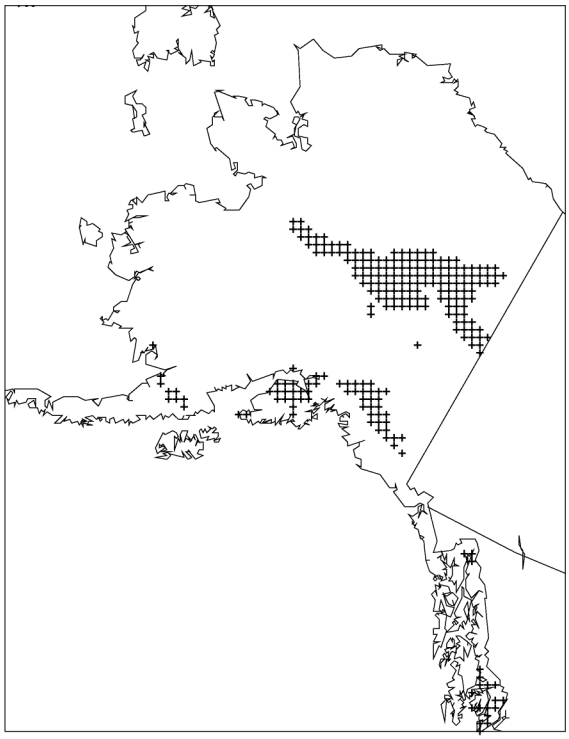


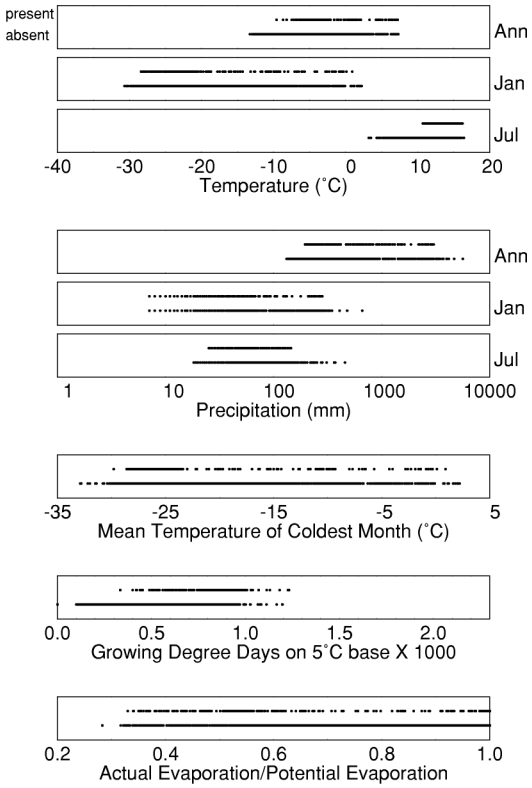


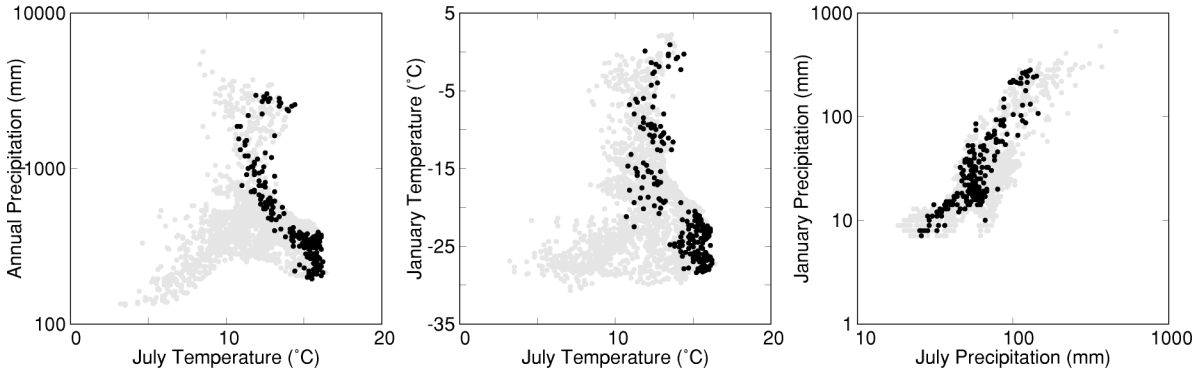


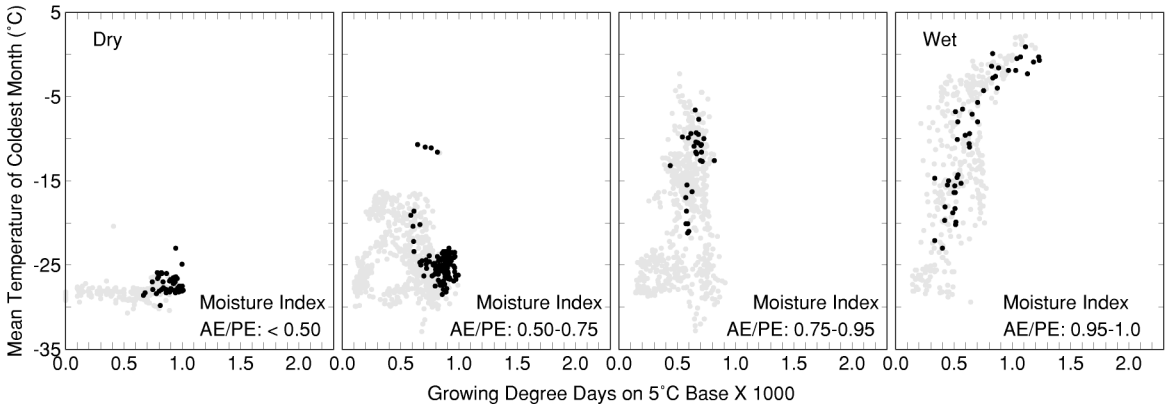


Amelanchier alnifolia

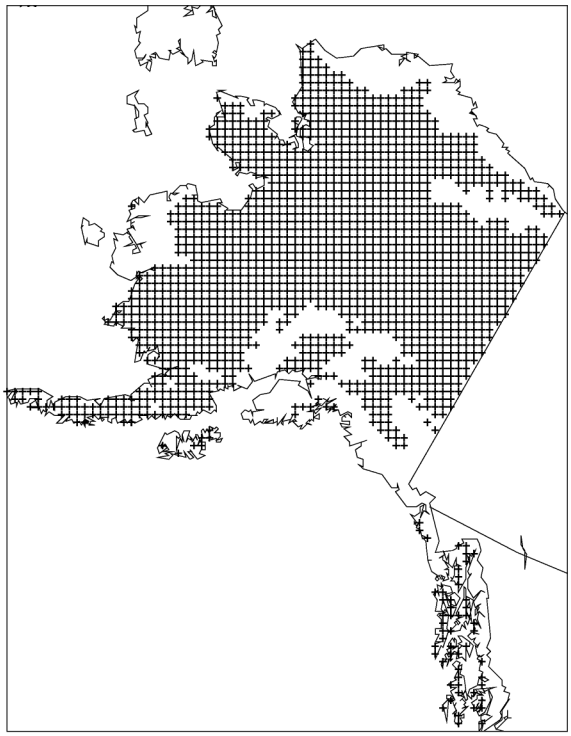


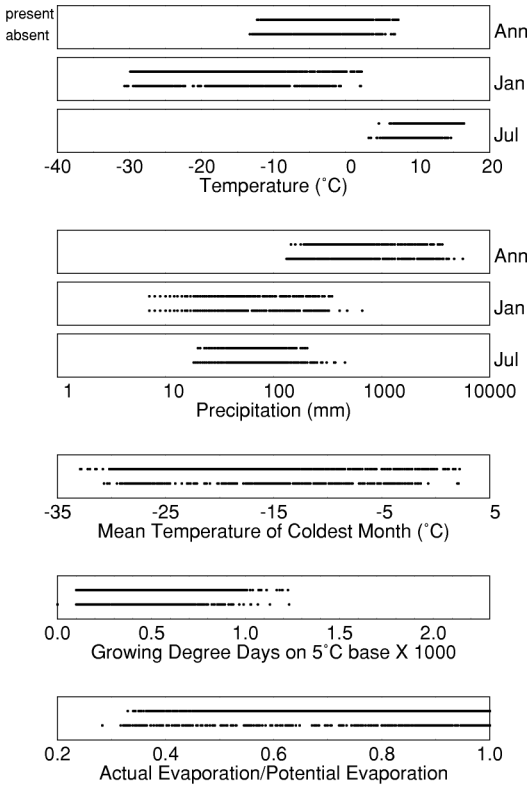


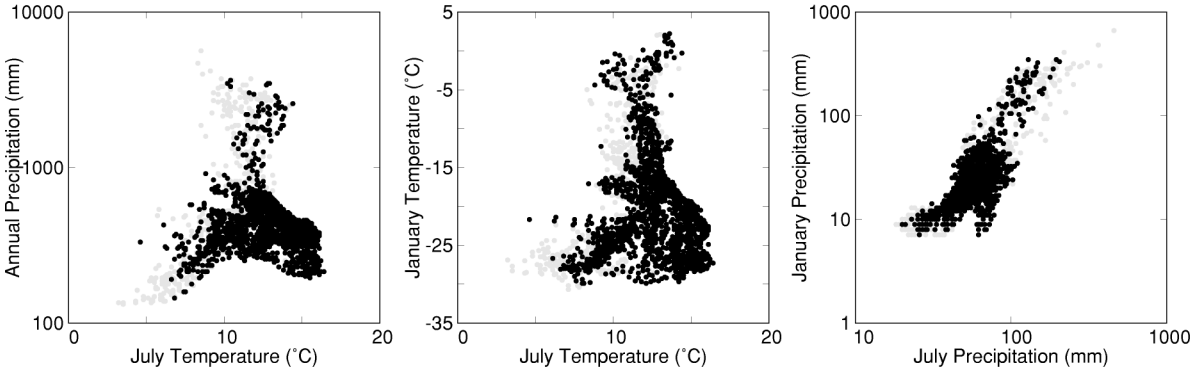


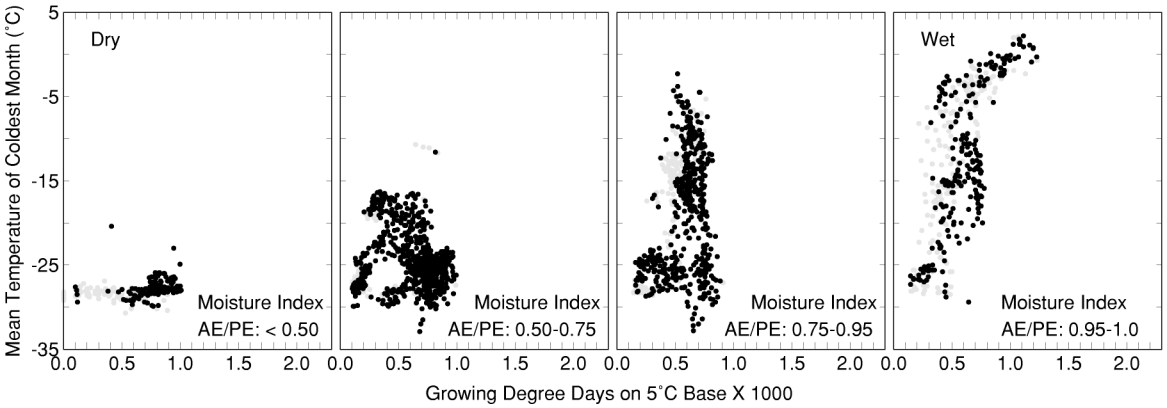


Andromeda polifolia

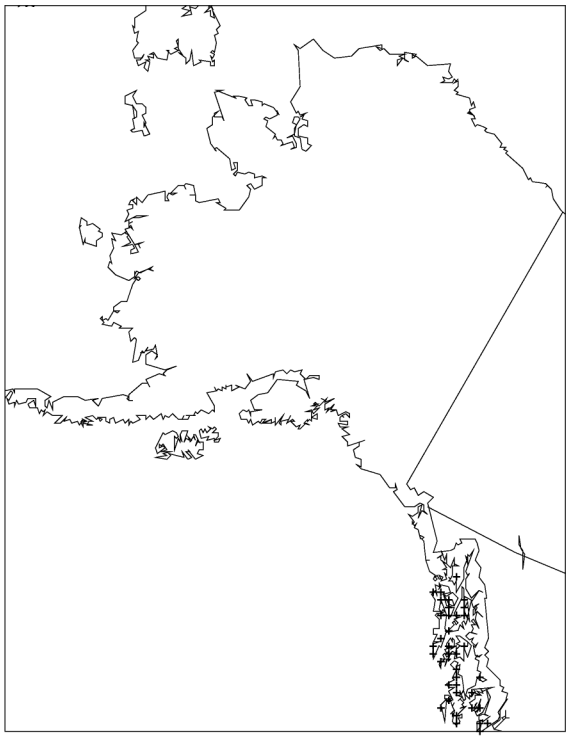


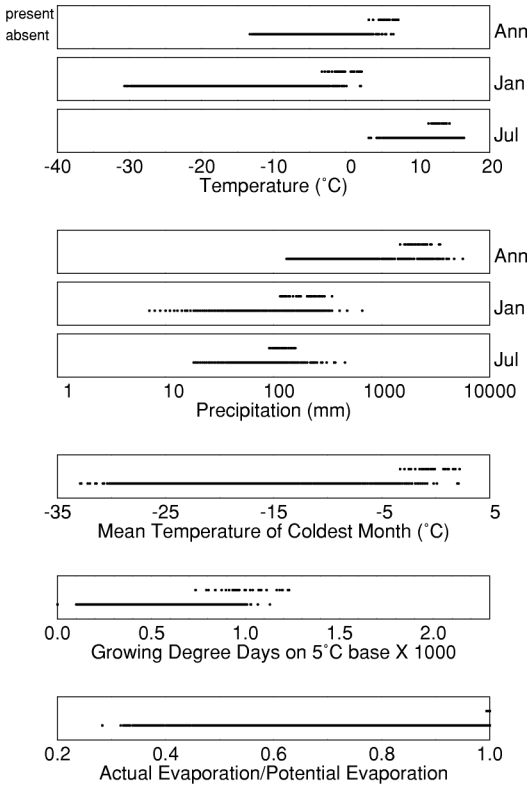


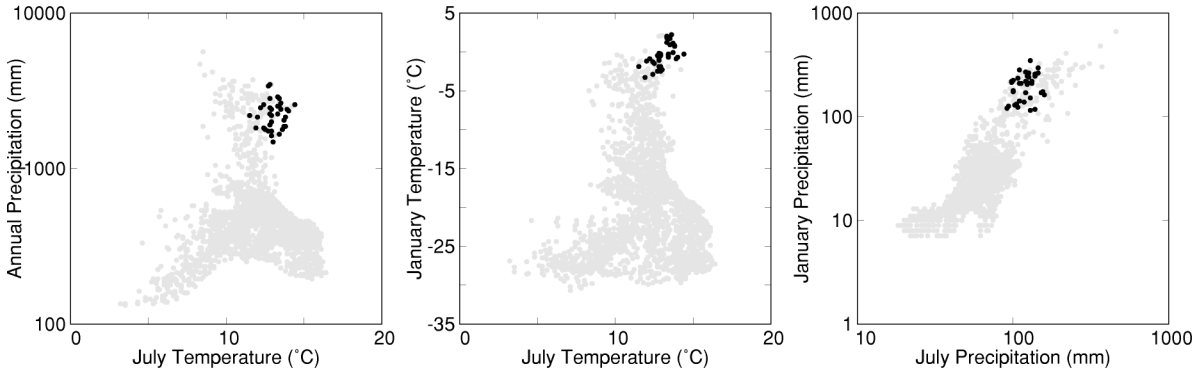


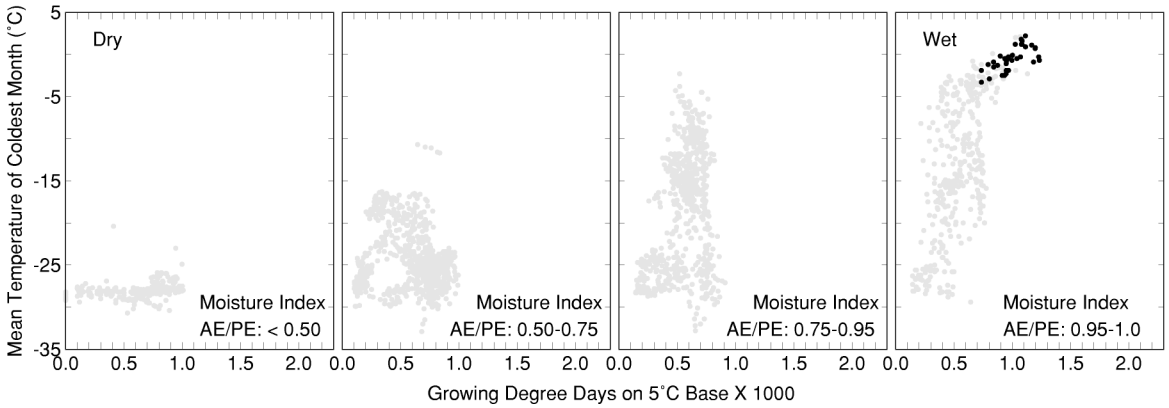


Arceuthobium tsugense

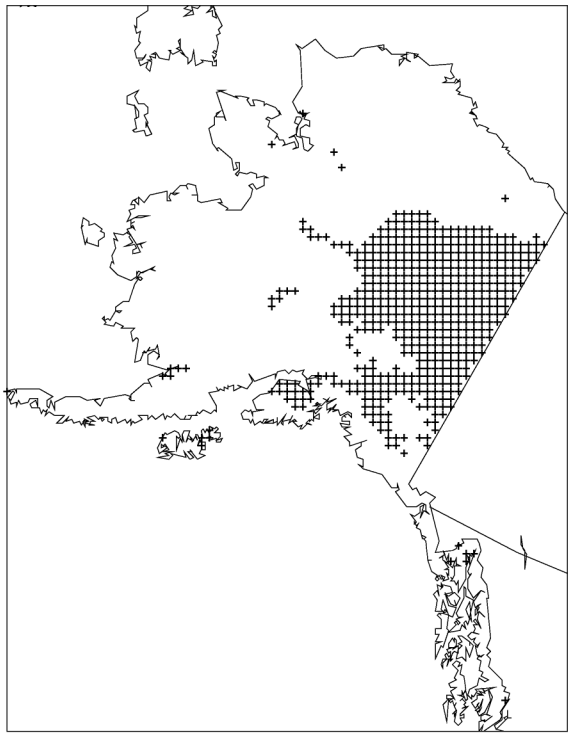


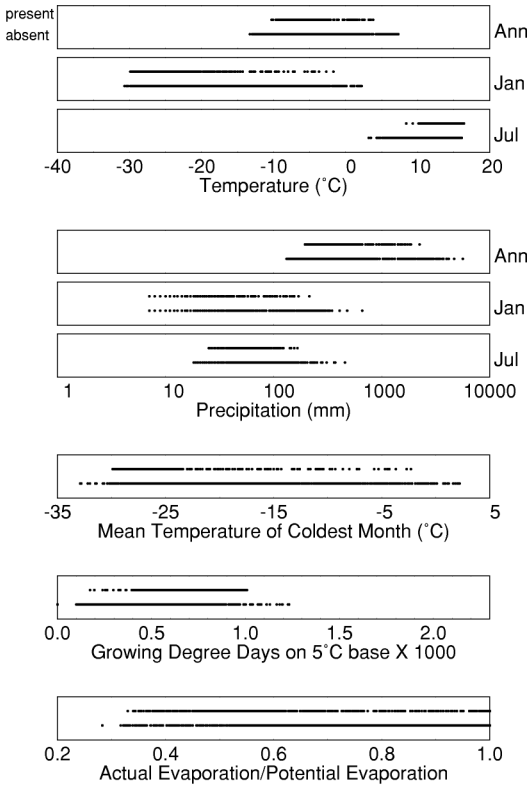


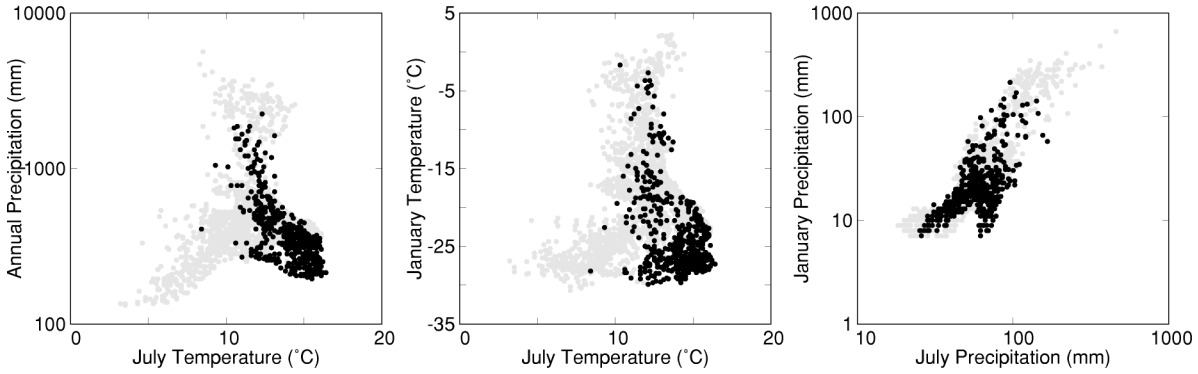


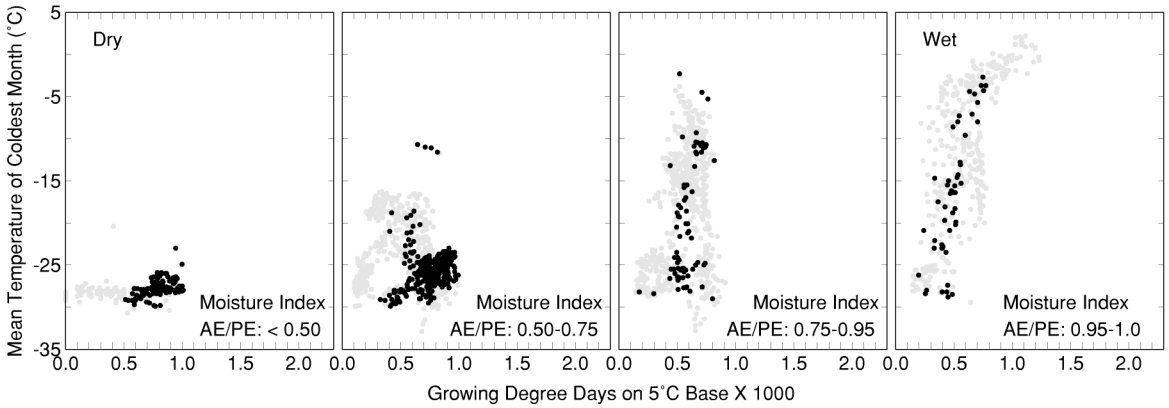


Arctostaphylos uva-ursi

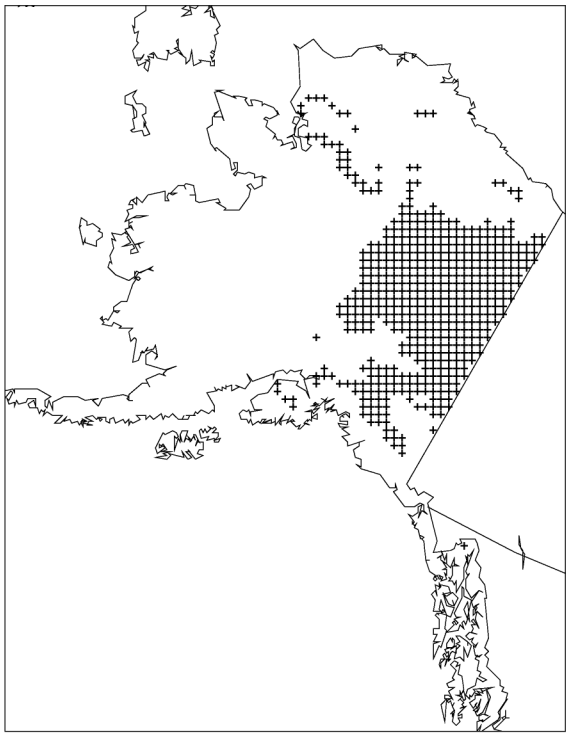


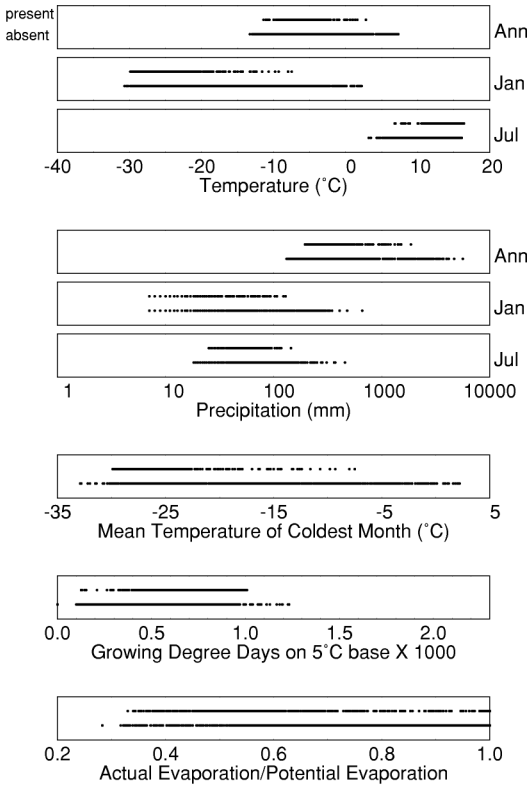


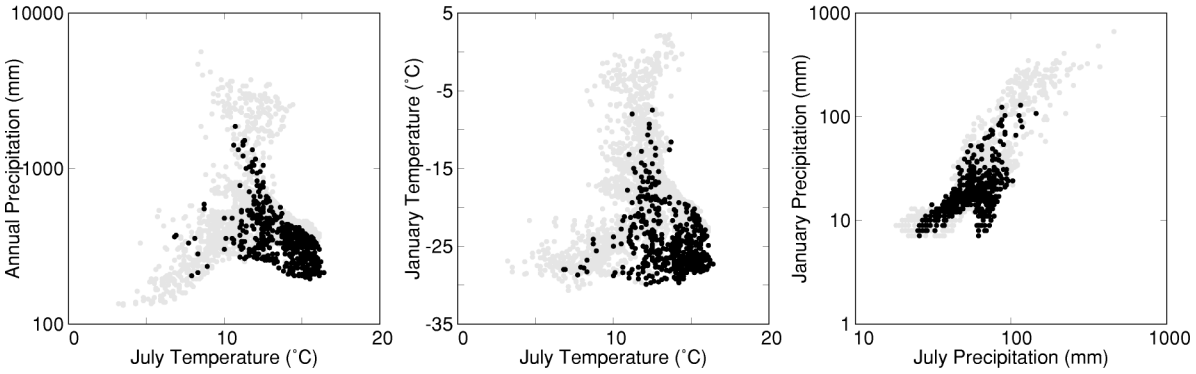


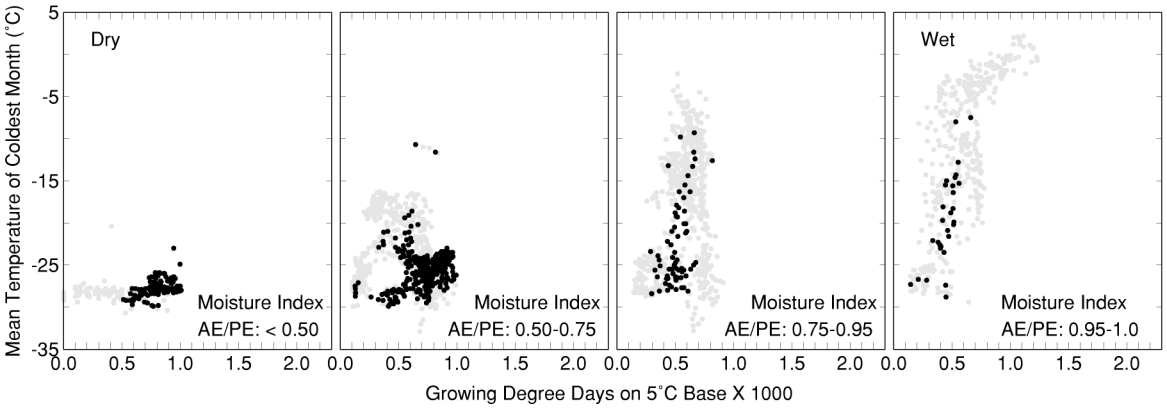


Betula glandulosa

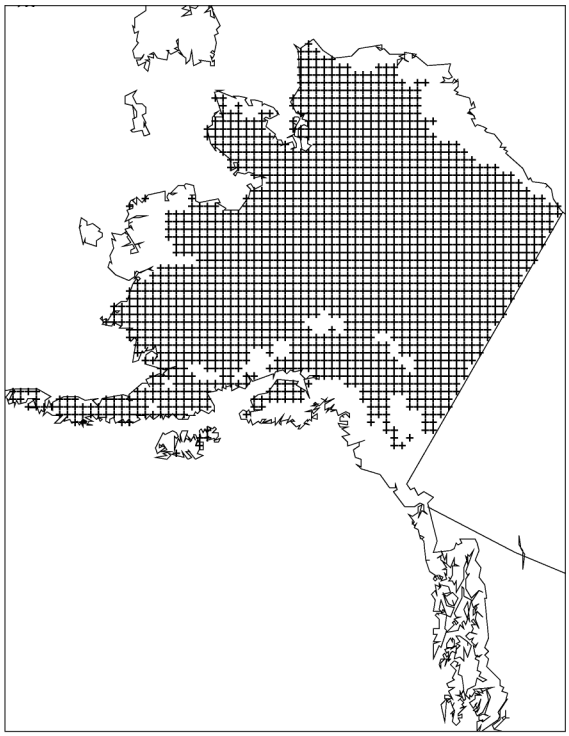


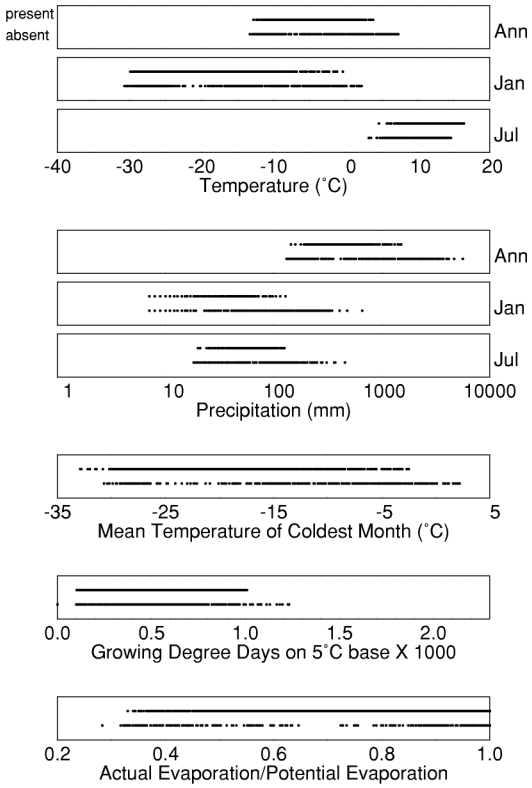


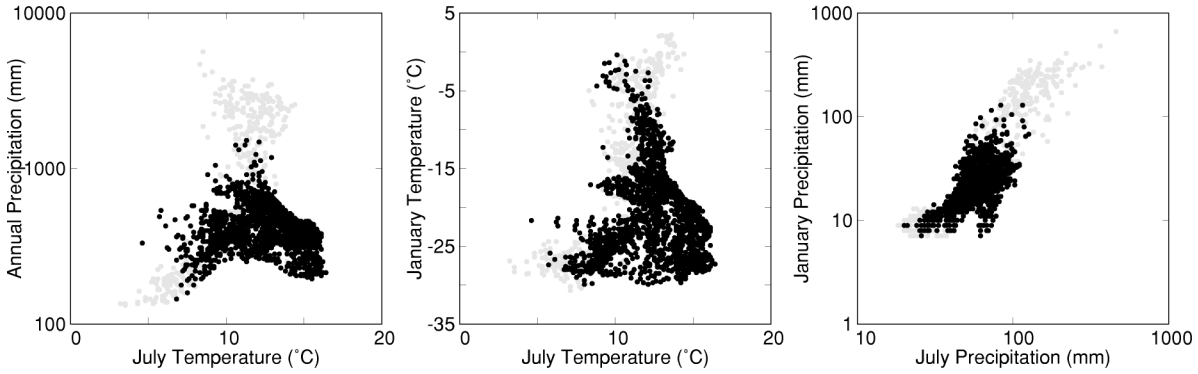


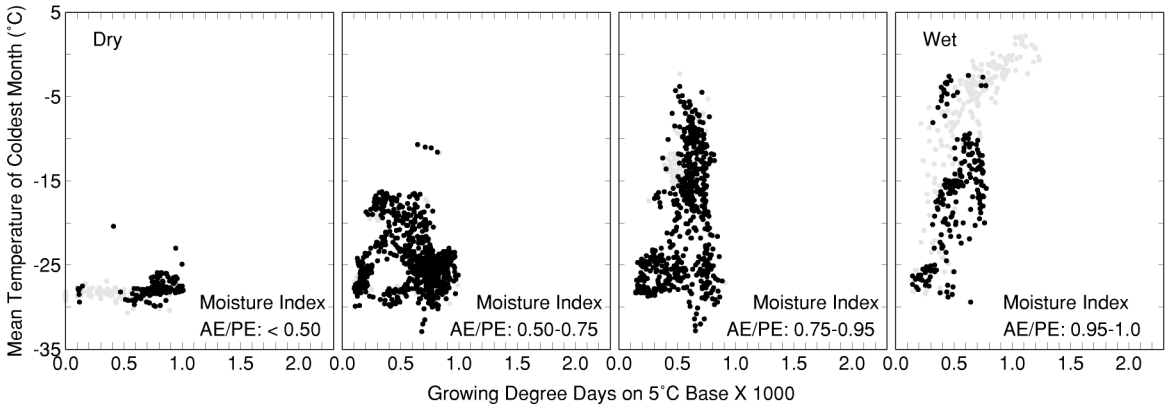


Betula nana

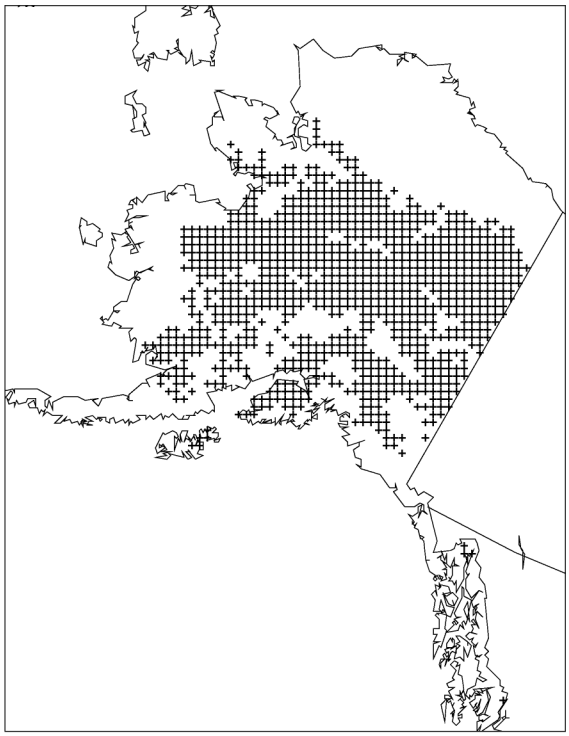


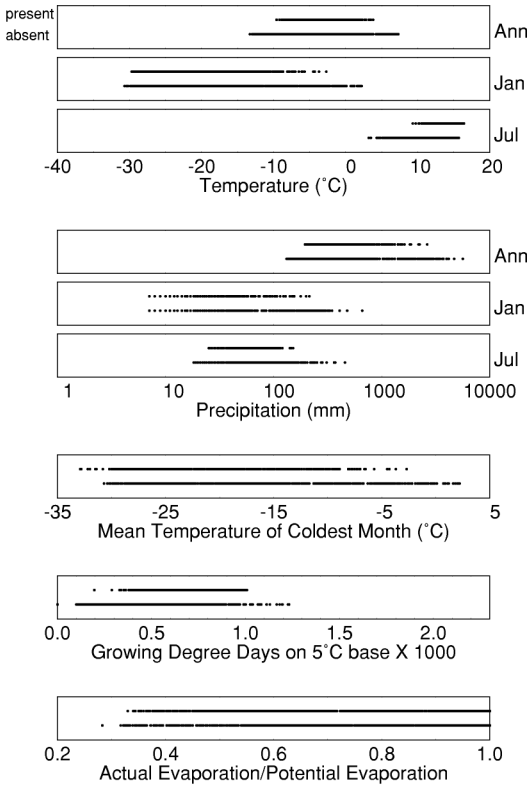

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

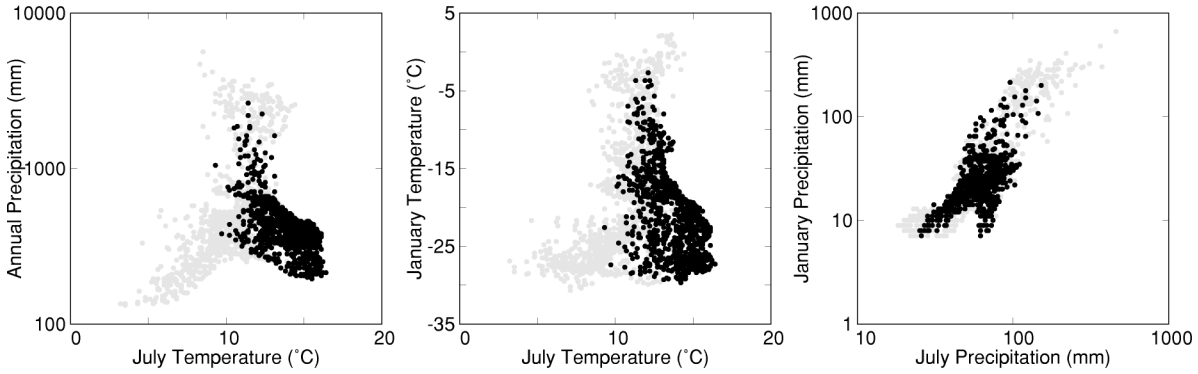

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

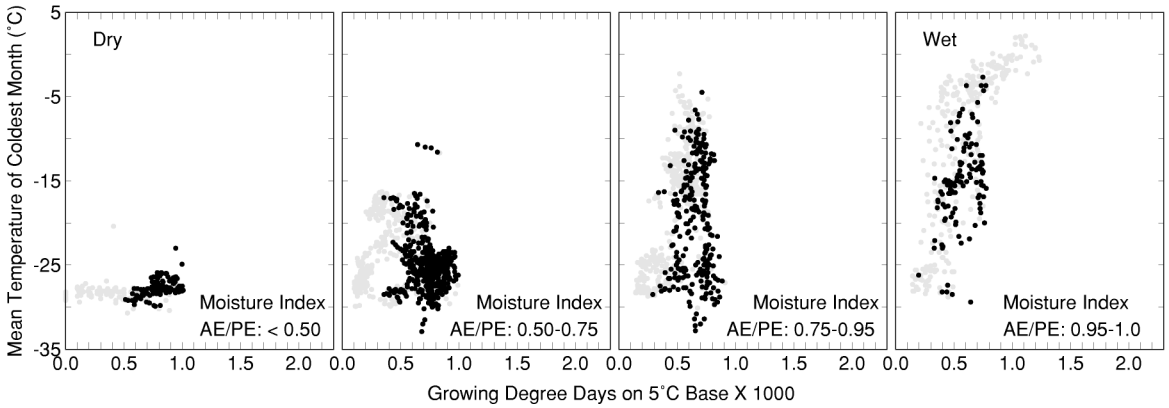

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

Betula papyrifera

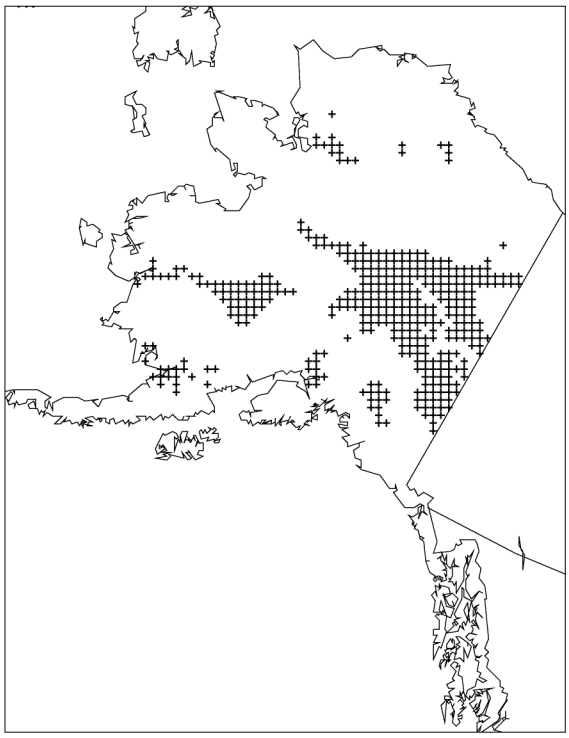


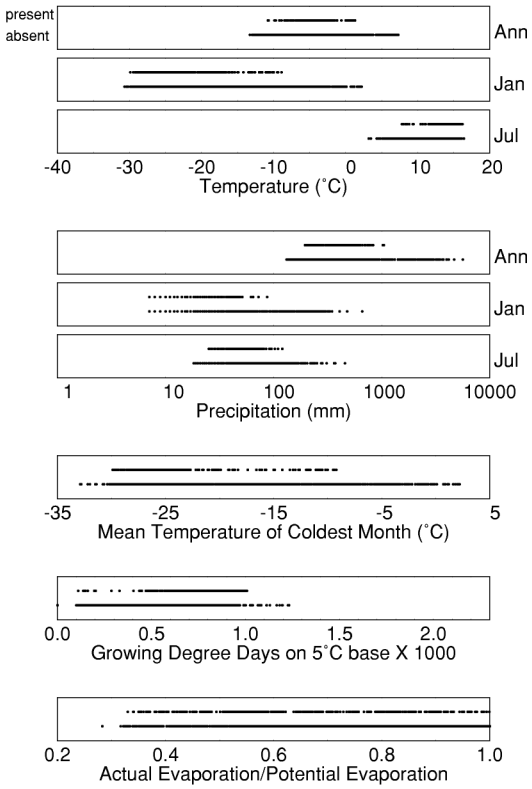


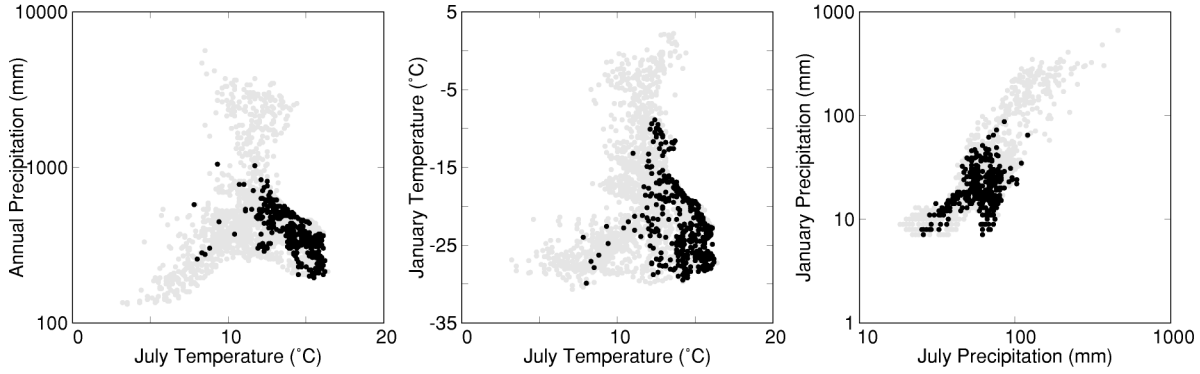


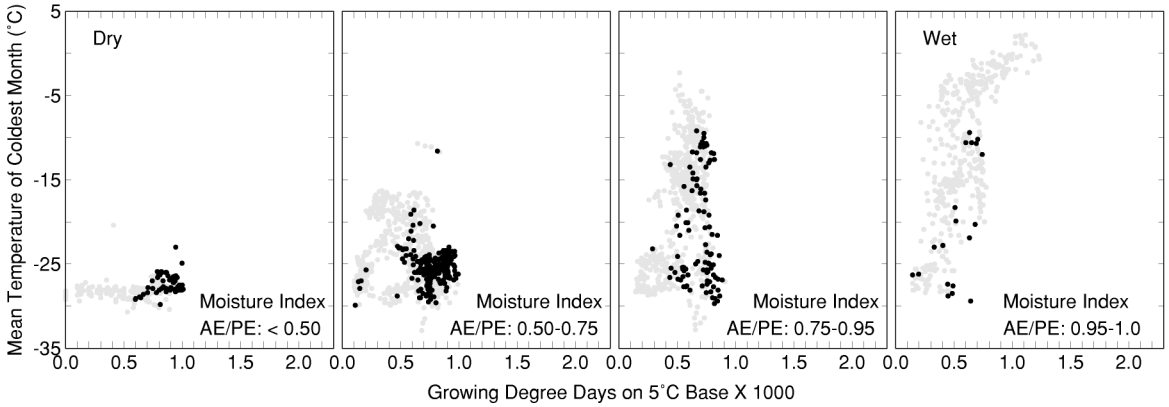


Chamaedaphne calyculata

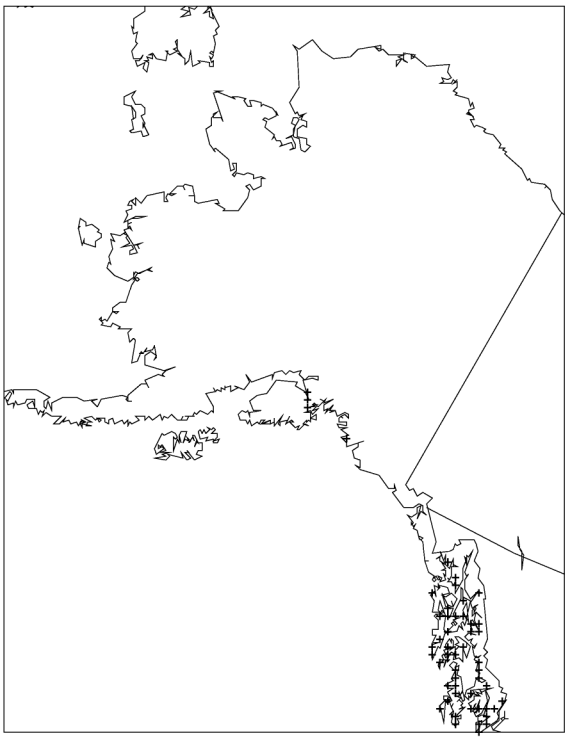


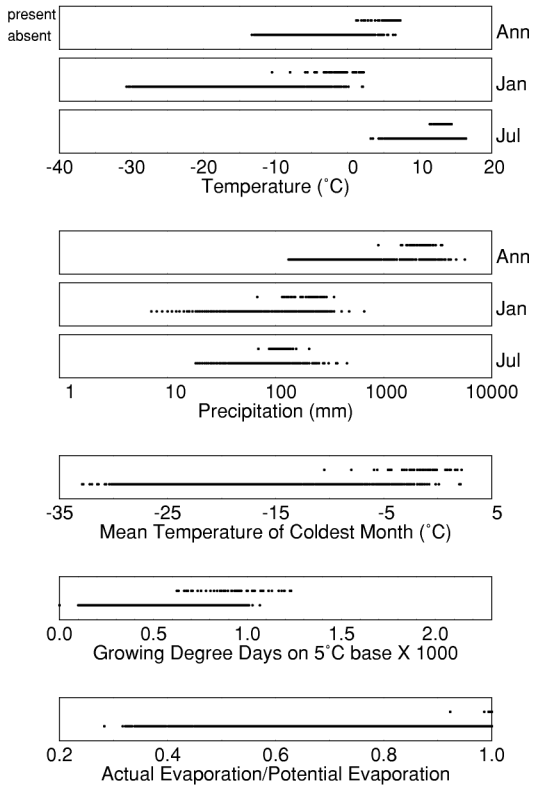


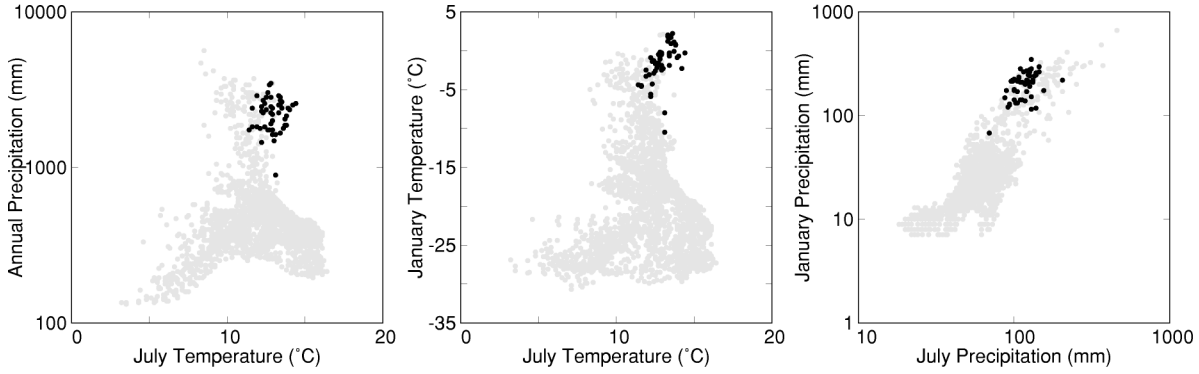


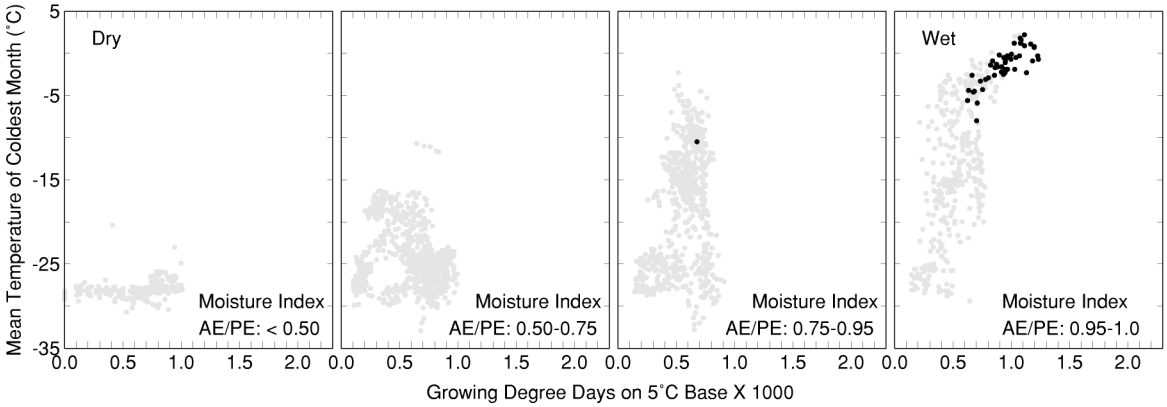


Cladothamnus pyrolaeflorus

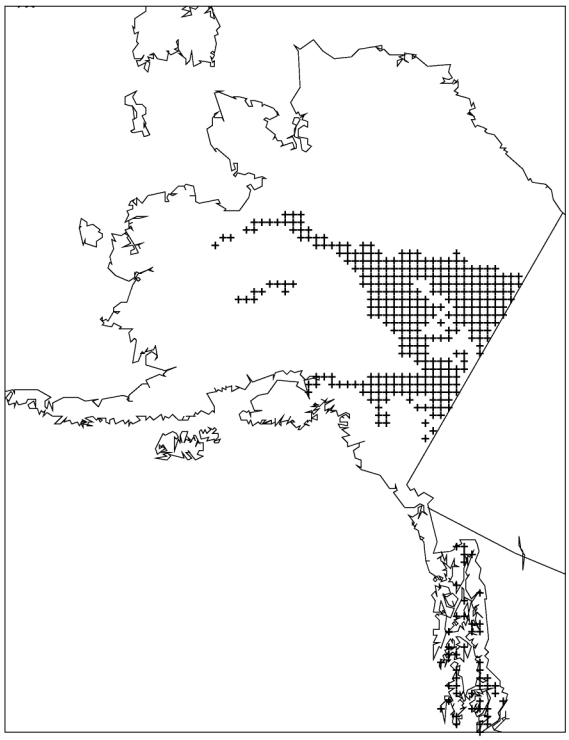


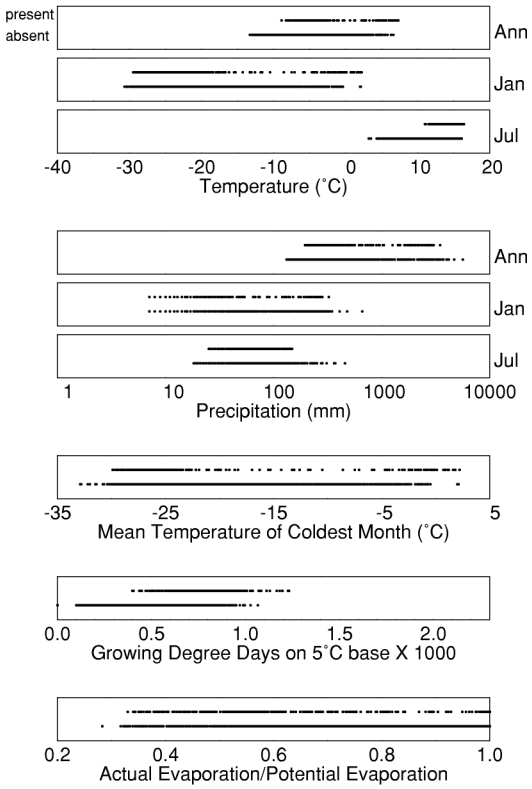


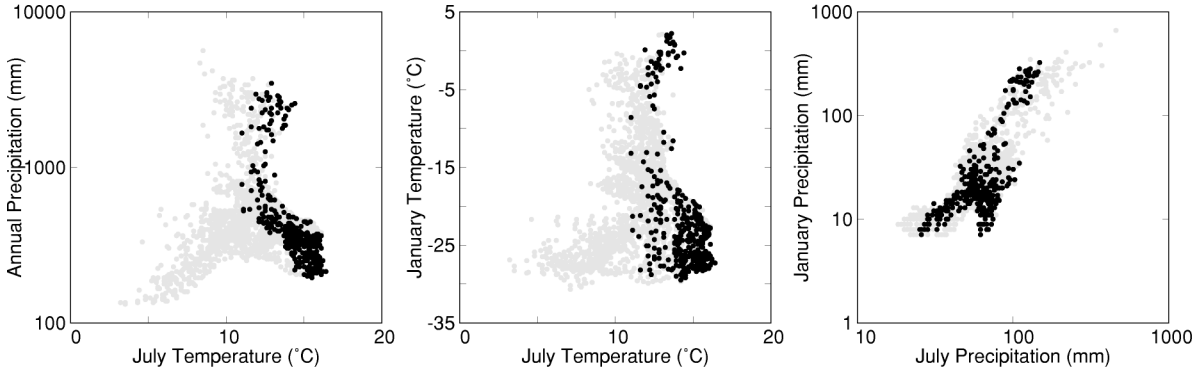


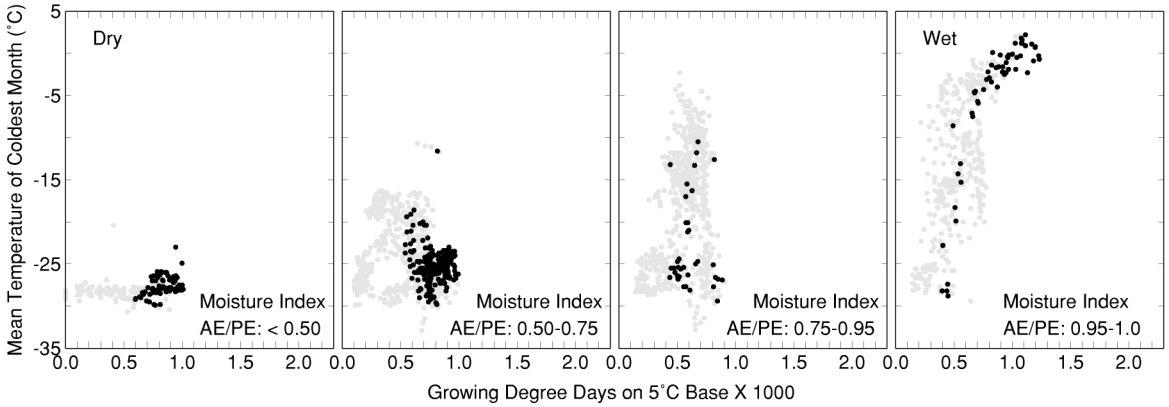


Cornus stolonifera

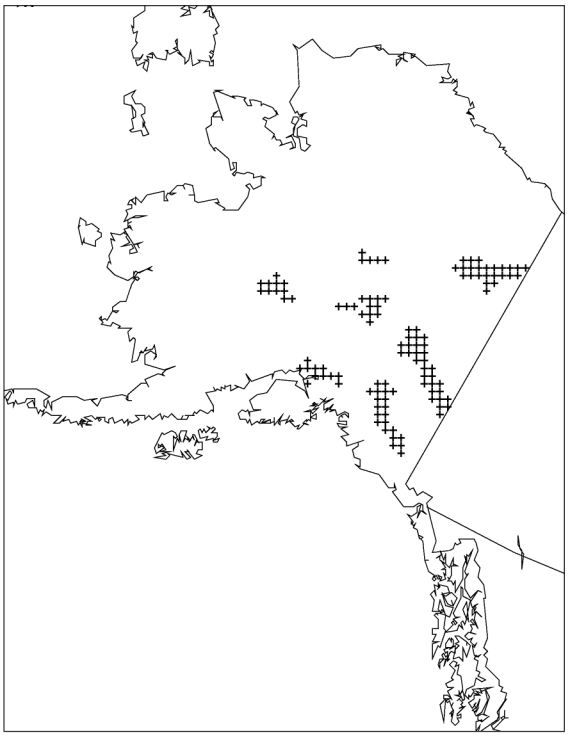


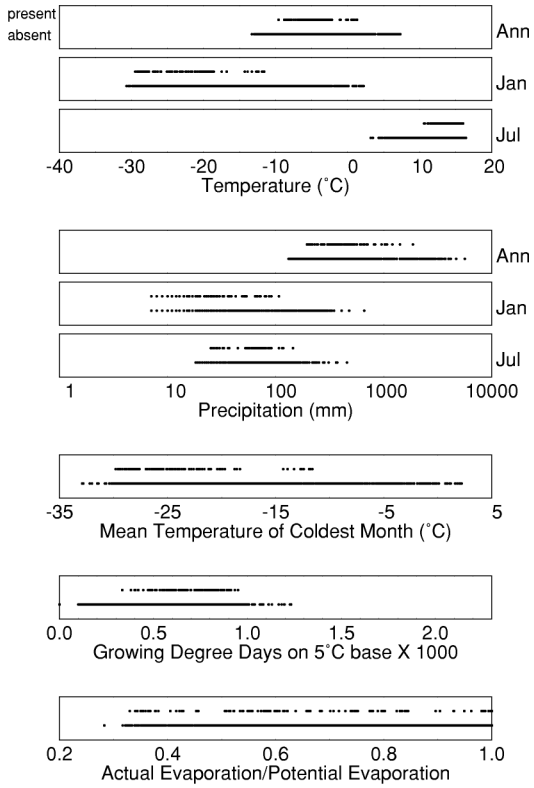


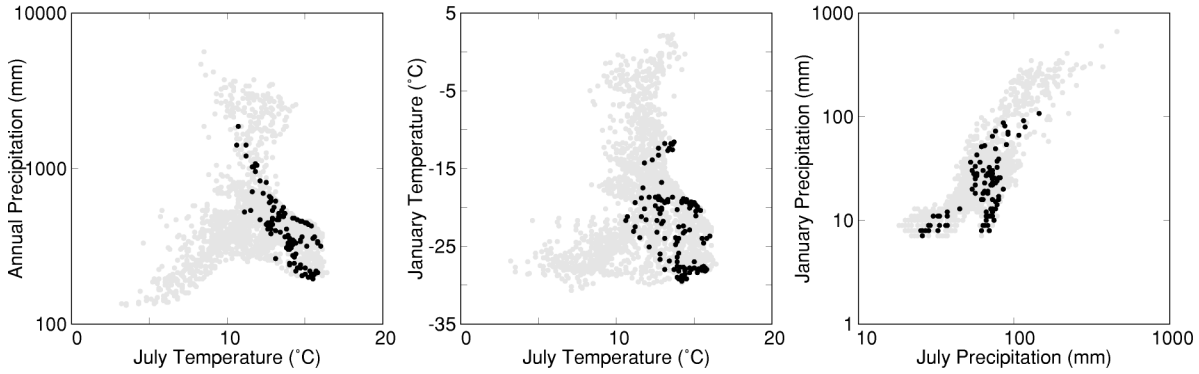


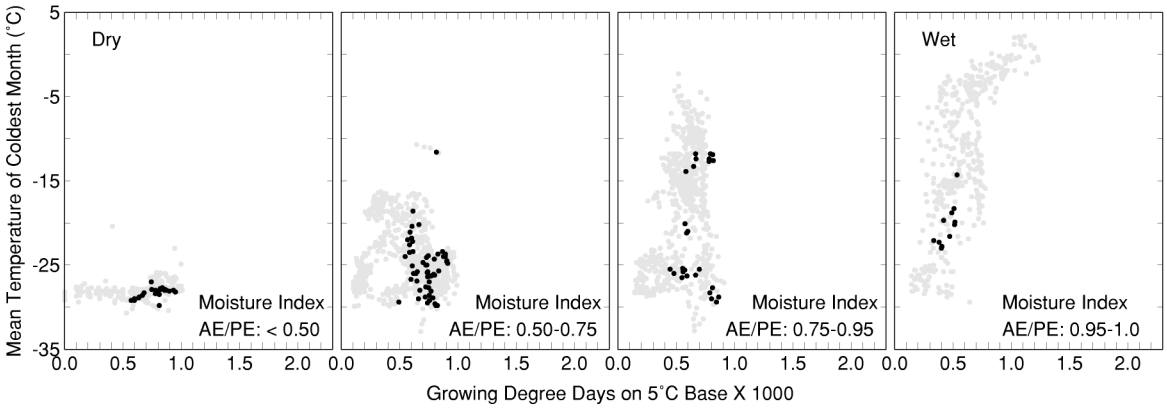


Elaeagnus commutata

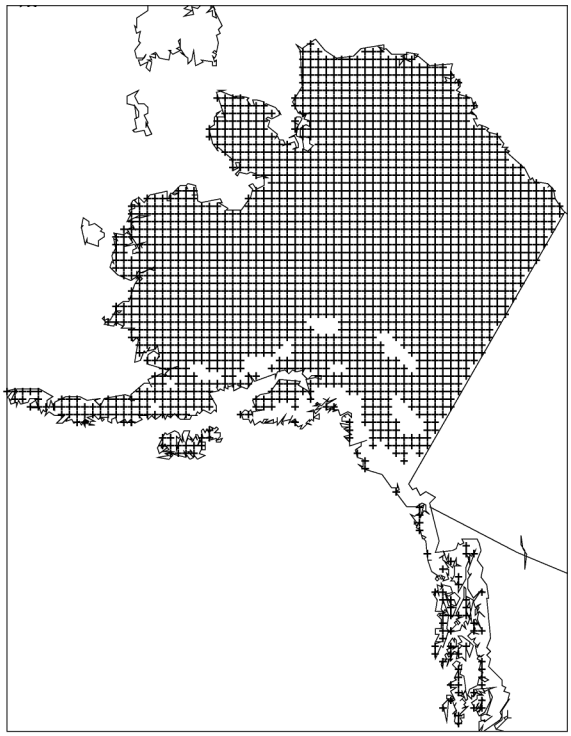


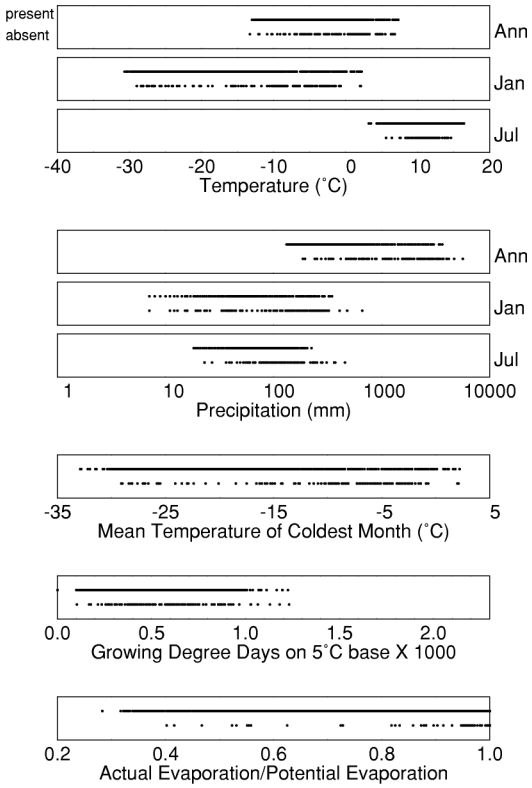


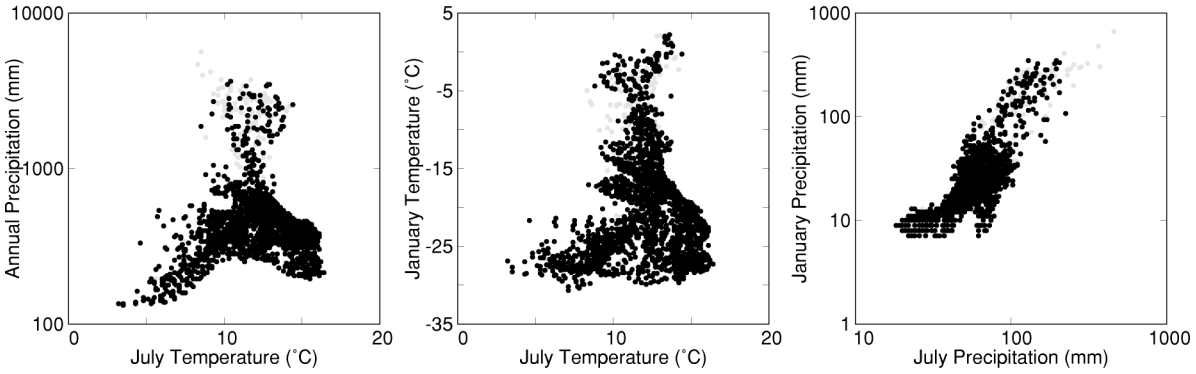


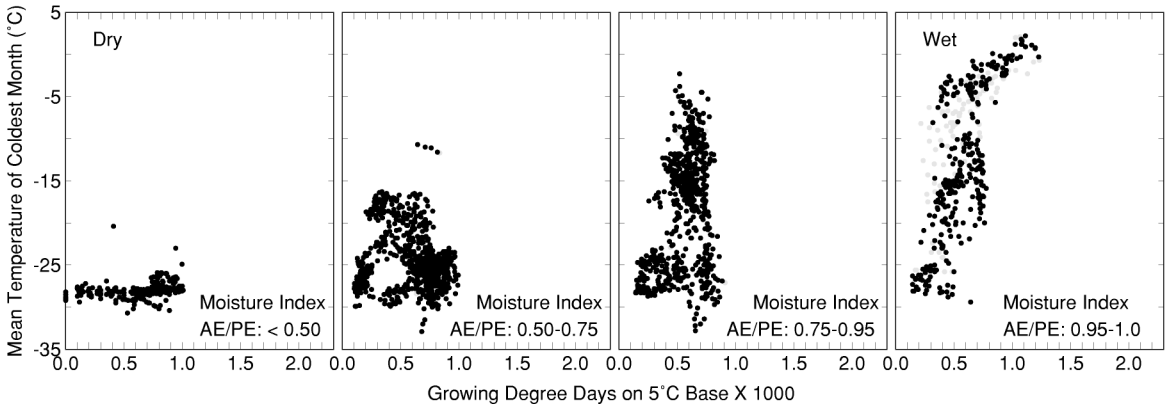


Empetrum nigrum

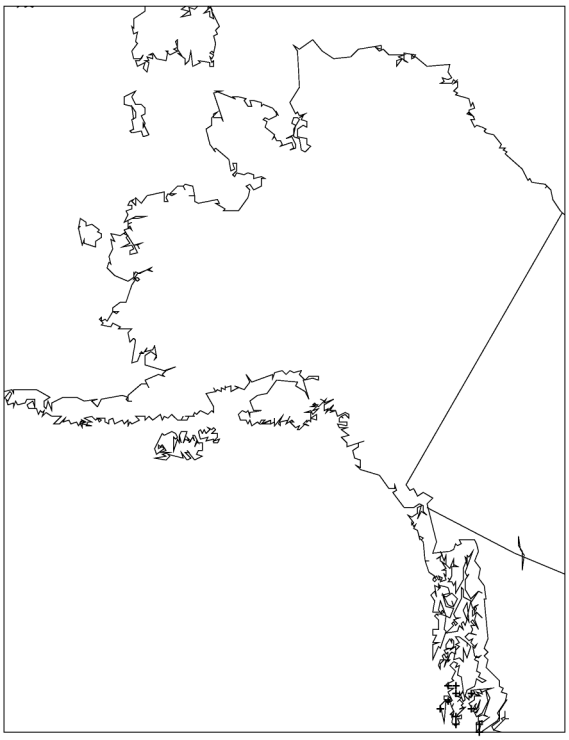


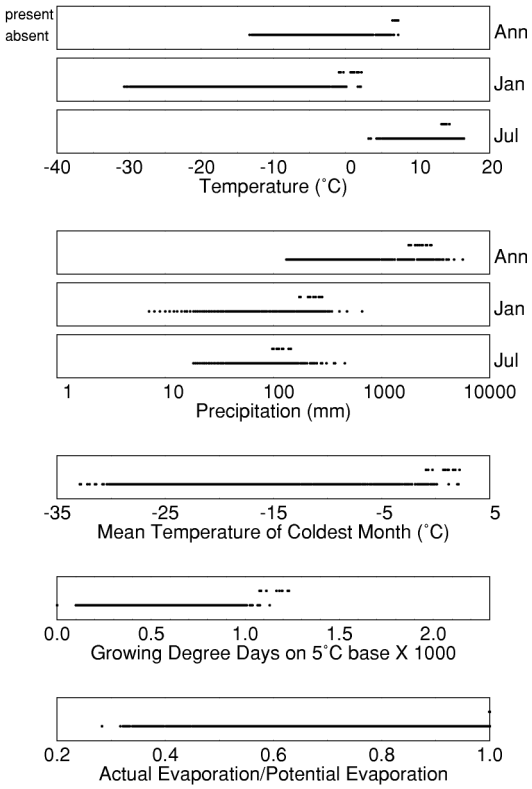


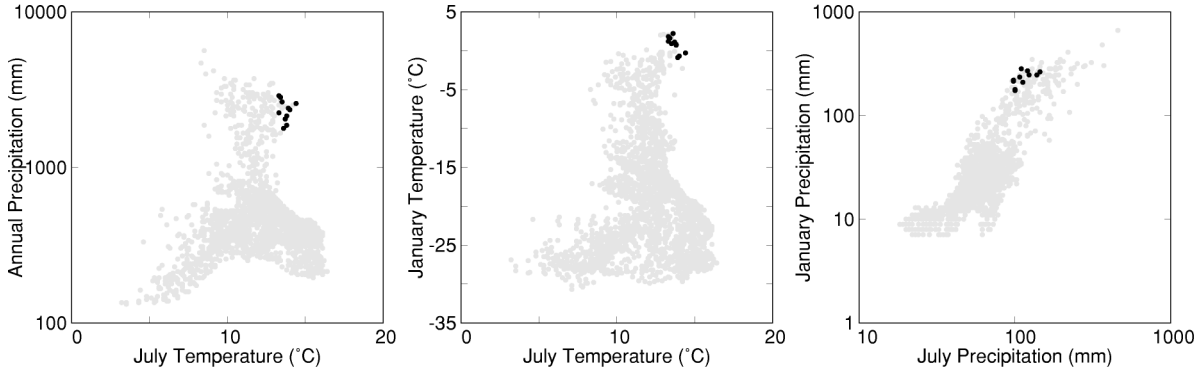


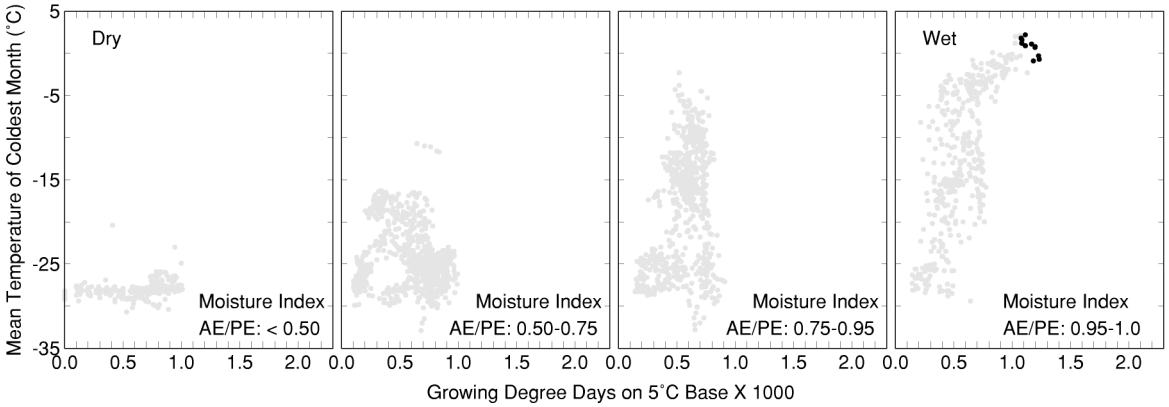


Gaultheria shallon

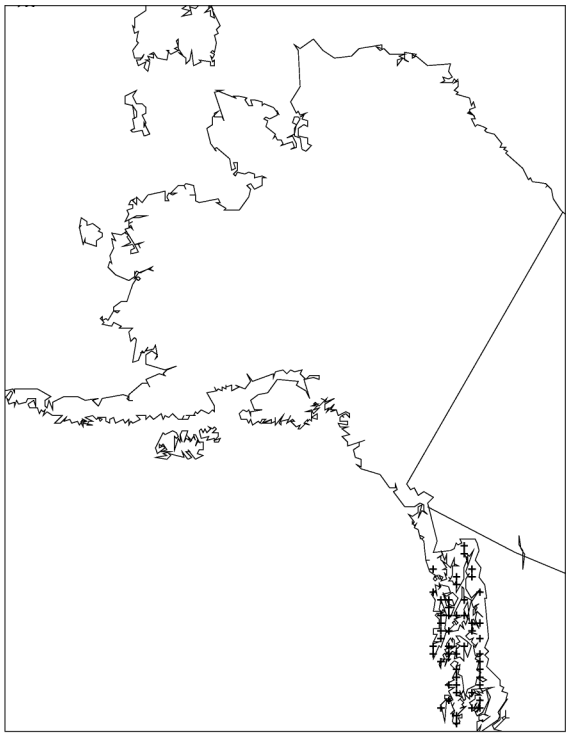


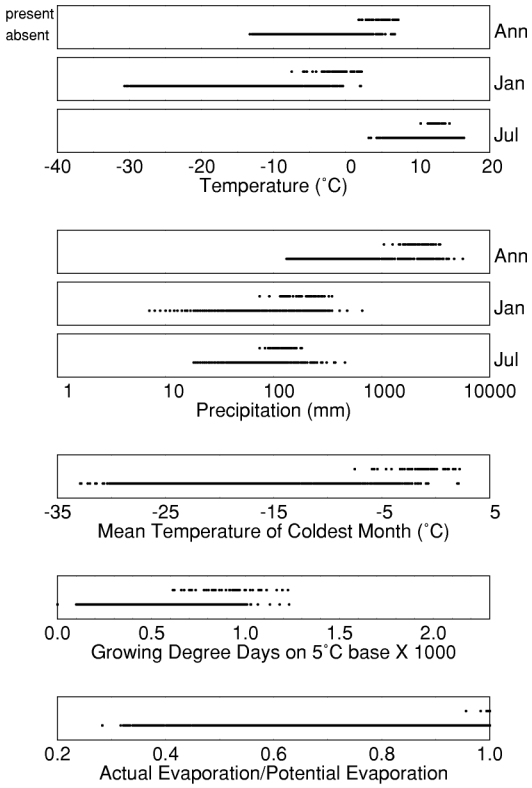


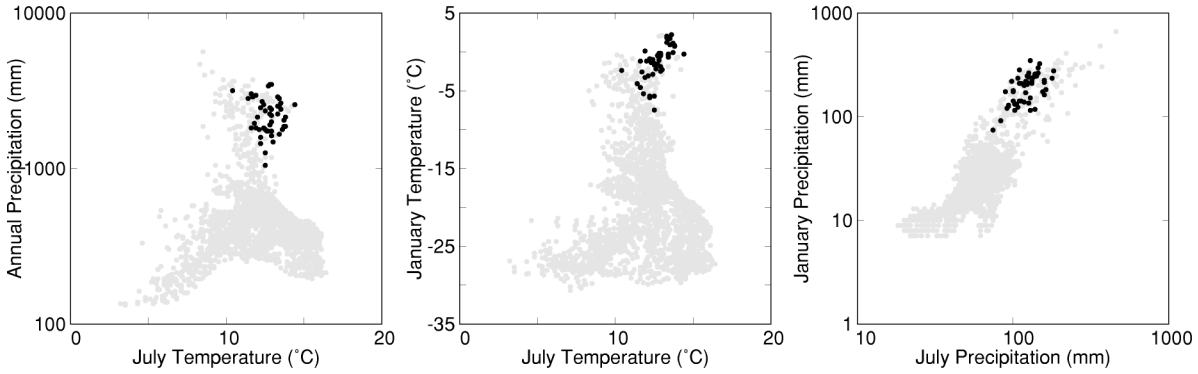


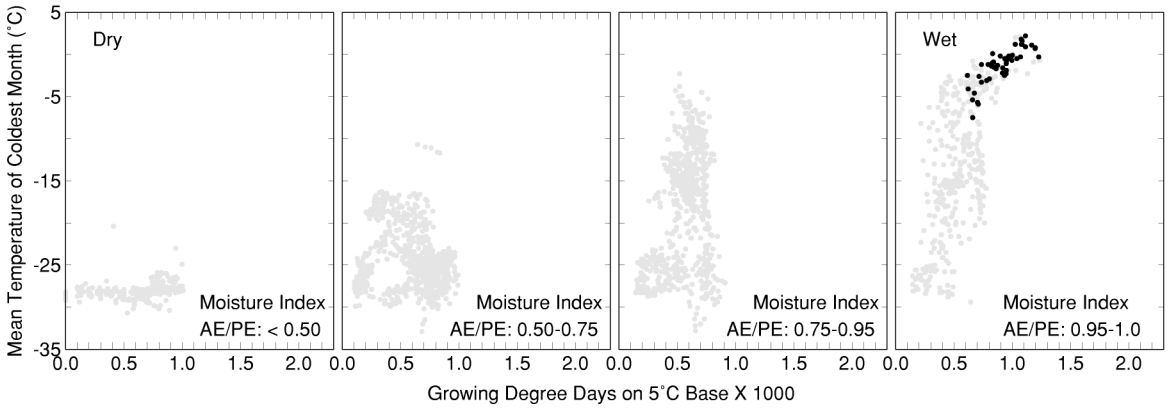


Kalmia polifolia

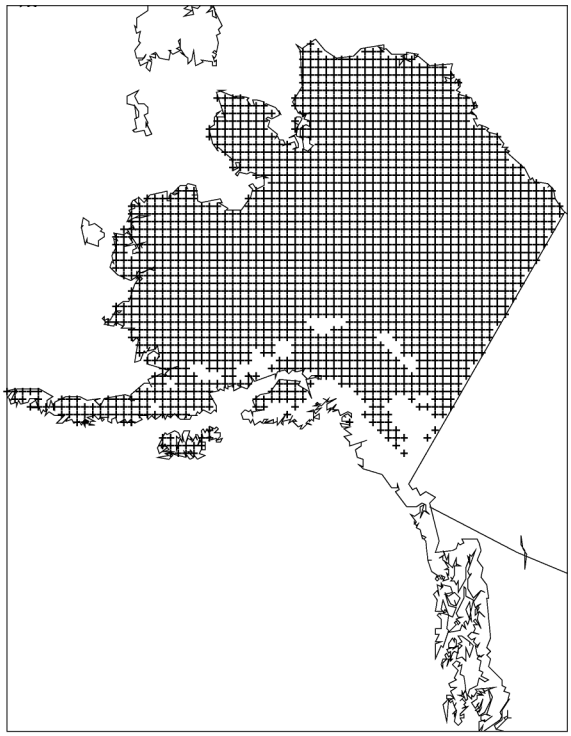


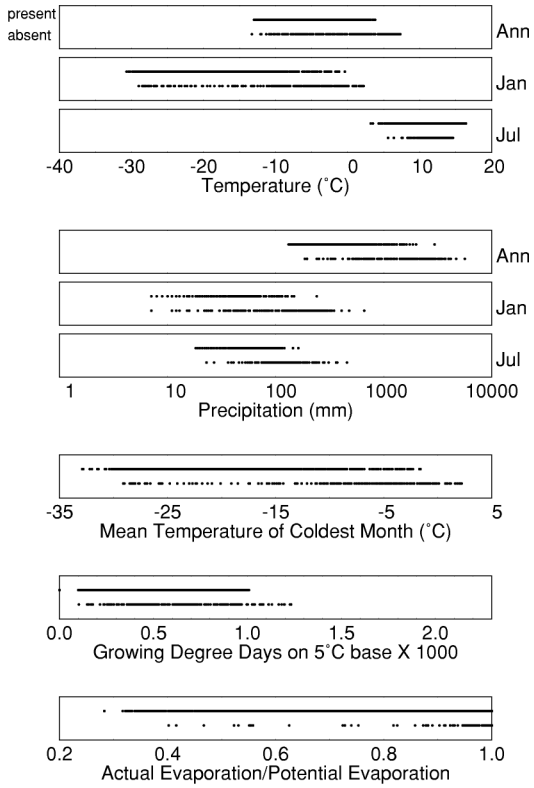


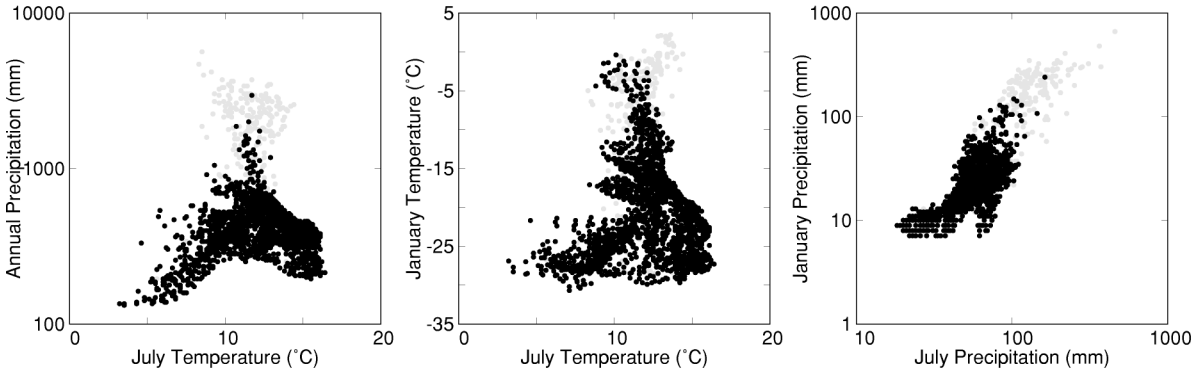


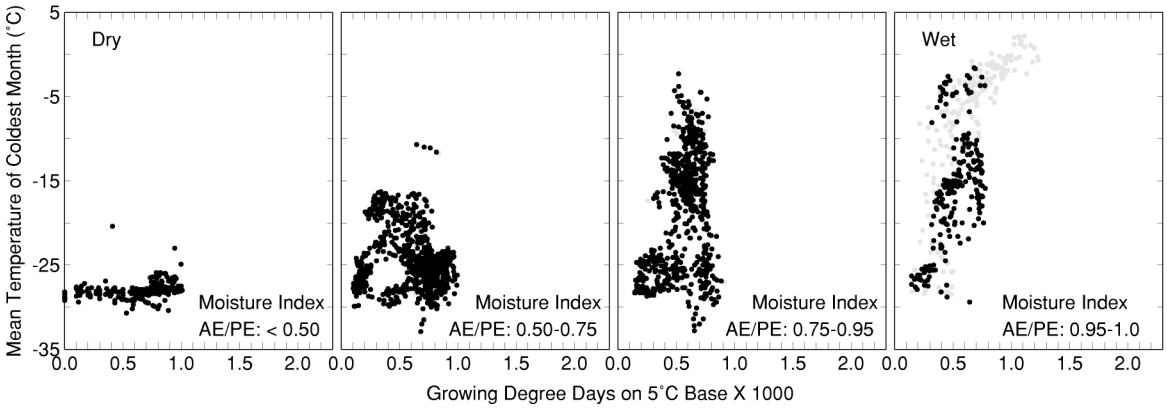


Ledum decumbens

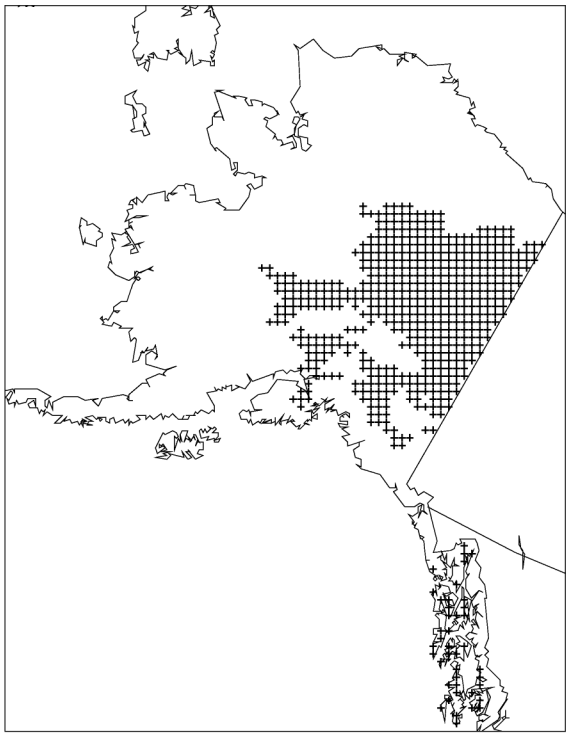


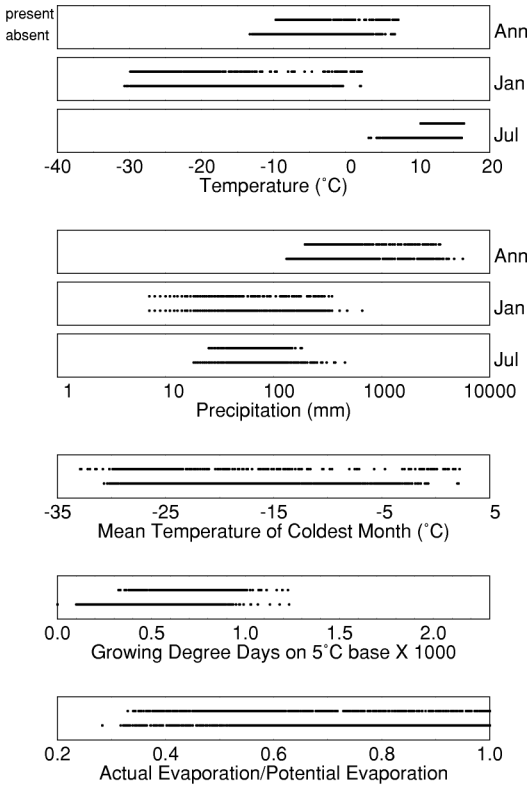


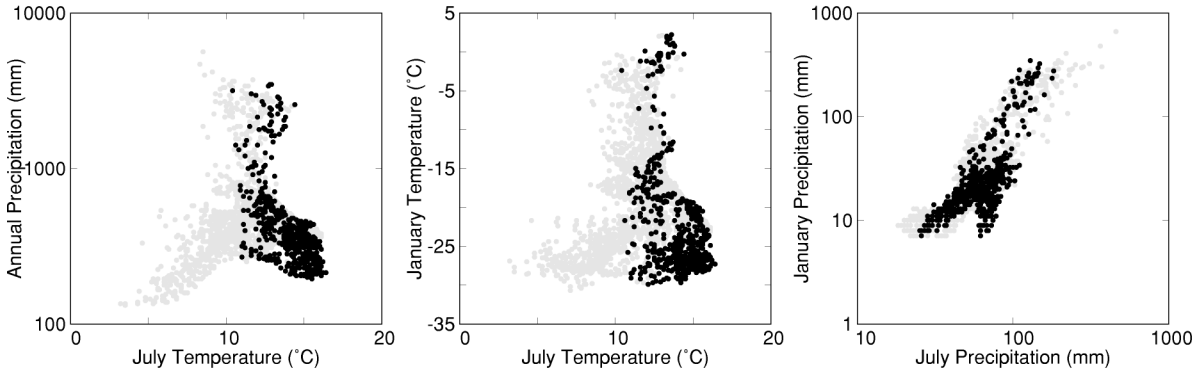


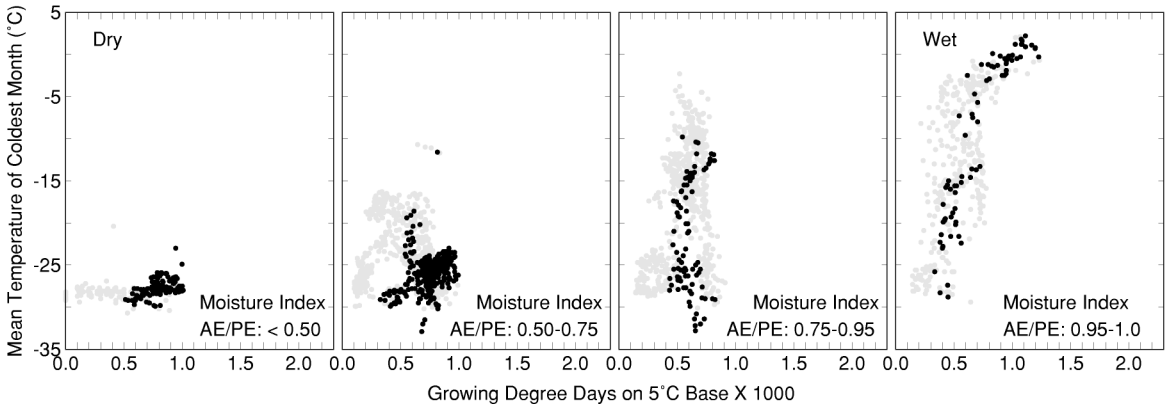


Ledum groenlandicum

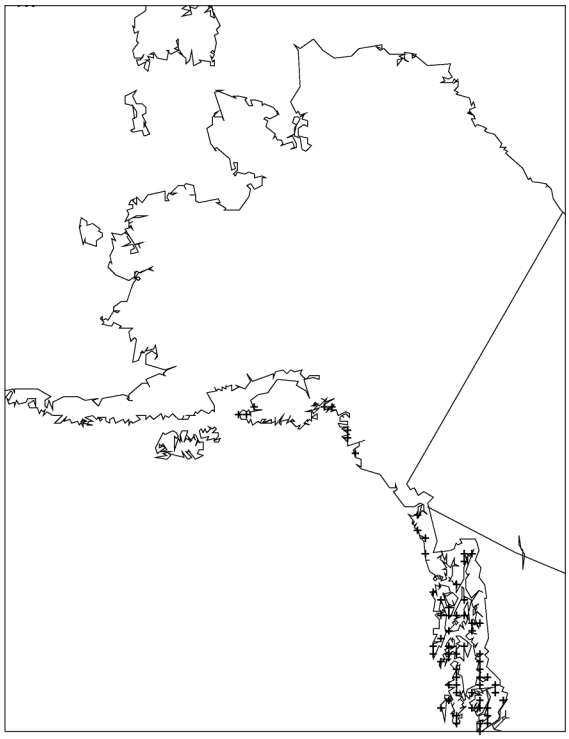


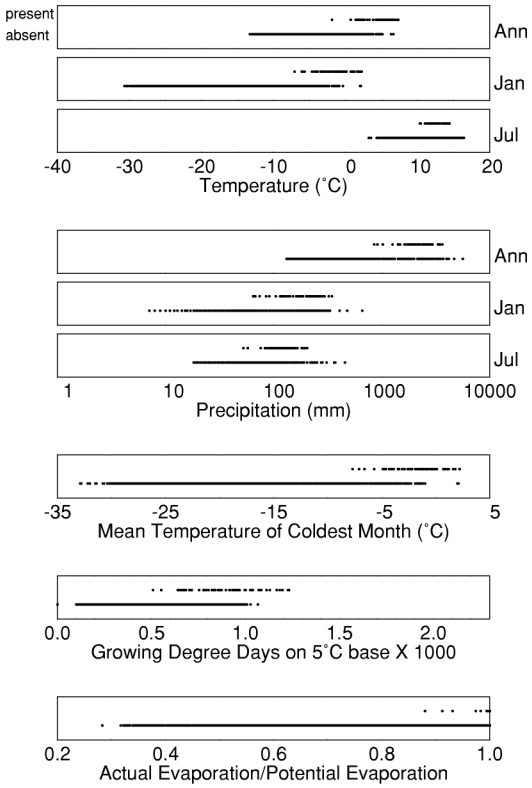


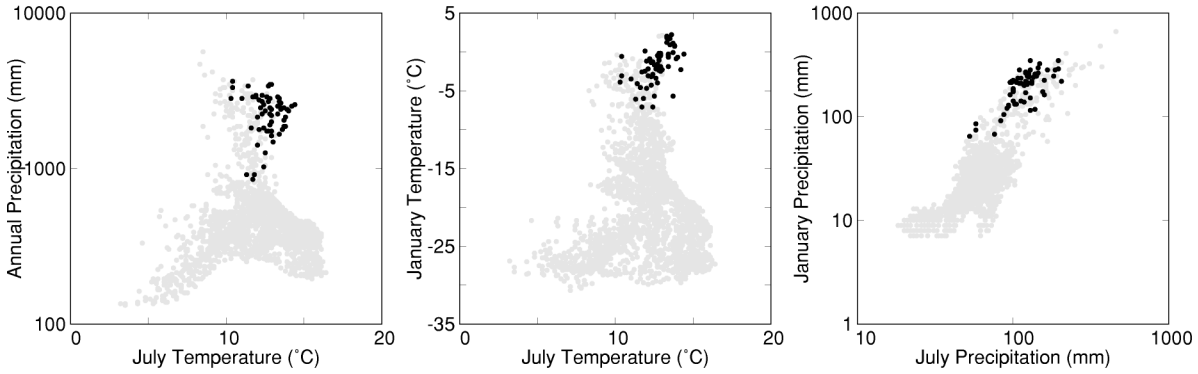


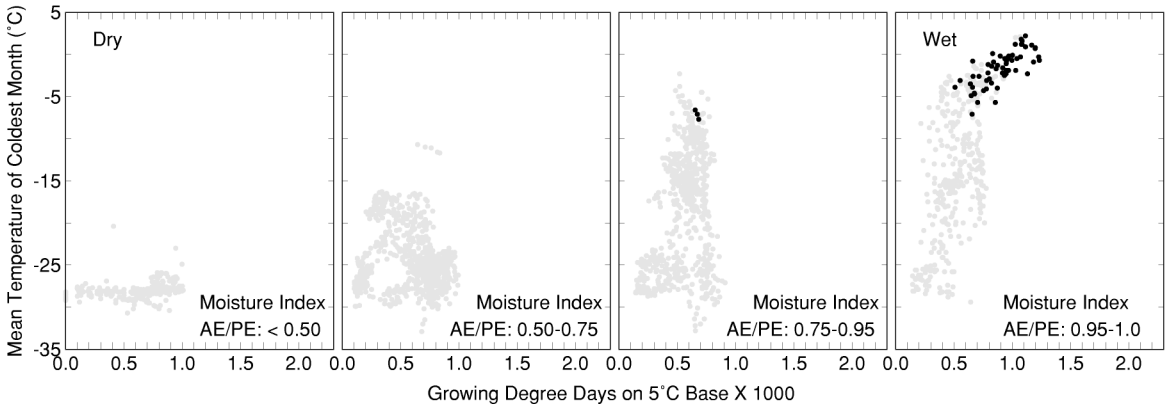


Malus diversifolia

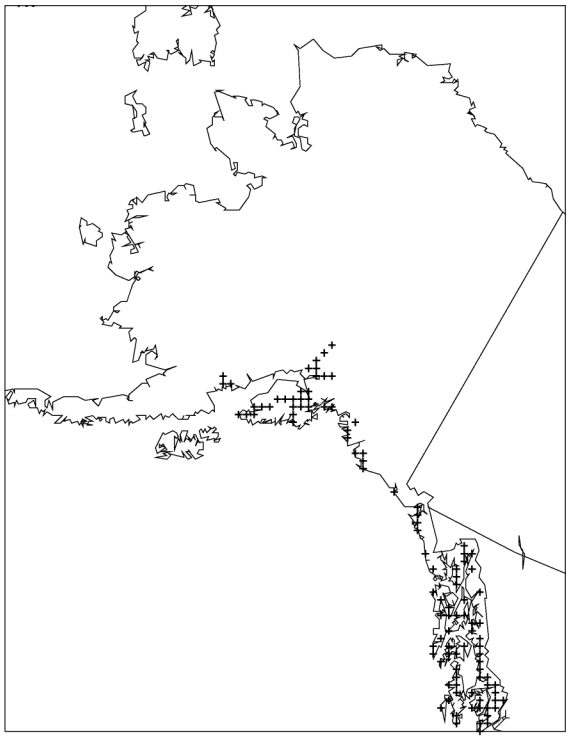


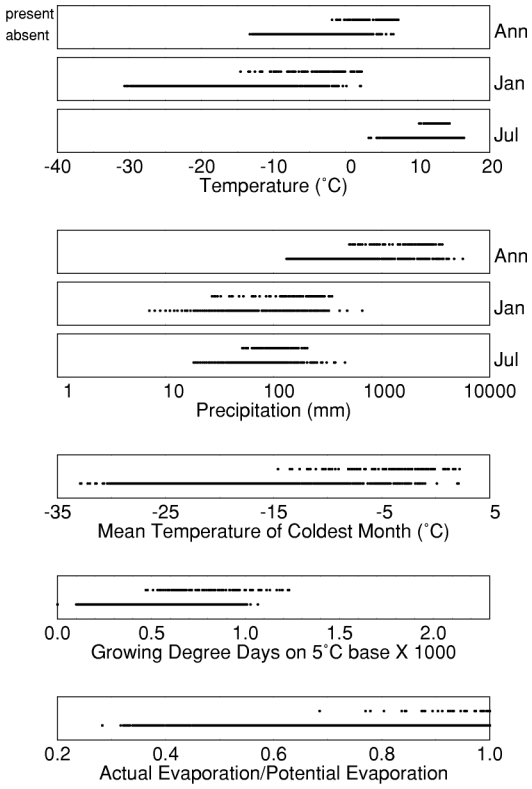


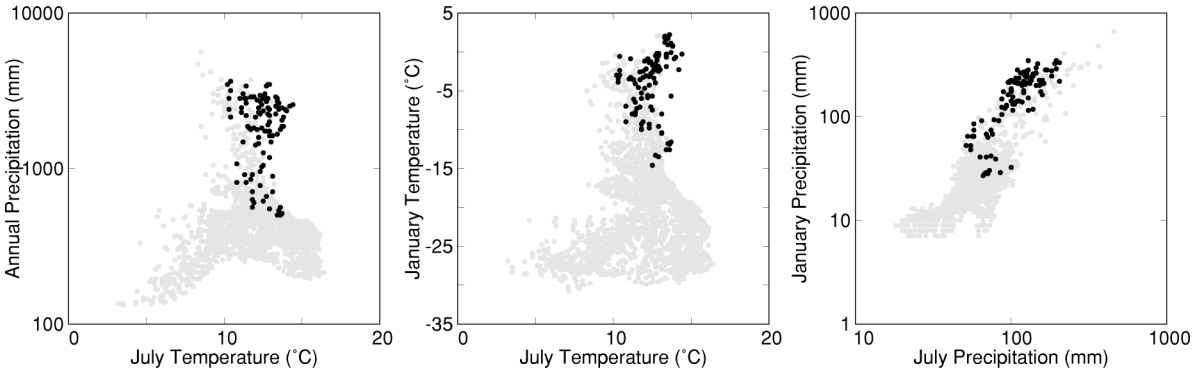


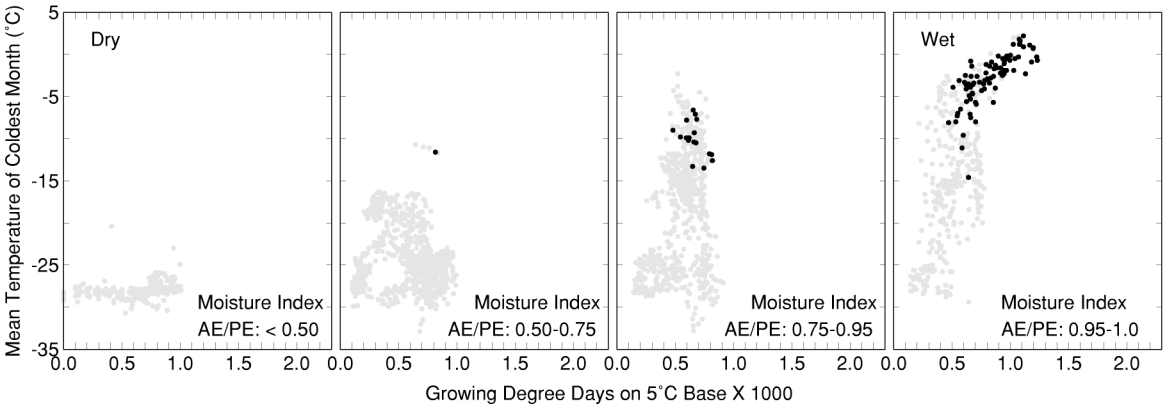


Menziesia ferruginea

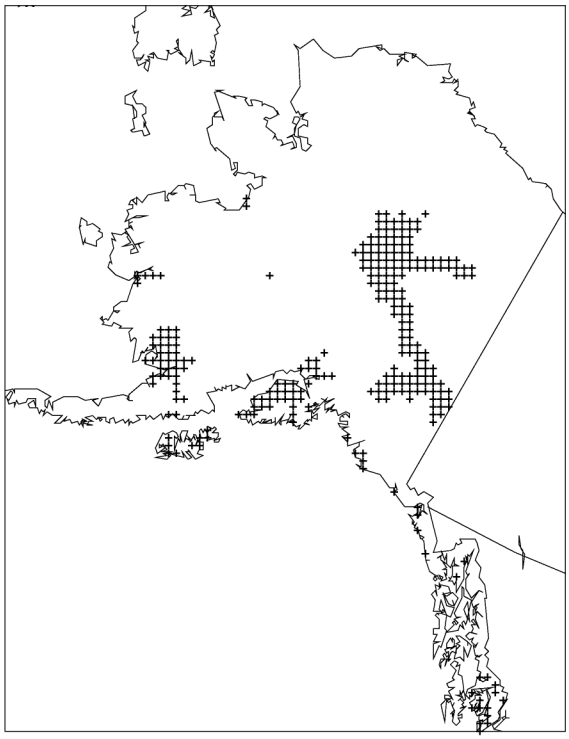


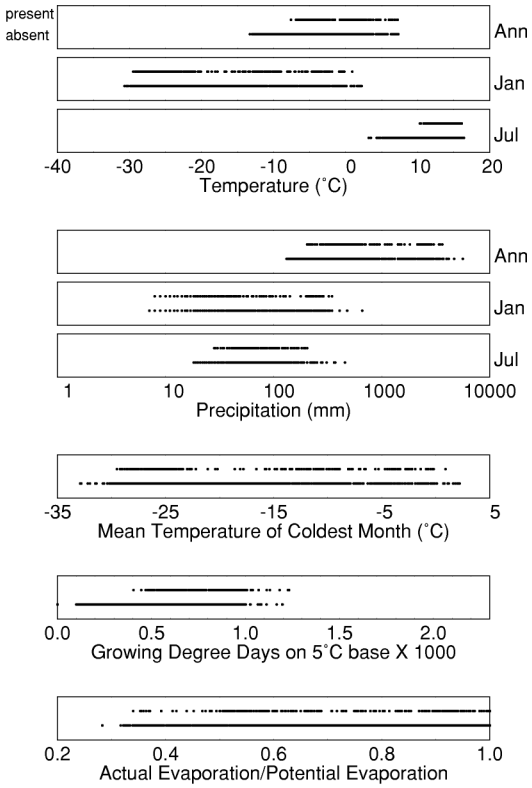


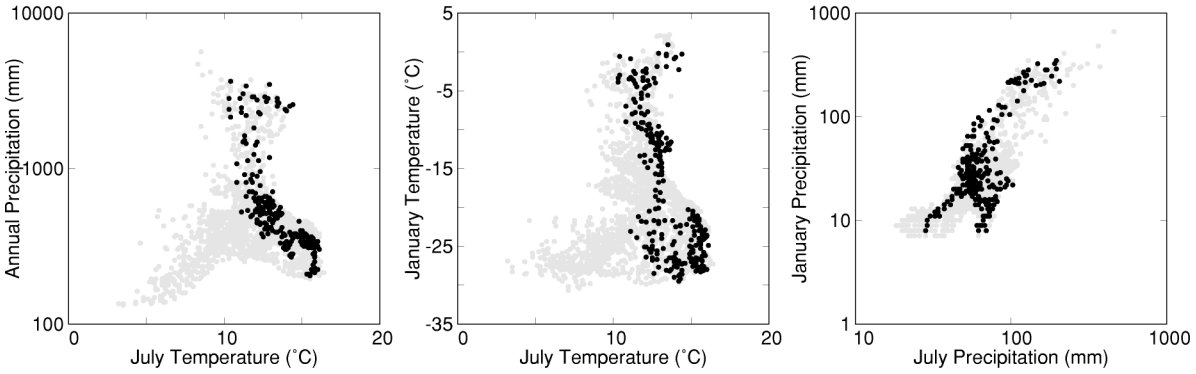


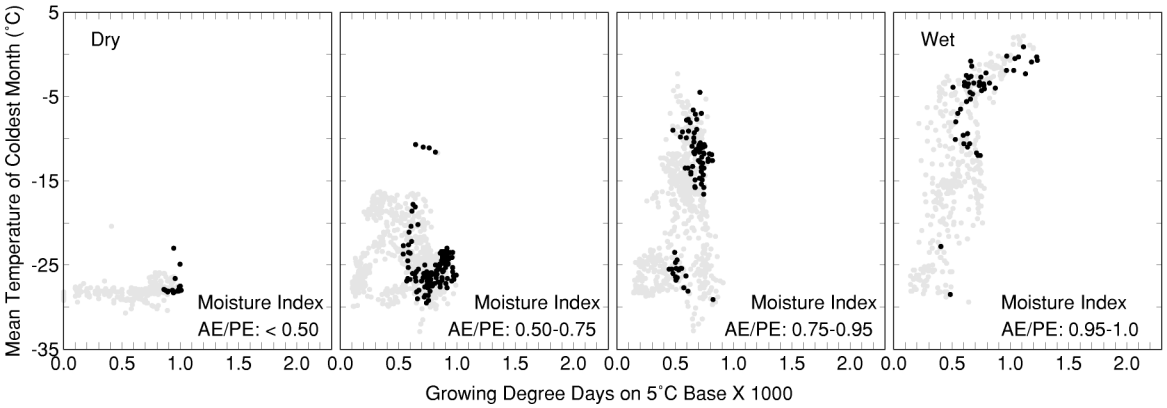


Myrica gale

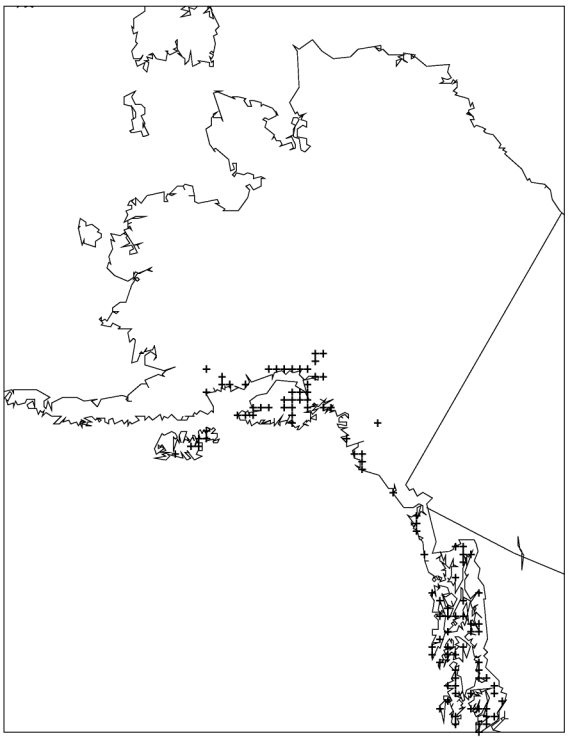


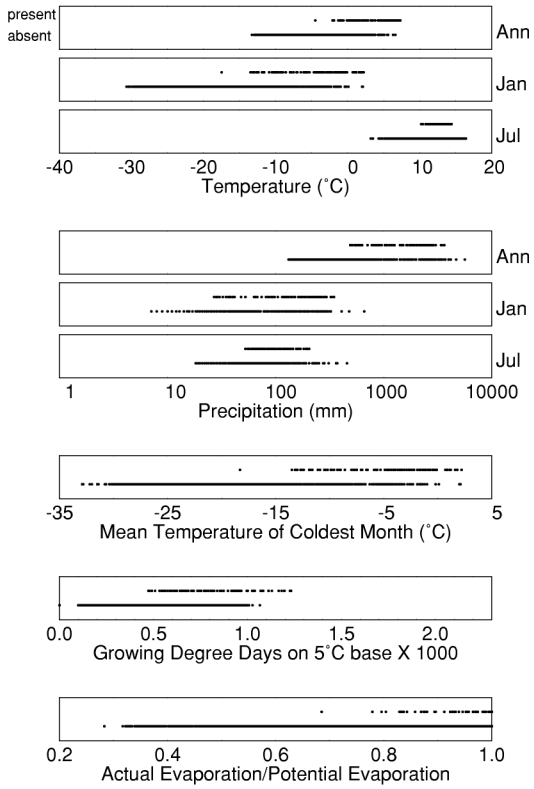

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

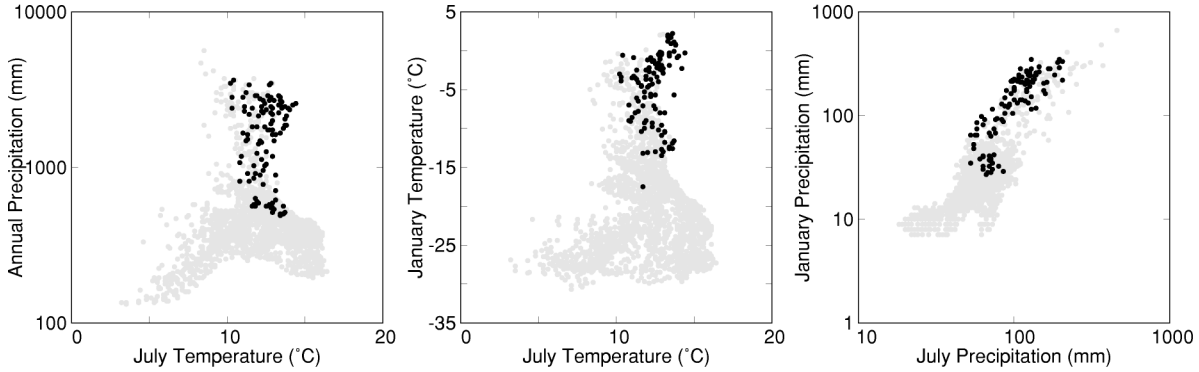

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

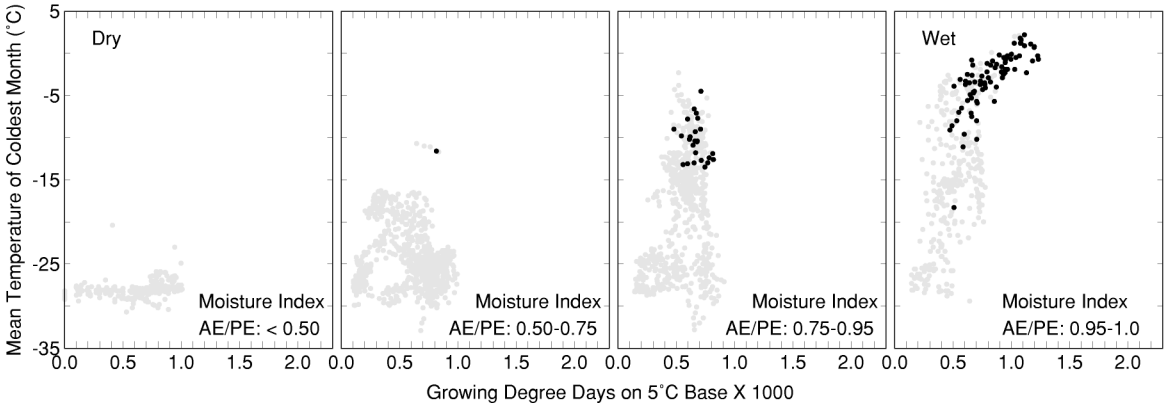

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

Oplopanax horridus

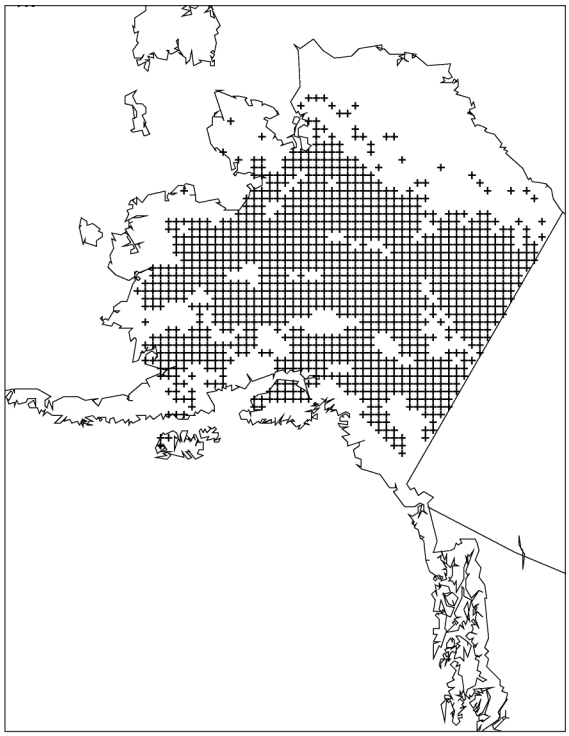


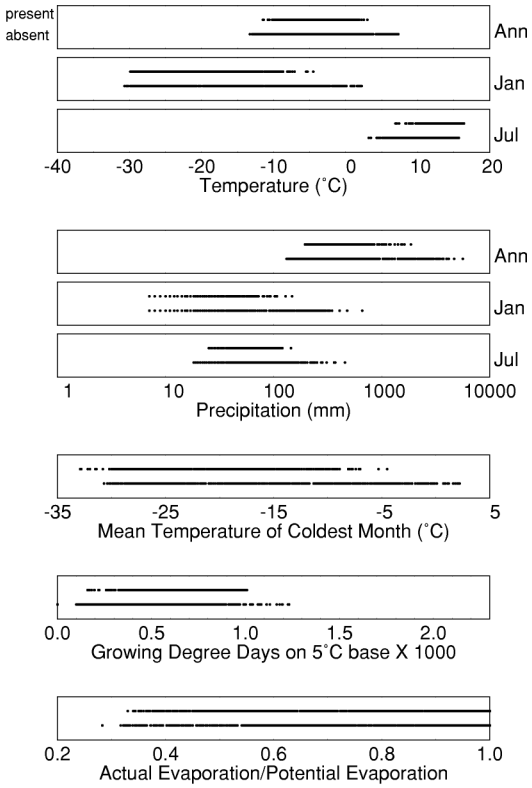


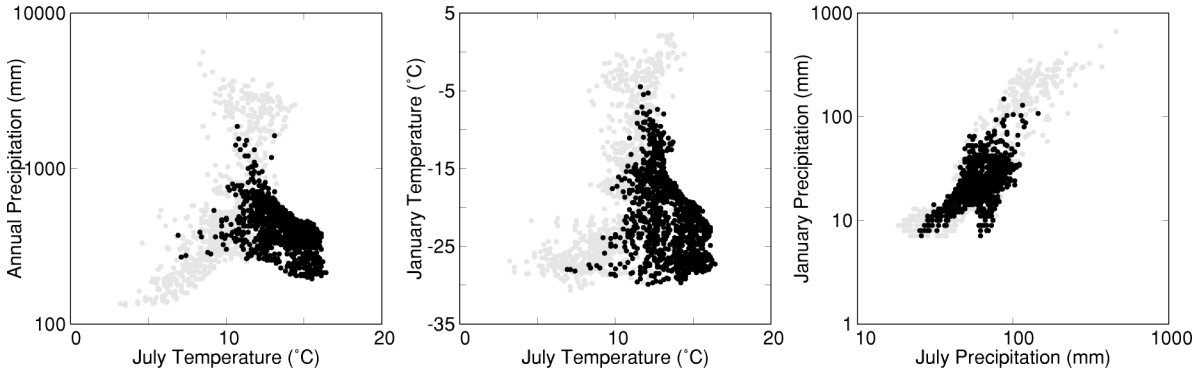


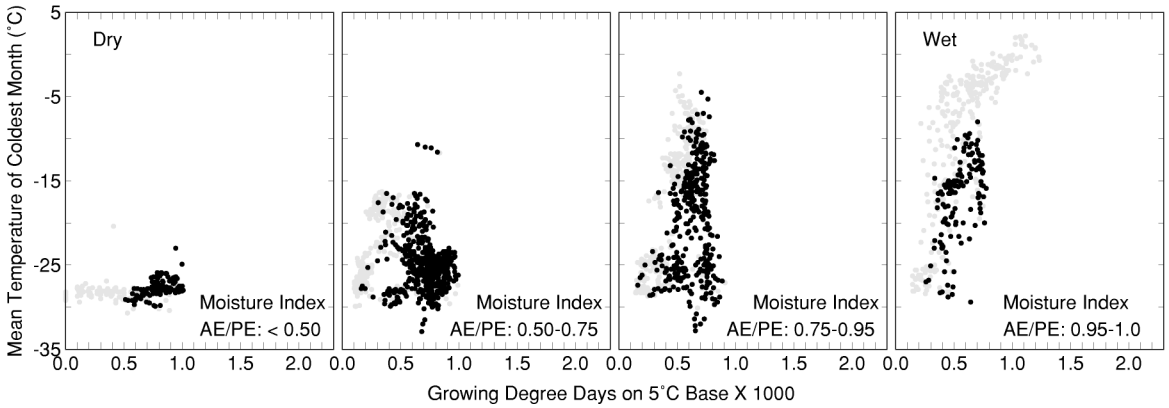


Populus balsamifera

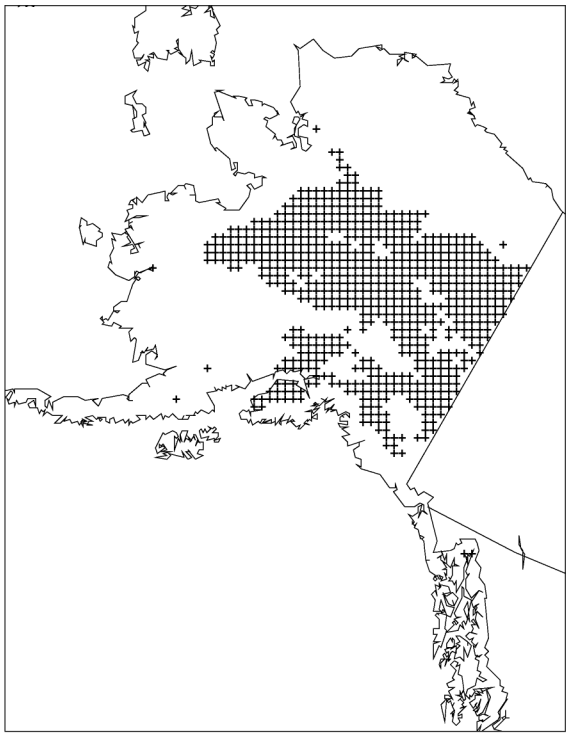


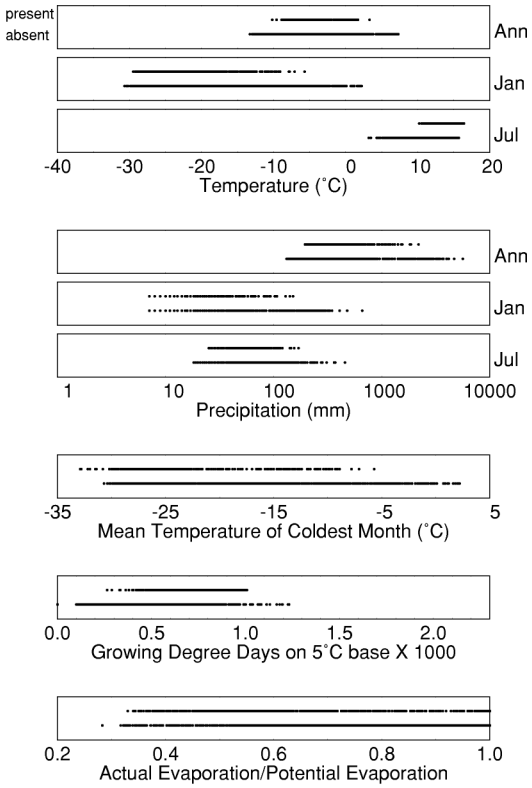


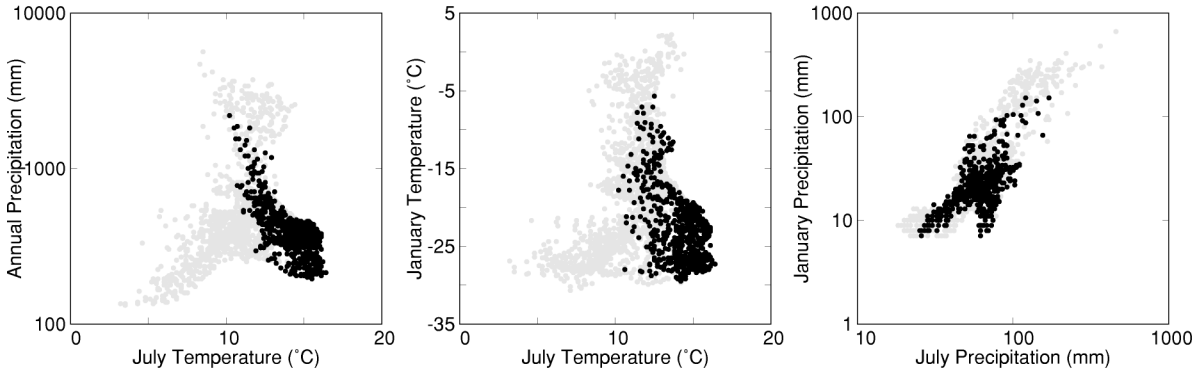


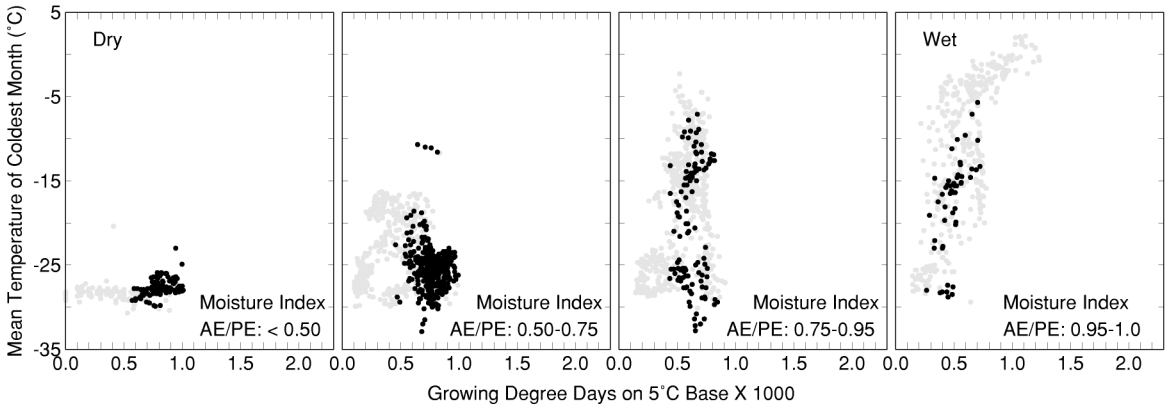


Populus tremuloides

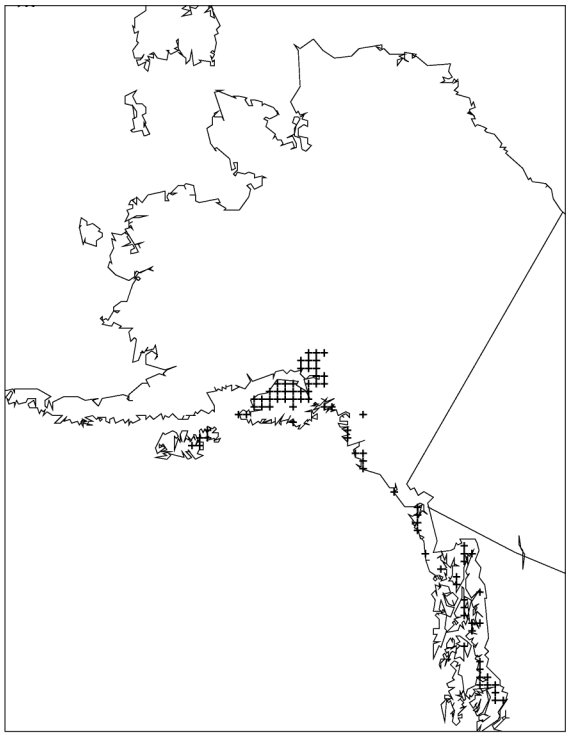


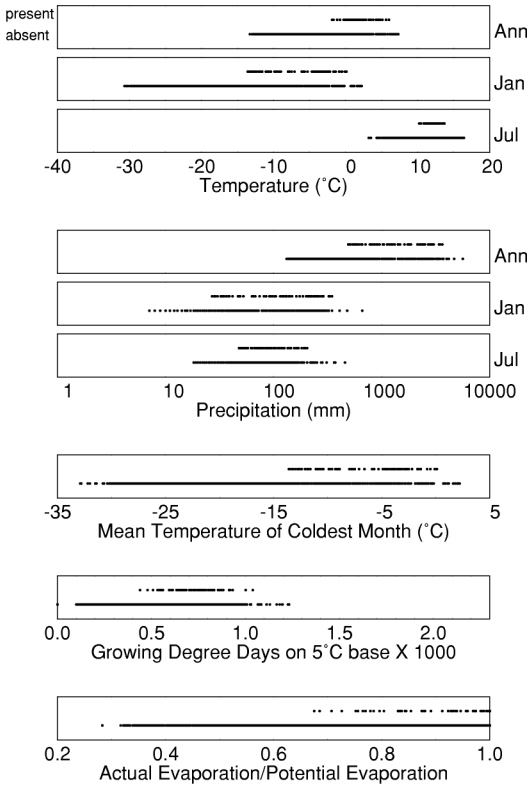


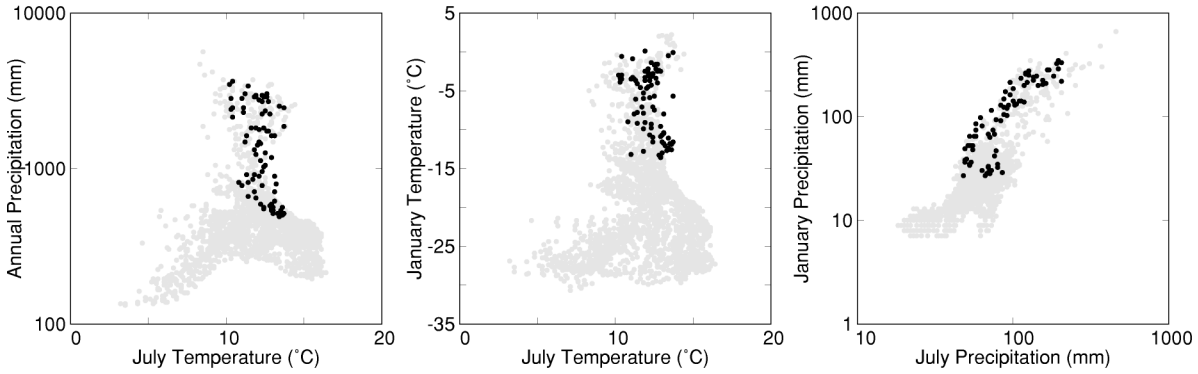


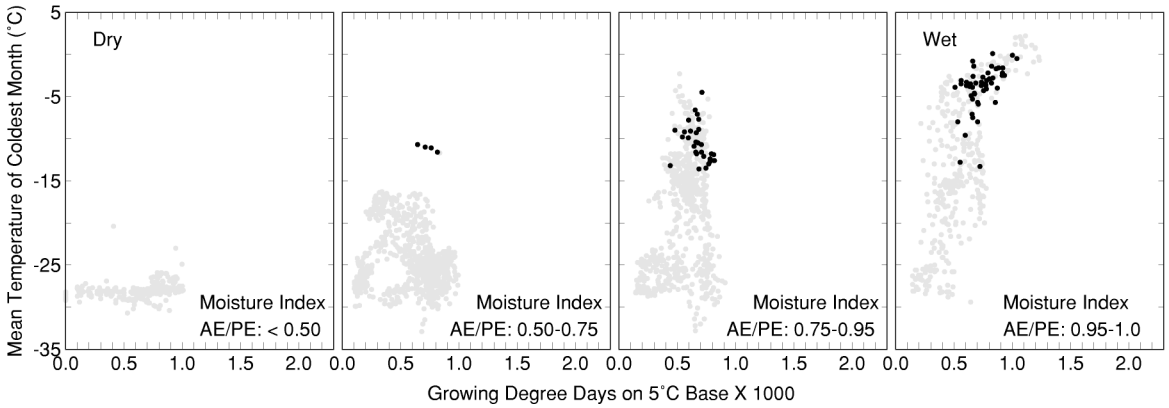


Populus trichocarpa

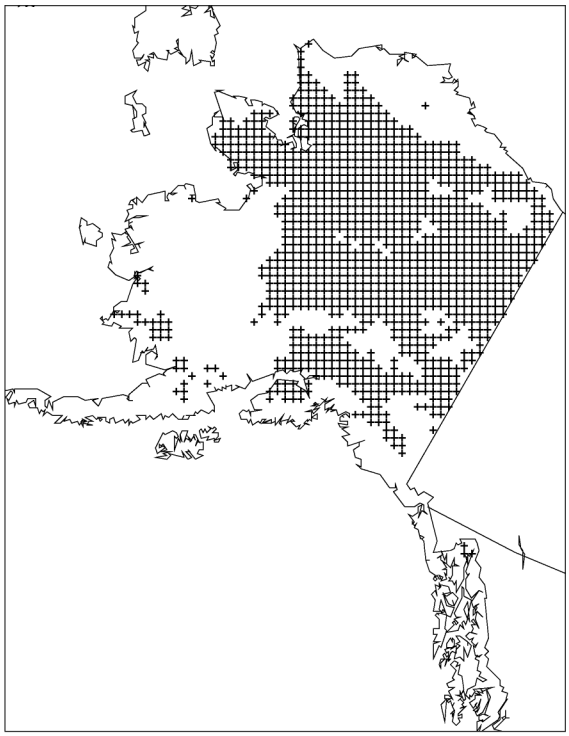


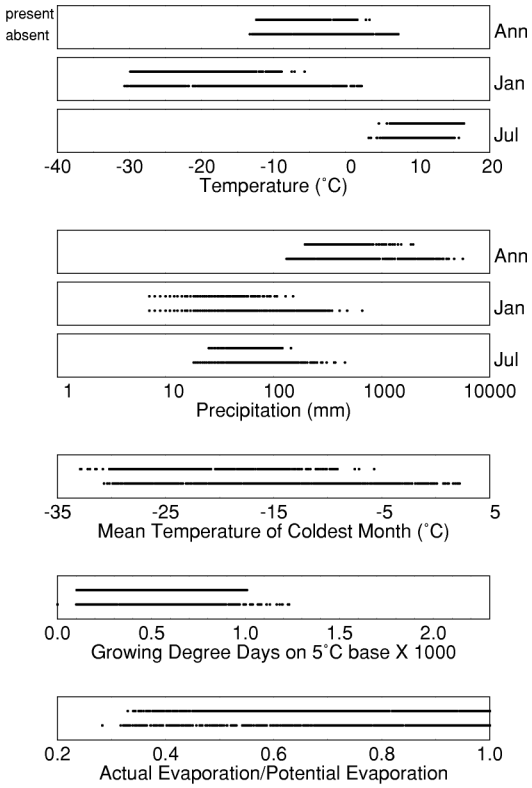


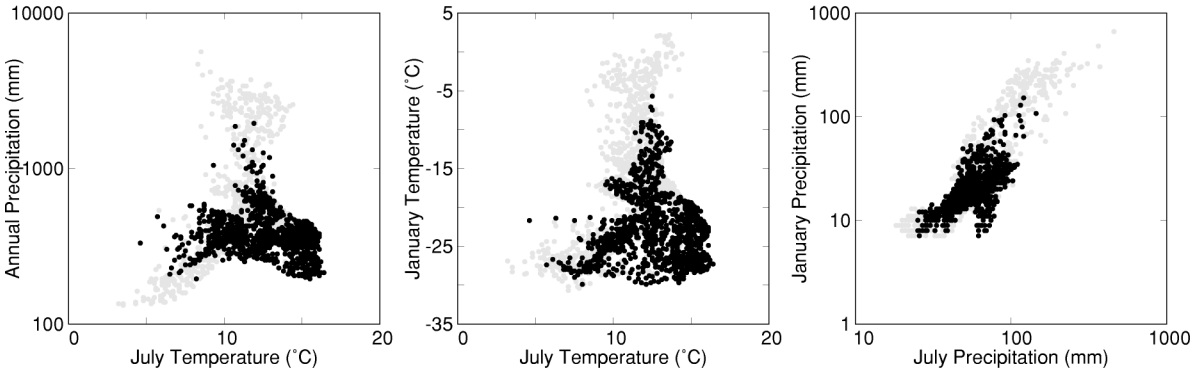


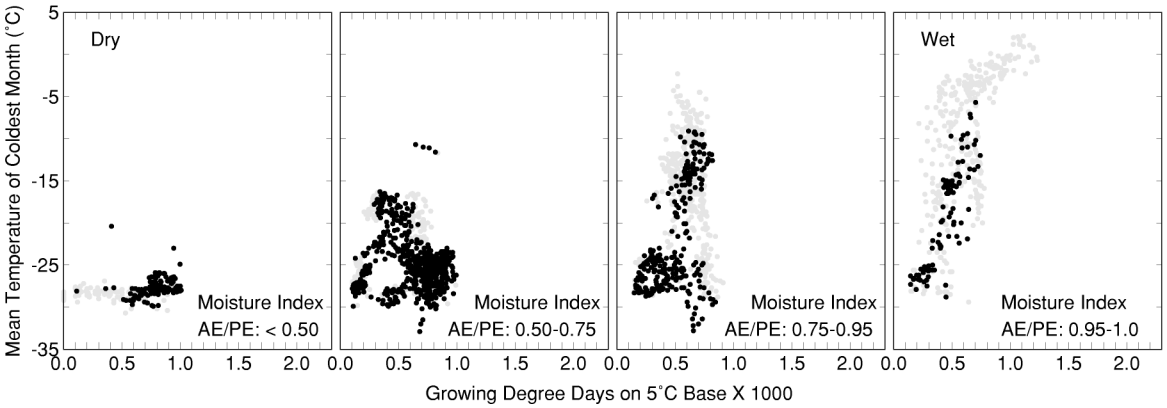


Potentilla fruticosa

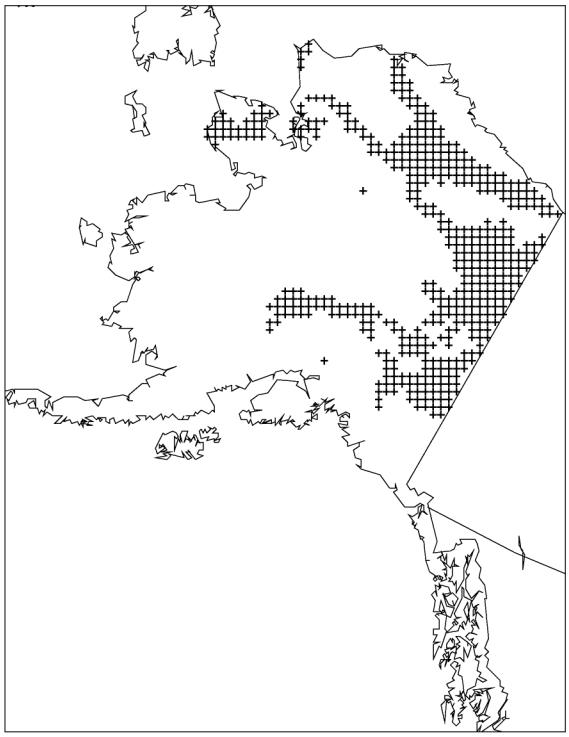


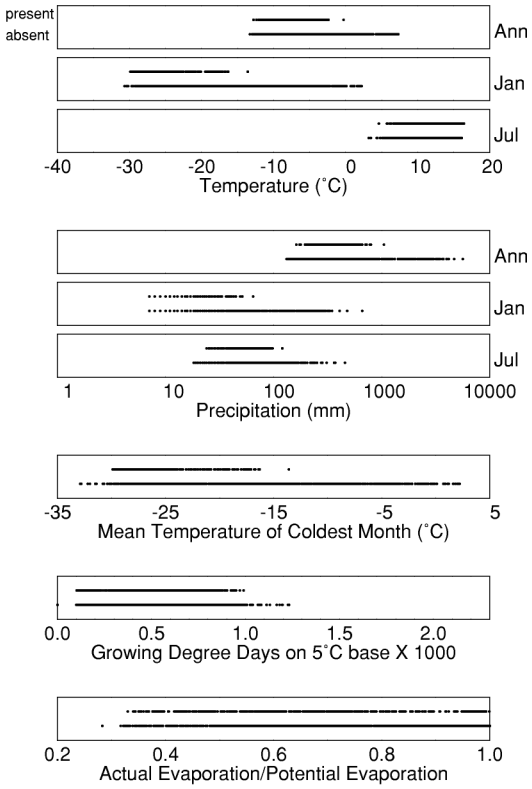


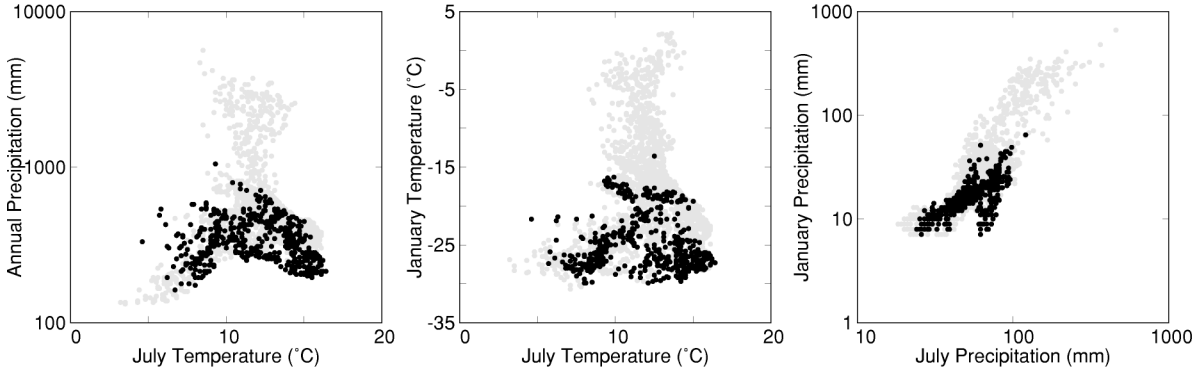


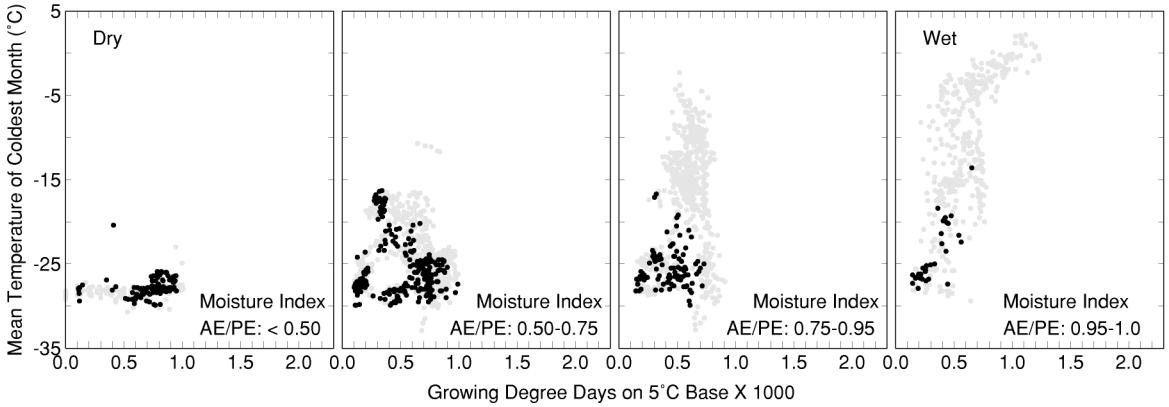


Rhododendron lapponicum

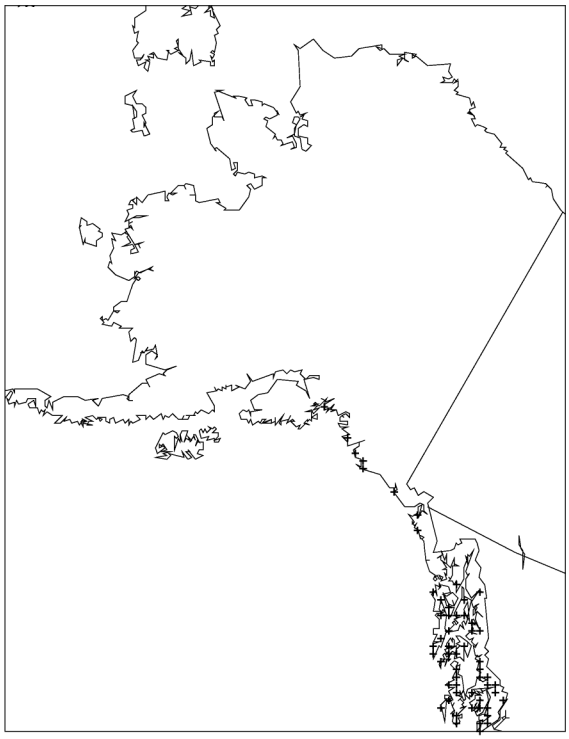


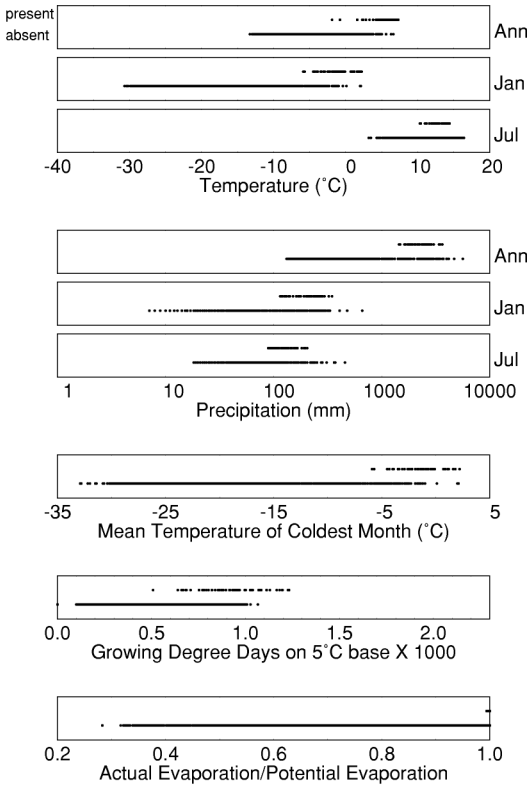


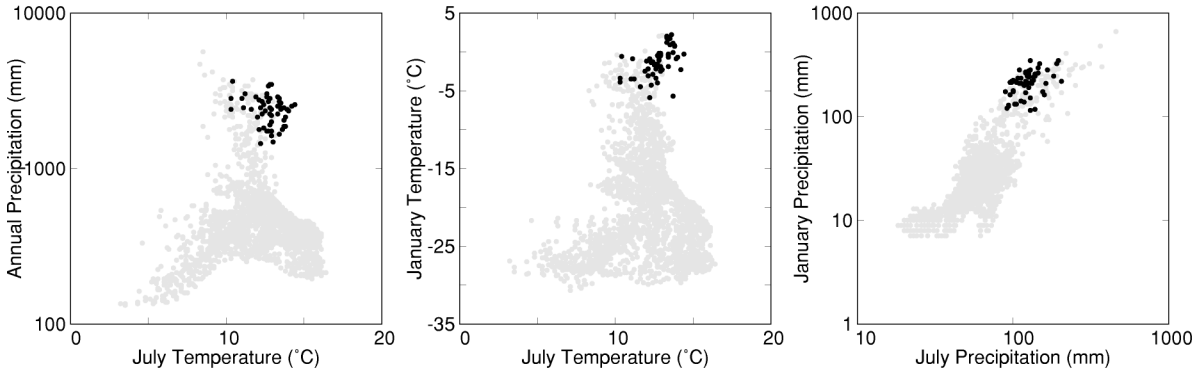


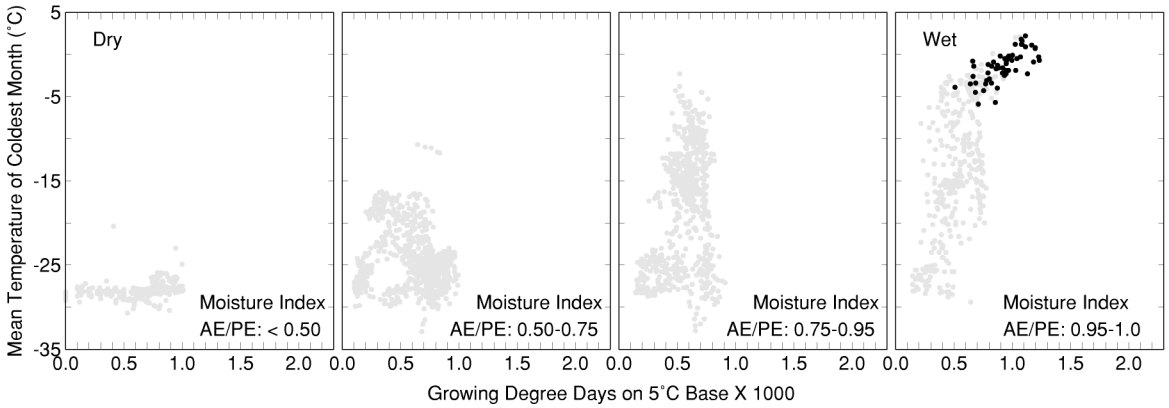


Ribes bracteosum

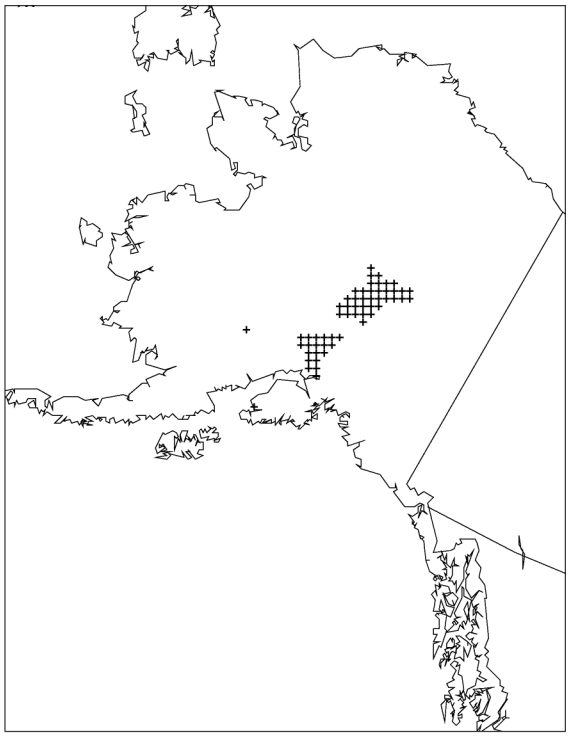


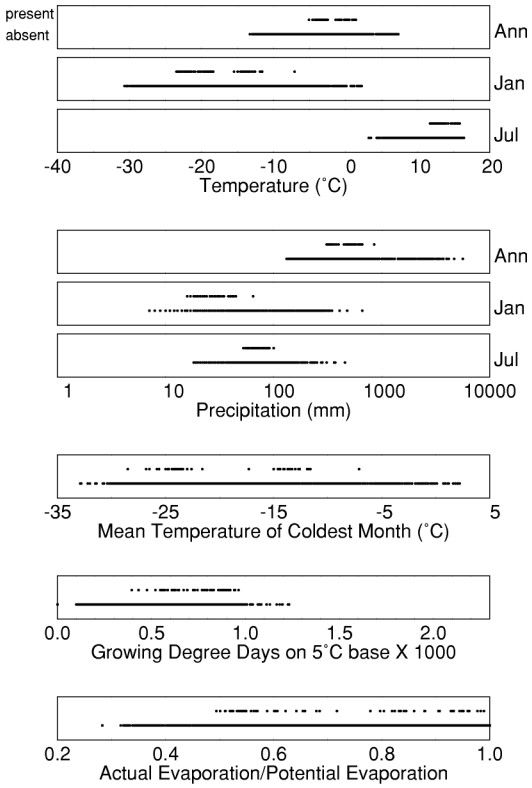


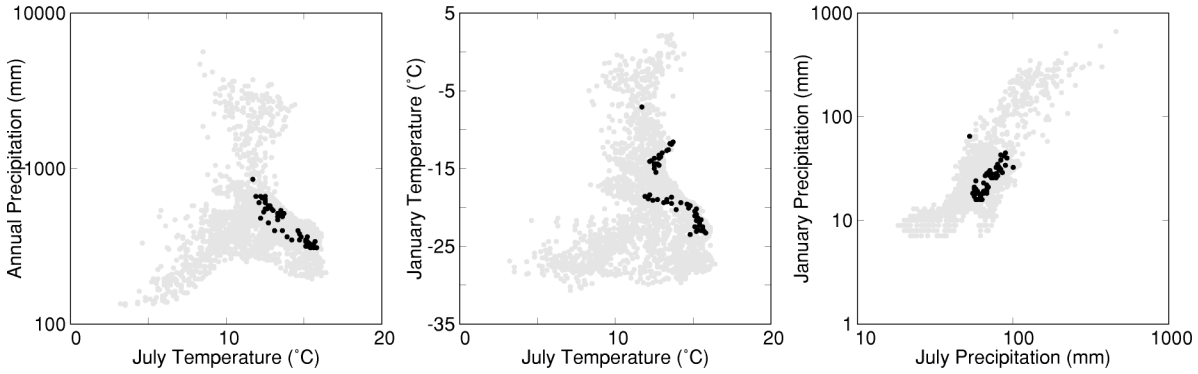


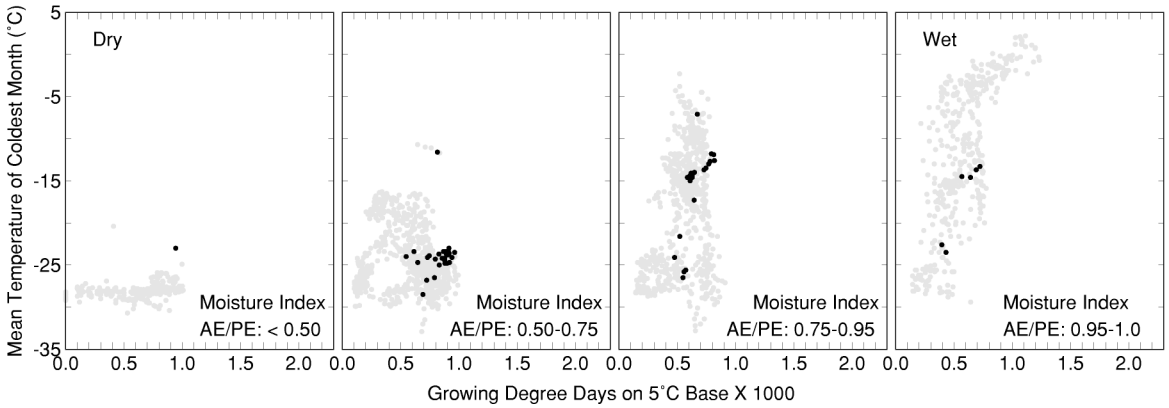


Ribes glandulosum

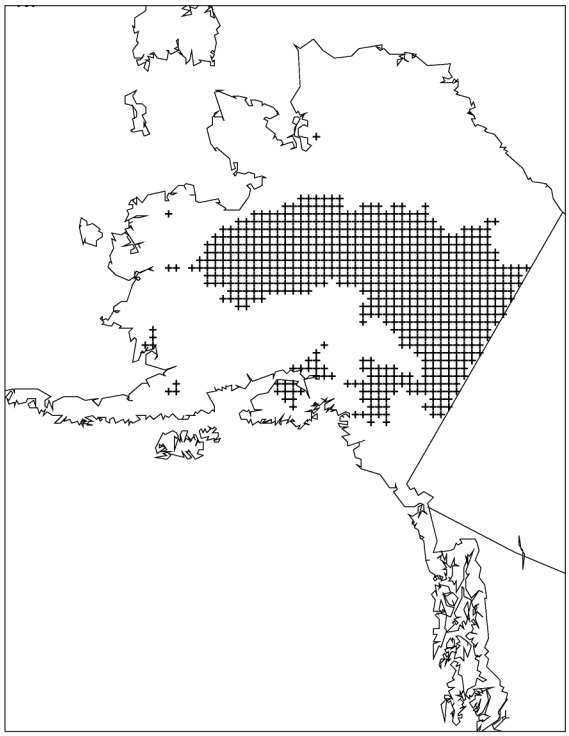


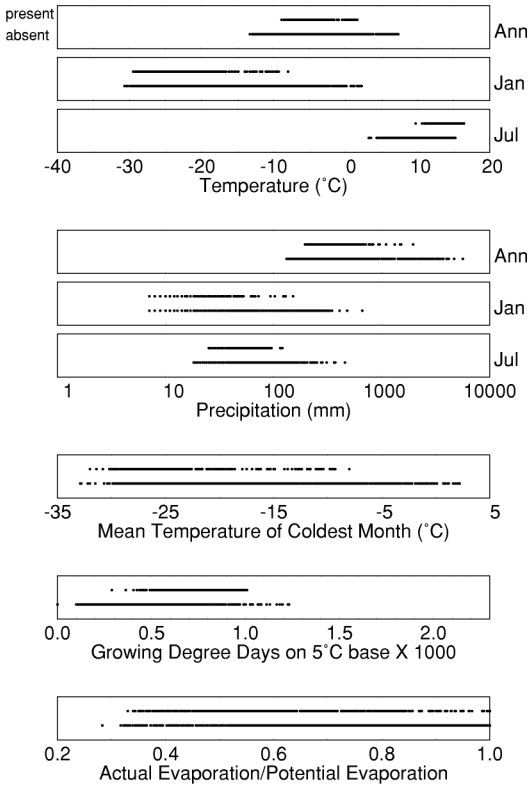


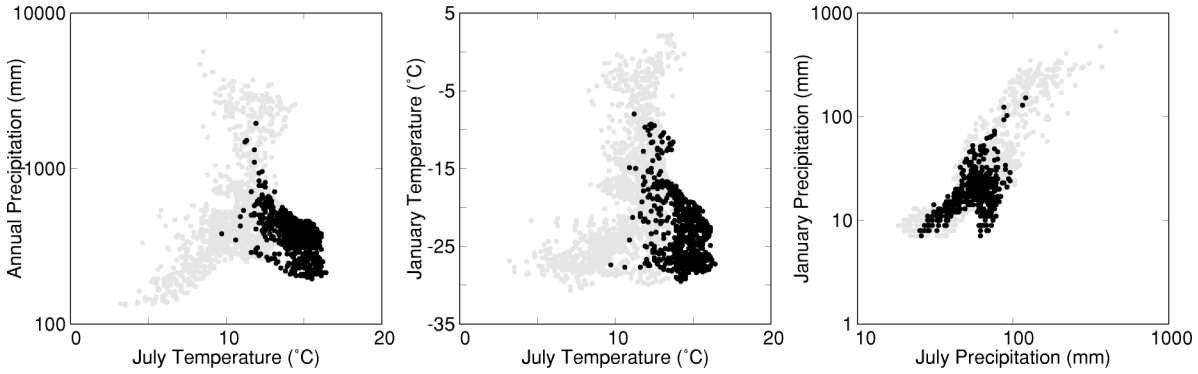


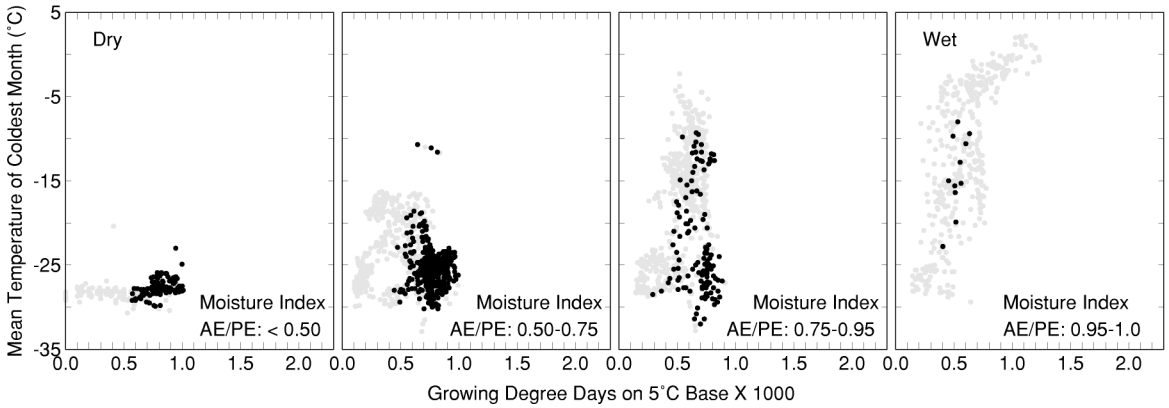


Ribes hudsonianum

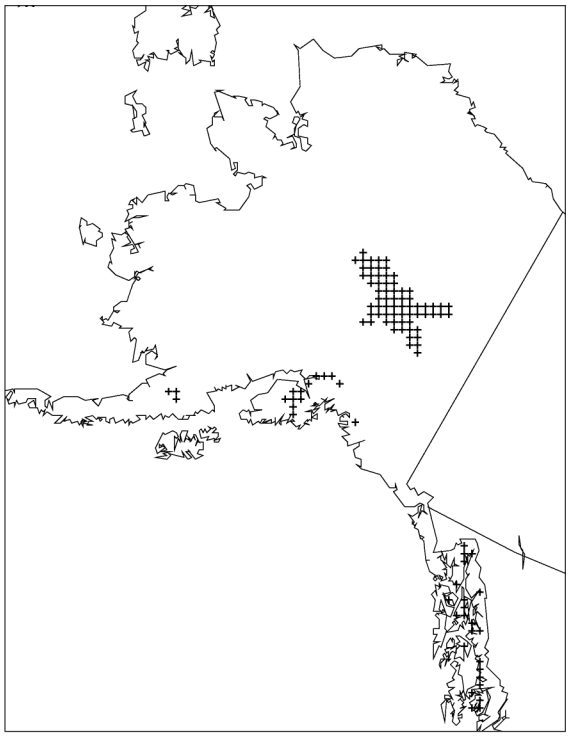


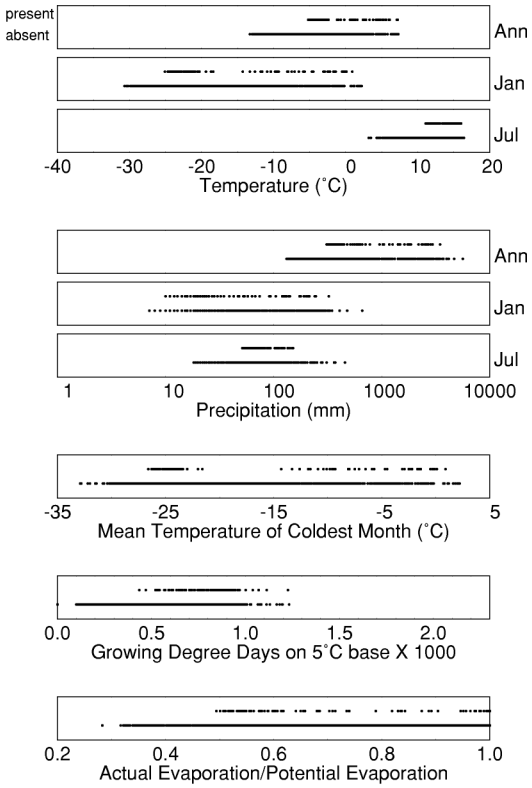


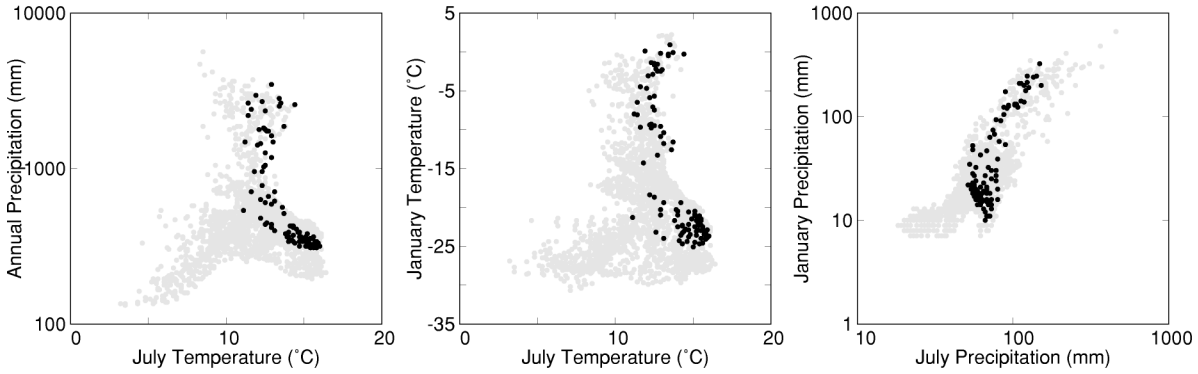


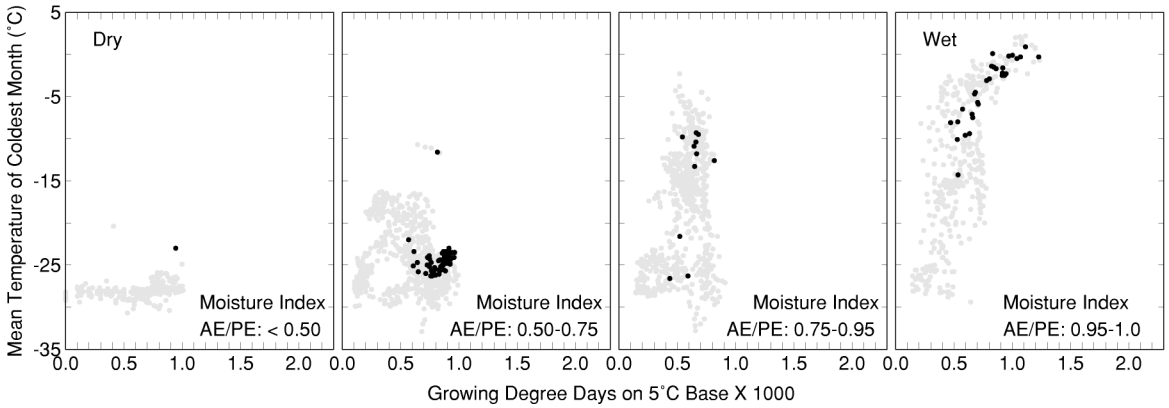


Ribes lacustre

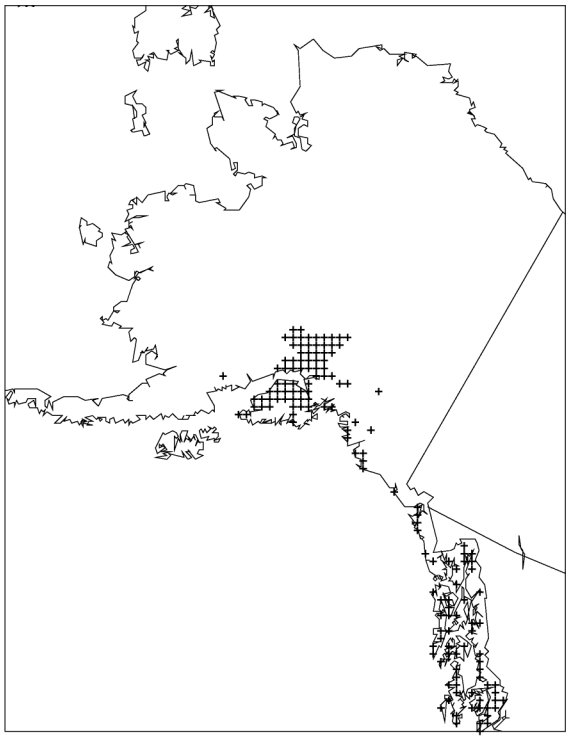


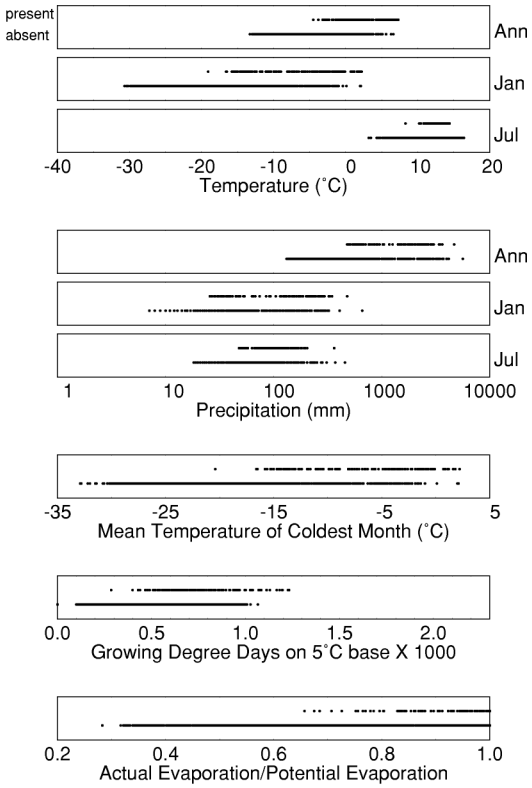


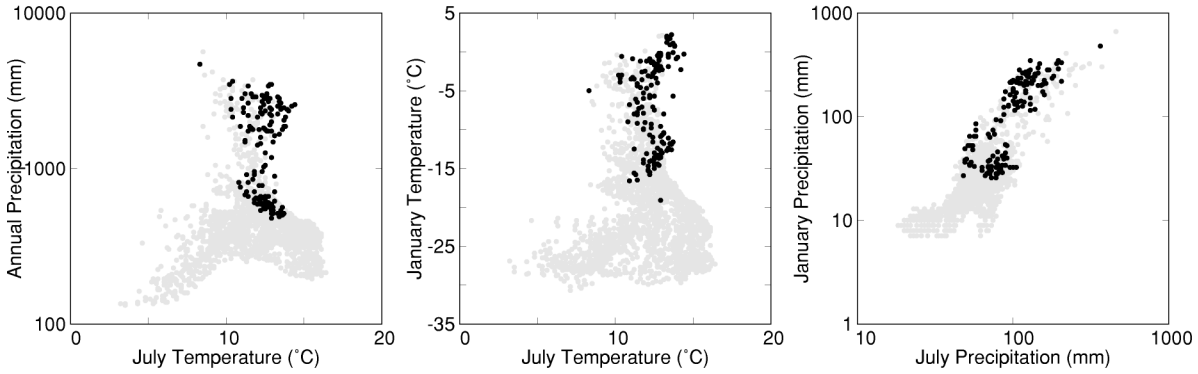


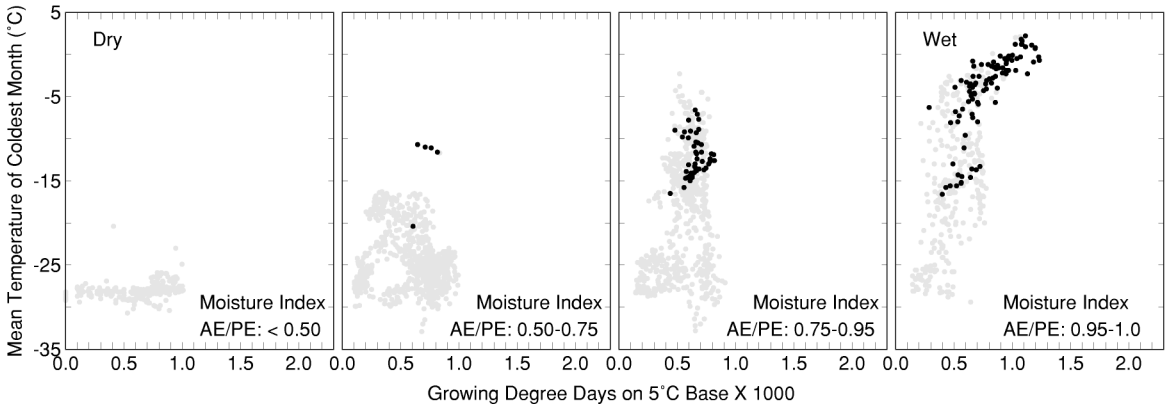


Ribes laxiflorum

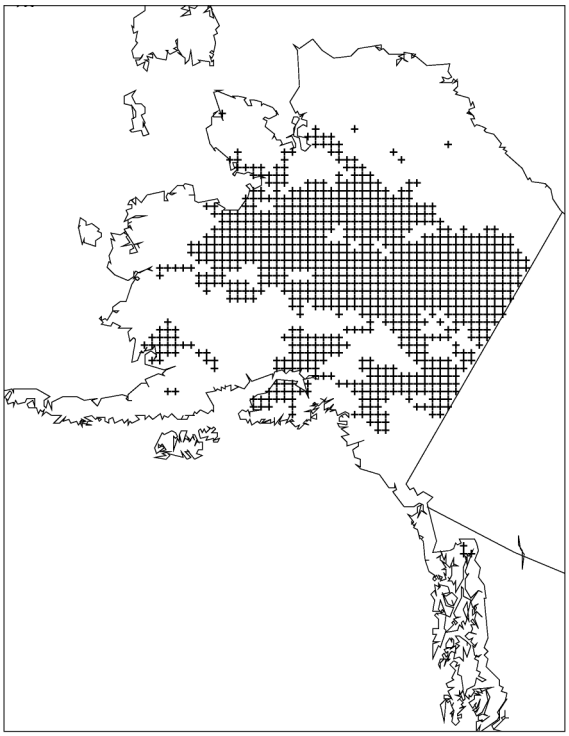


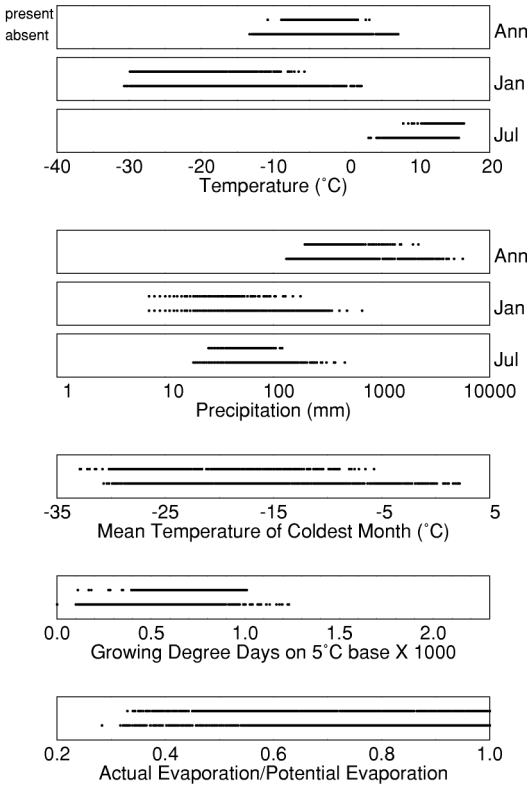


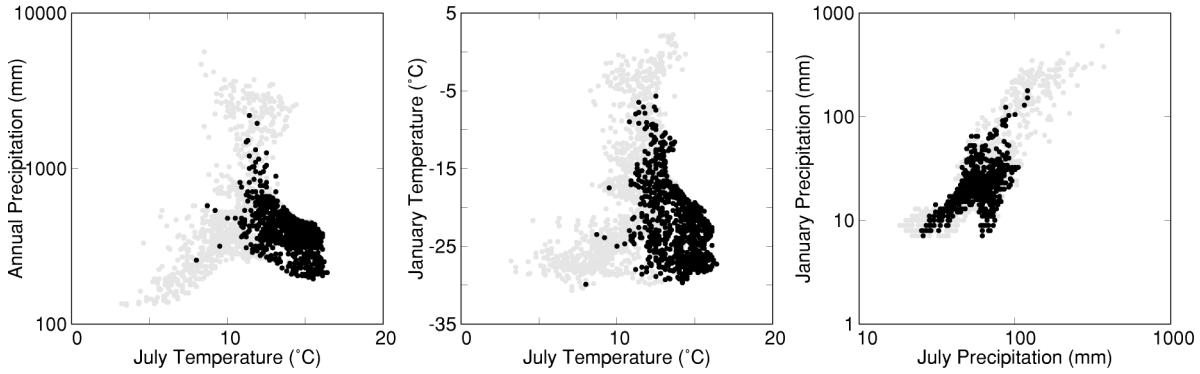


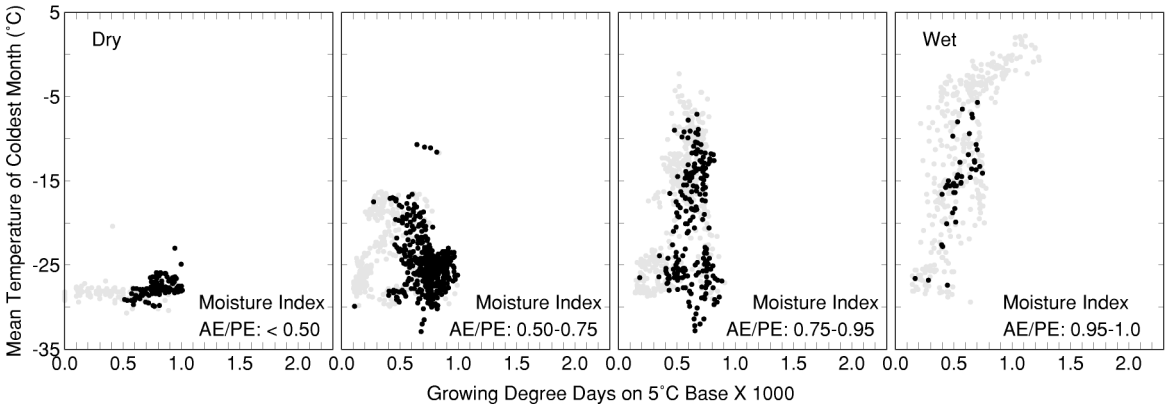


Ribes triste

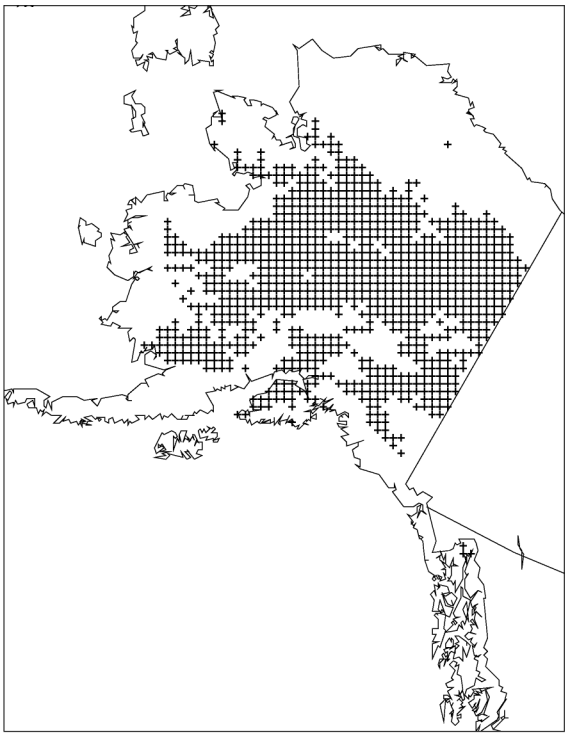


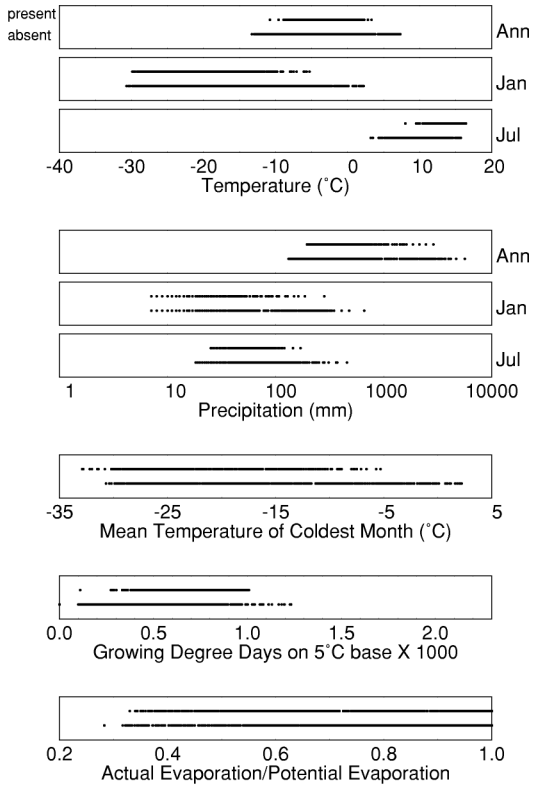


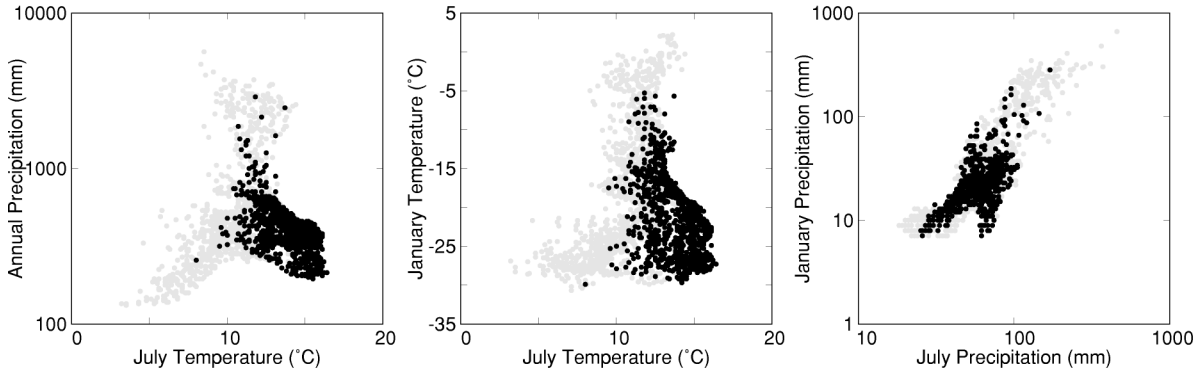


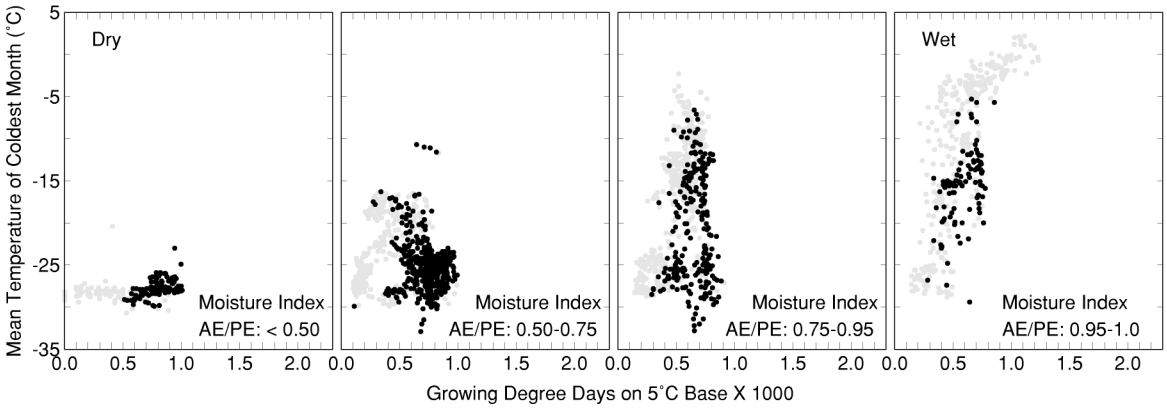


Rosa acicularis

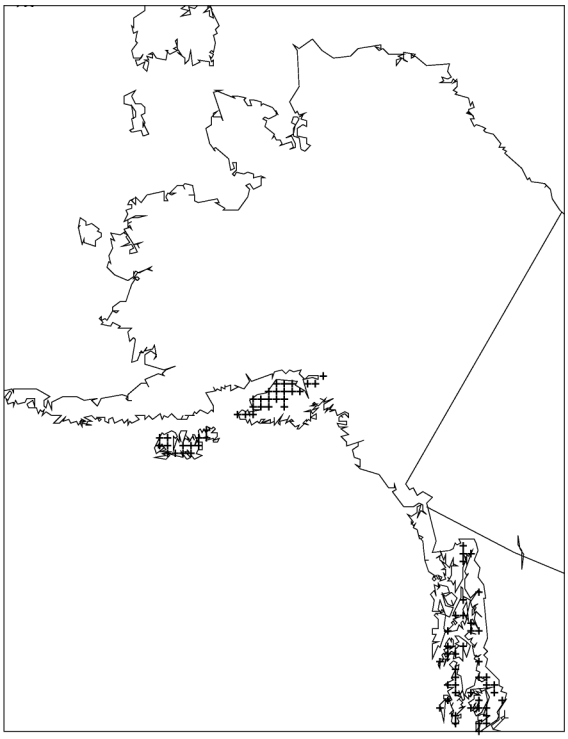


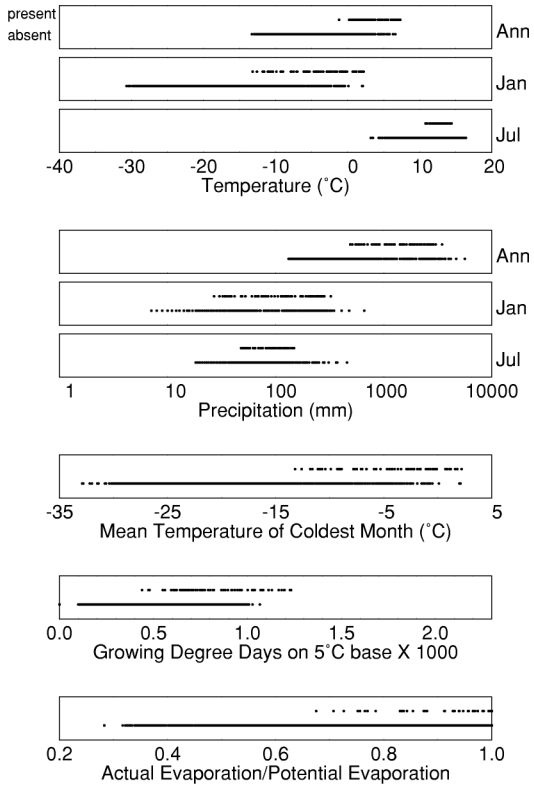


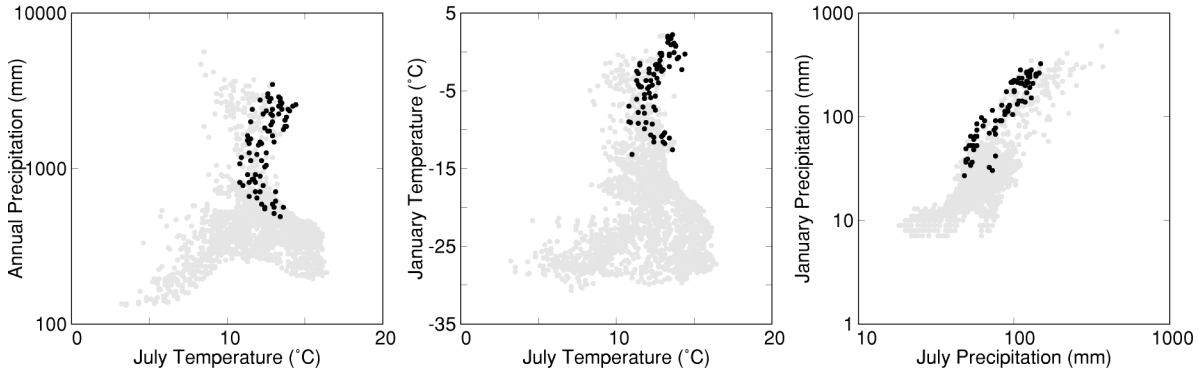


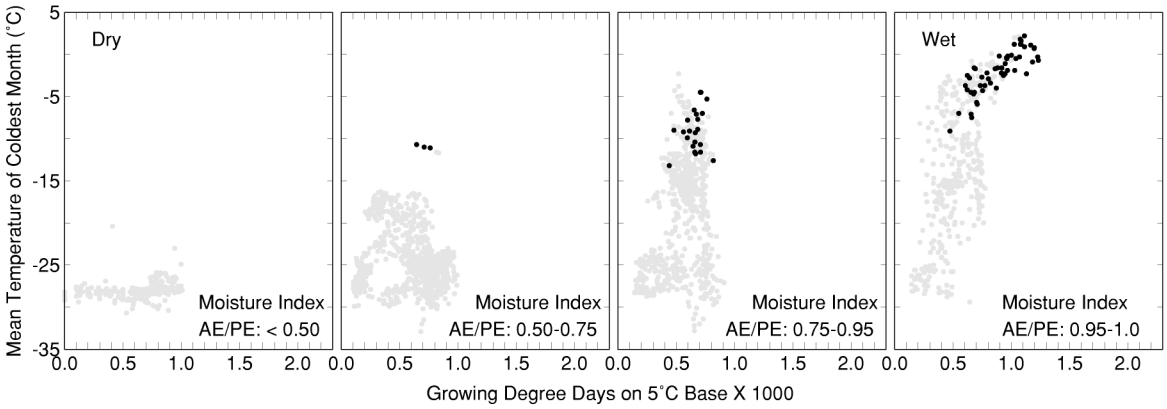


Rosa nutkana

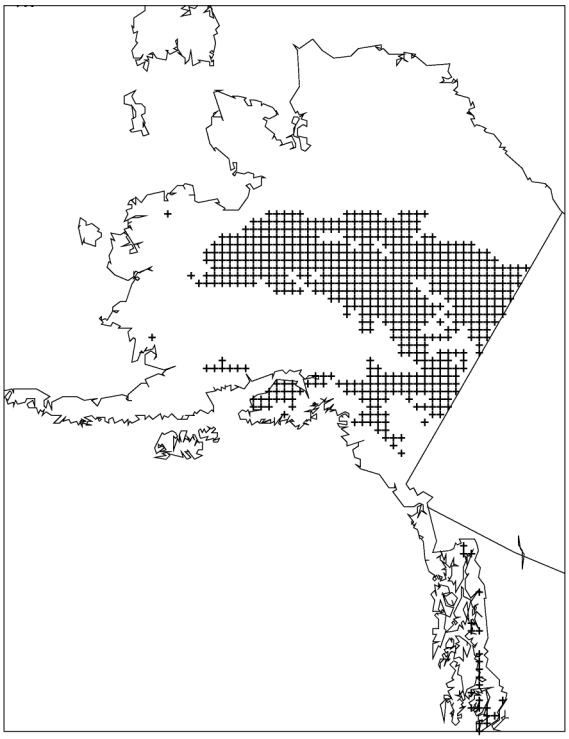


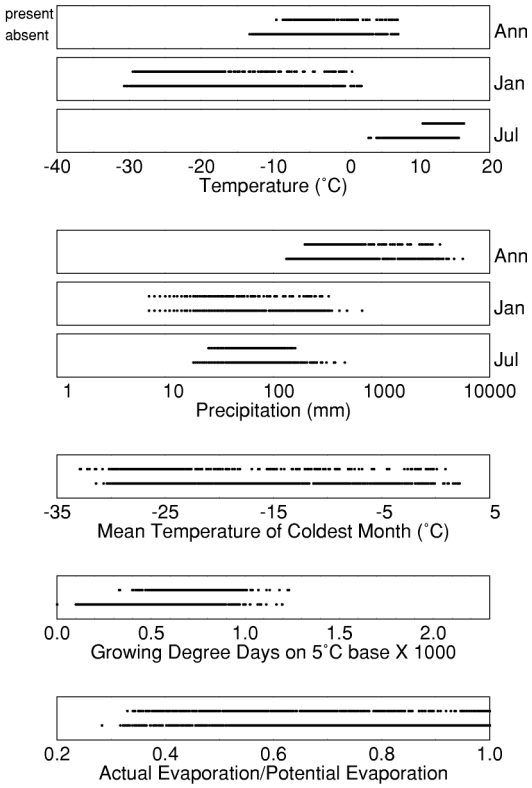


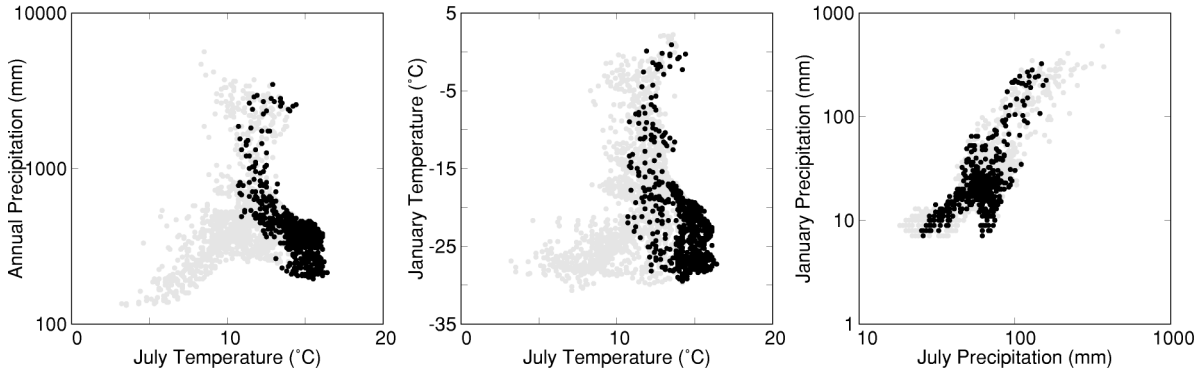


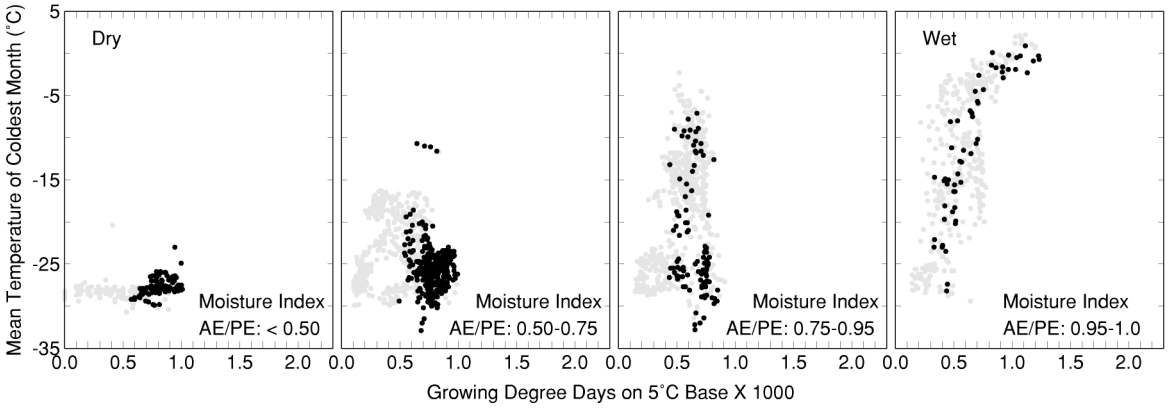


Rubus idaeus var. strigosus

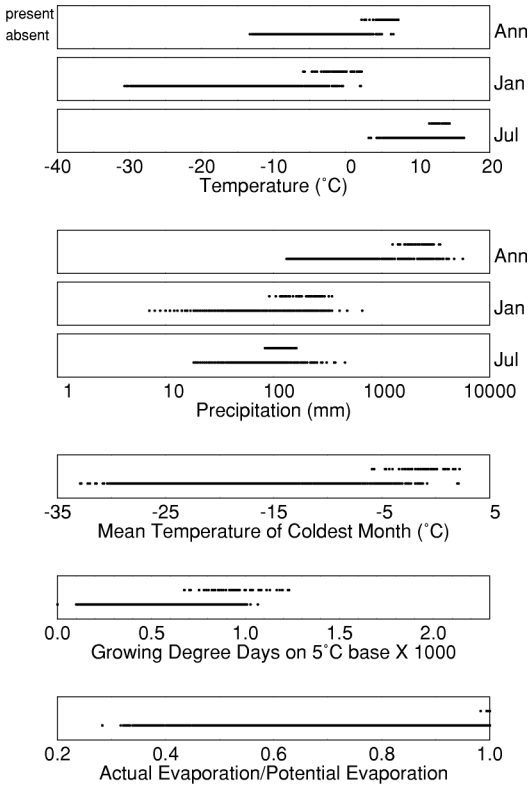


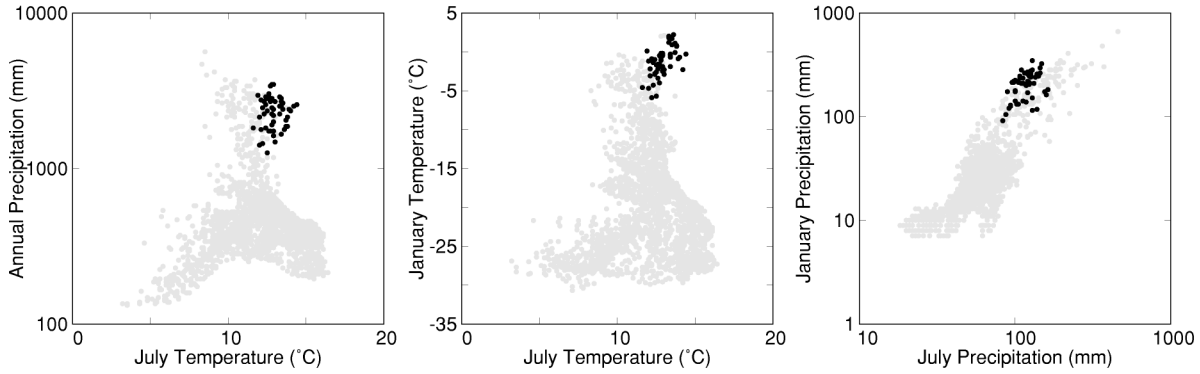


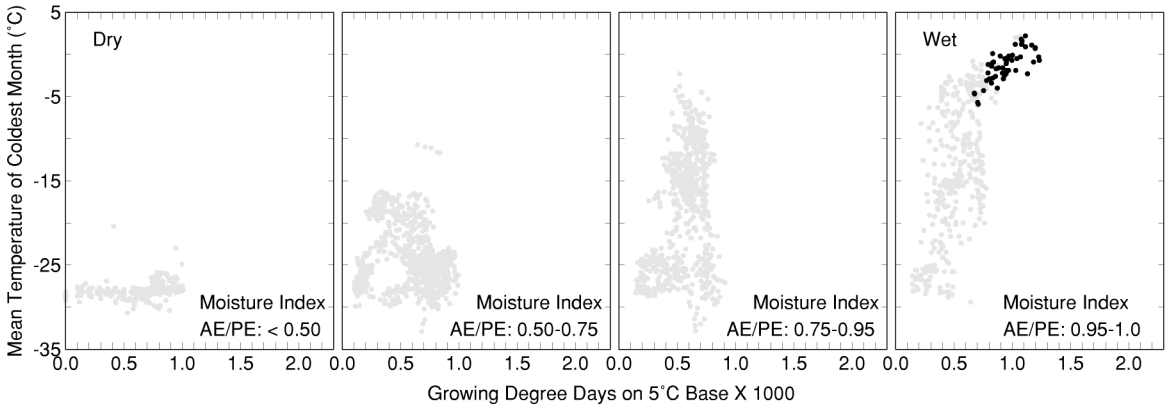




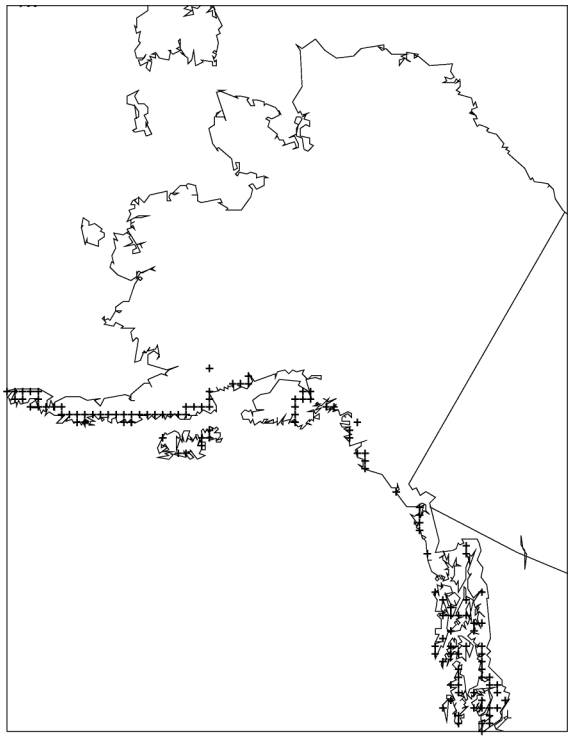
Rubus parviflorus

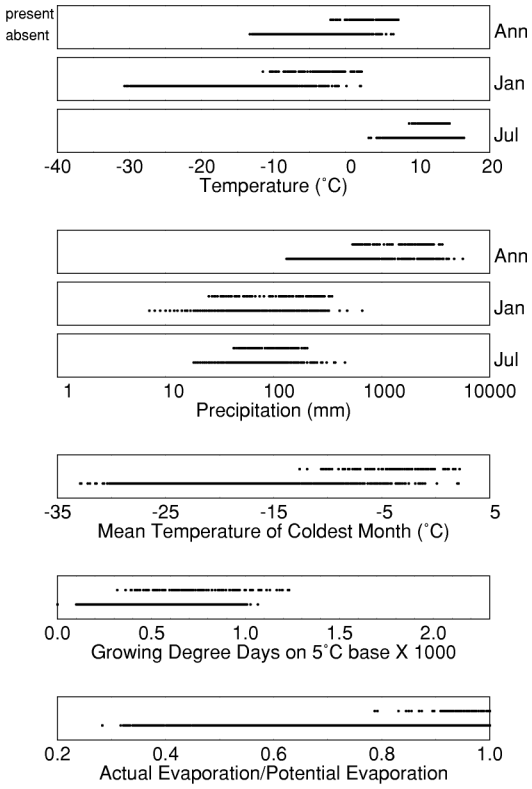


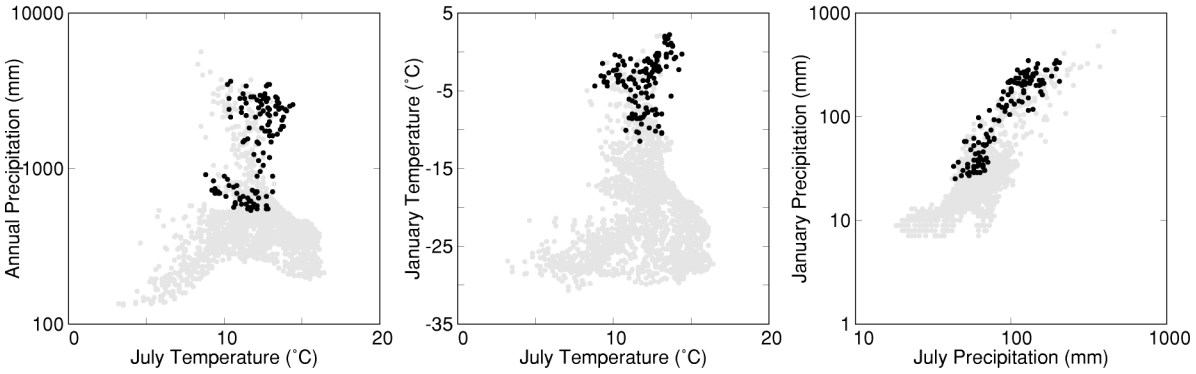


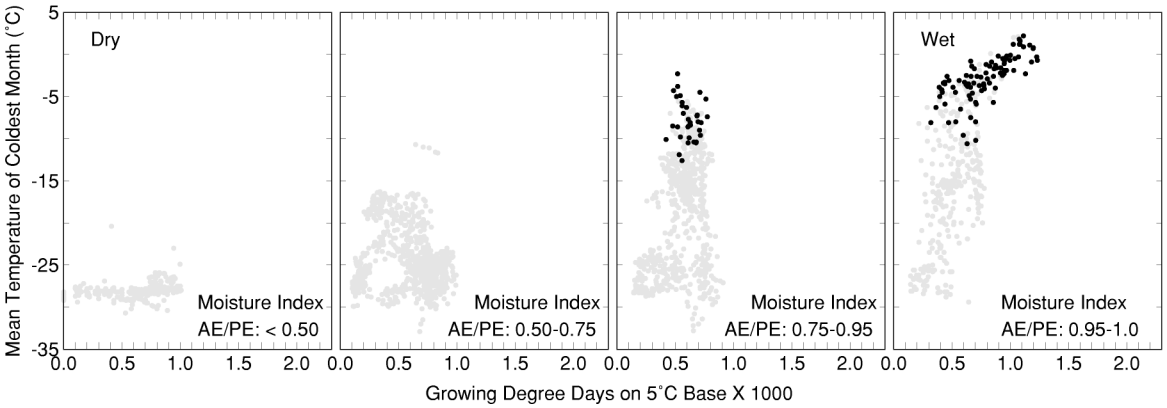


Rubus spectabilis

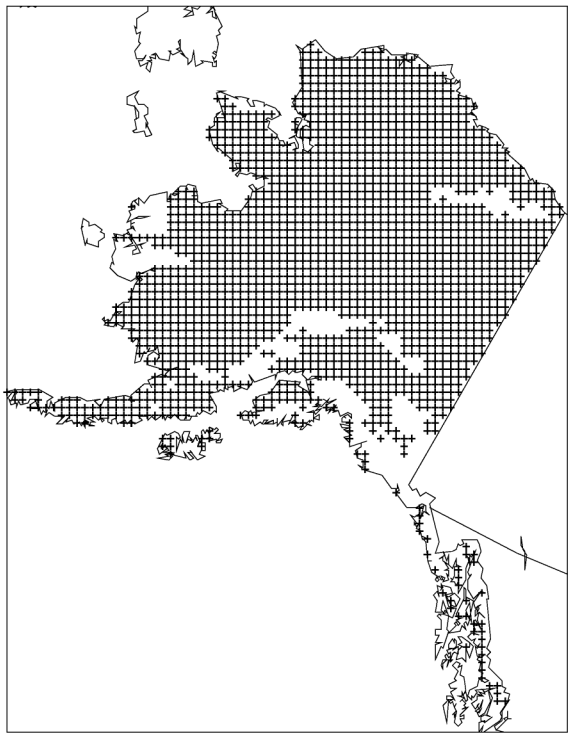


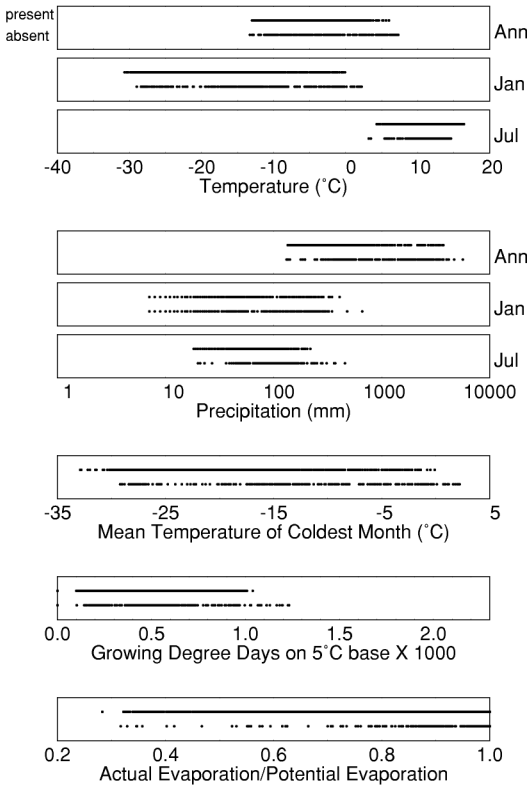


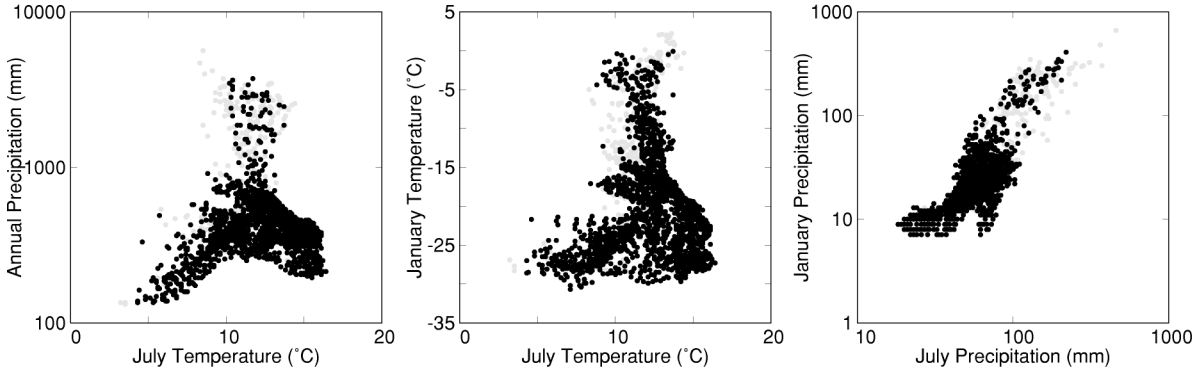


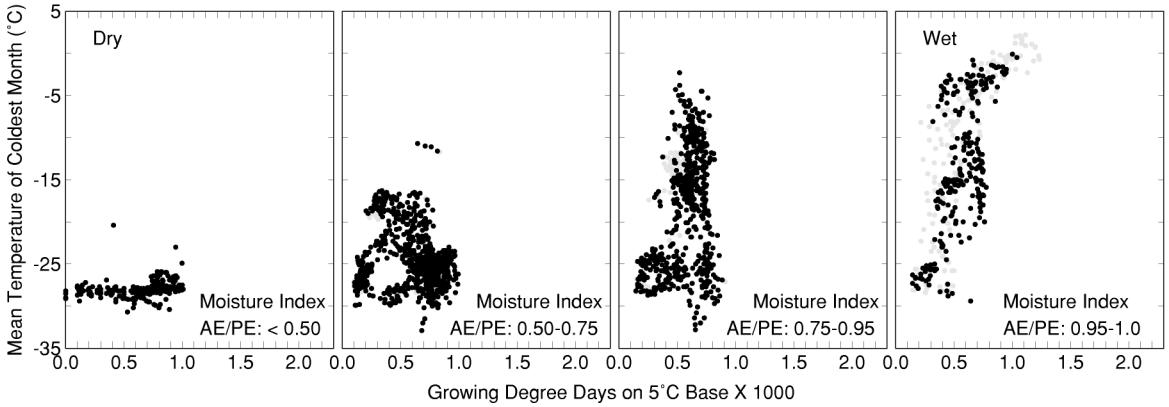


Salix alaxensis

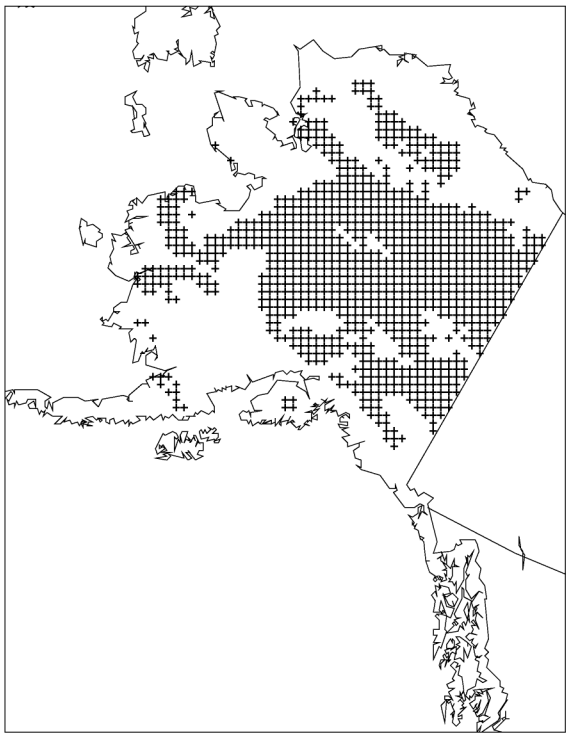


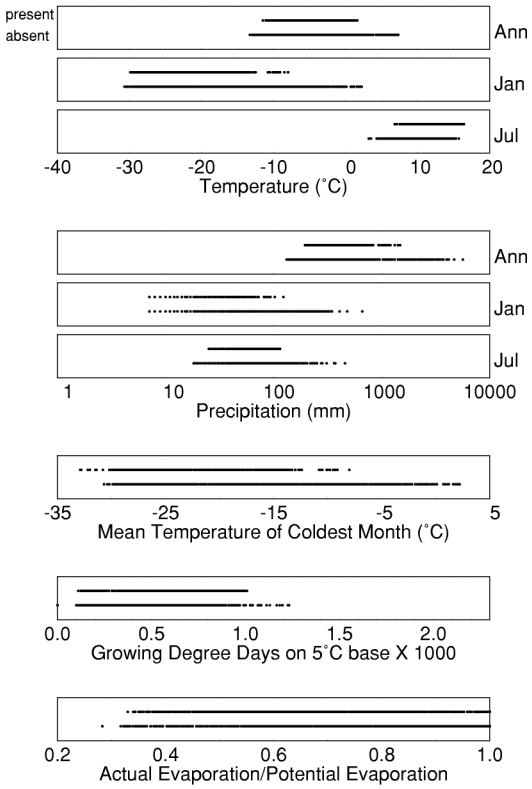


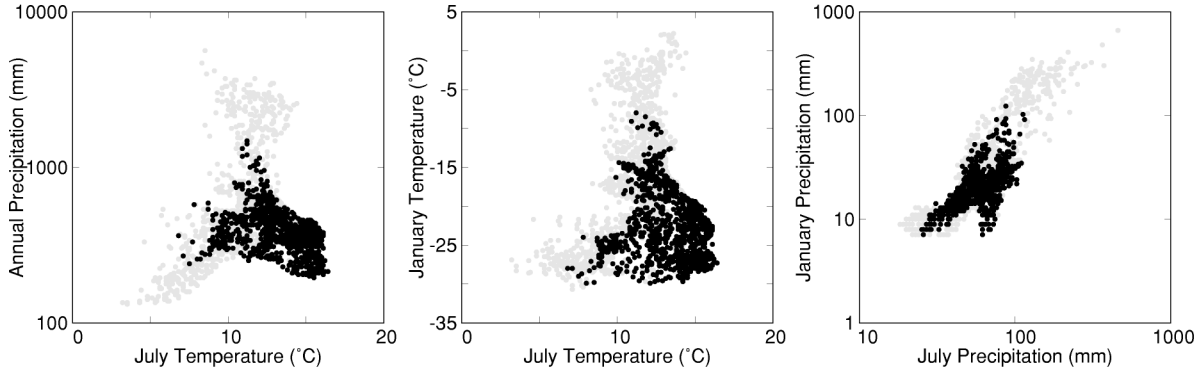


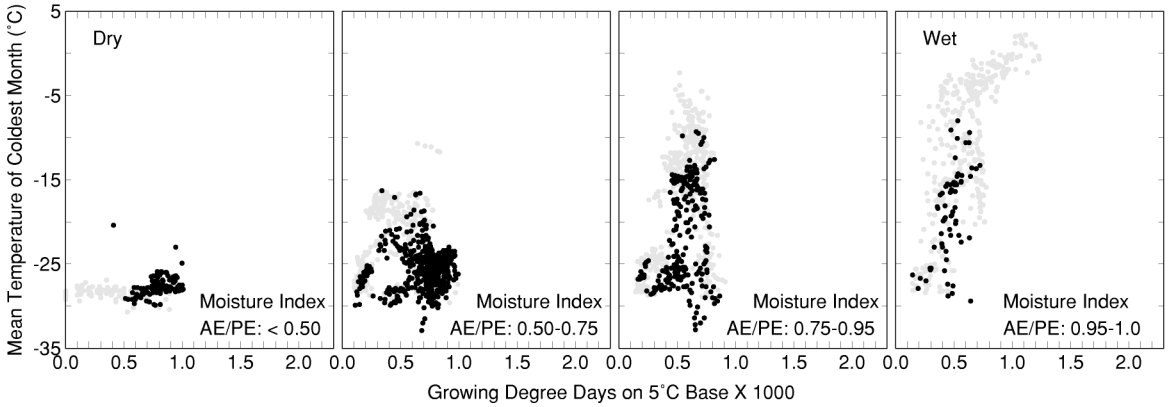


Salix arbusculoides

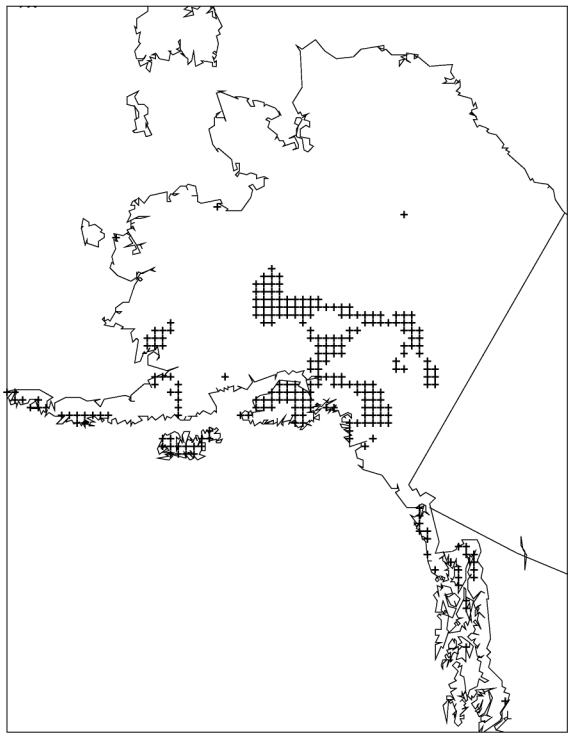


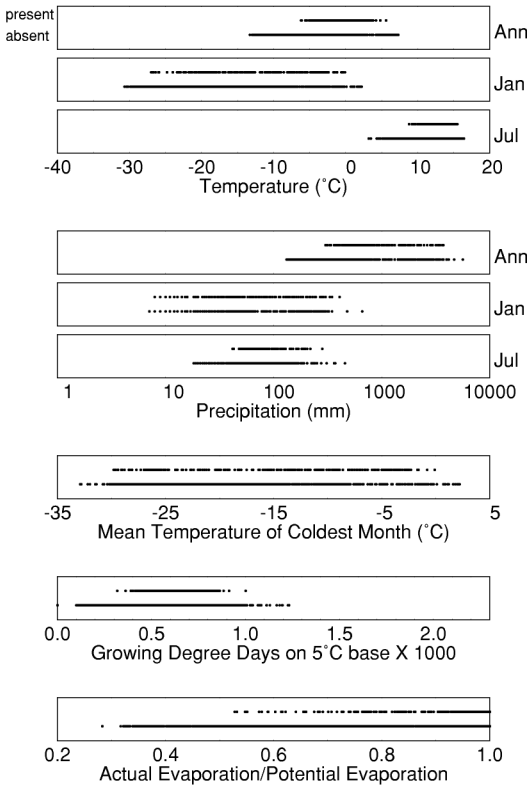


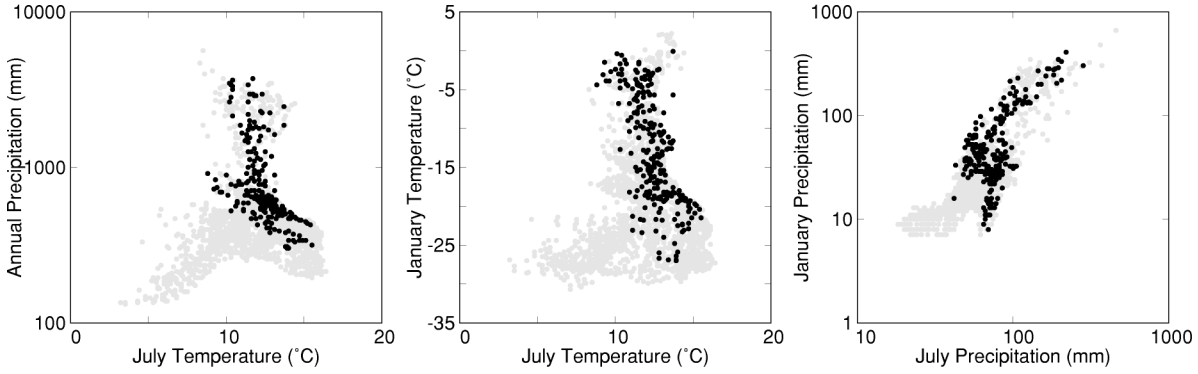


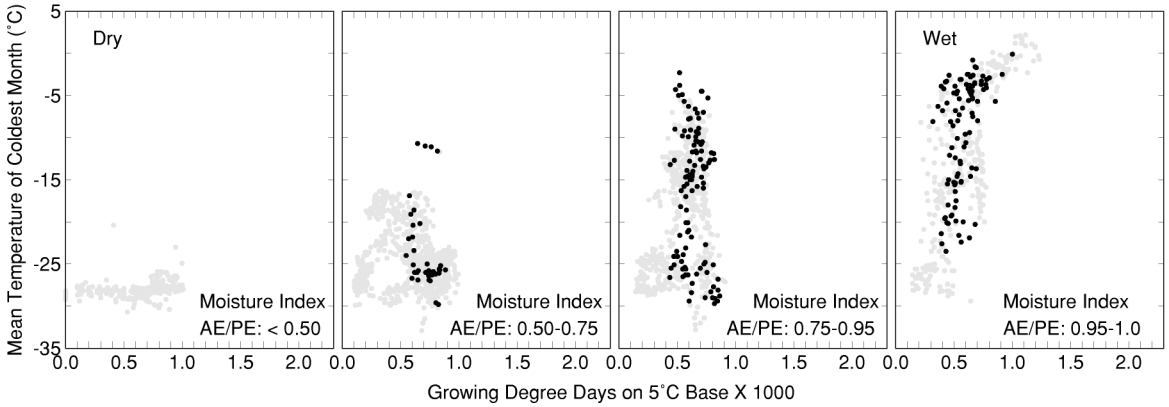


Salix barclayi

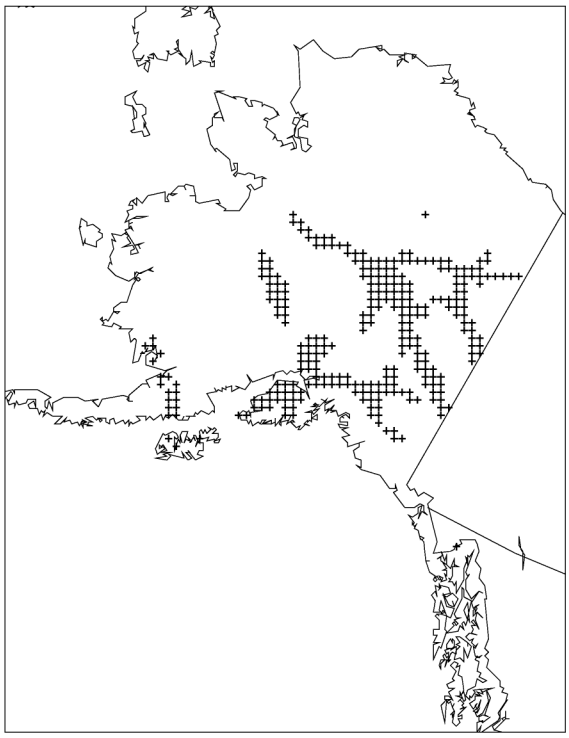


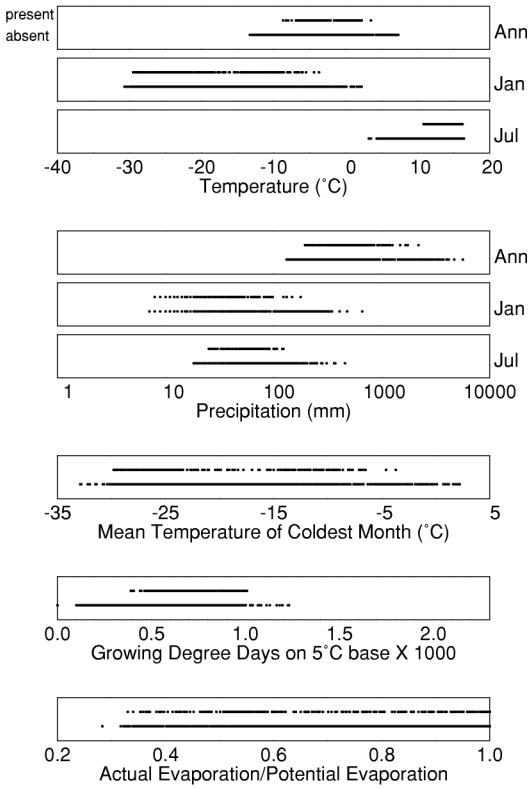


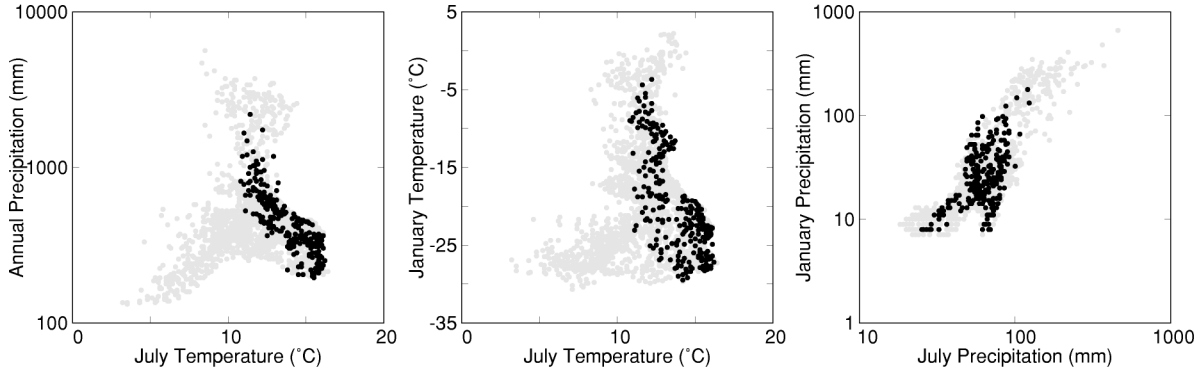


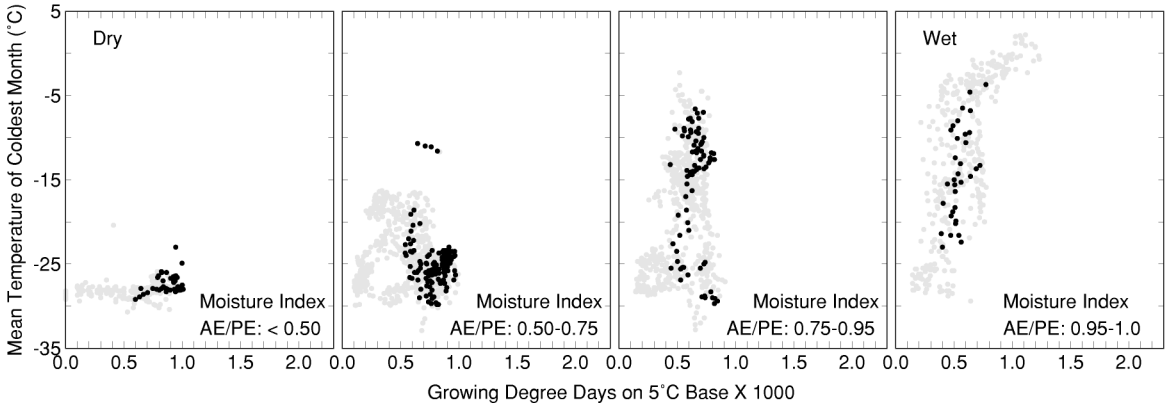


Salix bebbiana

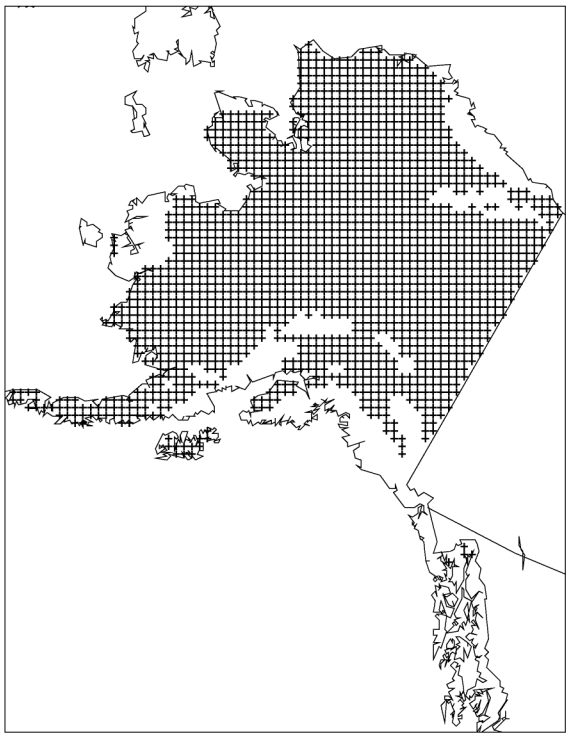


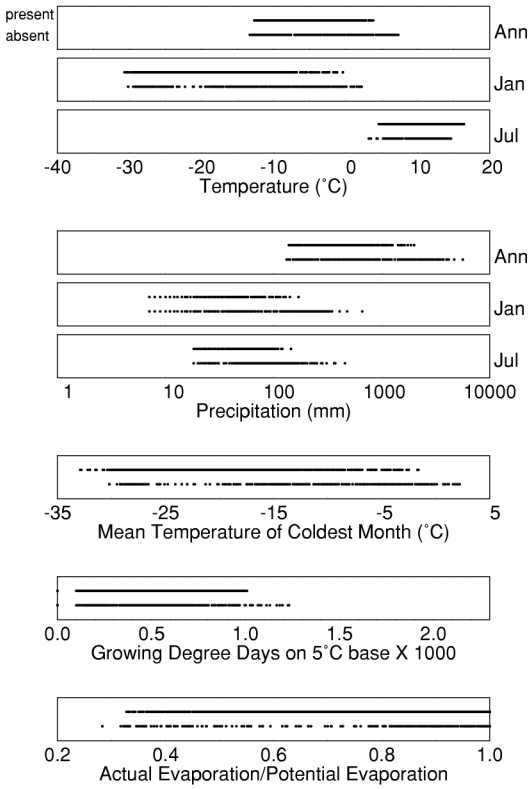


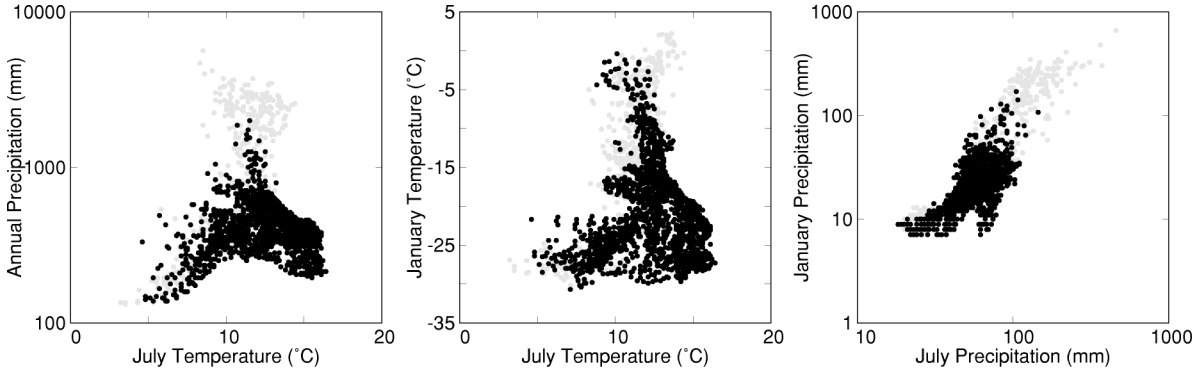


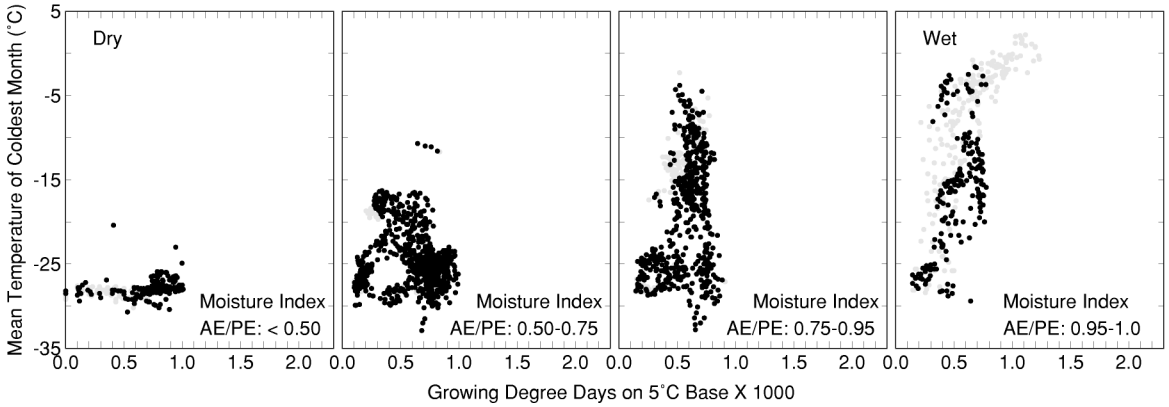


Salix glauca

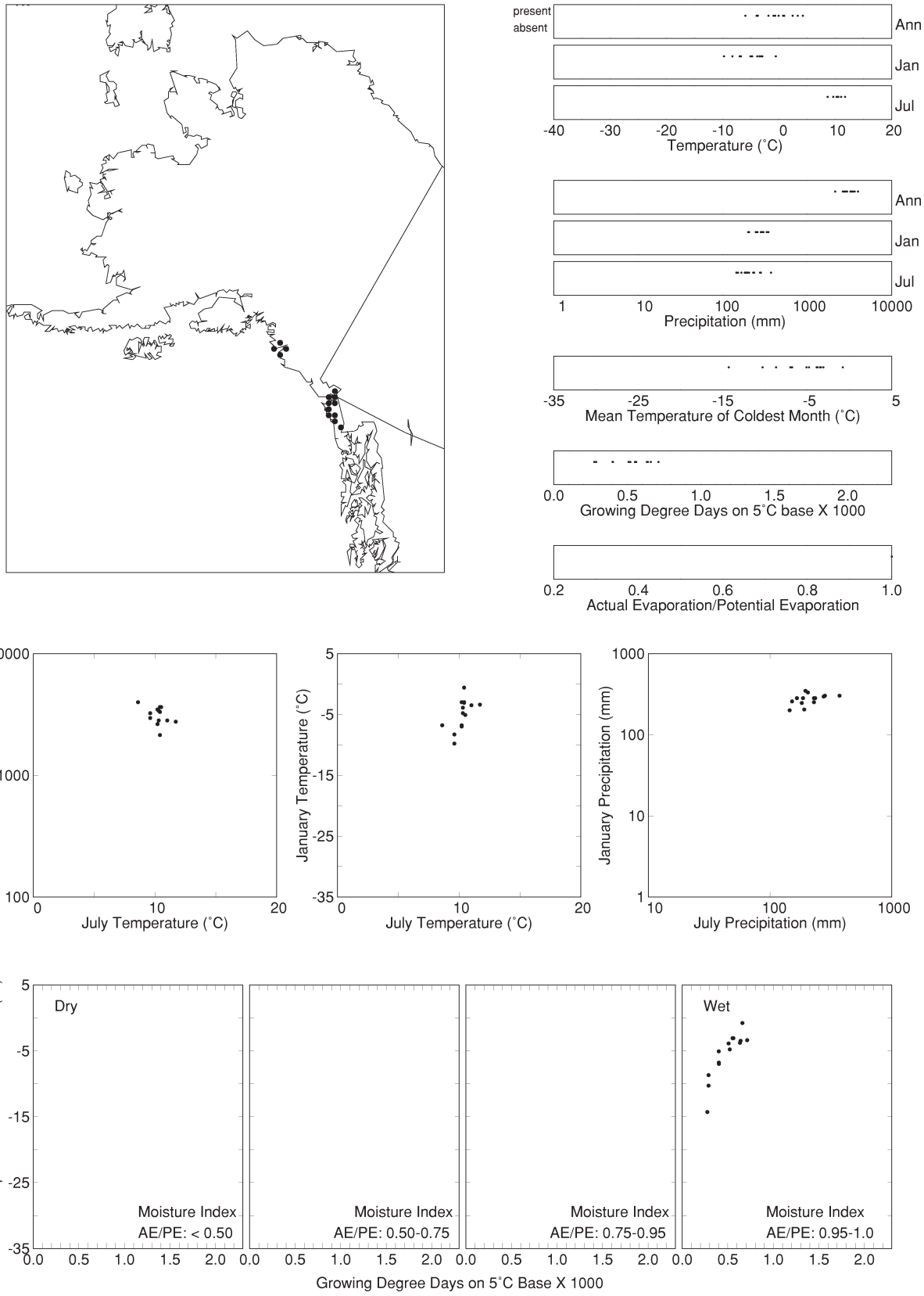




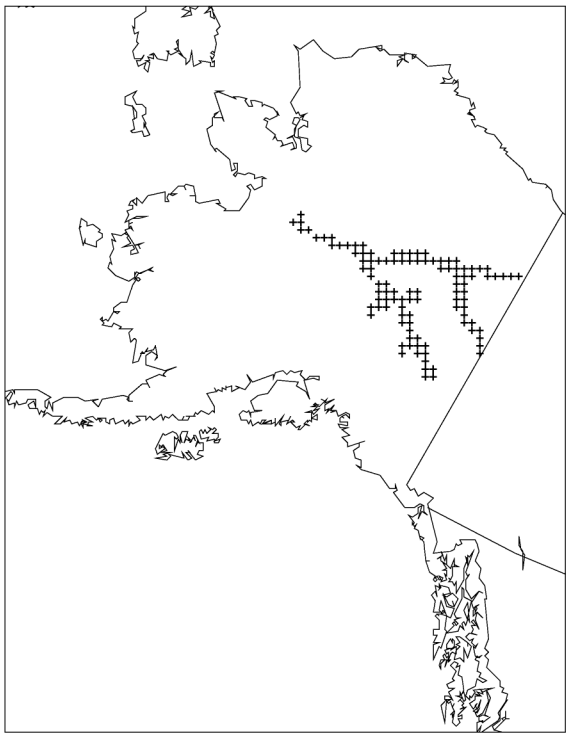


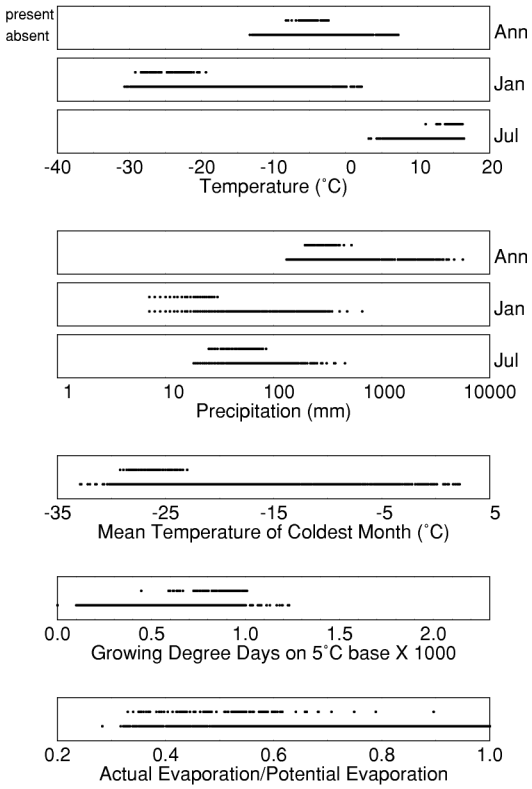


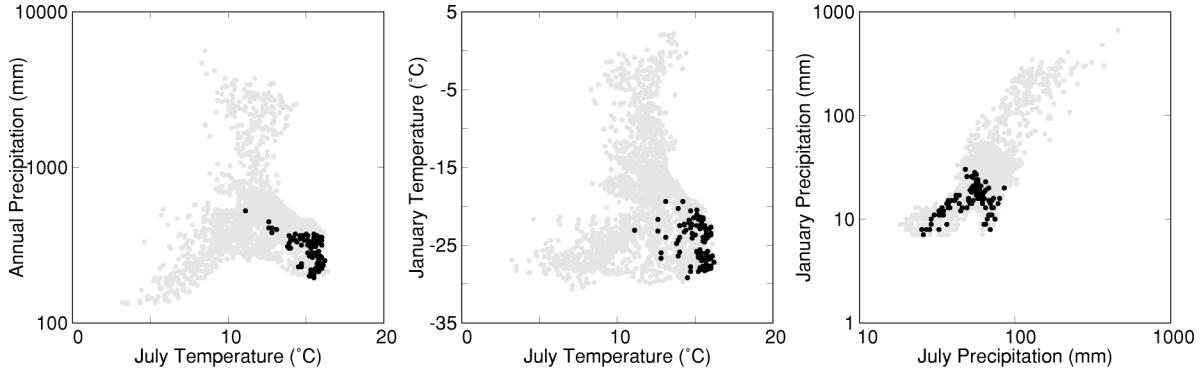
Salix hookeriana (minimal data - nearest grid points used with environmental parameters)

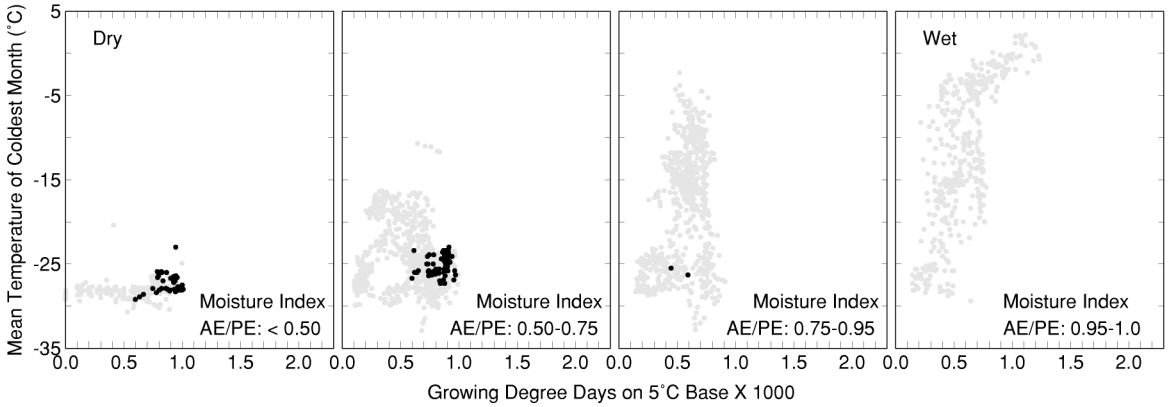


Salix interior

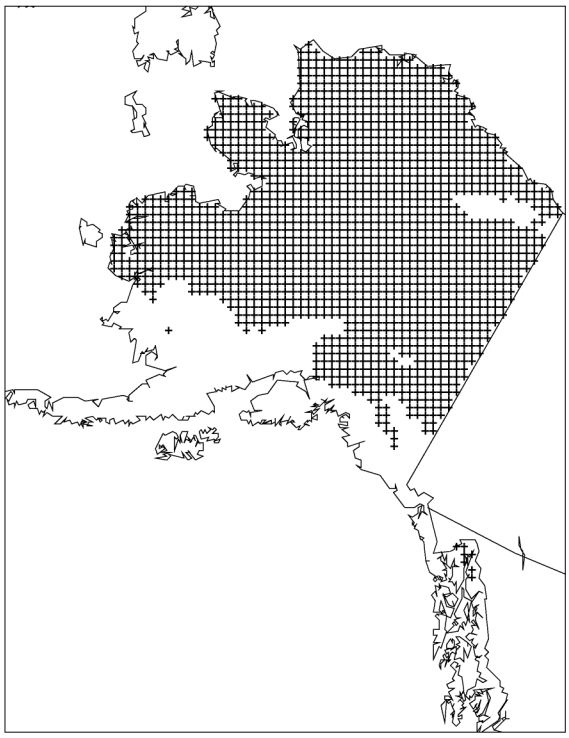


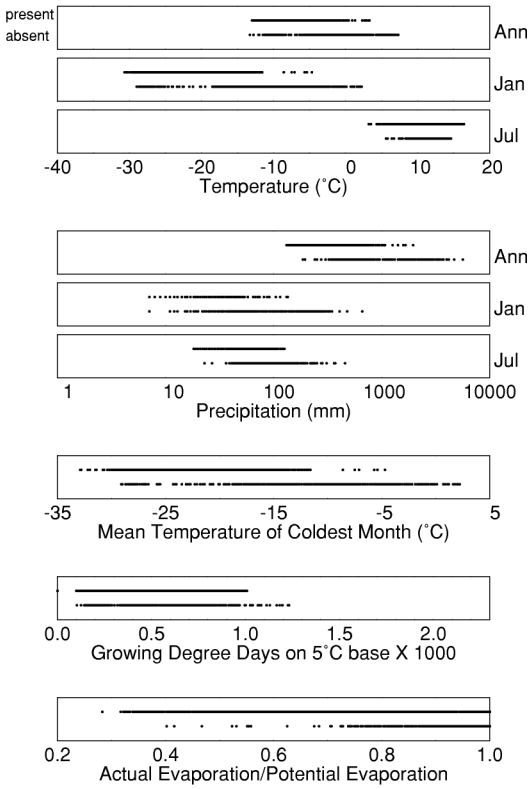


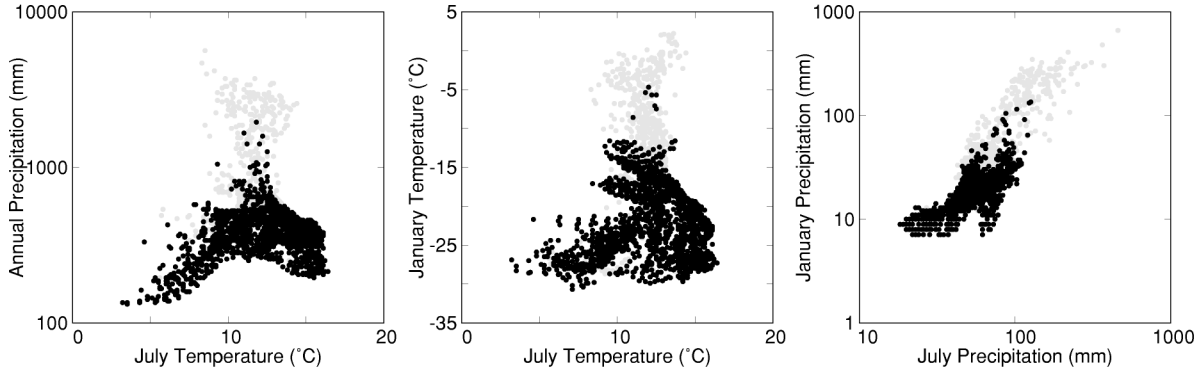


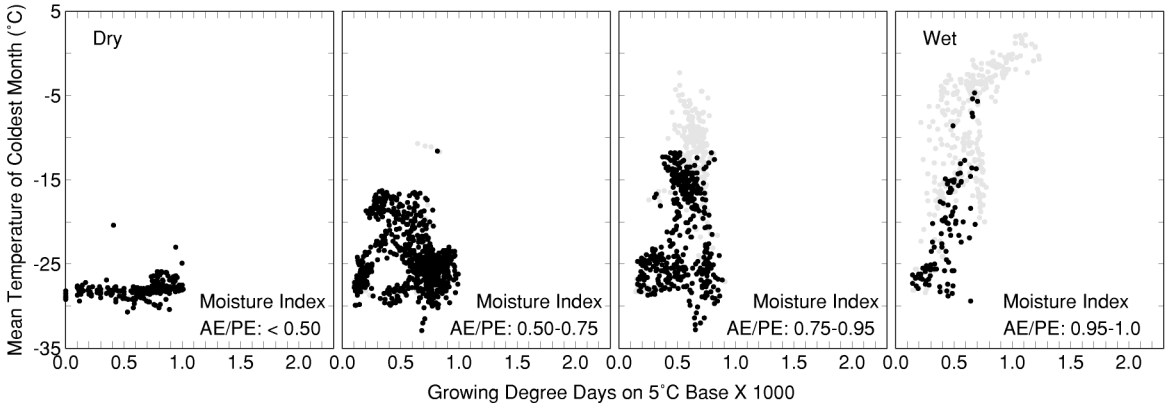


Salix lanata ssp. richardsonii

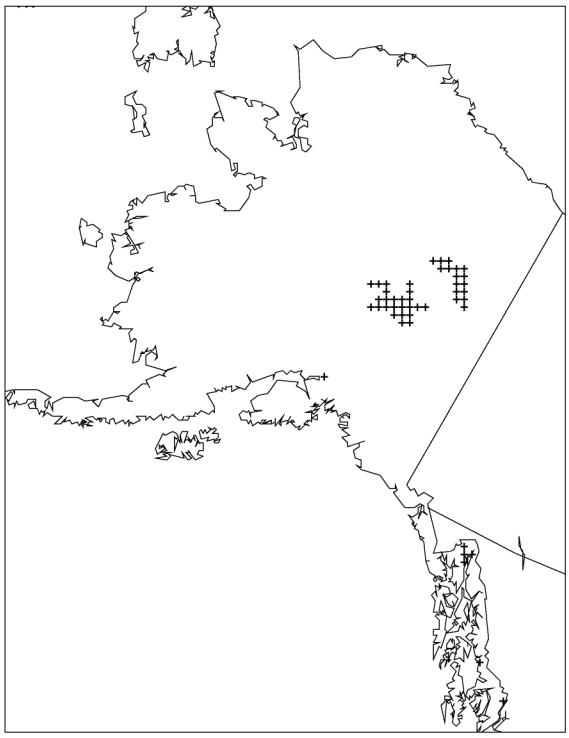


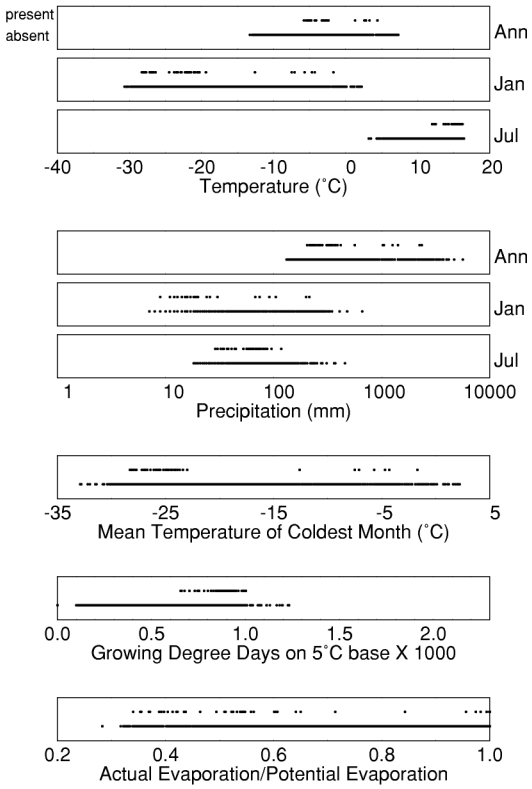


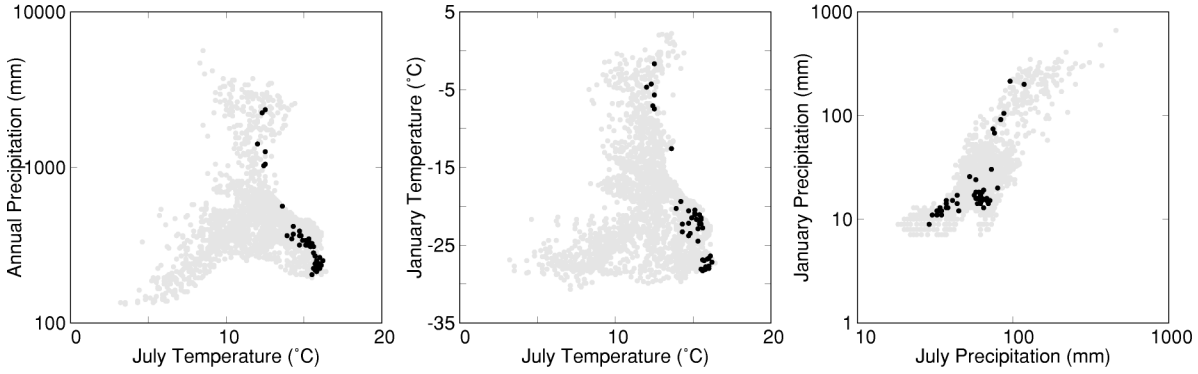


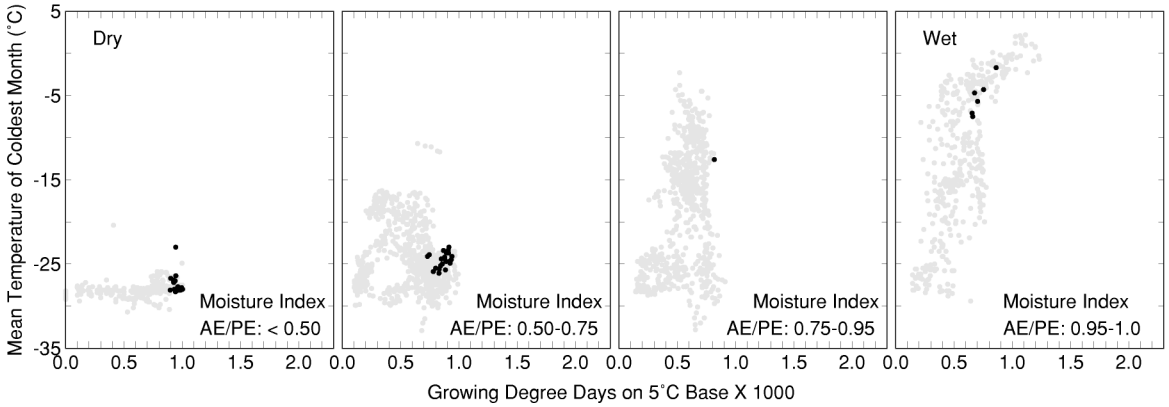


Salix lasiandra

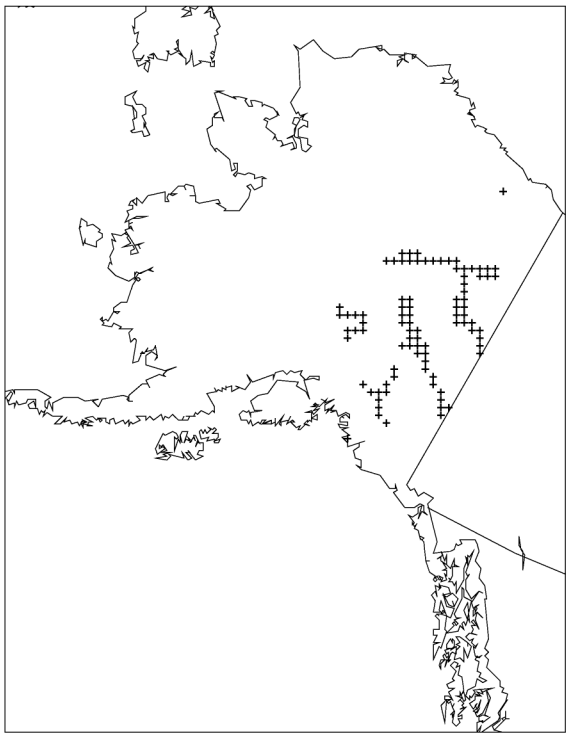


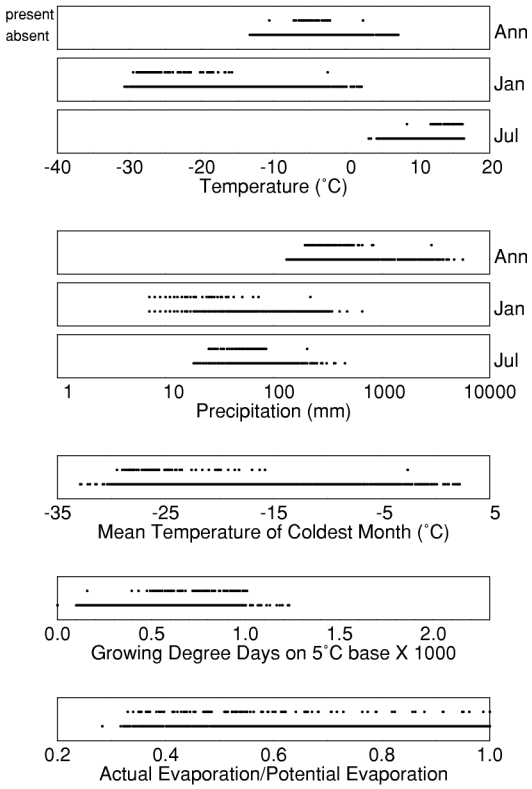


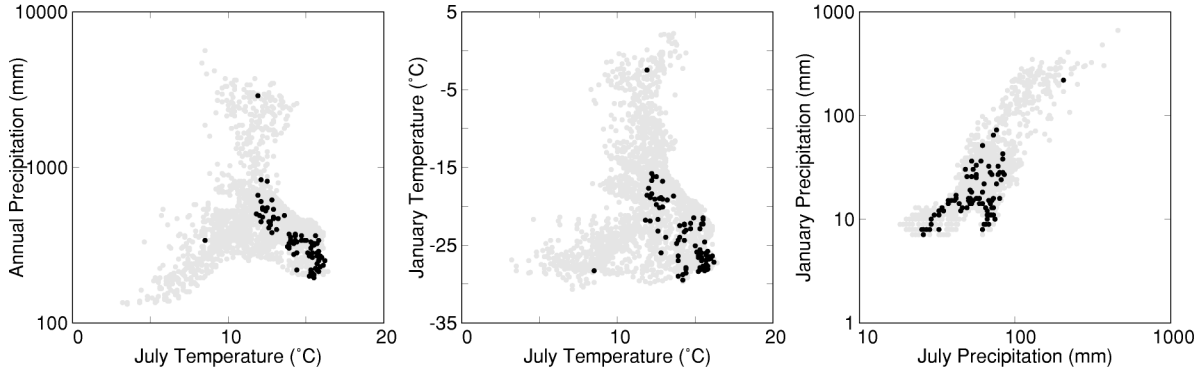


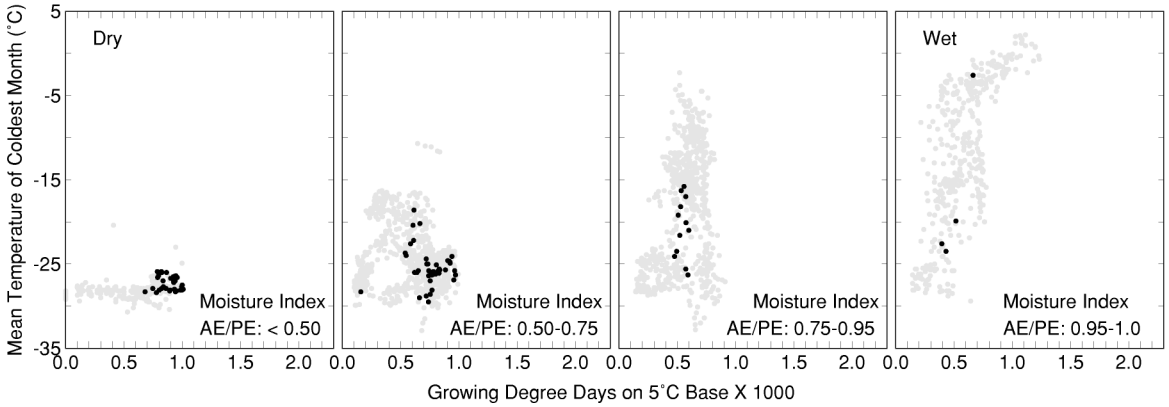


Salix monticola

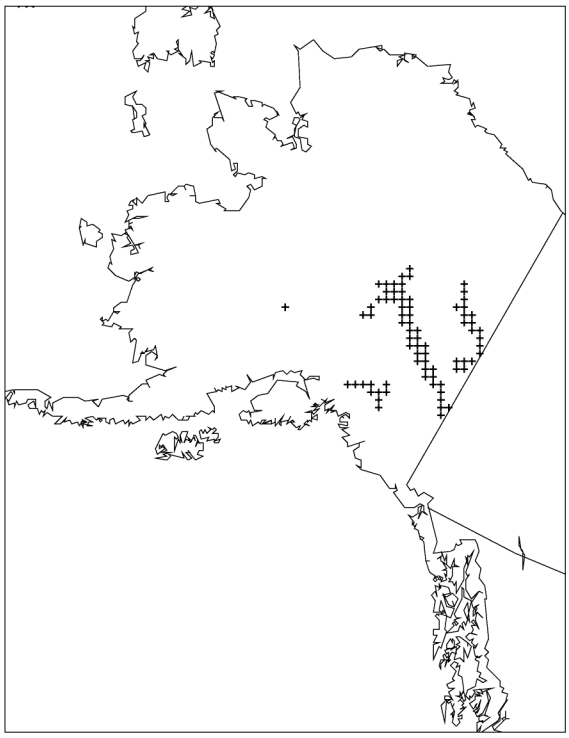


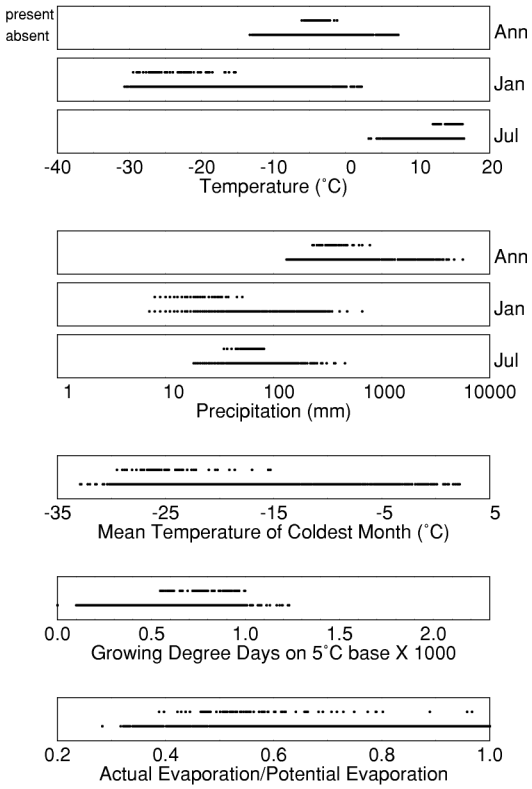


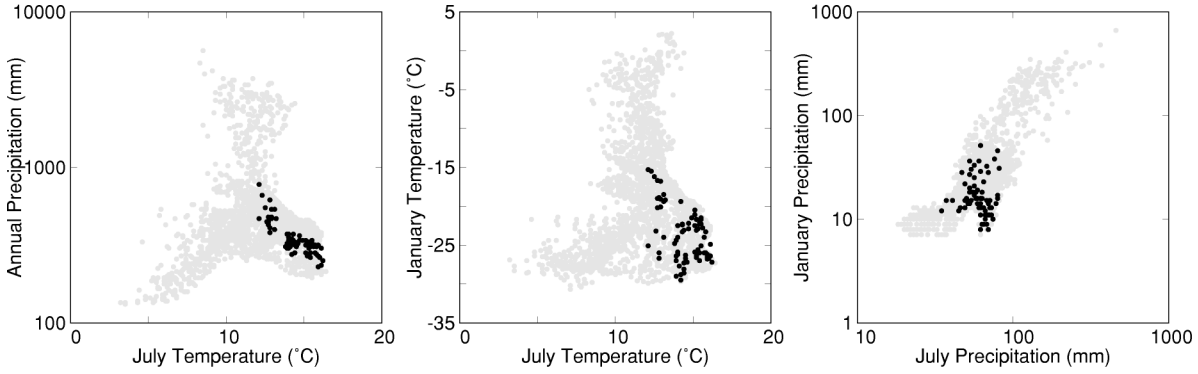


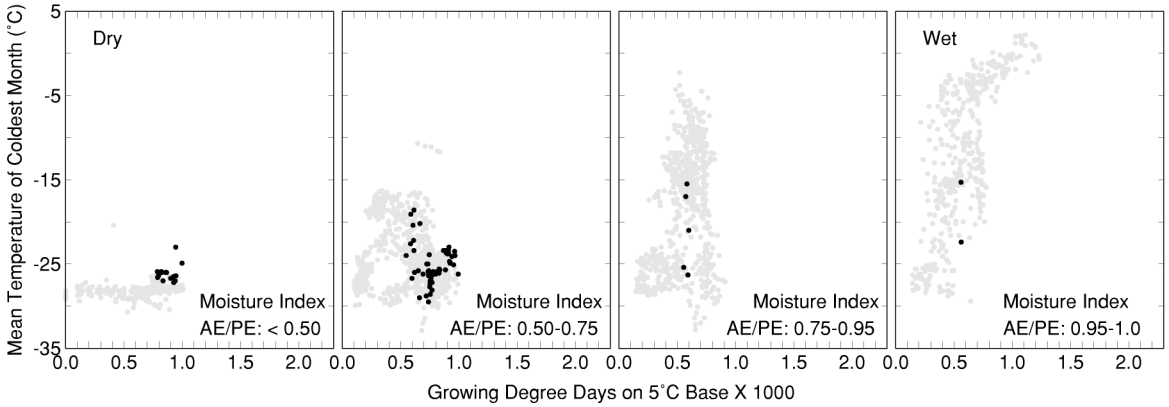


Salix novae-angliae

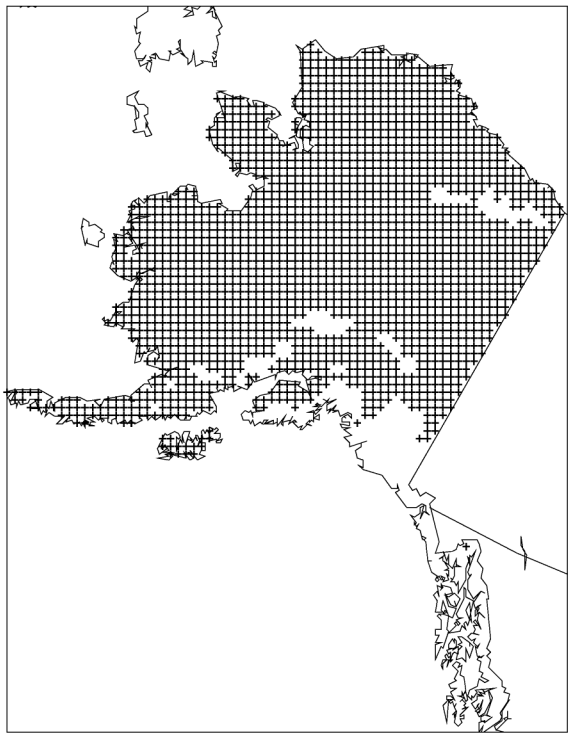


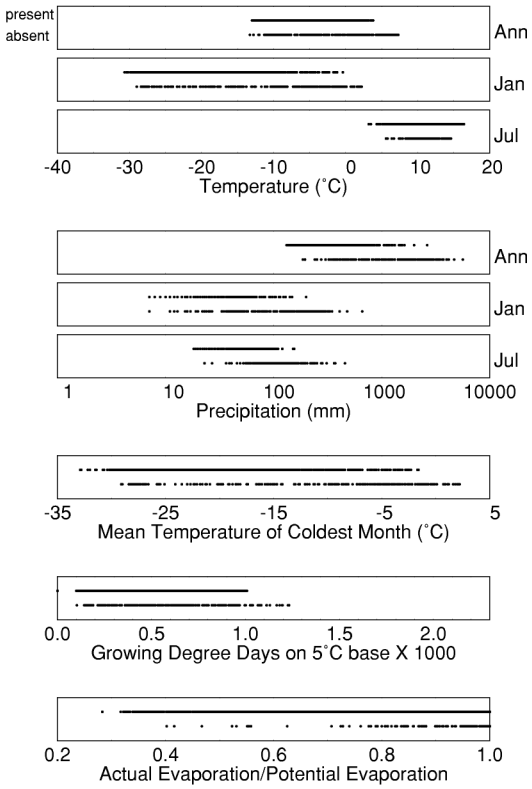


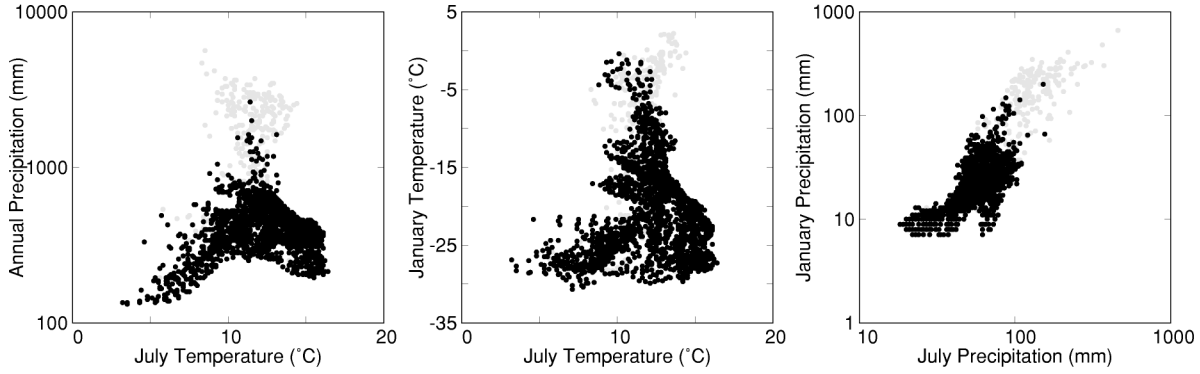


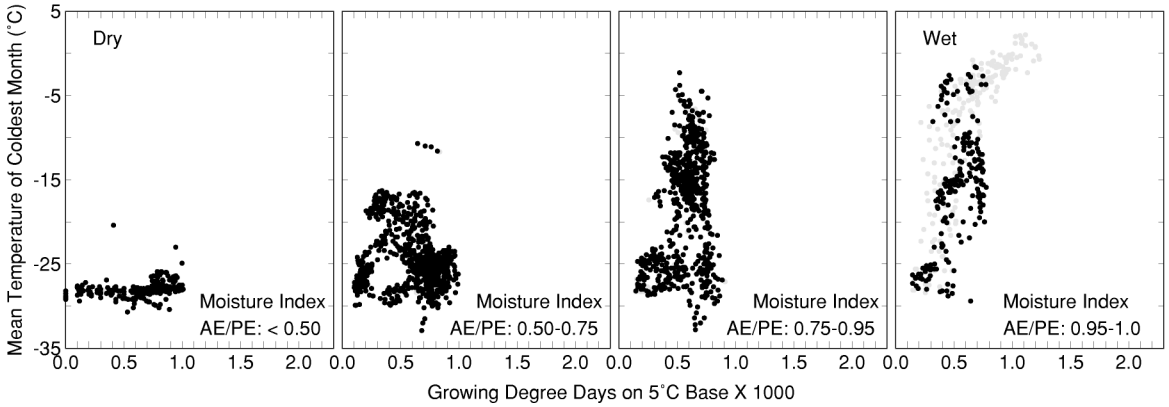


Salix planifolia ssp. pulchra

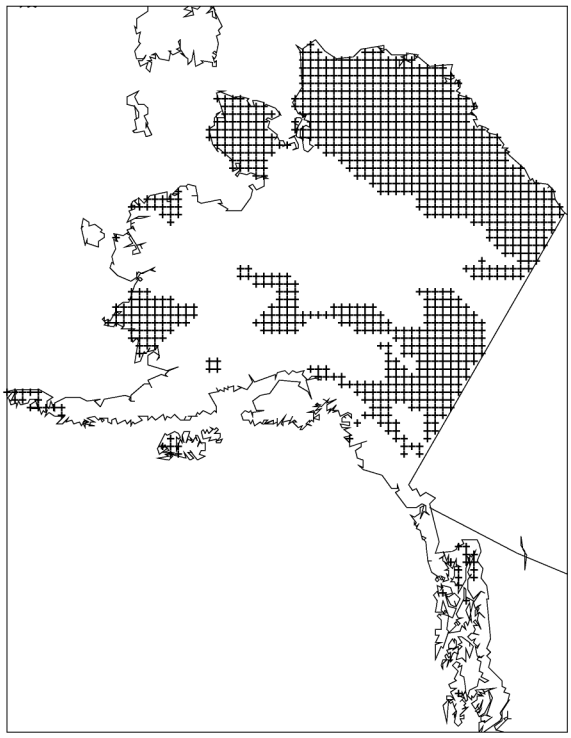


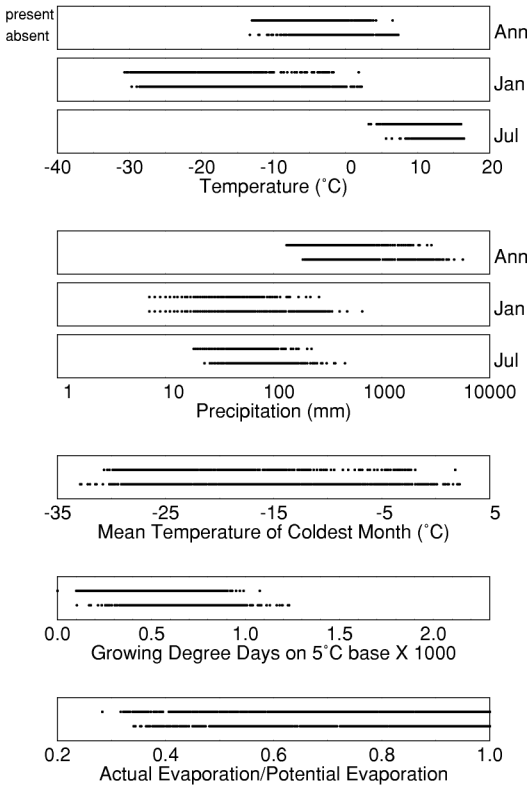


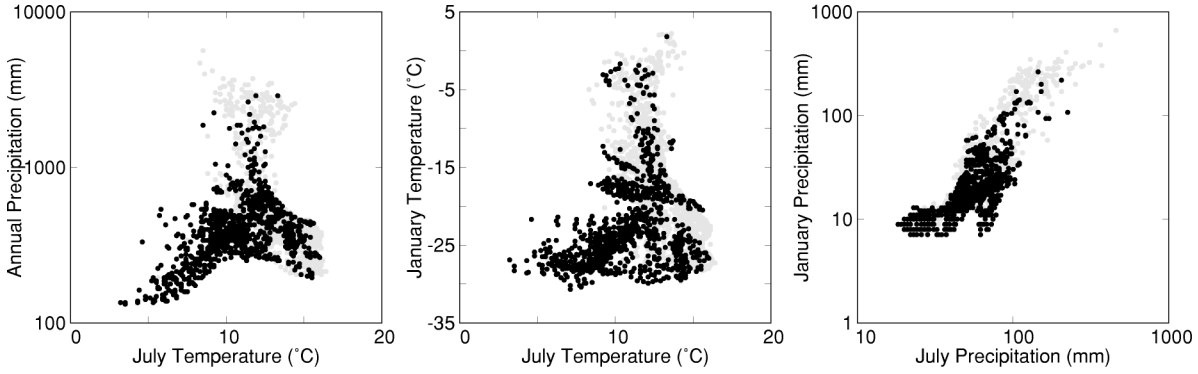


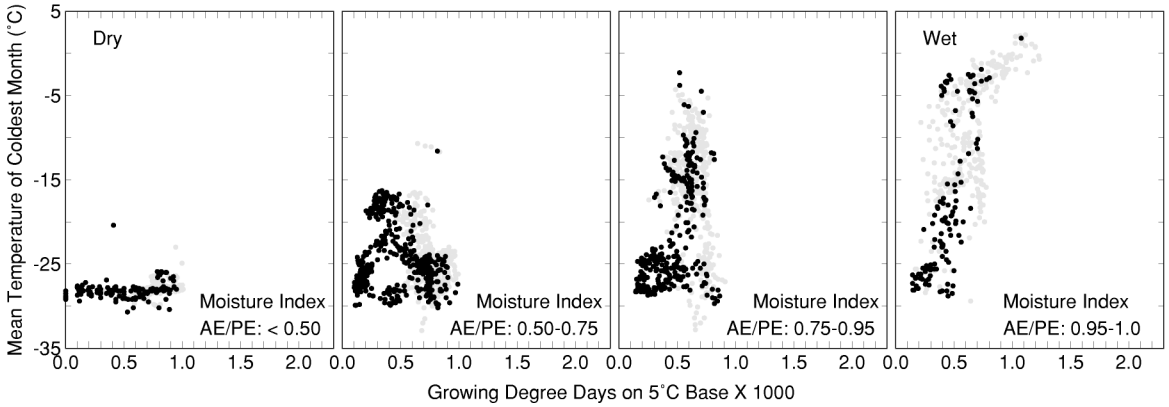


Salix reticulata

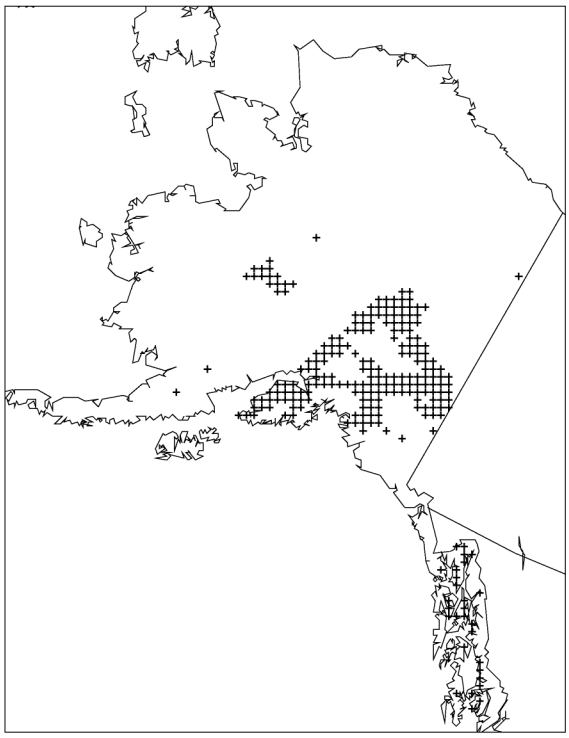


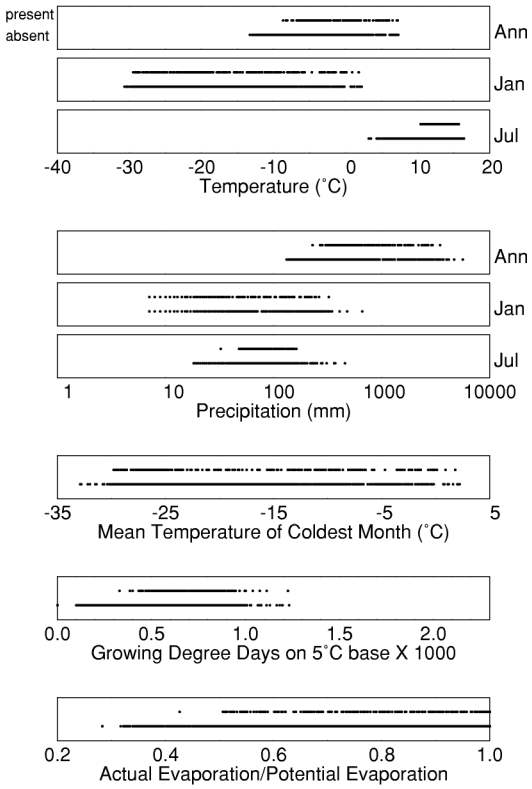


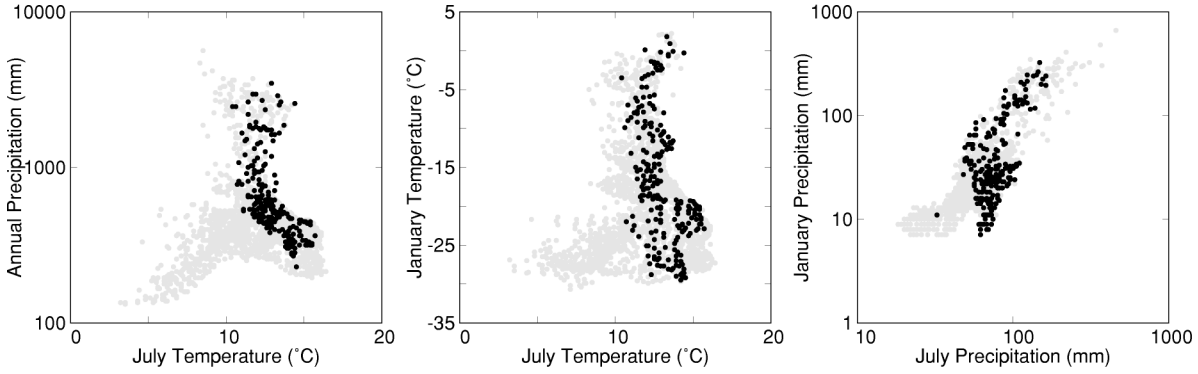


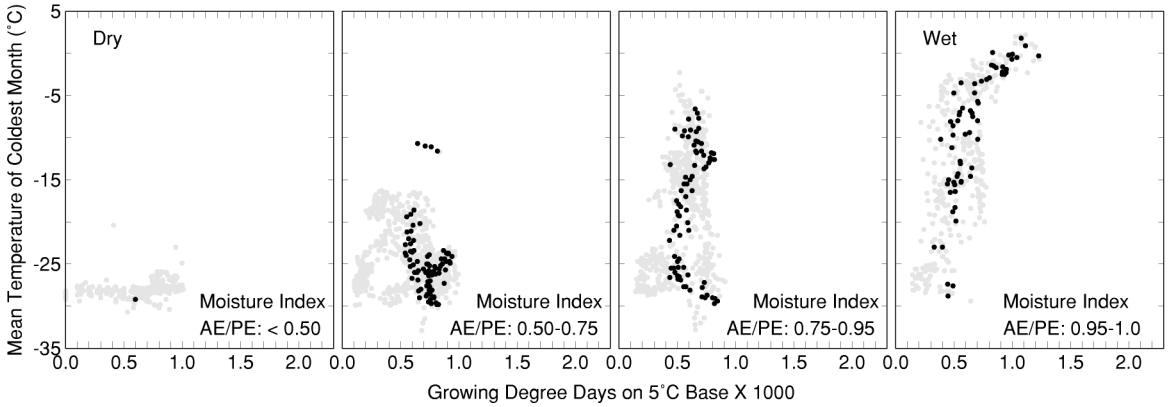


Salix scouleriana

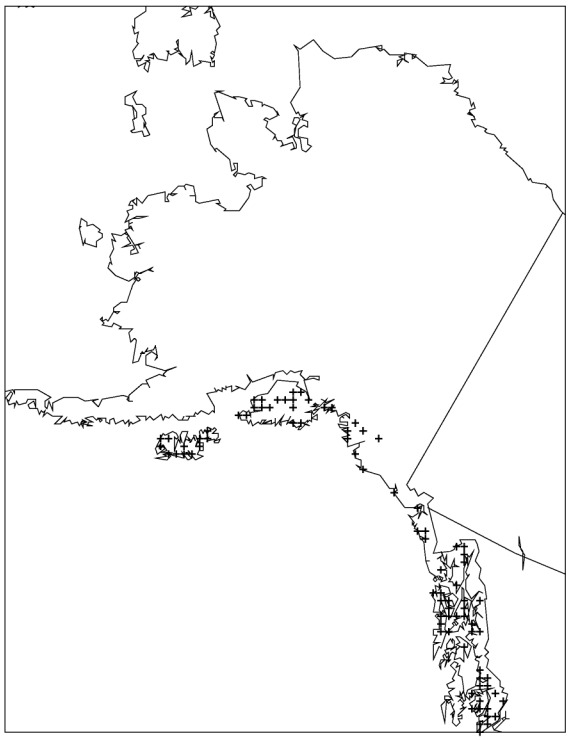


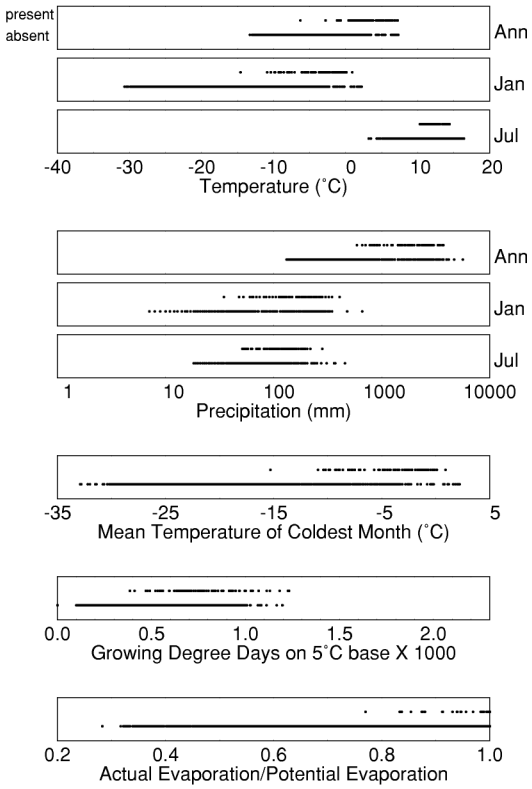


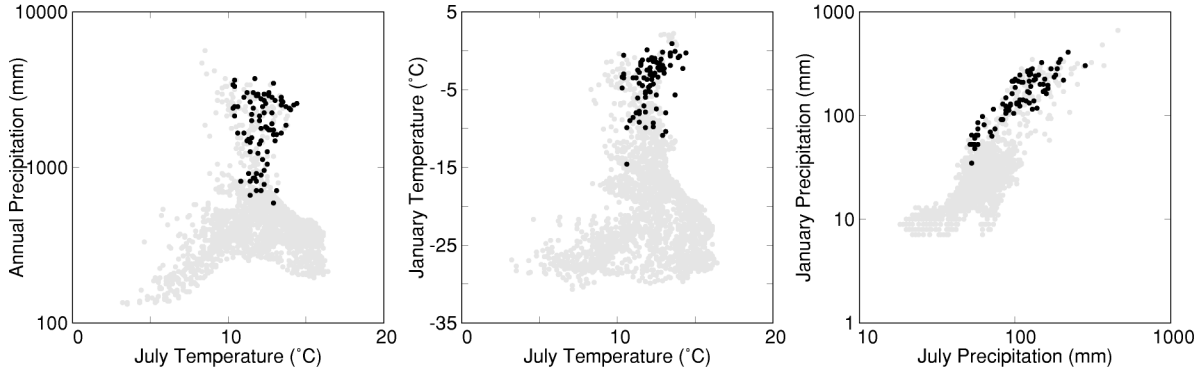


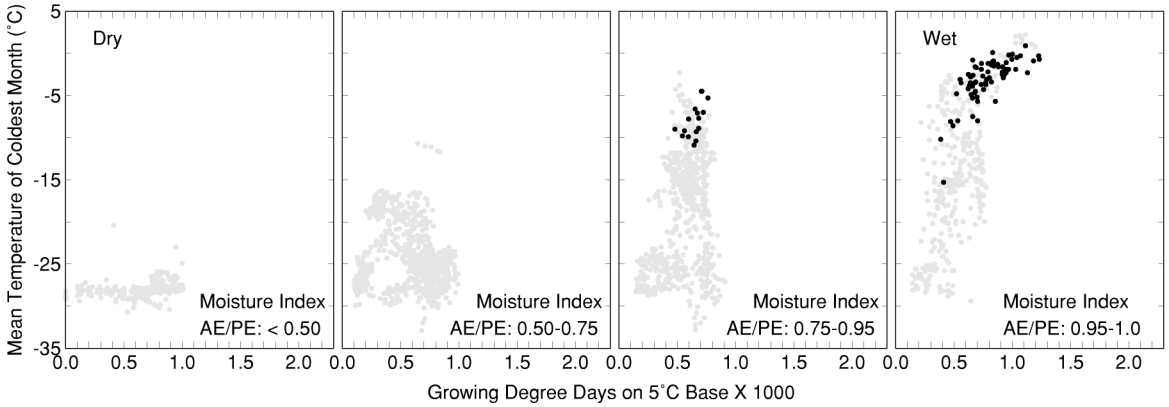


Salix sitchensis

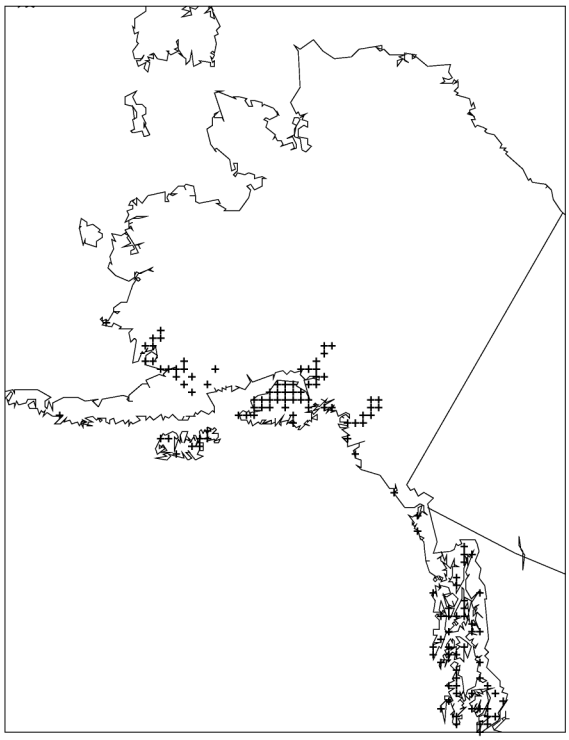


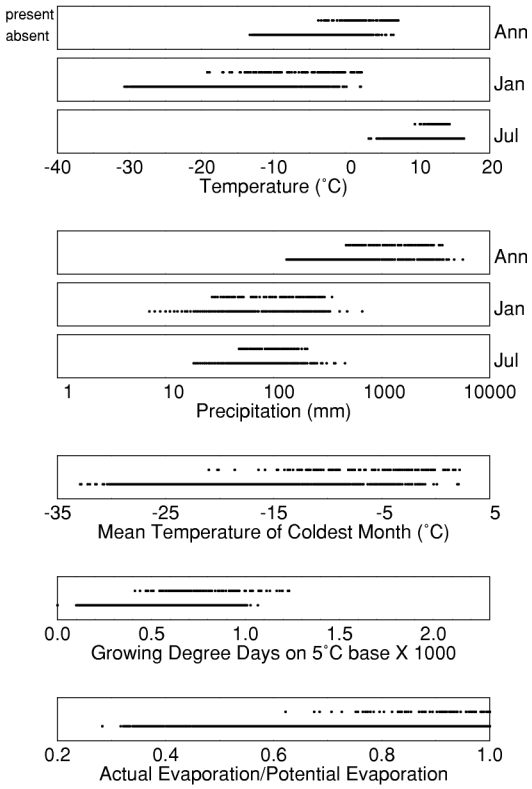


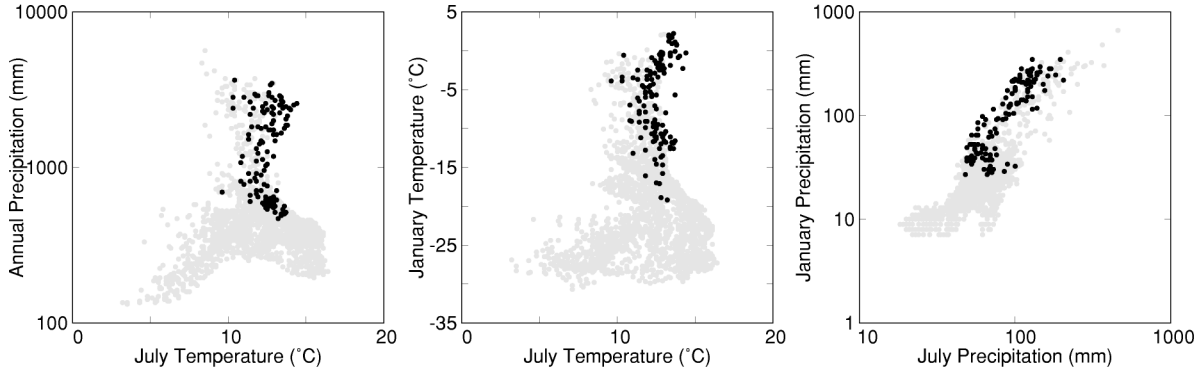


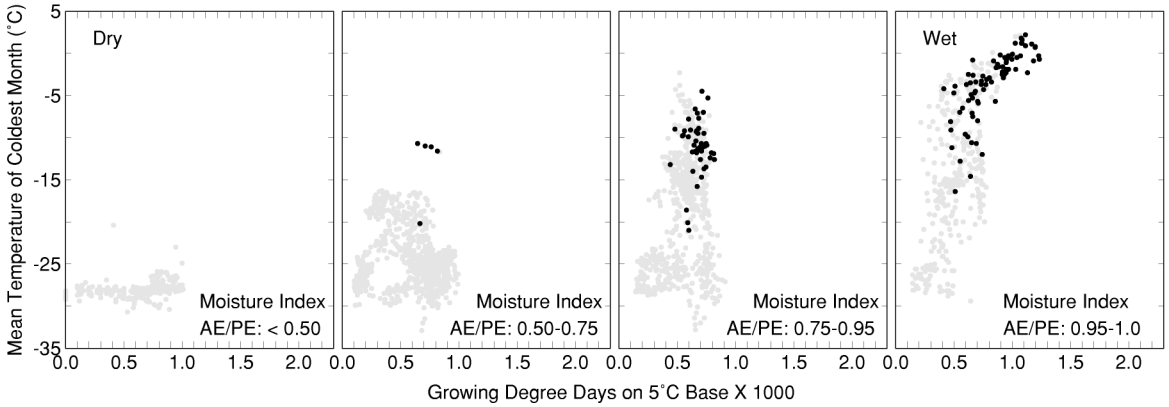


Sambucus callicarpa

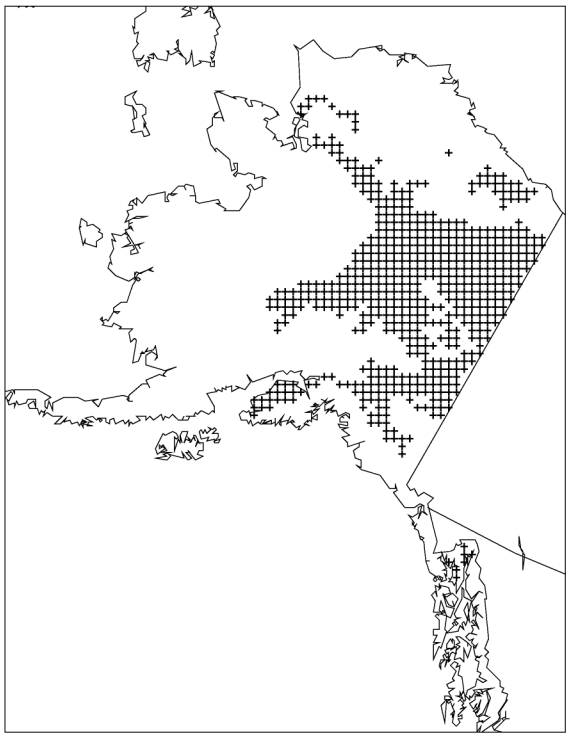


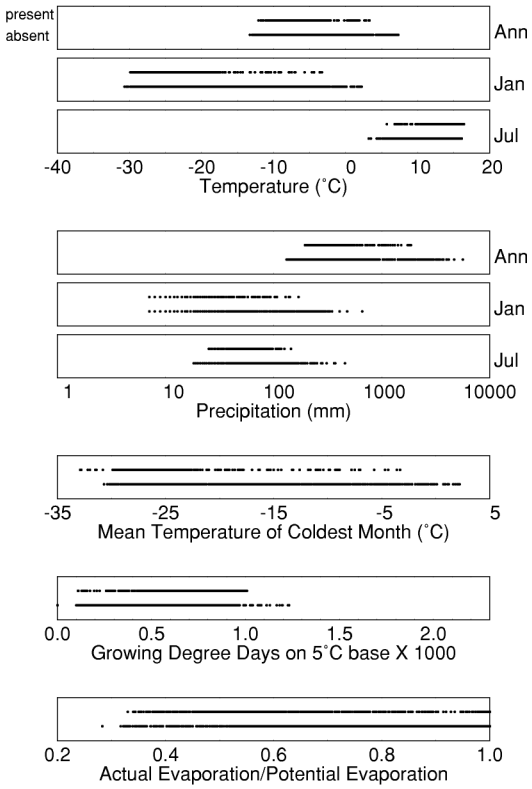


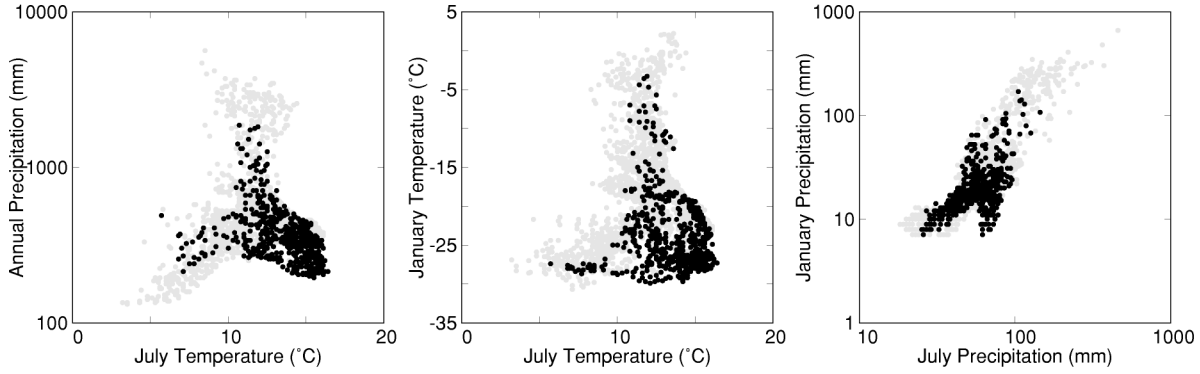


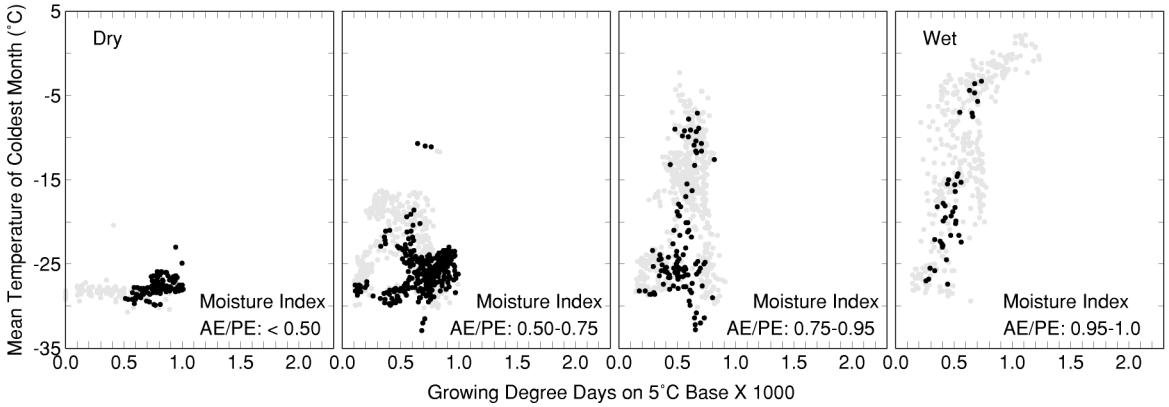


Shepherdia canadensis

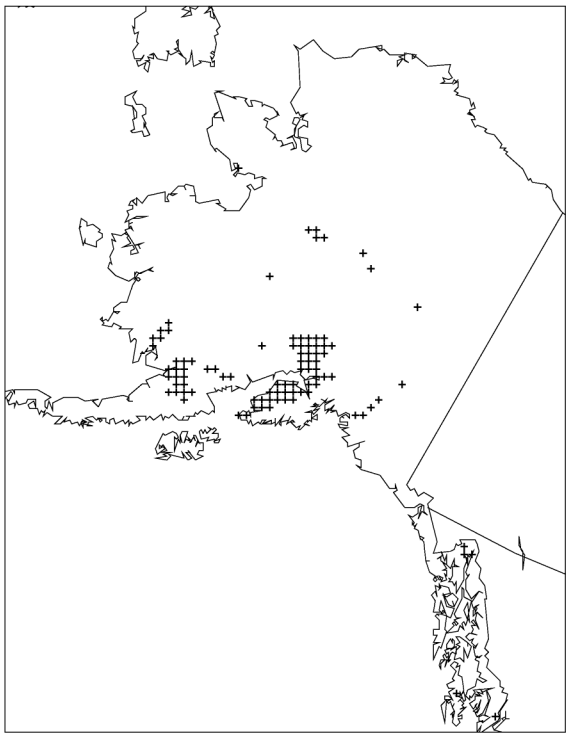


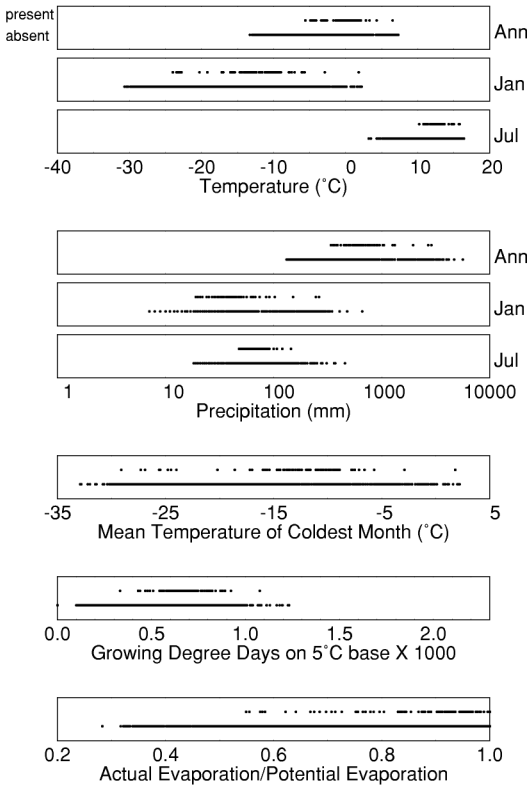


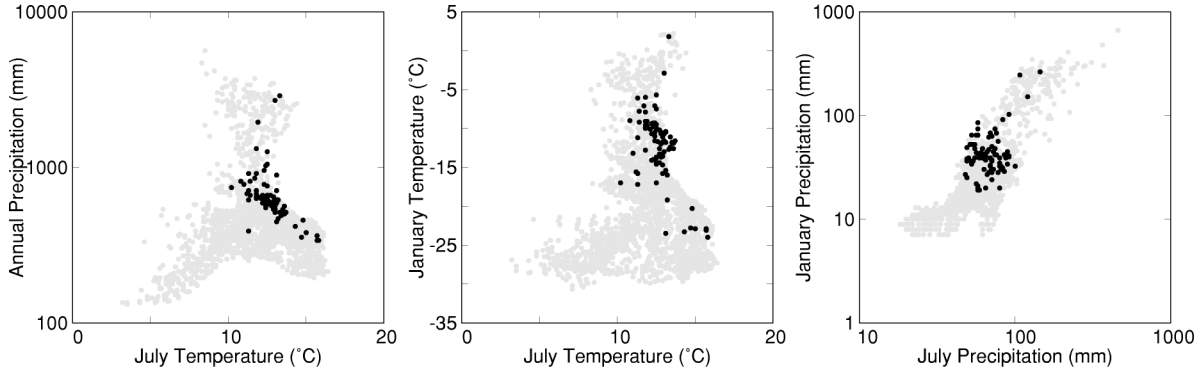


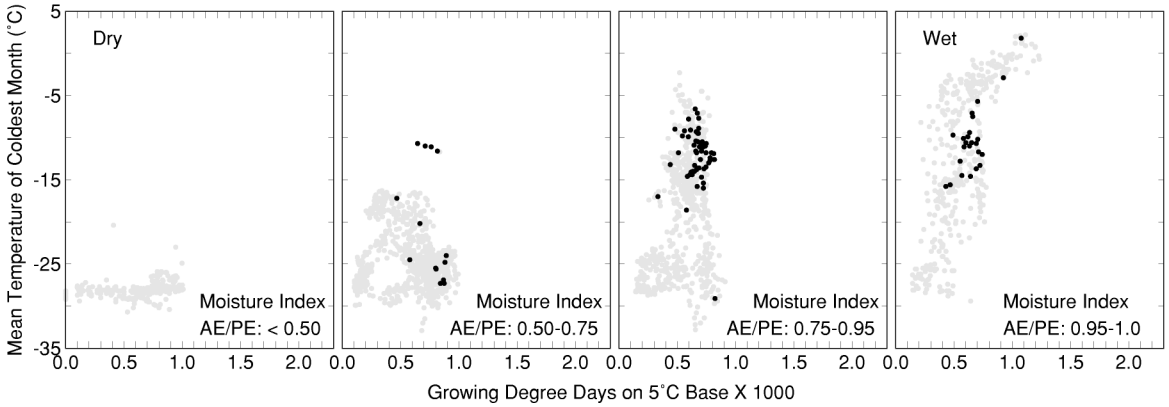


Sorbus scopulina

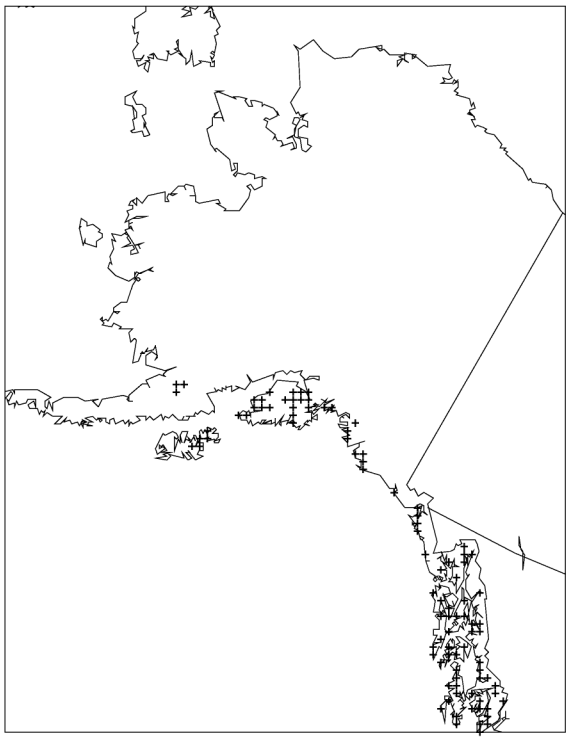


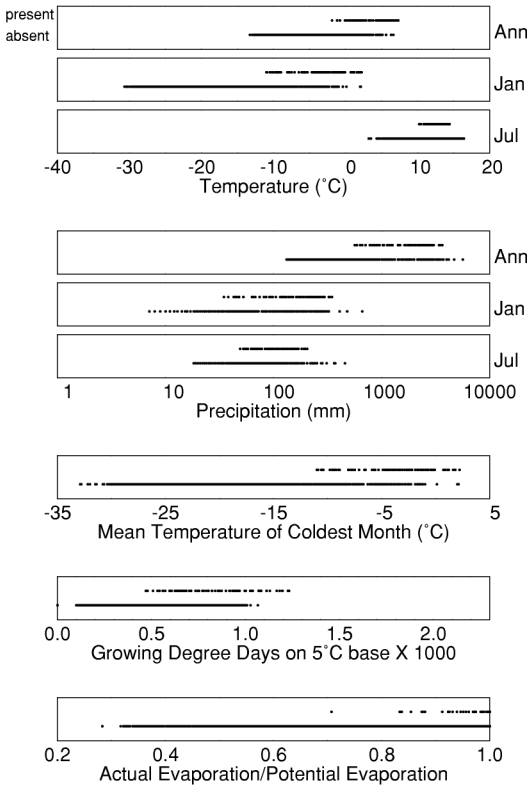


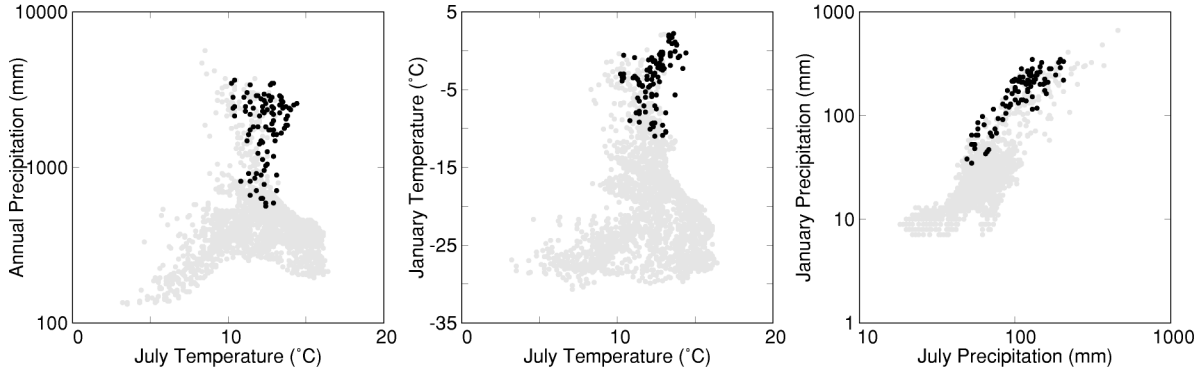


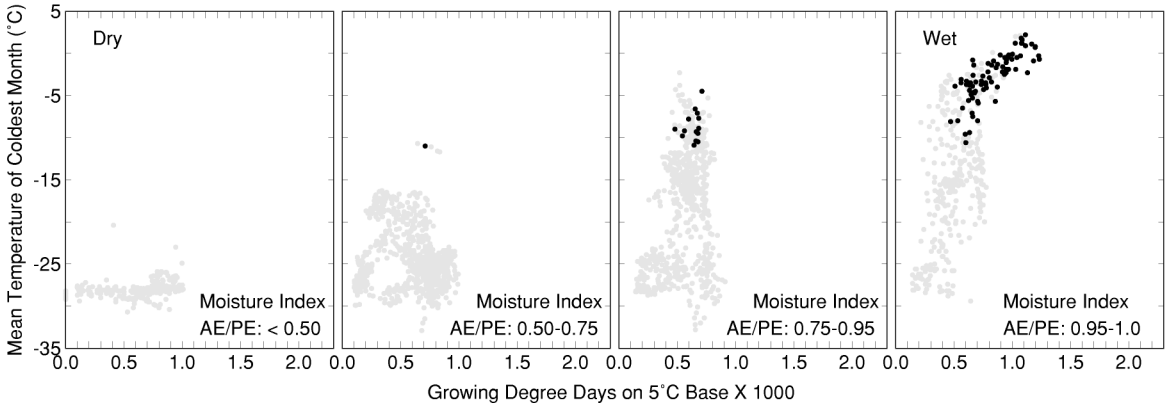


Sorbus sitchensis

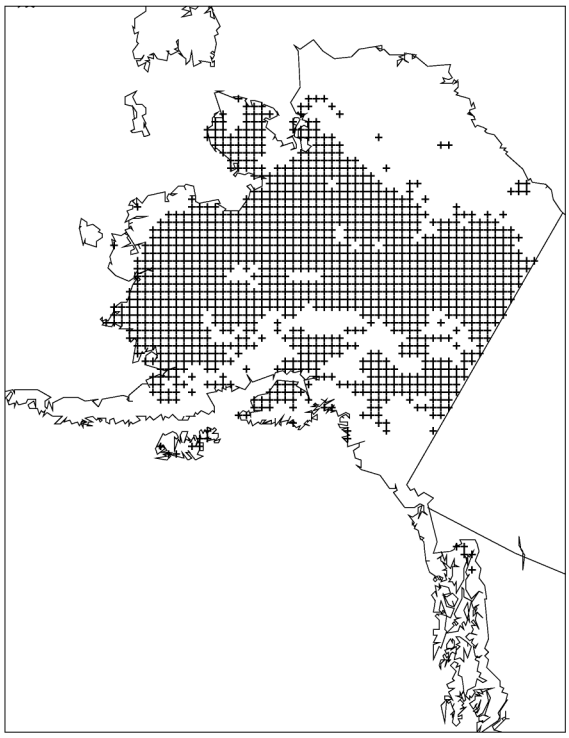


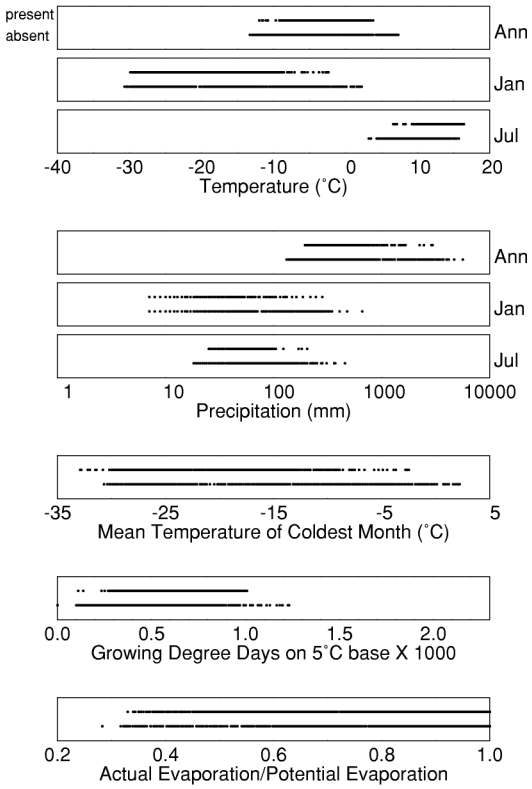


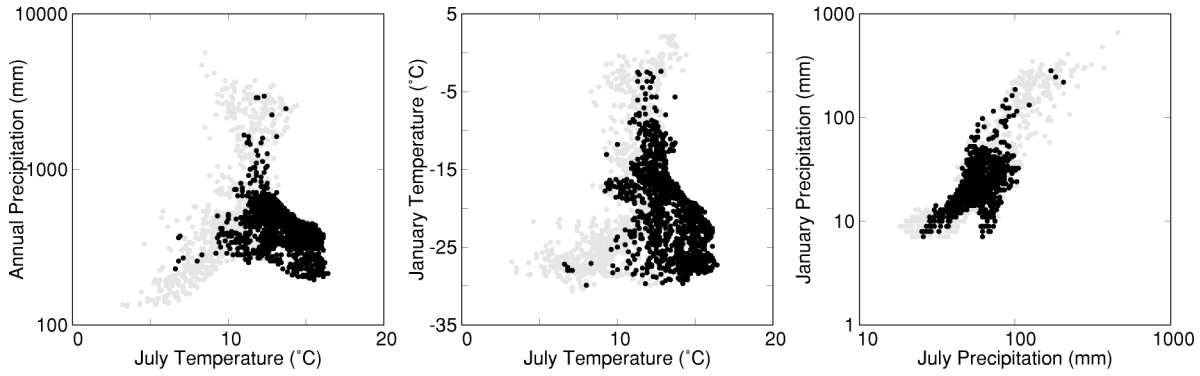


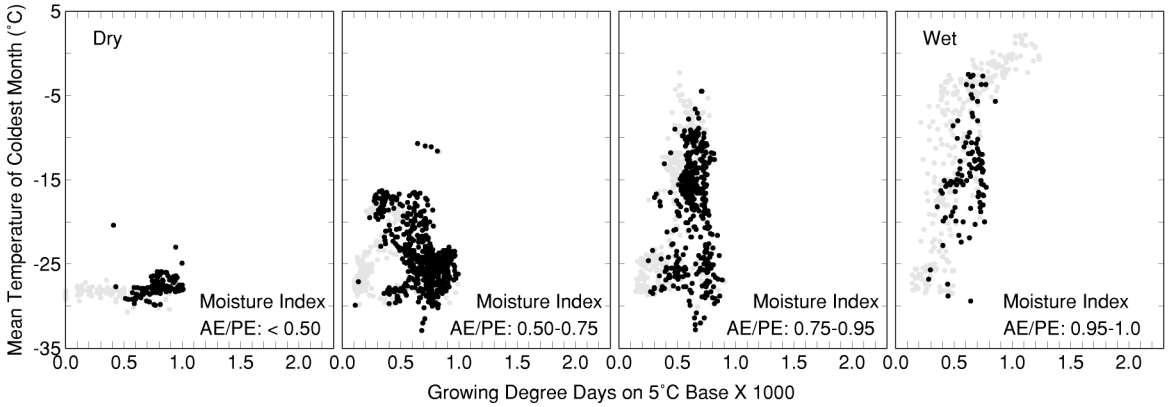


Spiraea beauverdiana

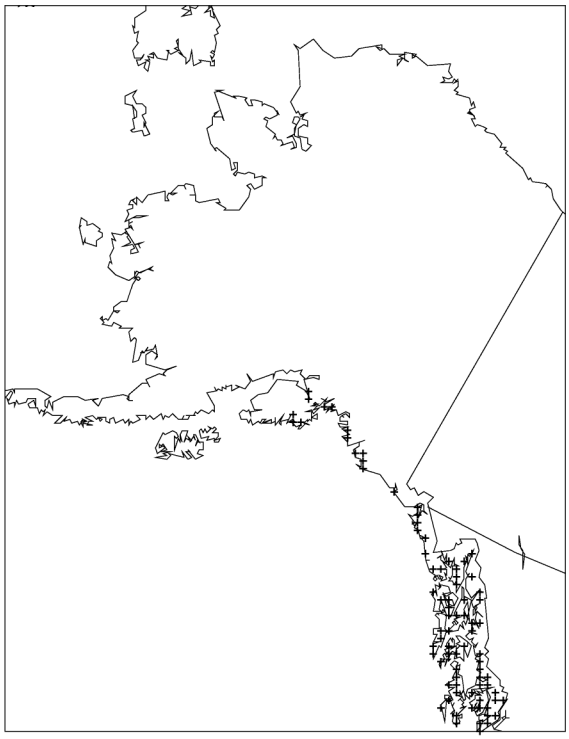


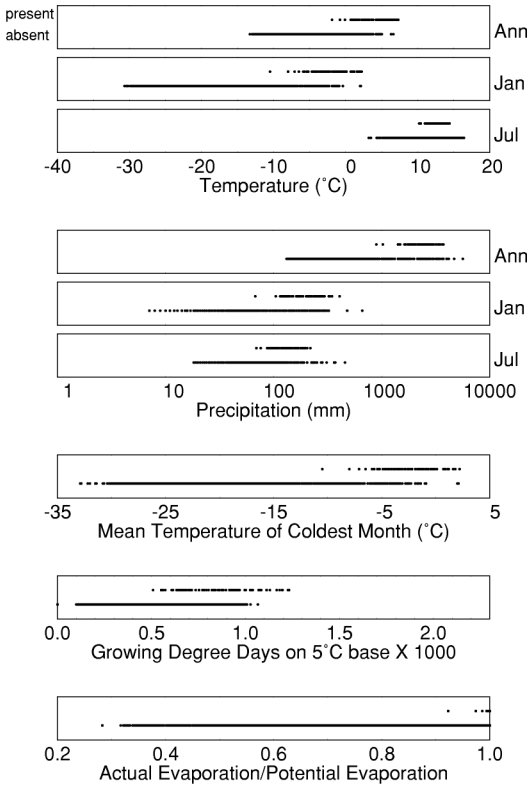


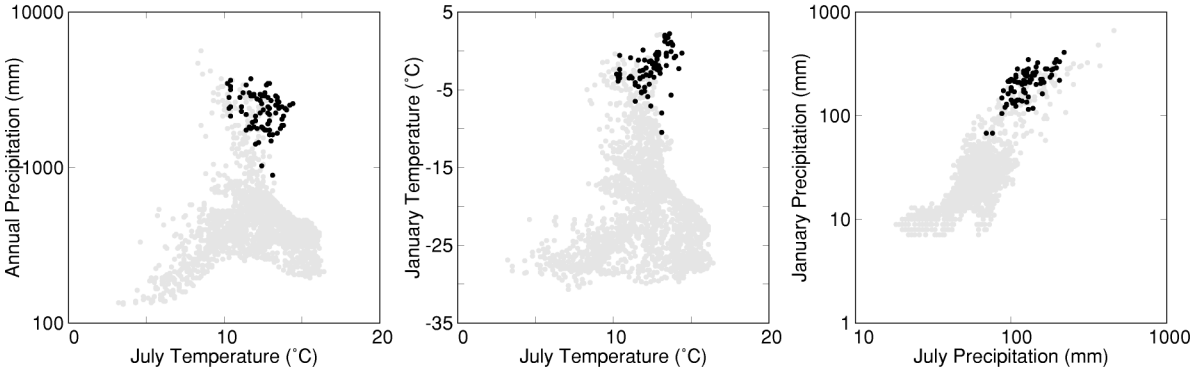


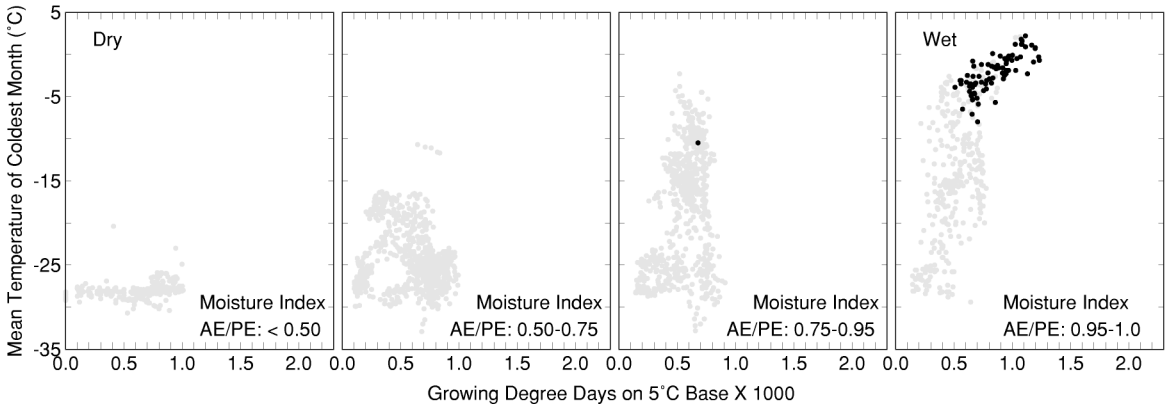


Vaccinium alaskaense

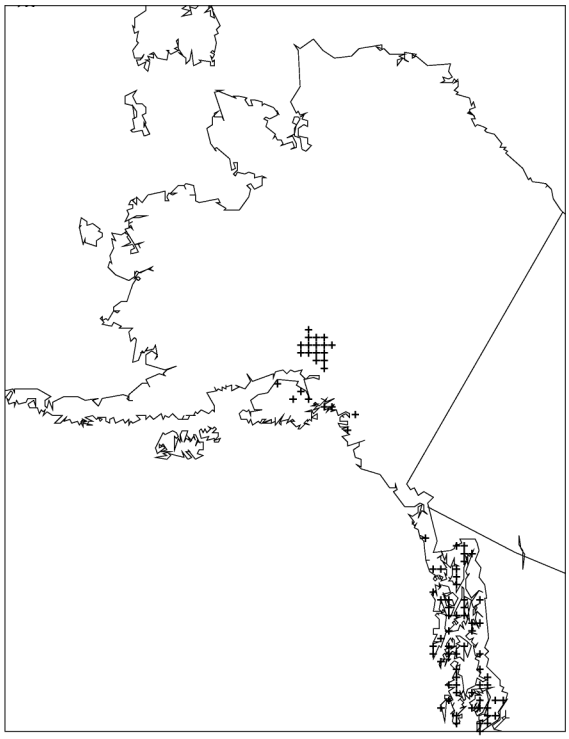


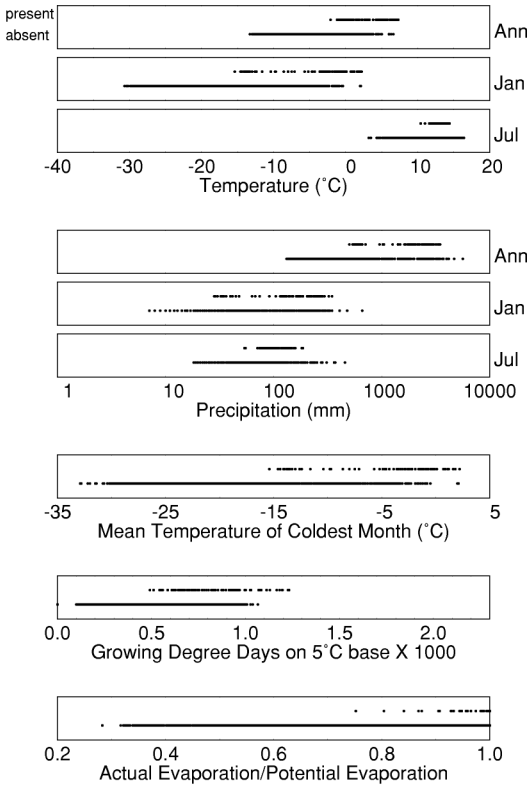


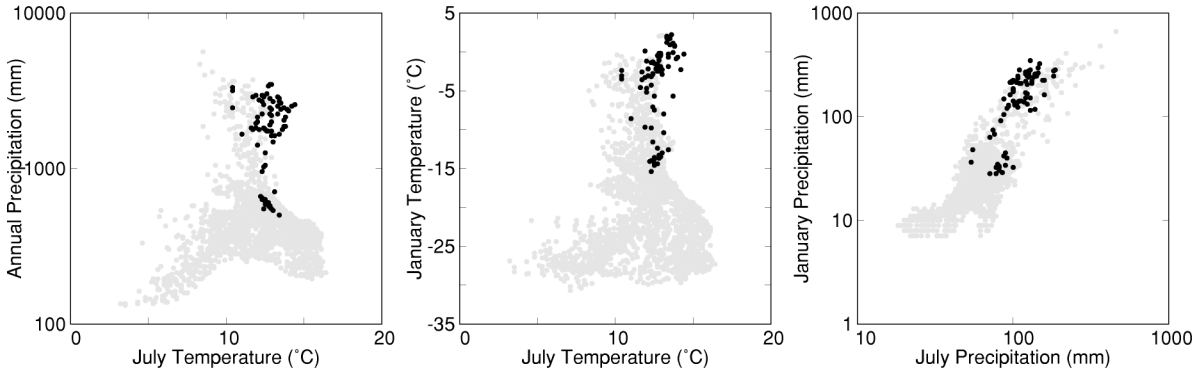


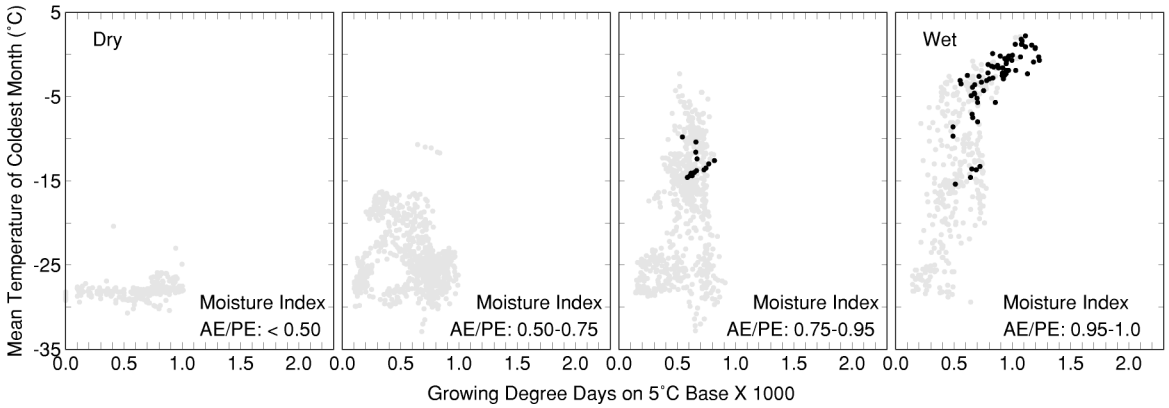


Vaccinium caespitosum

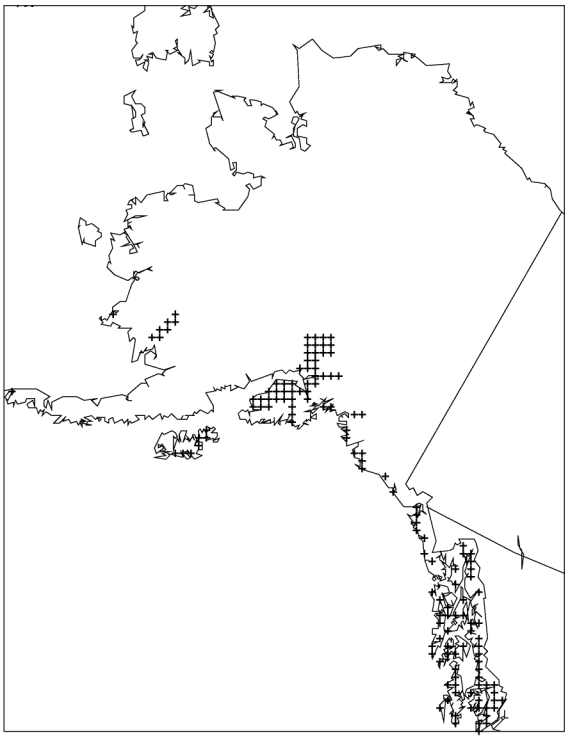


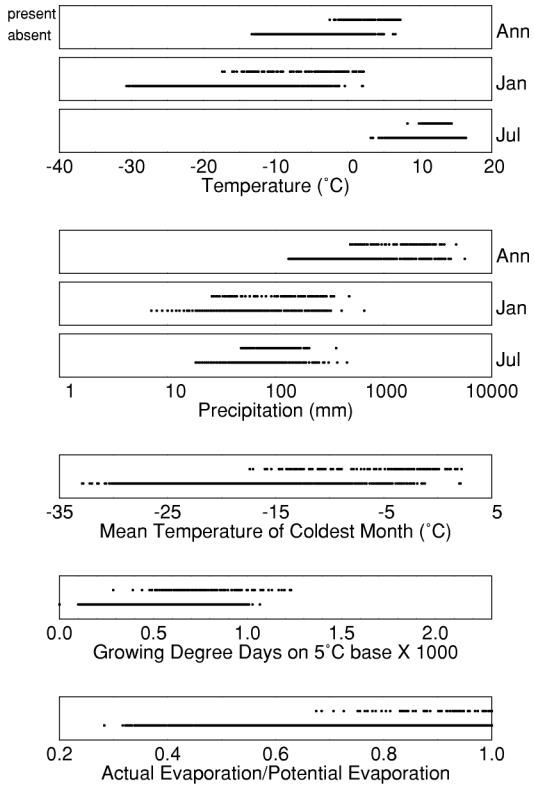


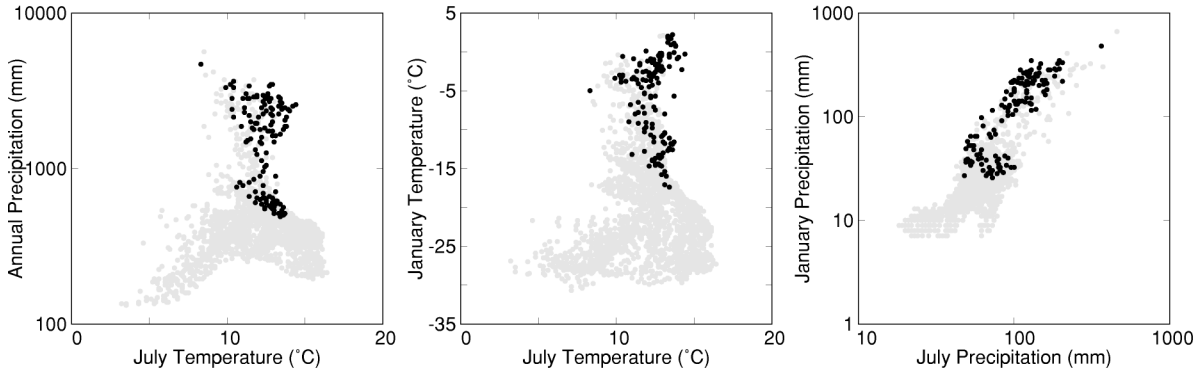


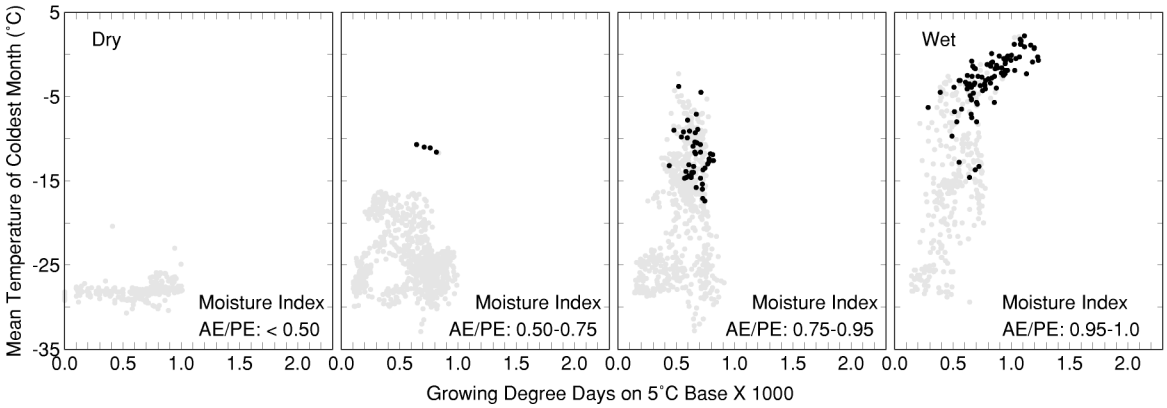


Vaccinium ovalifolium

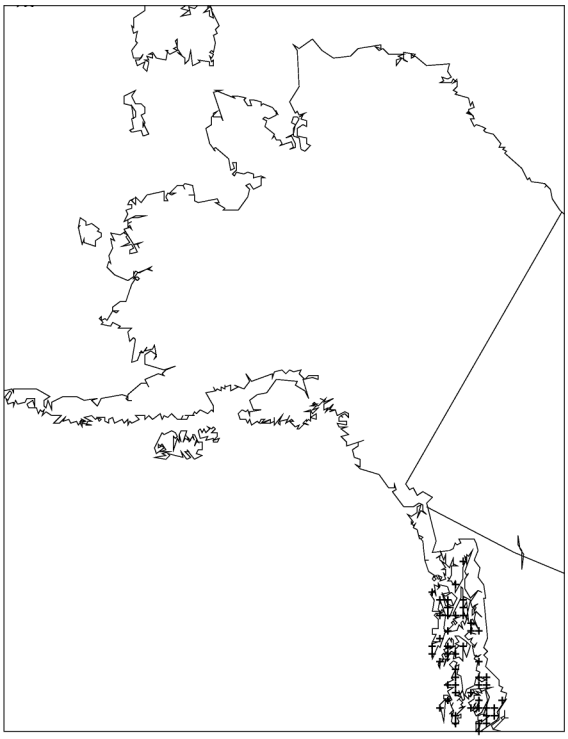


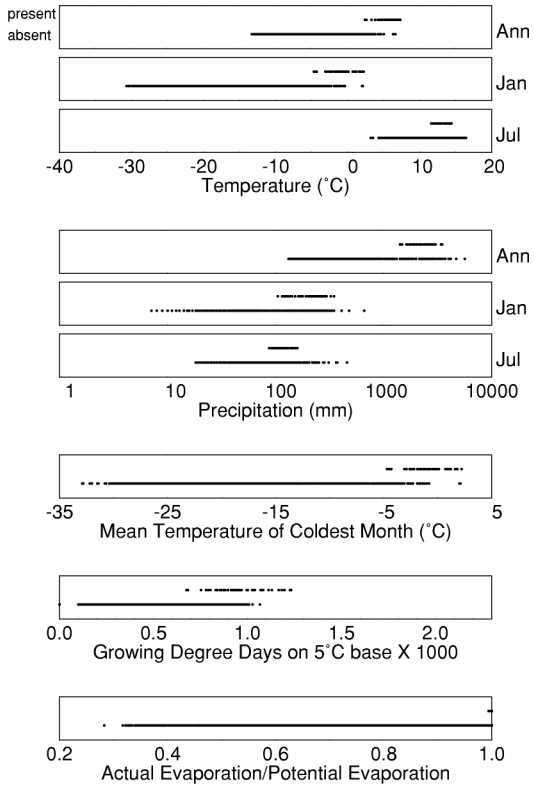


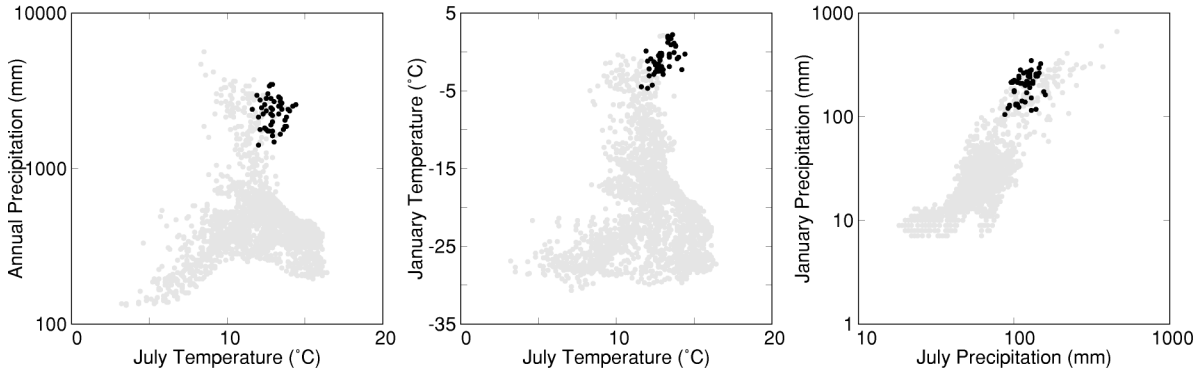


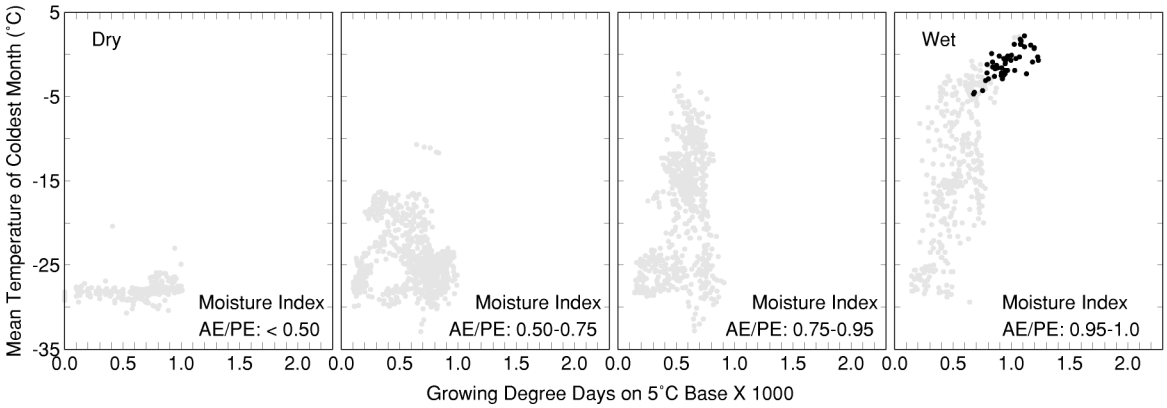


Vaccinium parvifolium

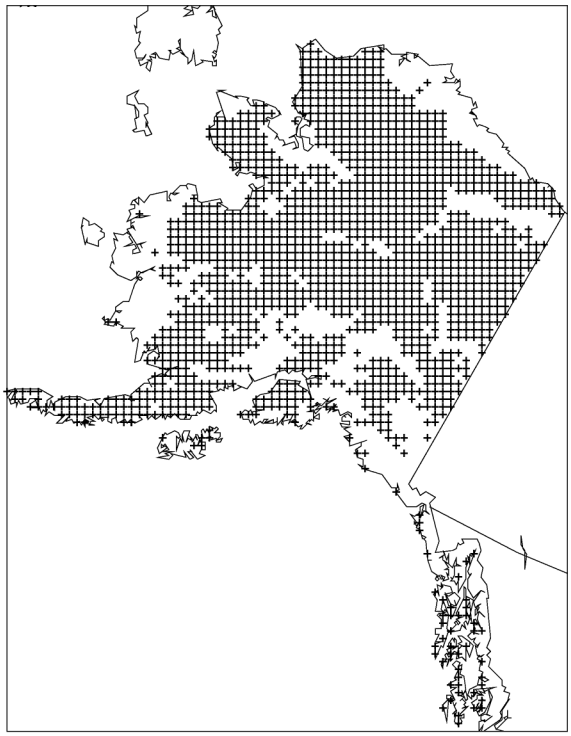


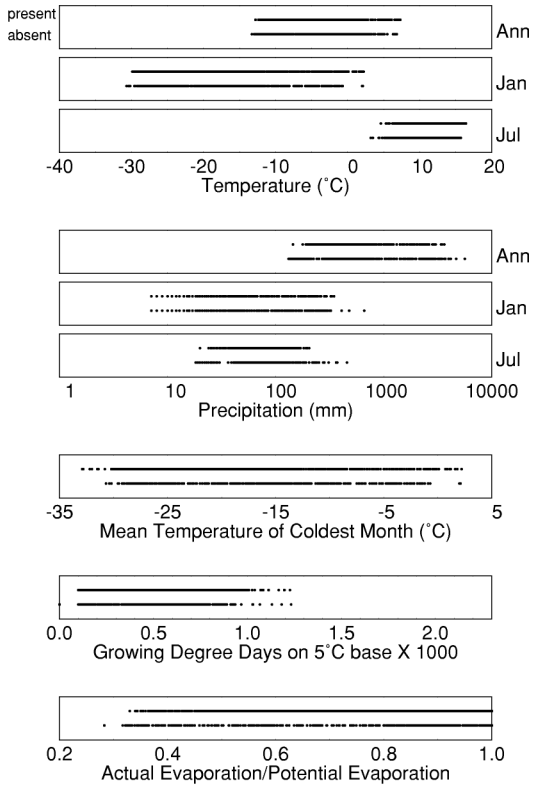


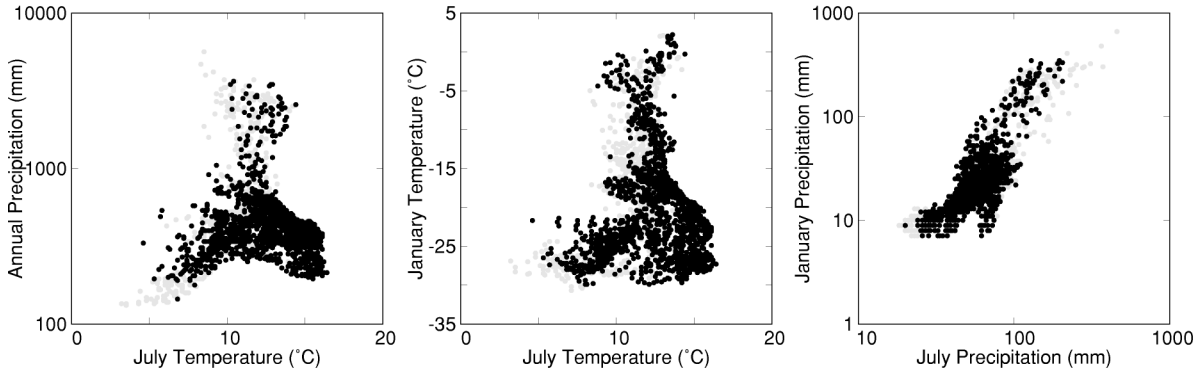


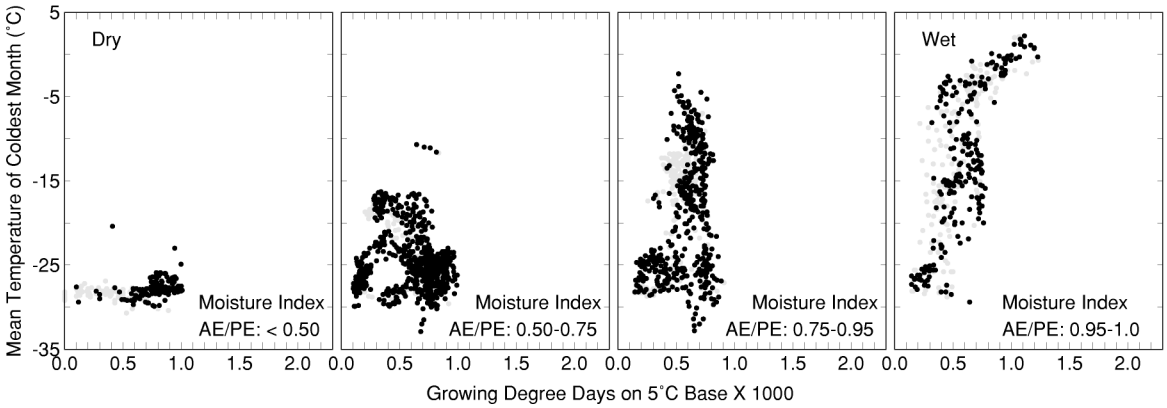


Vaccinium uliginosum

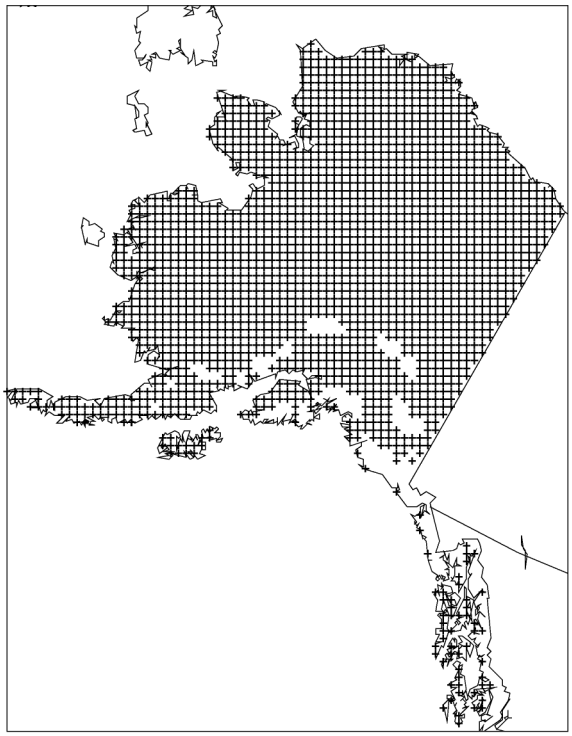


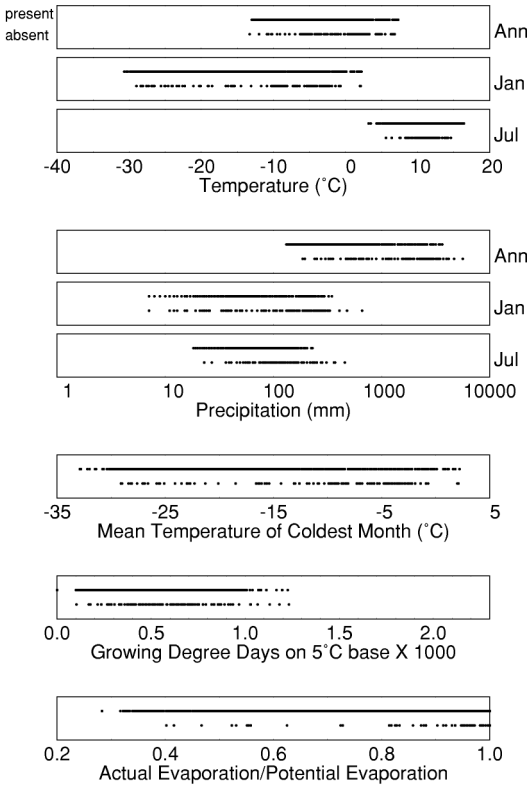


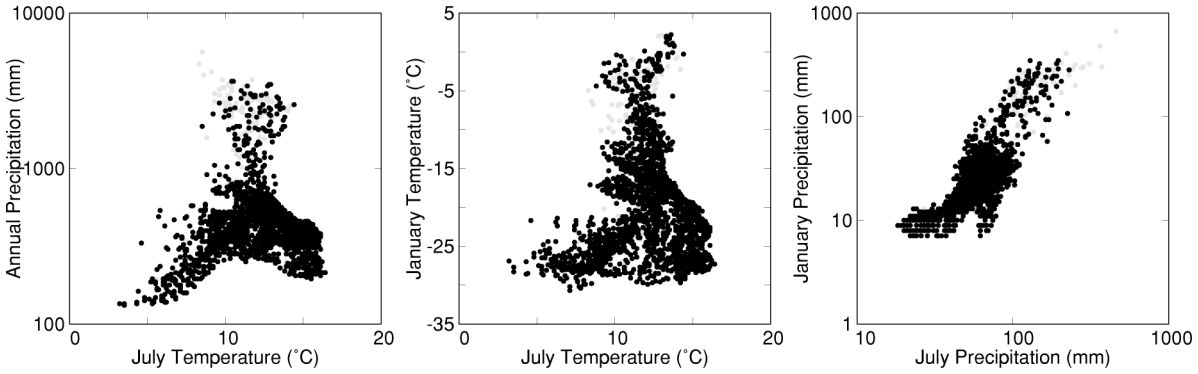


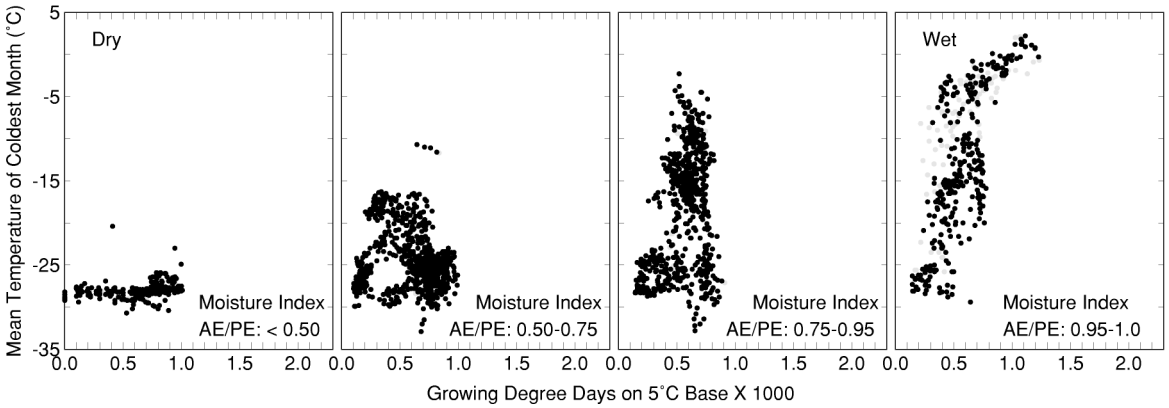


Vaccinium vitis-idaea

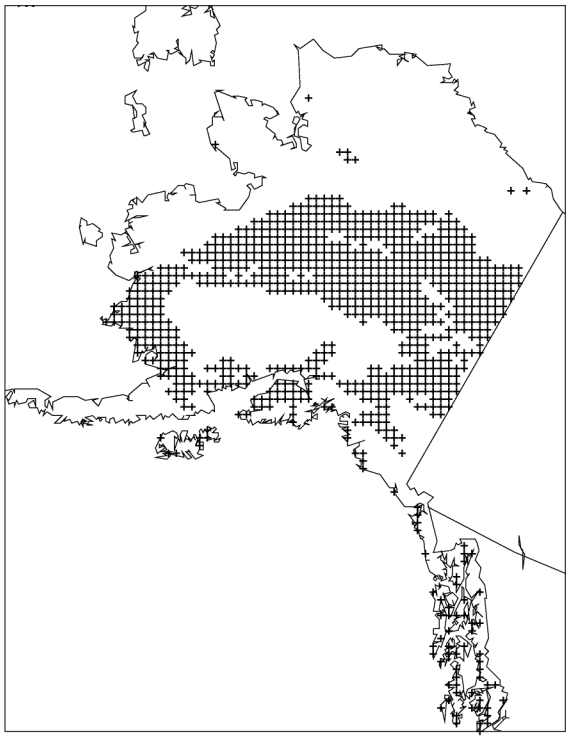


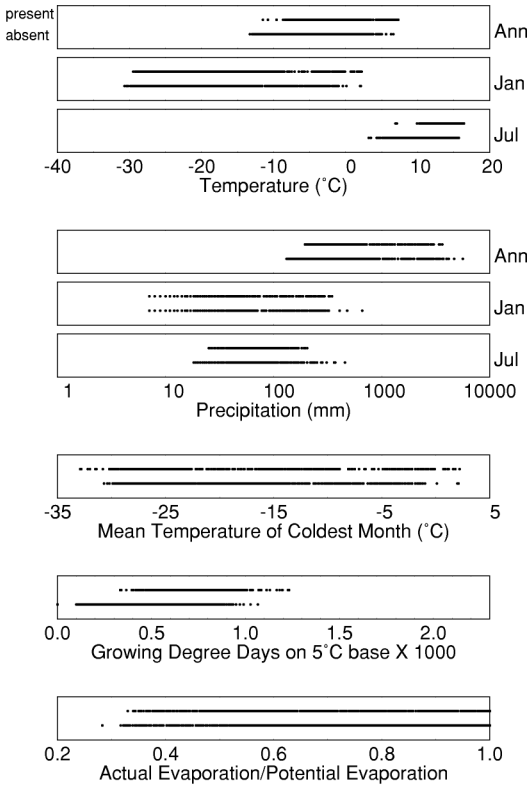


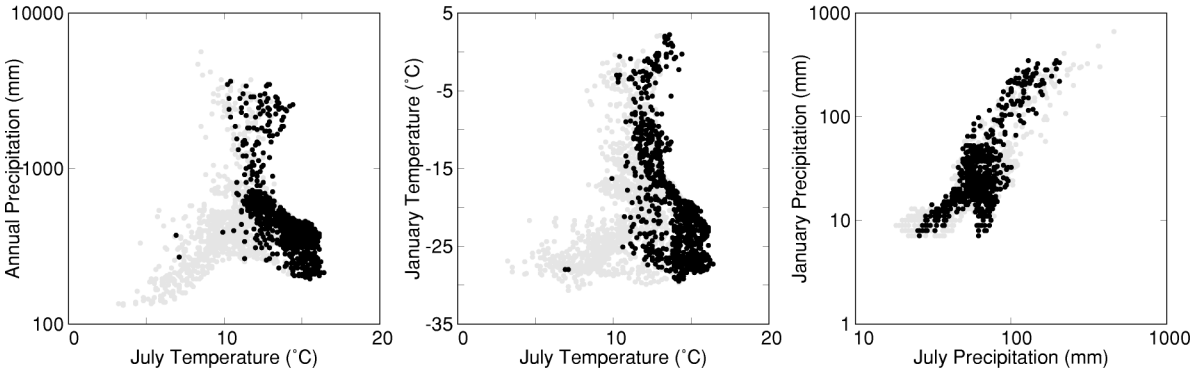


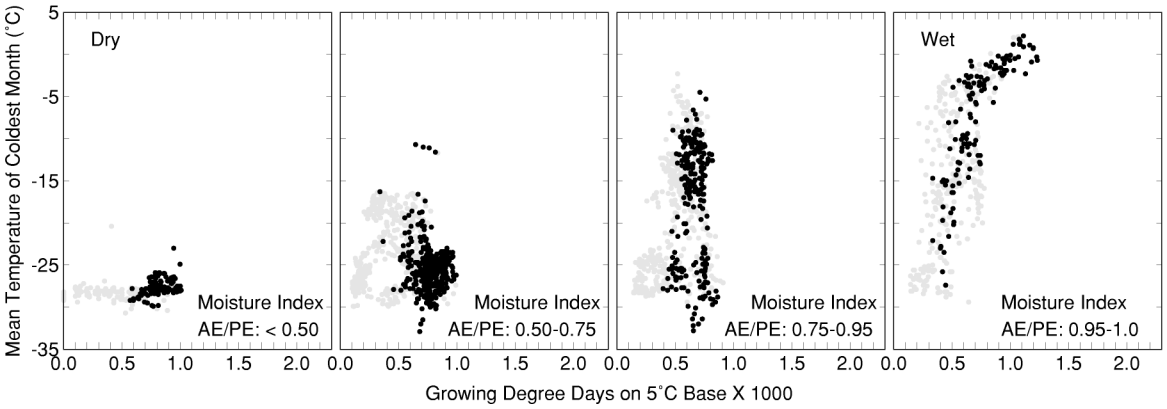


Viburnum edule

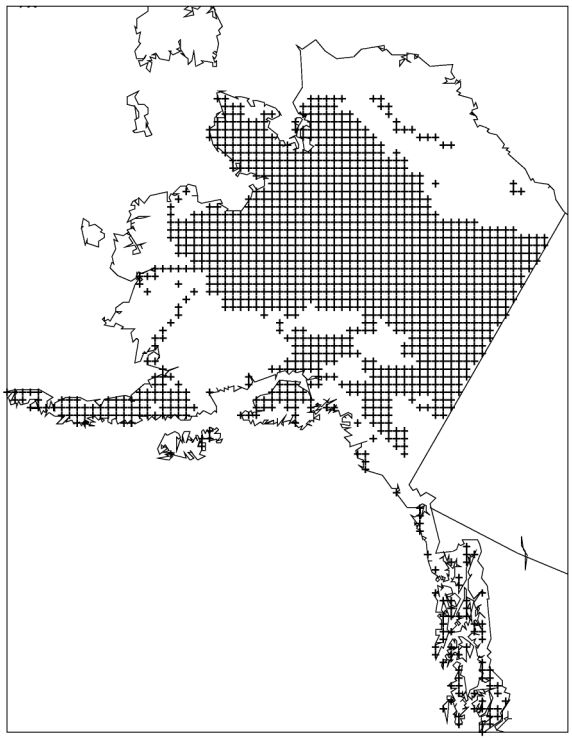


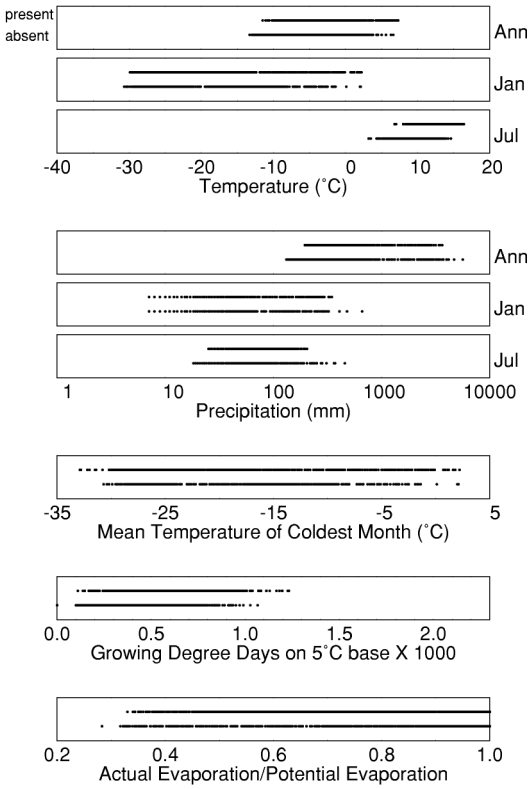


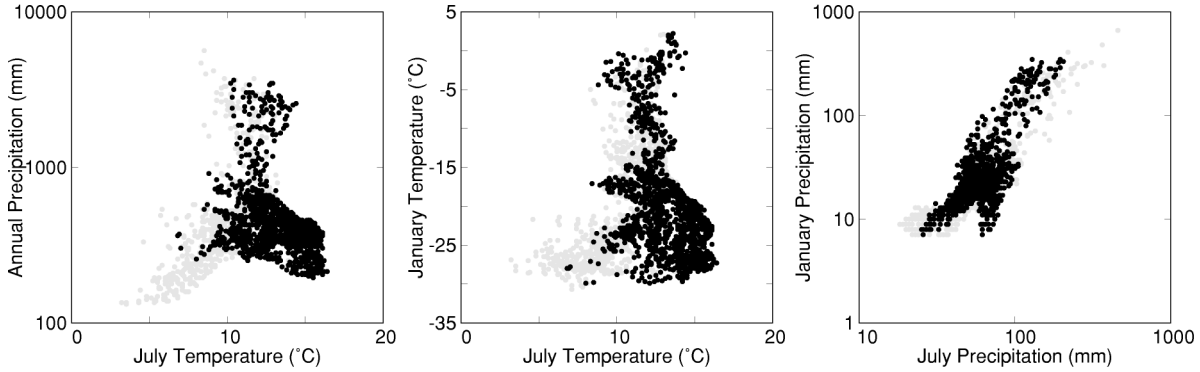


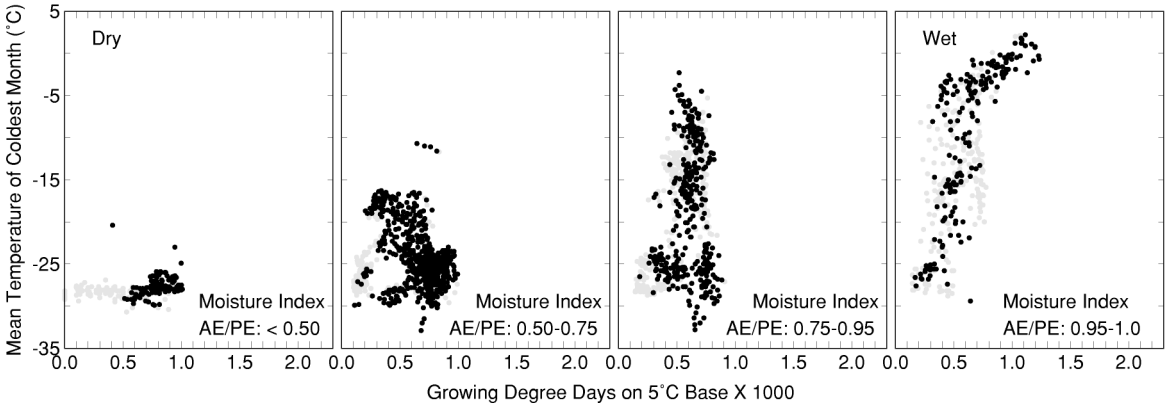


ALNUS

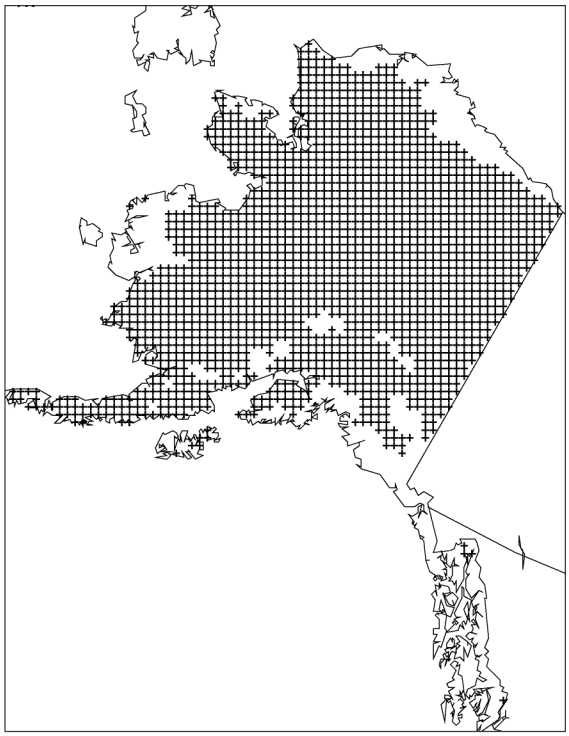


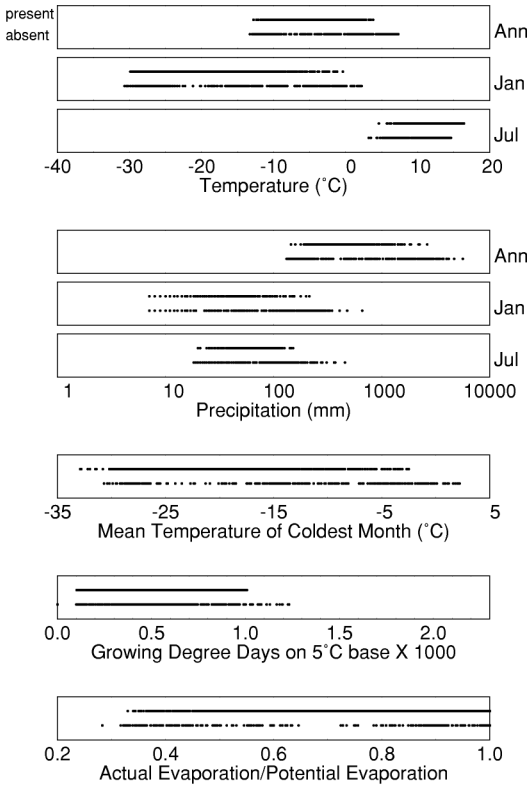

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

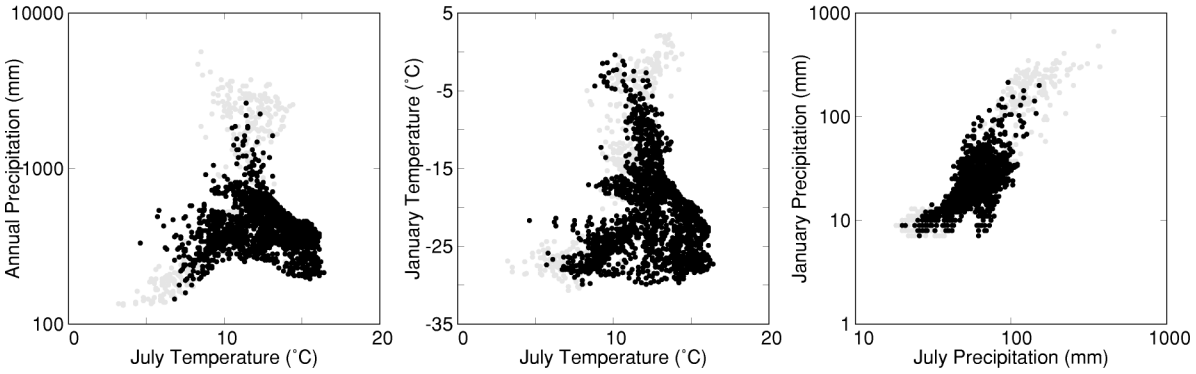

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

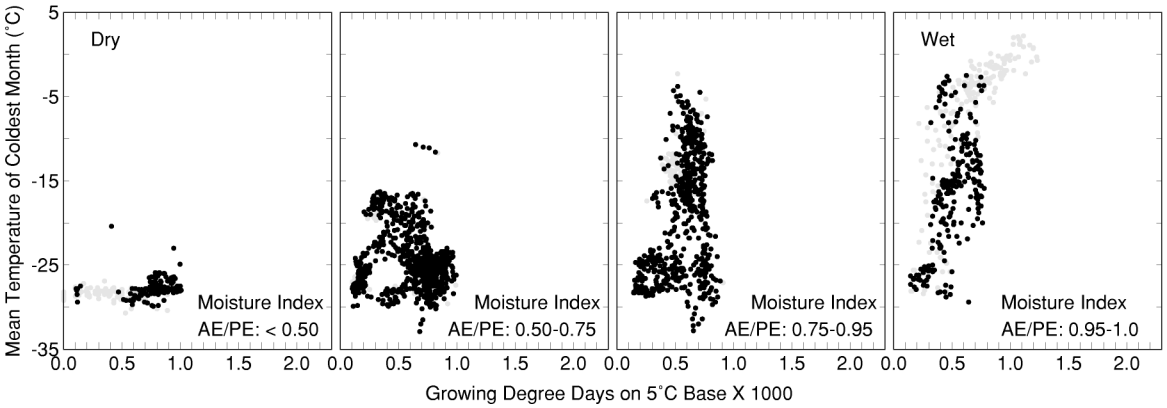

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

BETULA

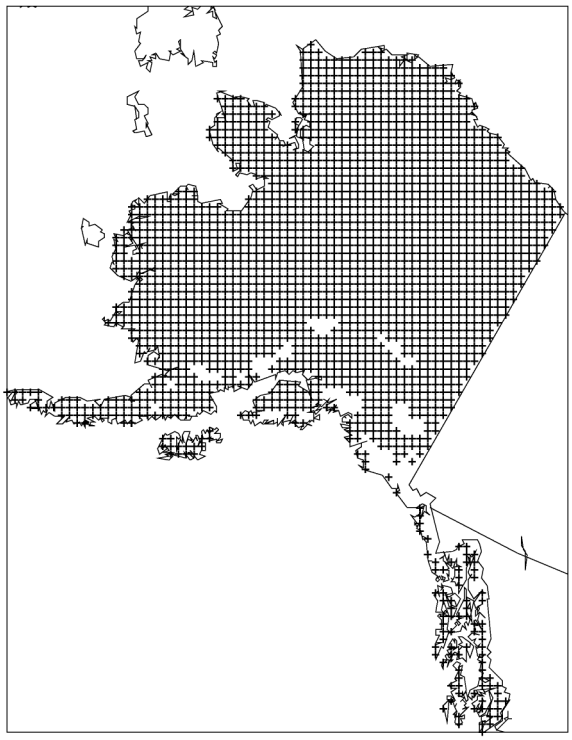


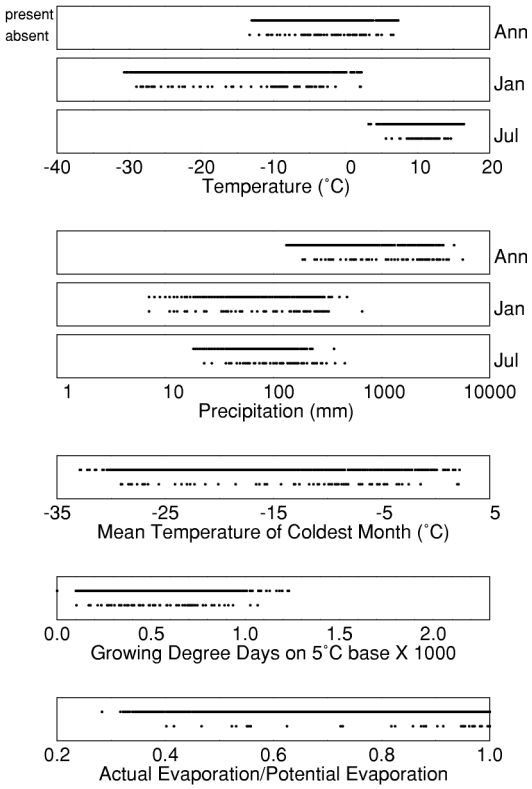

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

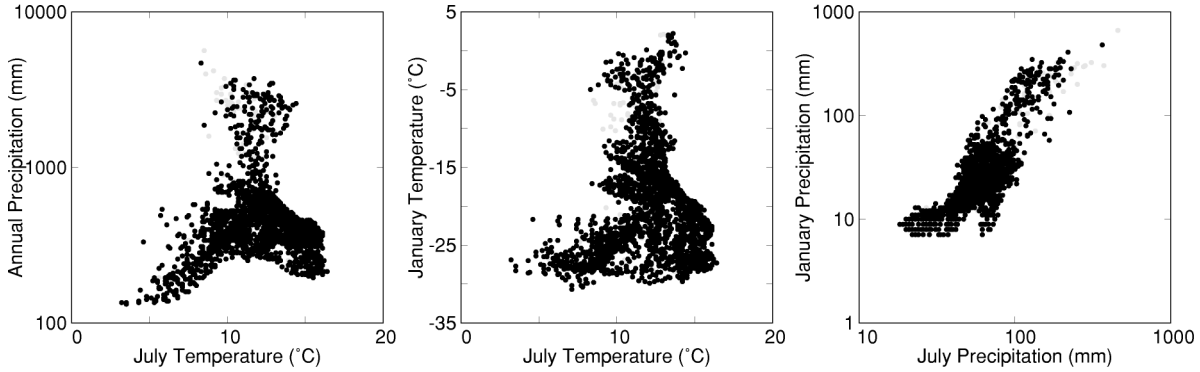

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

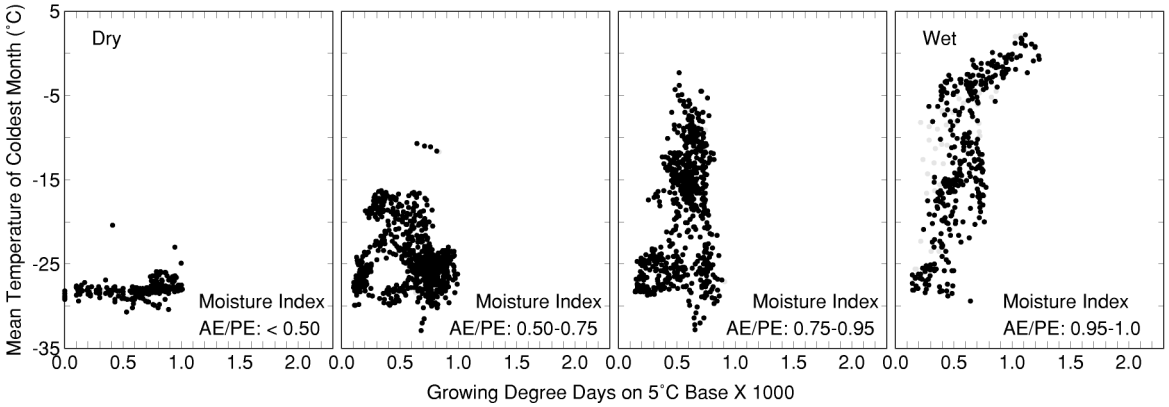

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

ERICACEAE

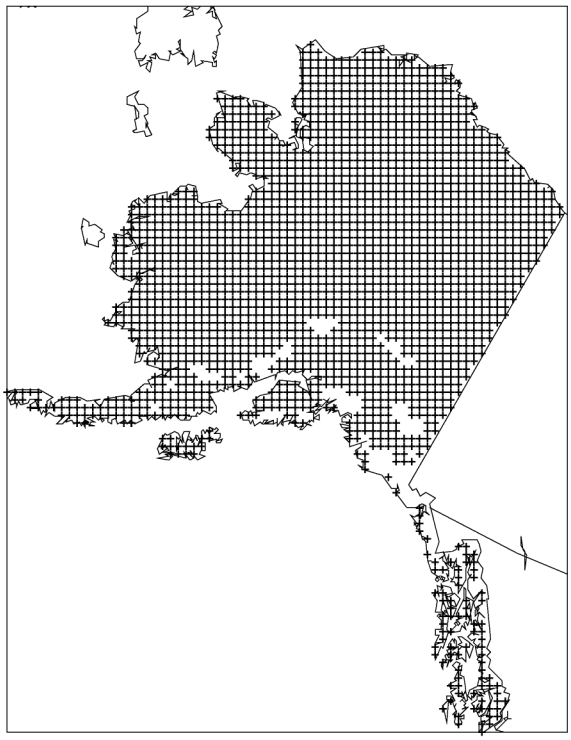


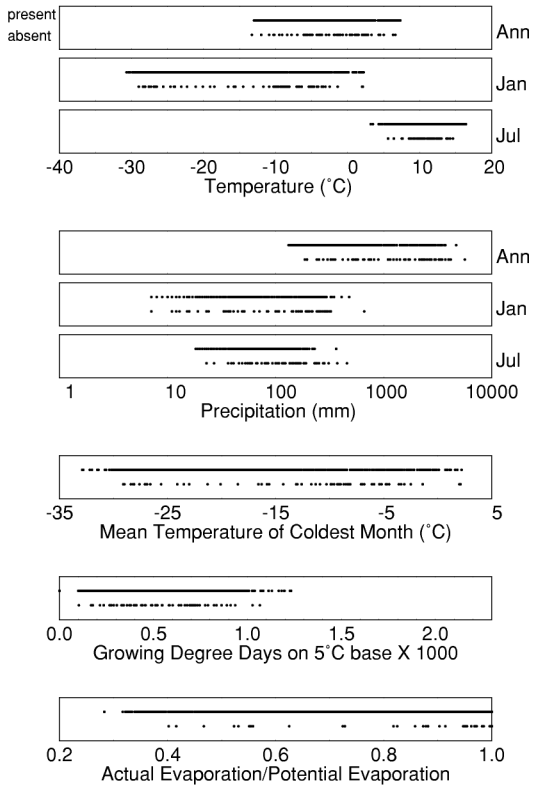

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

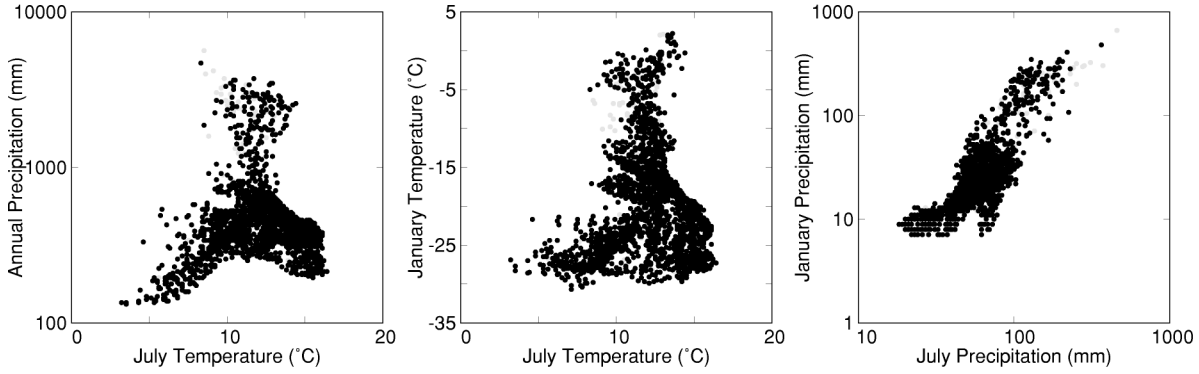

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

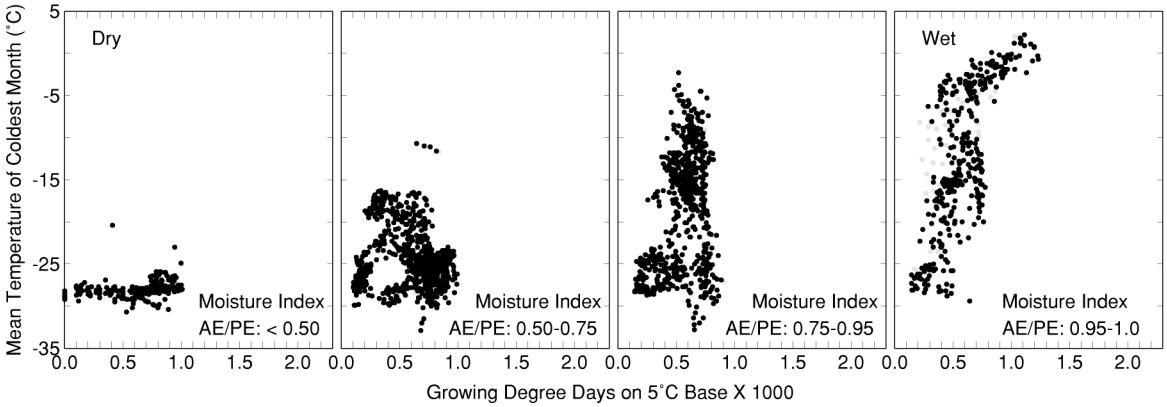

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

ERICACEAE */EMPETRUM*

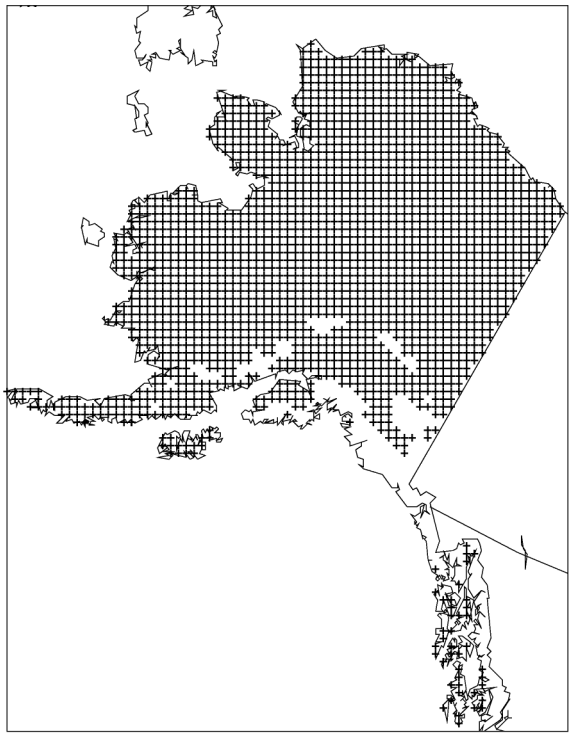


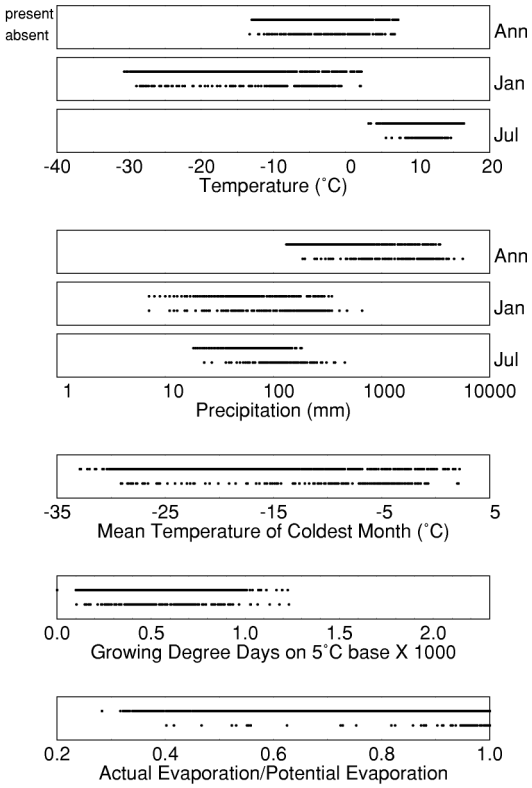


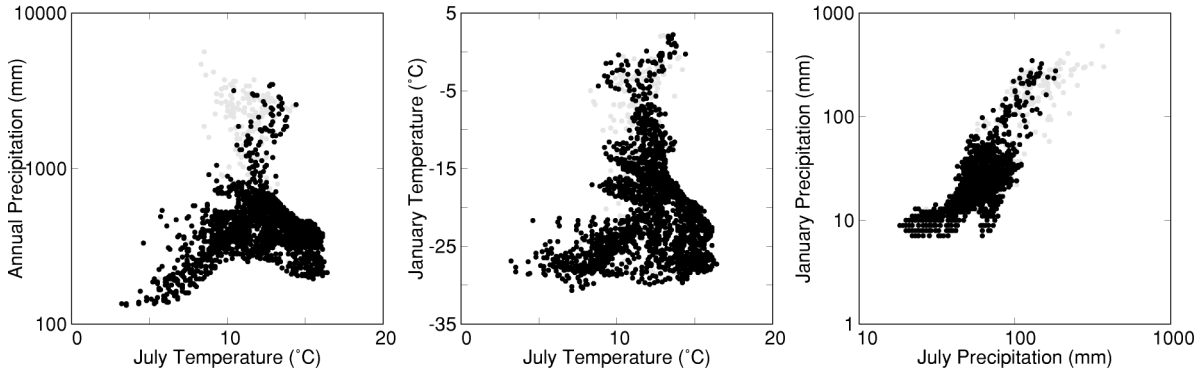


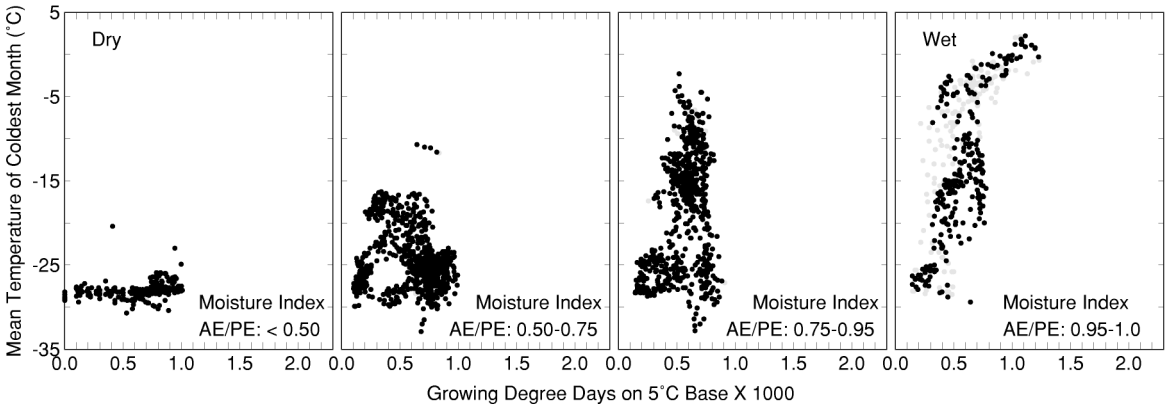


LEDUM

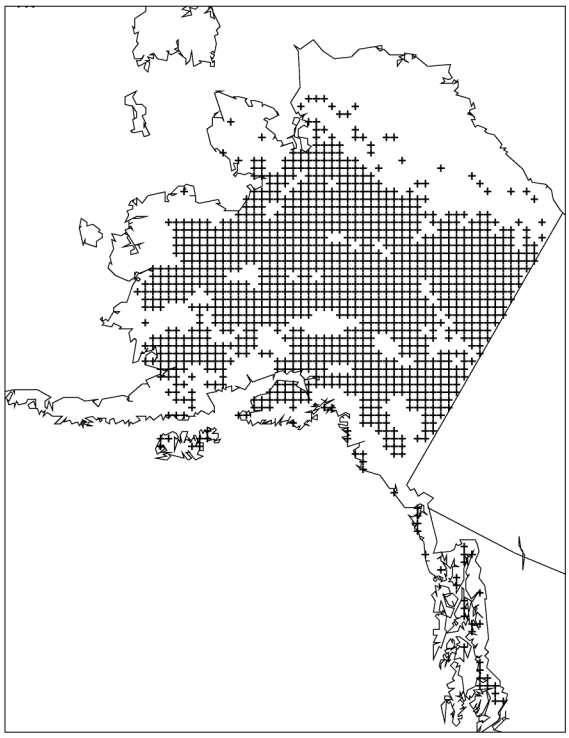


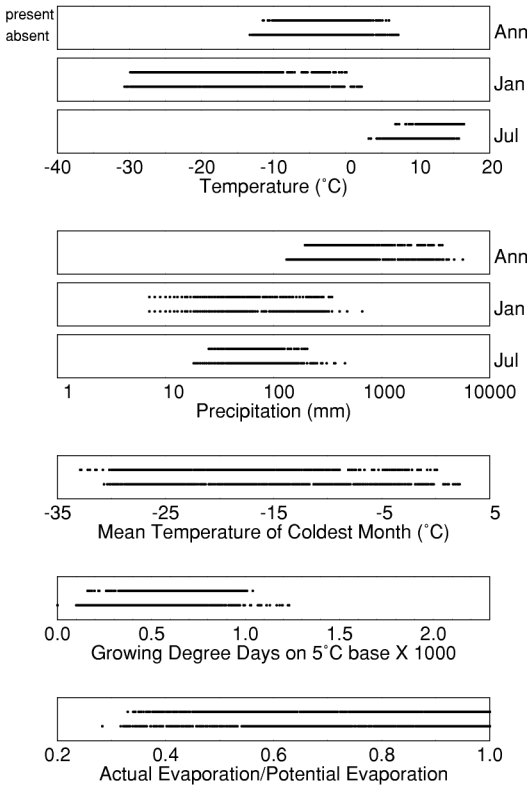

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

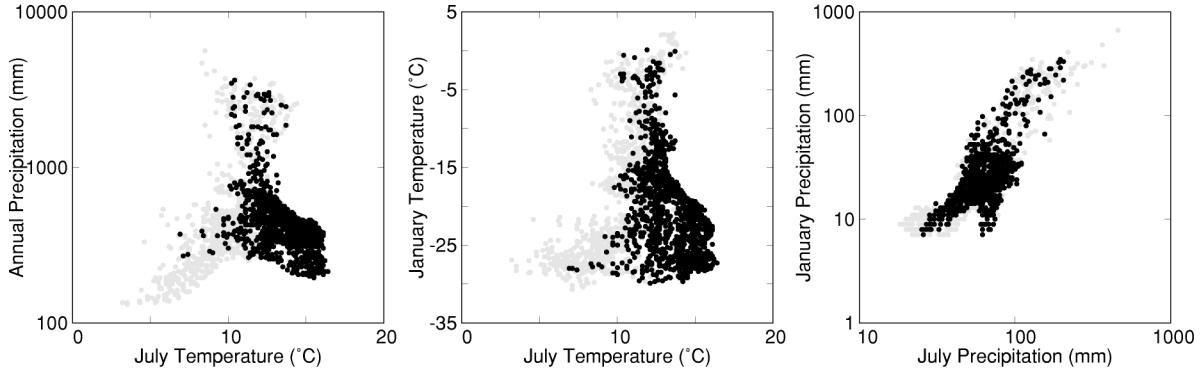

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

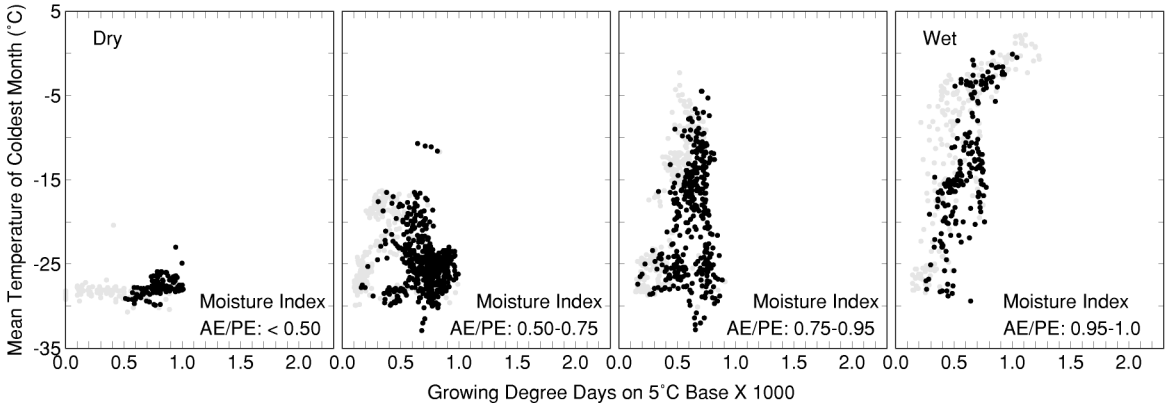

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

POPULUS

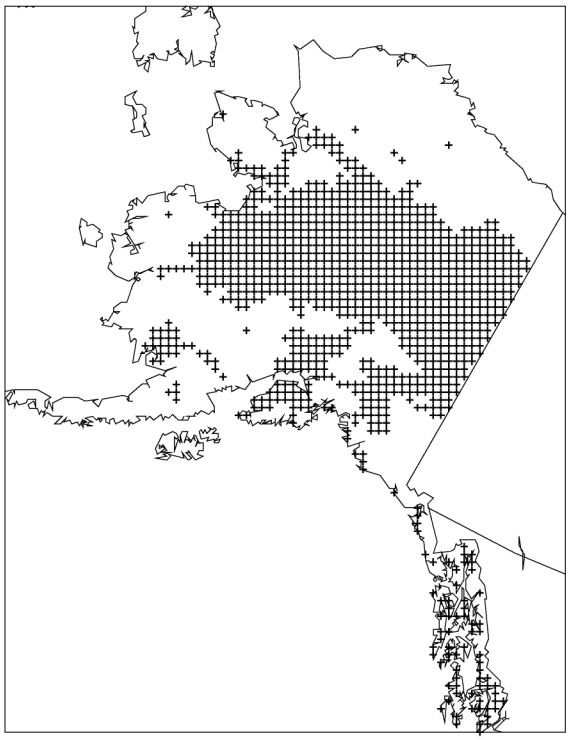


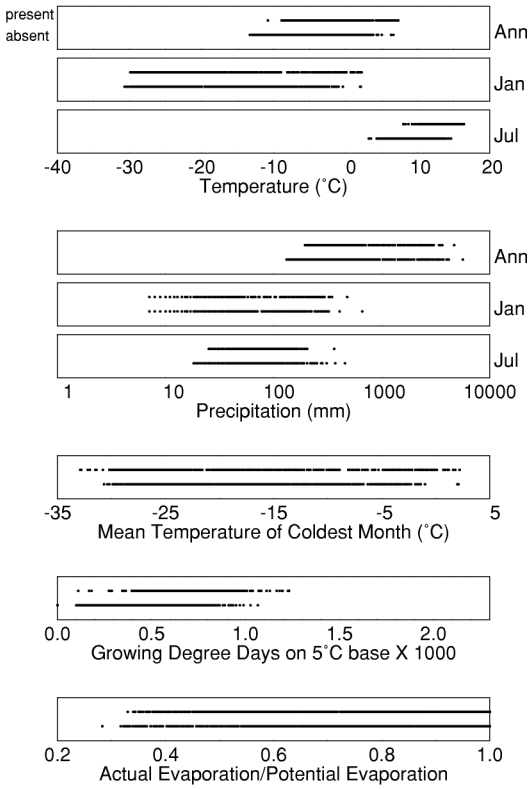

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

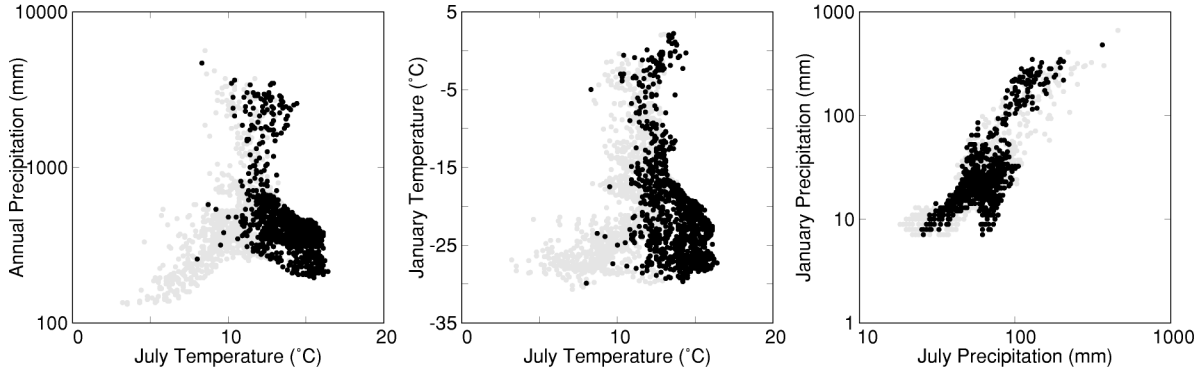

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

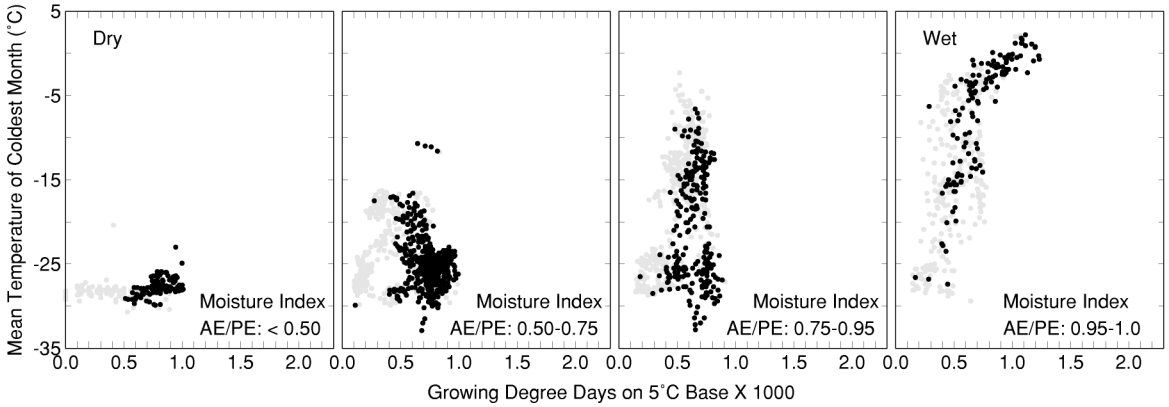

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

RIBES

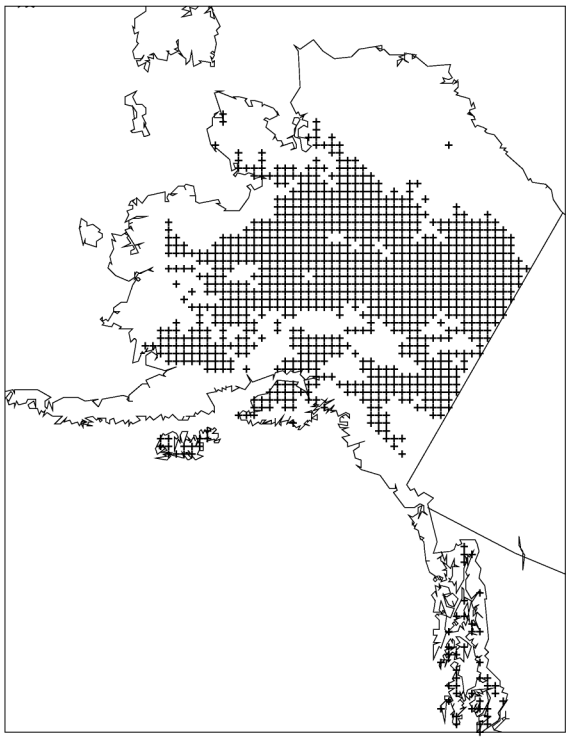


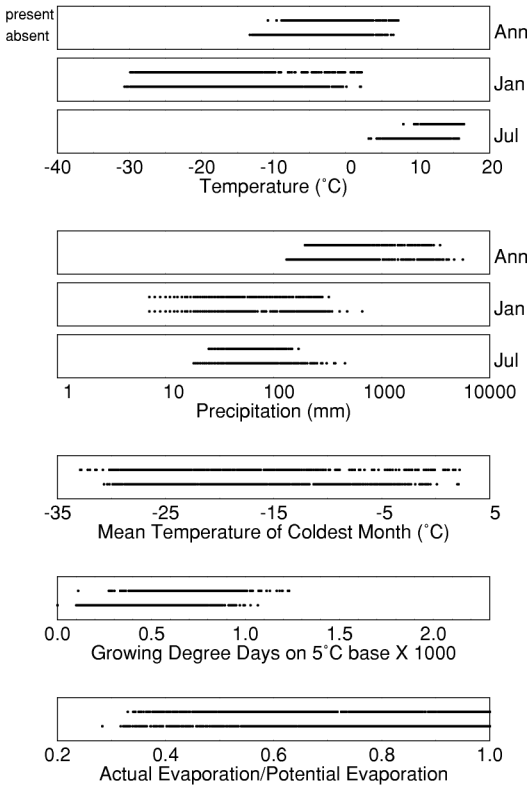

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

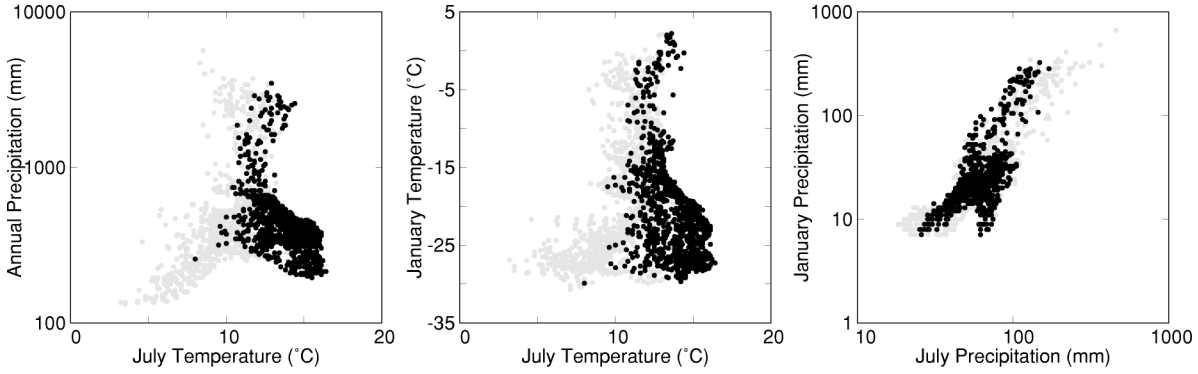

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

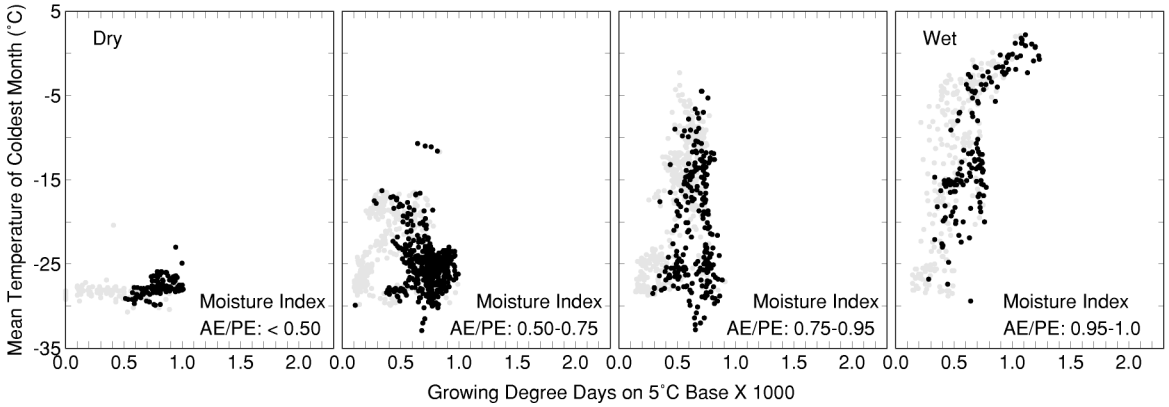

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

ROSA

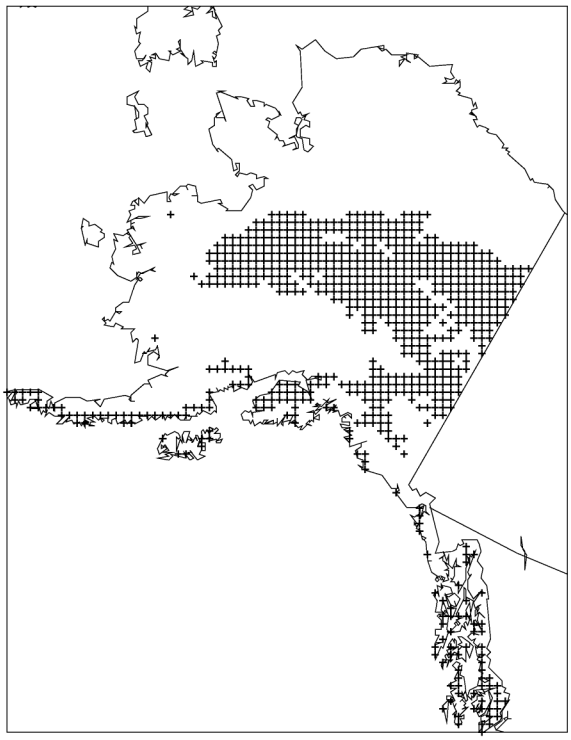


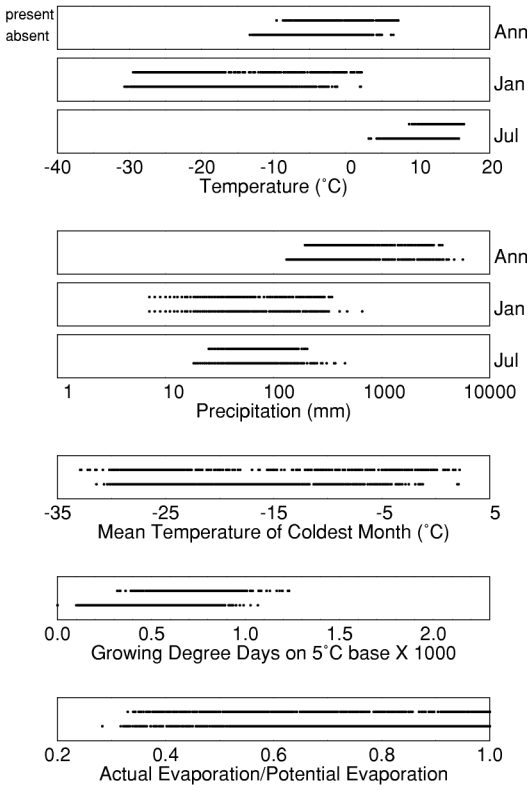

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

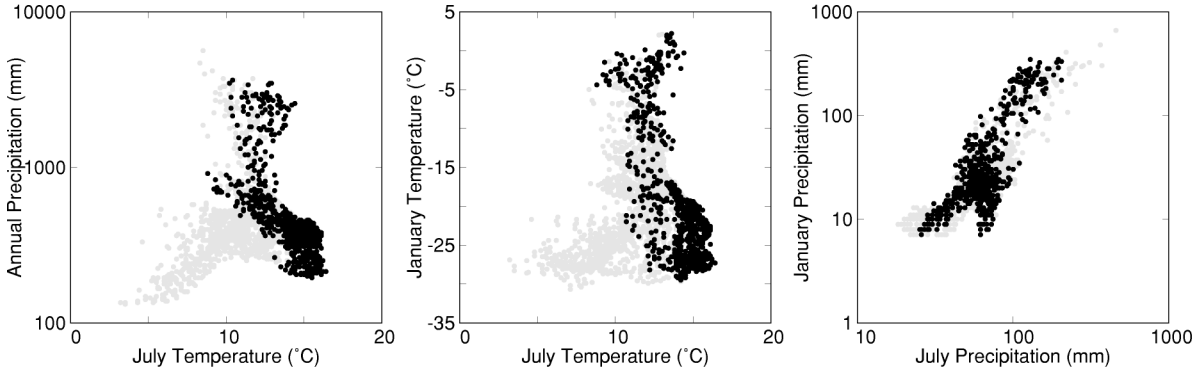

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

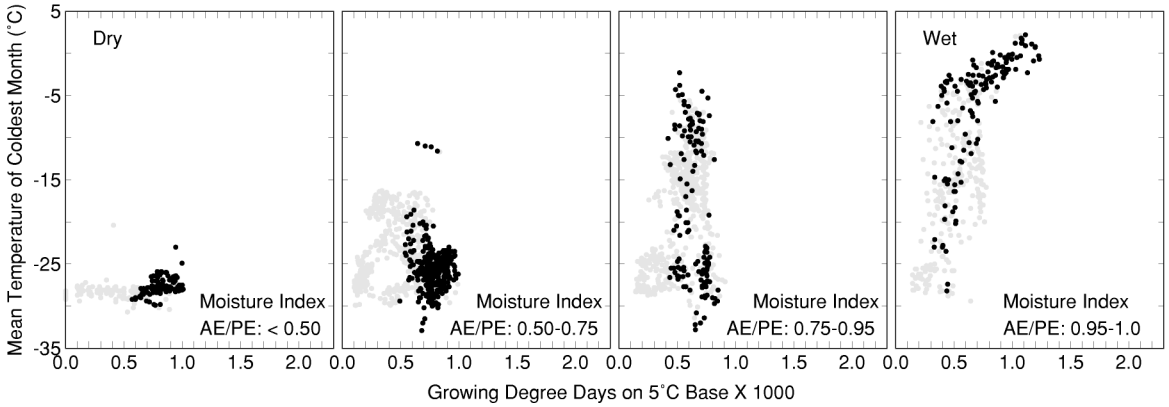

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

RUBUS

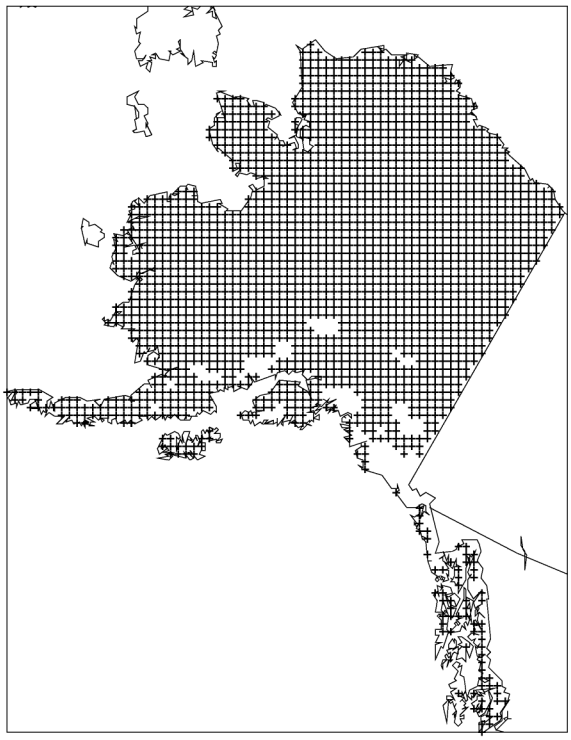


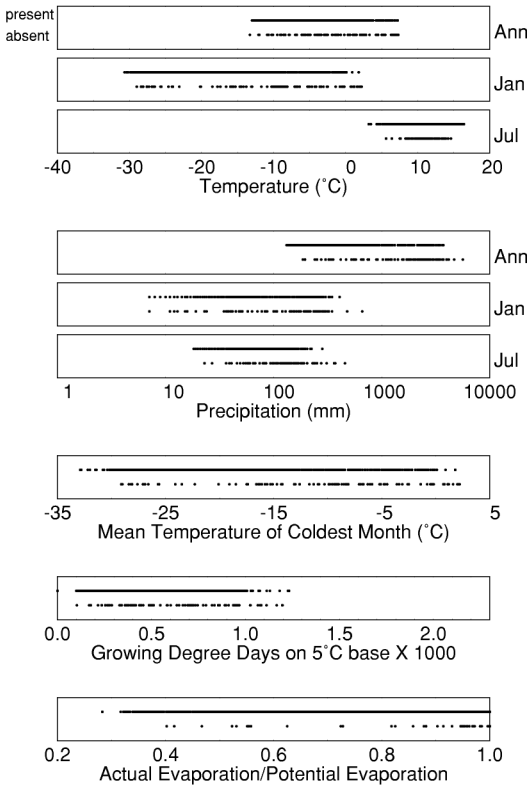

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

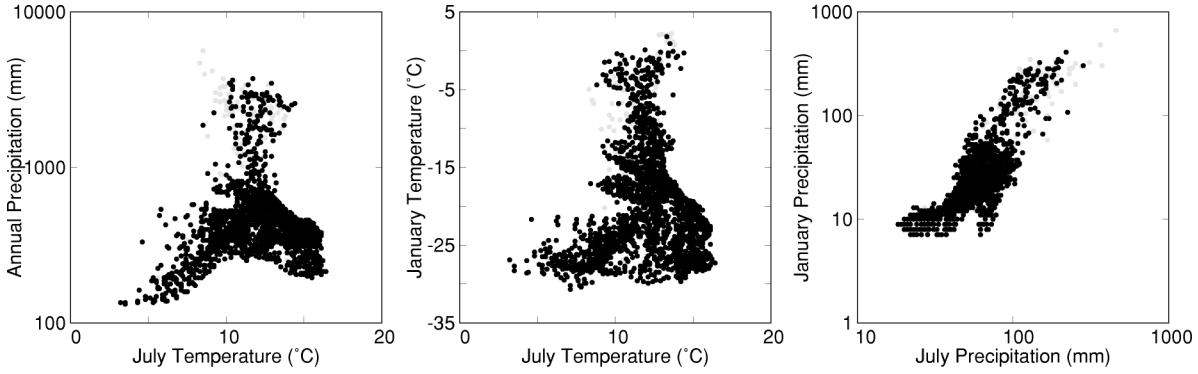

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

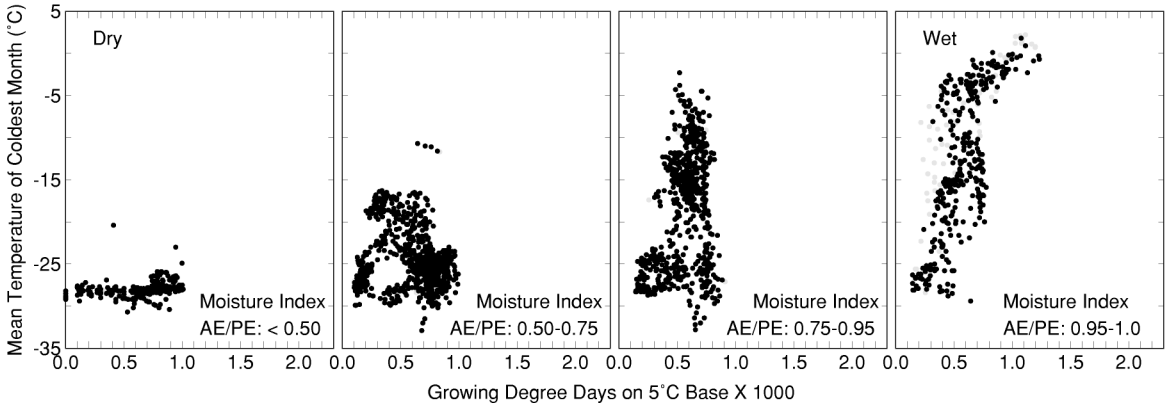

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

SALIX

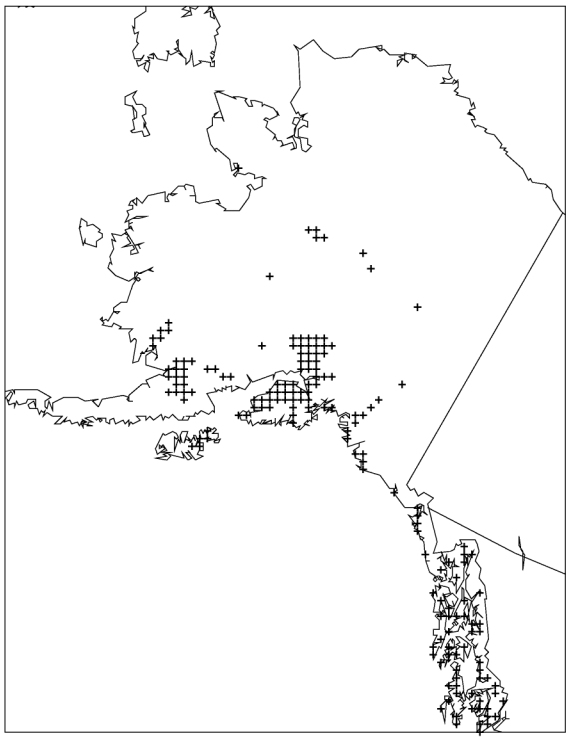


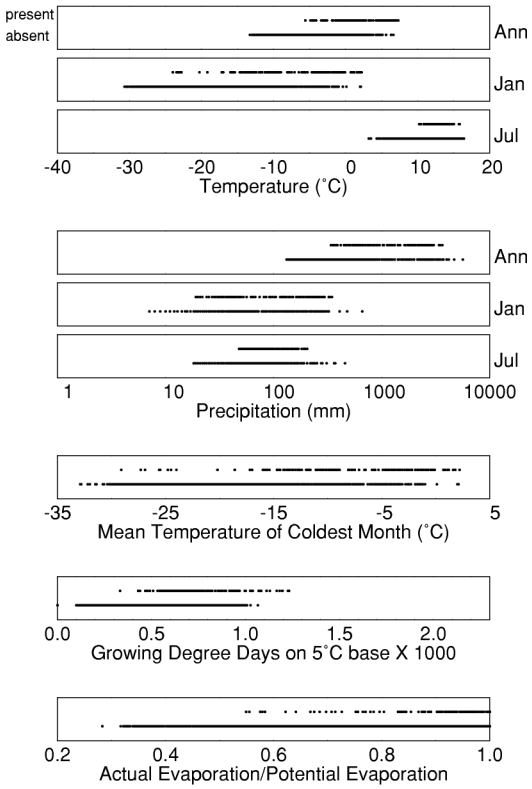

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

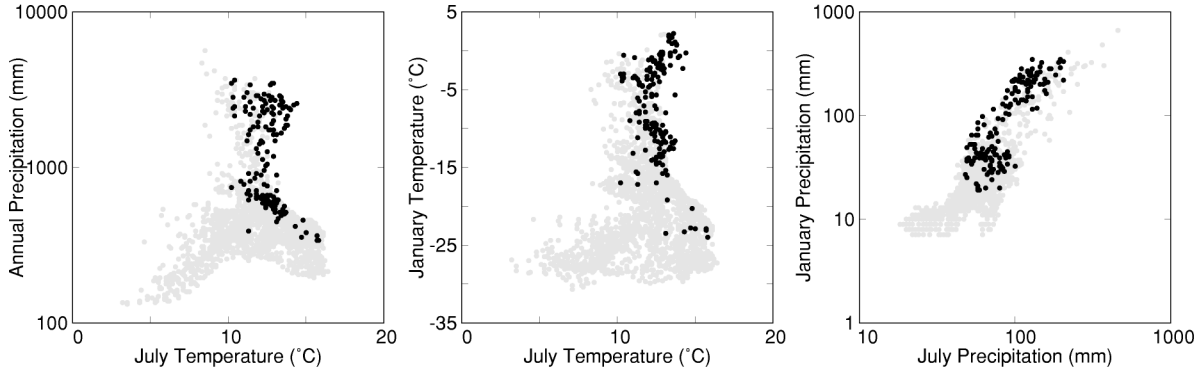

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

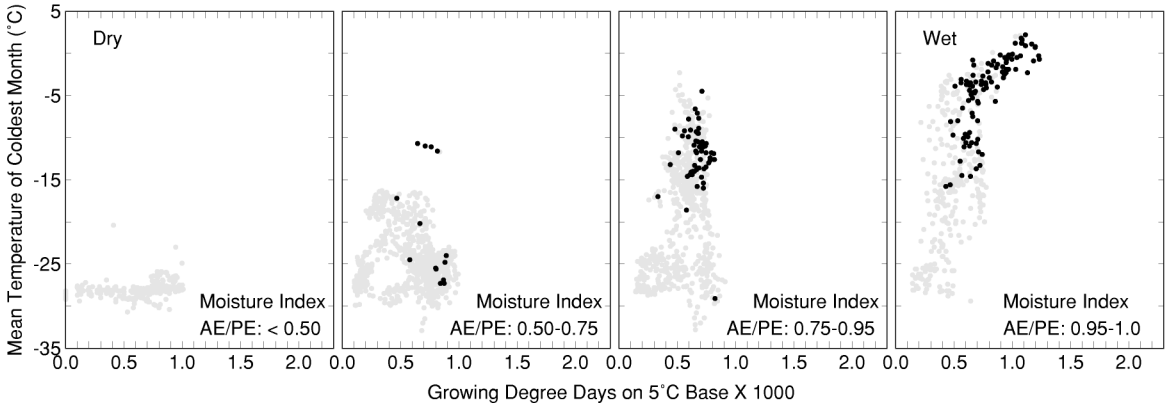

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

SORBUS

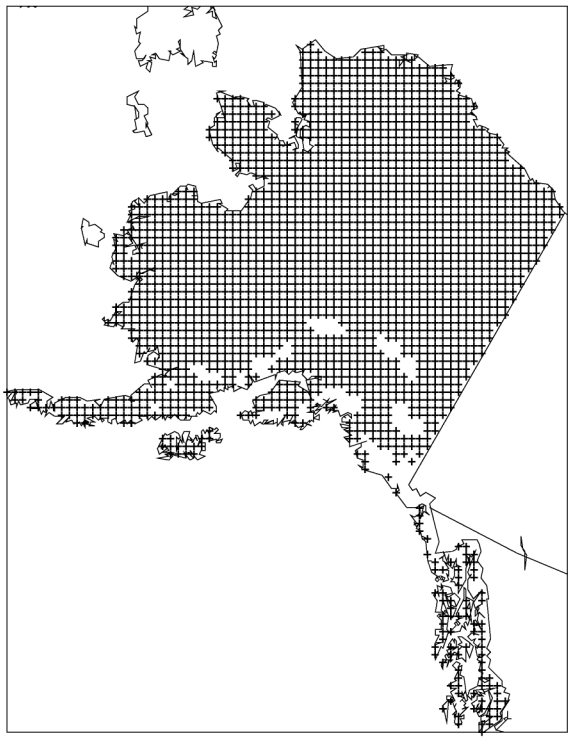


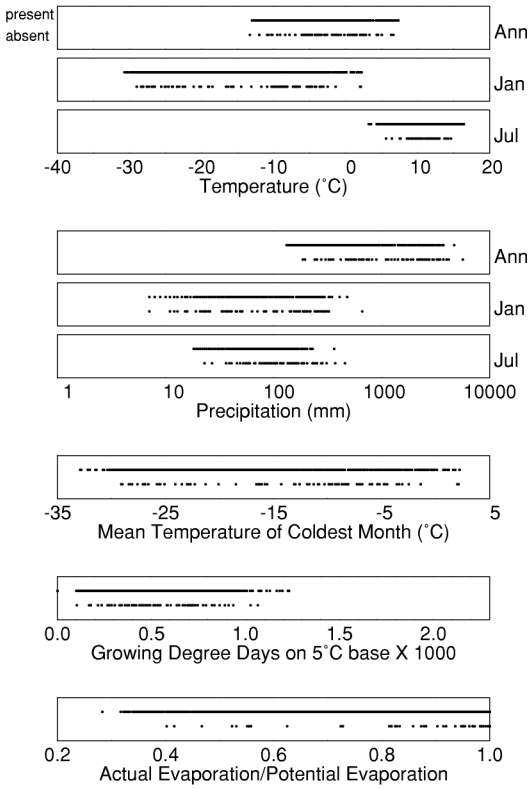

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

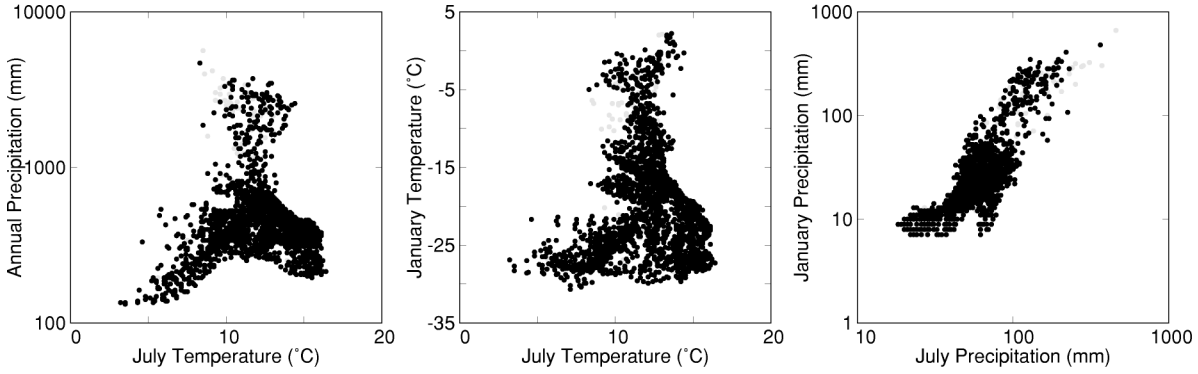

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

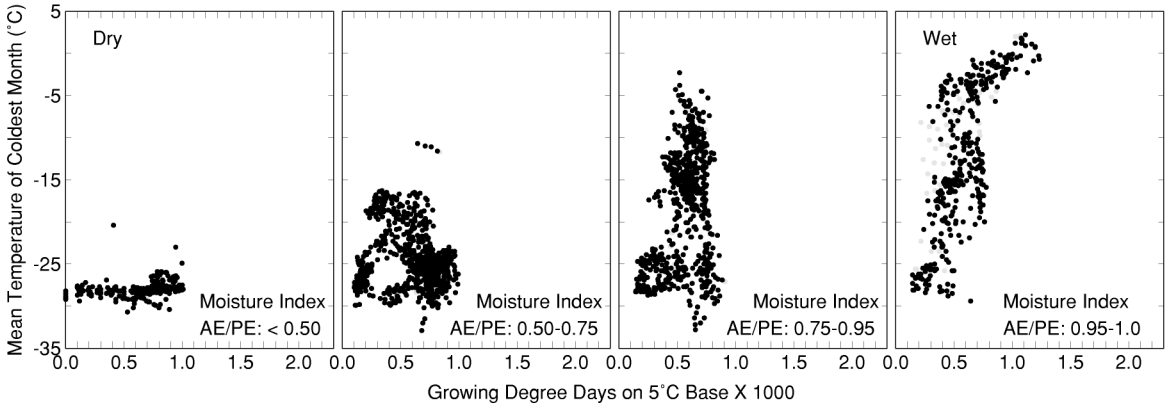

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

VACCINIUM

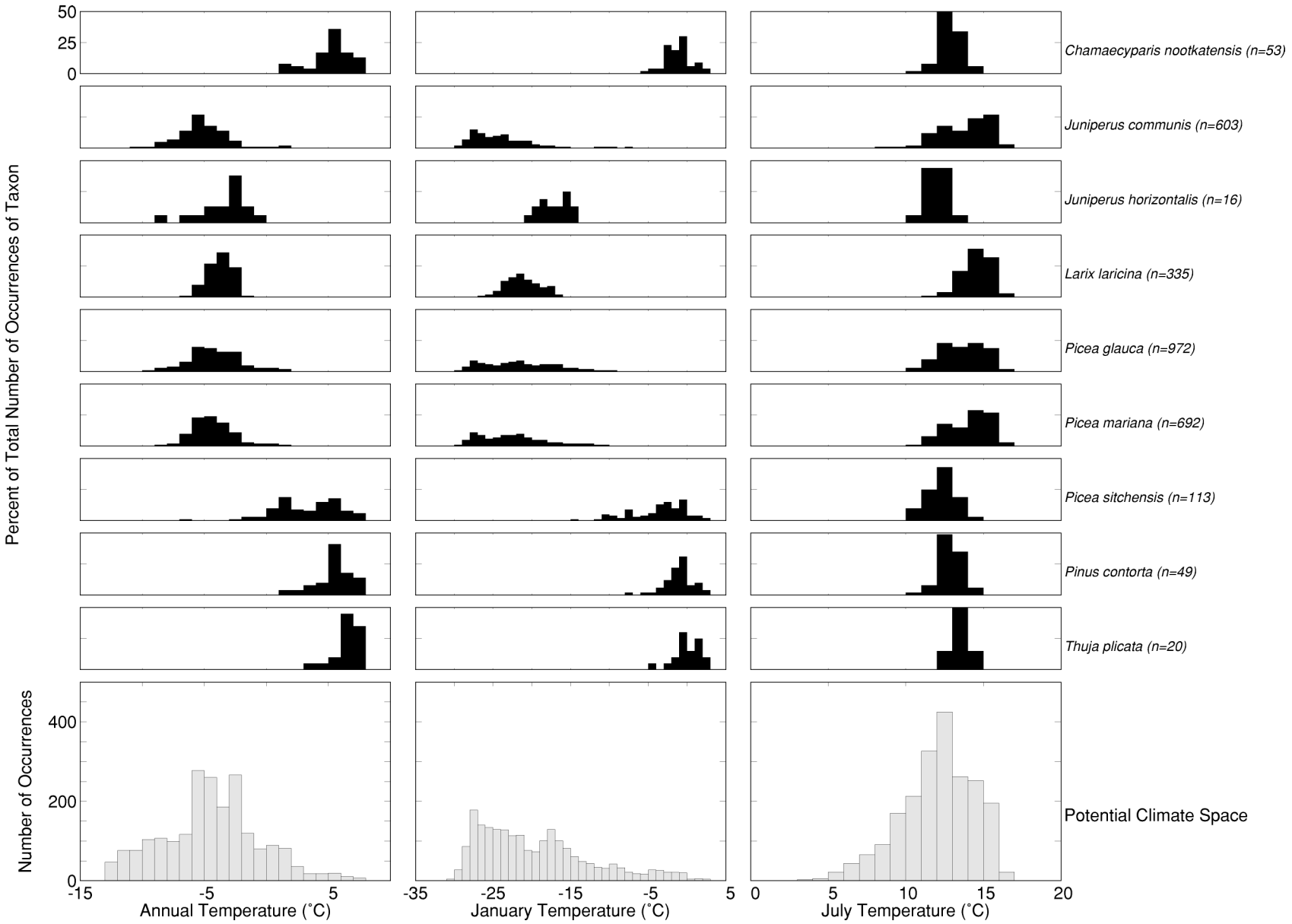


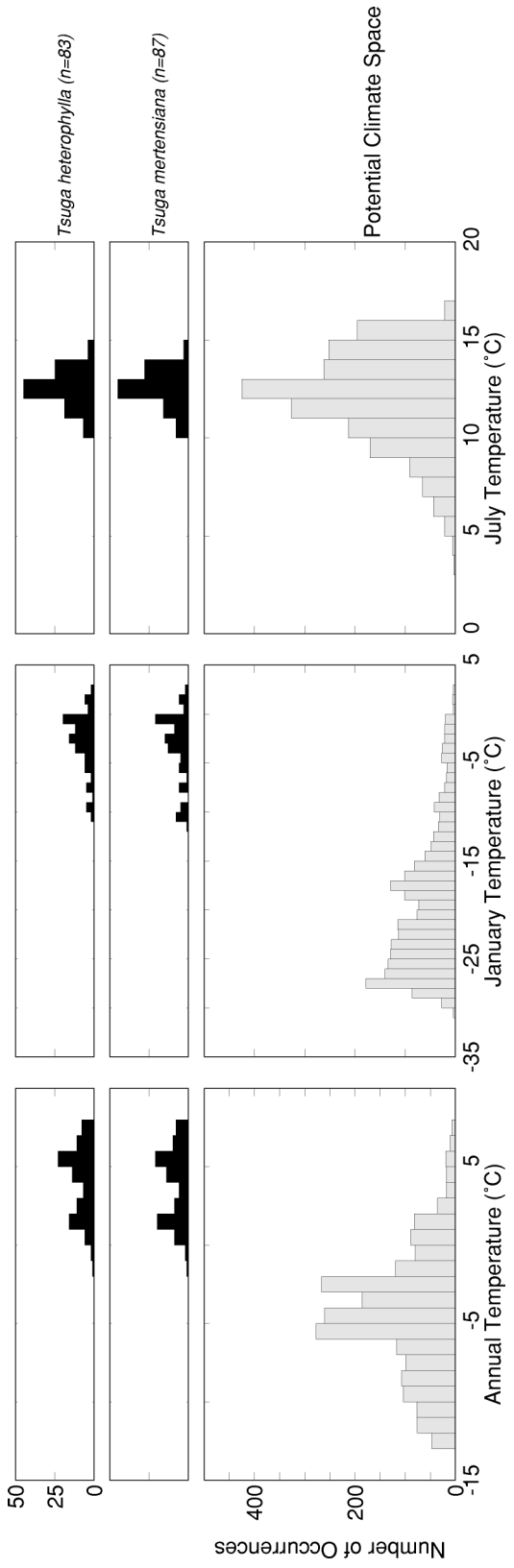

present
absent
Ann
Jan
Jul
-40 -30 -20 -10 0 10 20
Temperature (˚C)
Ann
Jan
Jul
1 10 100 1000 10000
Precipitation (mm)
-35 -25 -15 -5 5
Mean Temperature of Coldest Month (˚C)
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C base X 1000
0.2 0.4 0.6 0.8 1.0
Actual Evaporation/Potential Evaporation

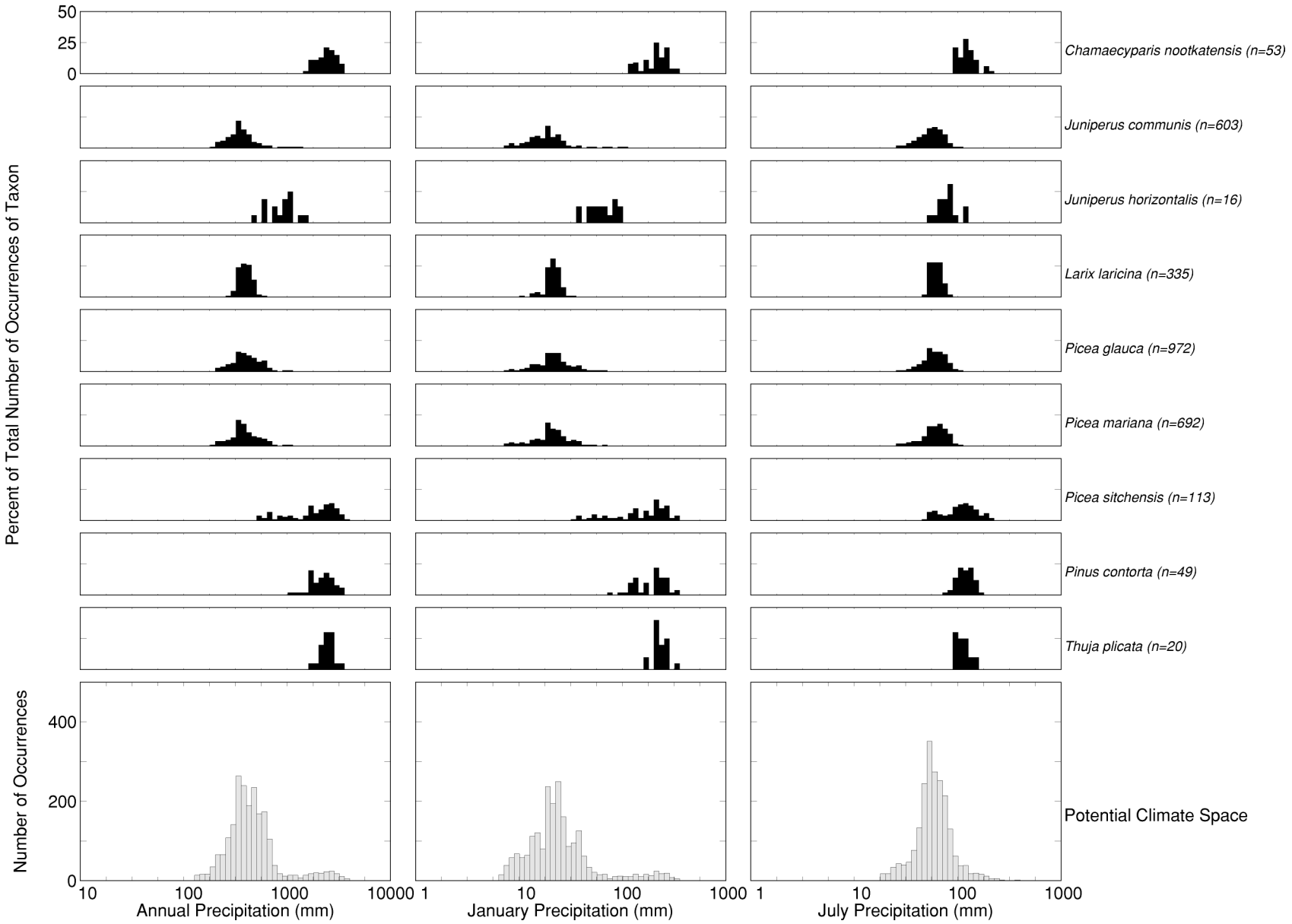

Annual Precipitation (mm)
10000
1000
100
0 10 20
July Temperature (˚C)
January Temperature (˚C)
5
-5
-15
-25
-35
0 10 20
July Temperature (˚C)
January Precipitation (mm)
1000
100
10
1
10 100 1000
July Precipitation (mm)

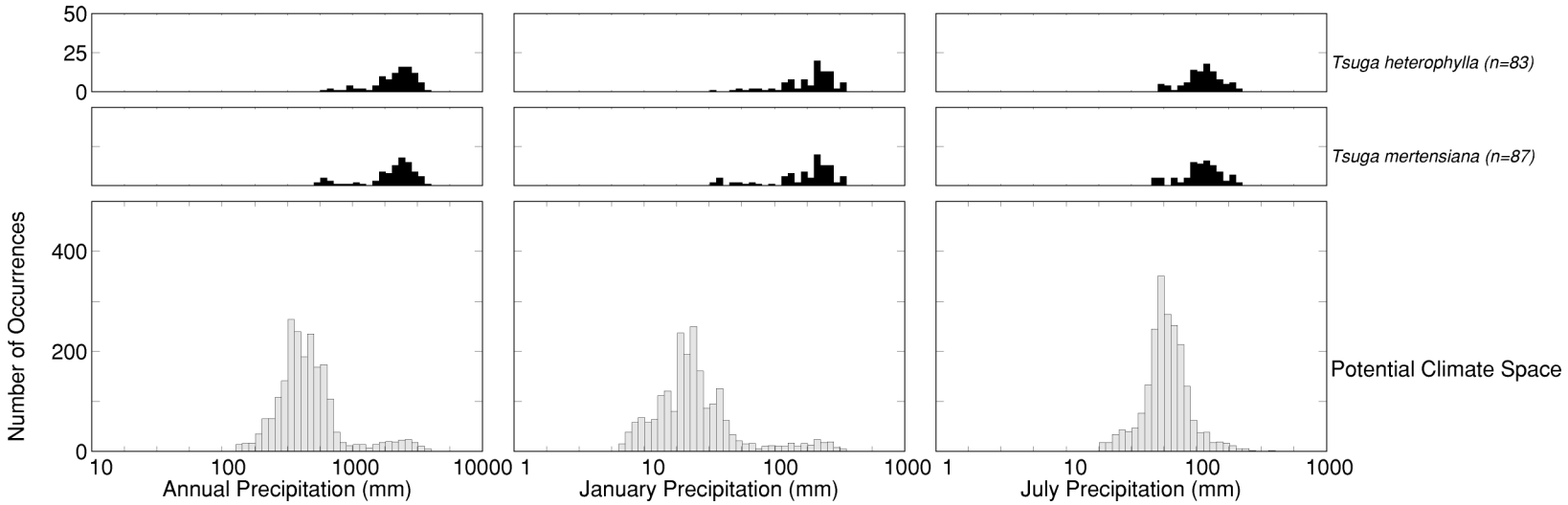

Mean Temperature of Coldest Month (˚C)
5
-5
-15
-25
-35
Dry
Moisture Index
AE/PE: < 0.50
Moisture Index
AE/PE: 0.50-0.75
Moisture Index
AE/PE: 0.75-0.95
Wet
Moisture Index
AE/PE: 0.95-1.0
0.0 0.5 1.0 1.5 2.0
Growing Degree Days on 5˚C Base X 1000

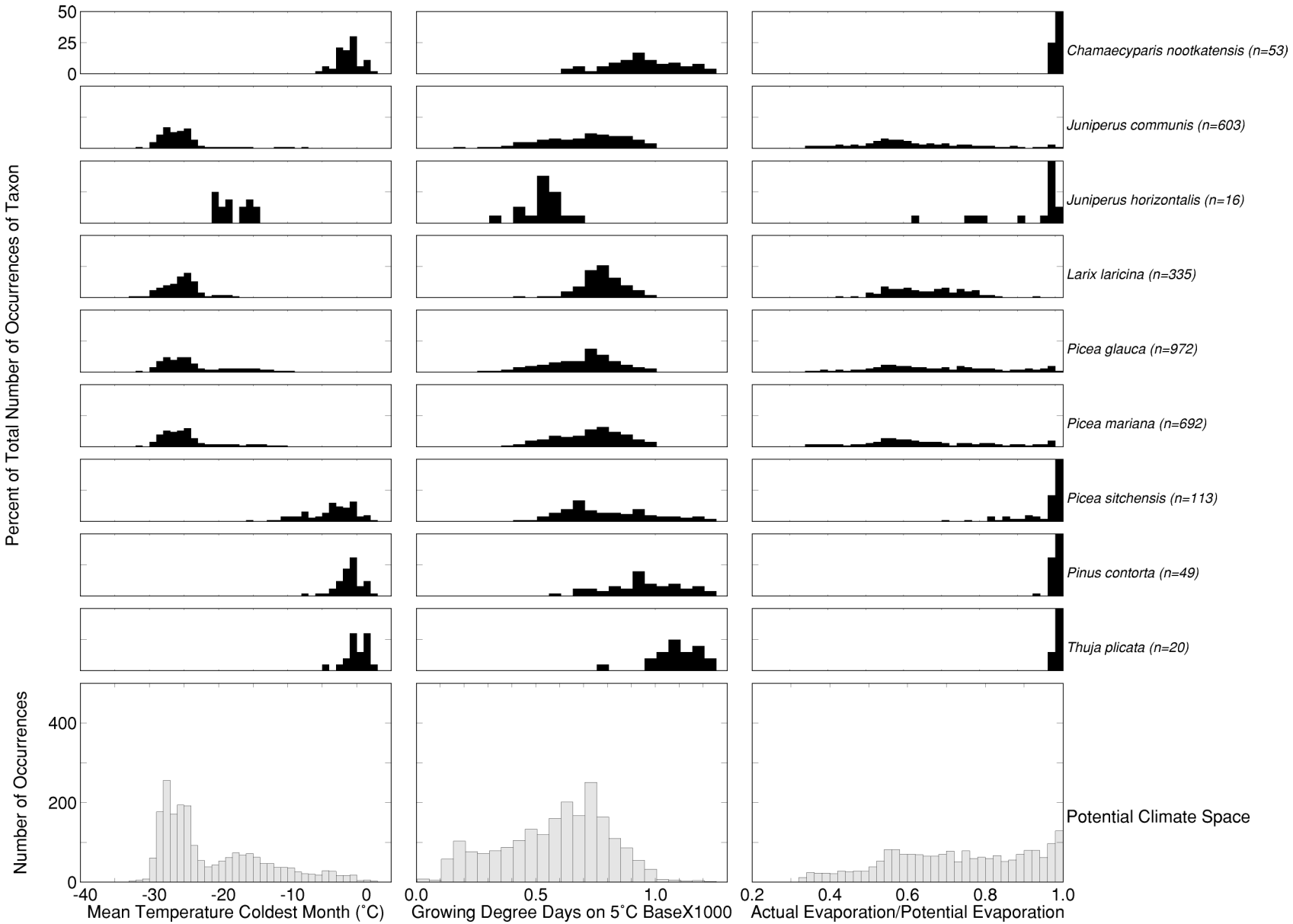
Alaska Species, Genera, and Groups—Histograms

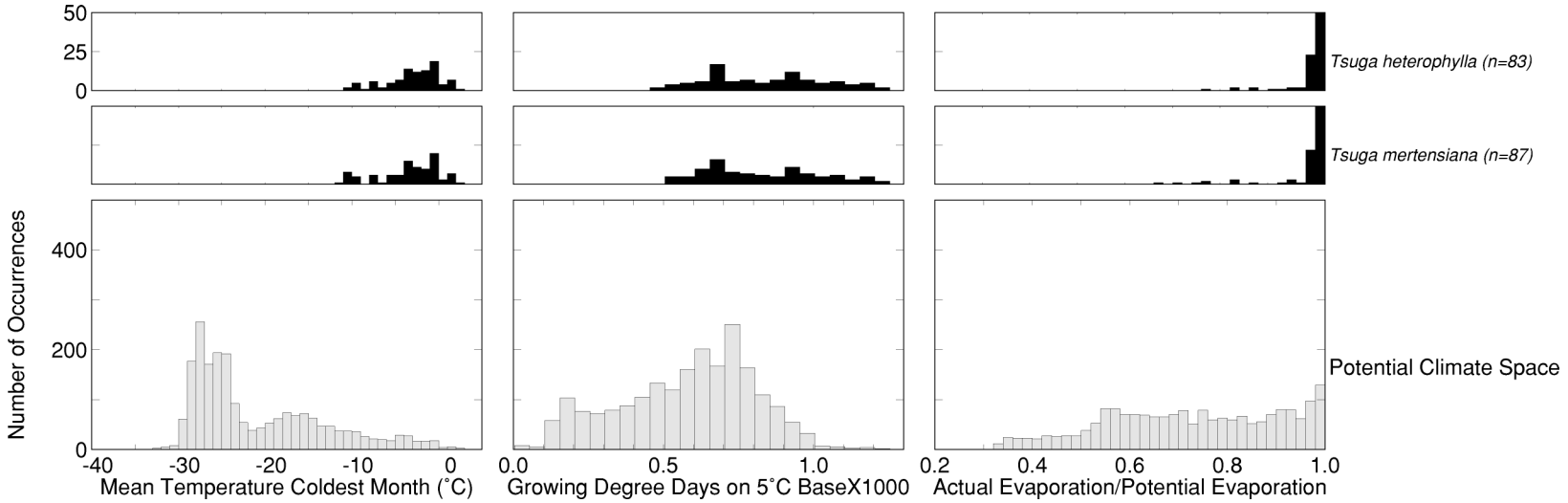

Percent of Total Number of Occurrences of Taxon
50
25
0
Chamaecyparis nootkatensis (n=53)
Juniperus communis (n=603)
Juniperus horizontalis (n=16)
Larix laricina (n=335)
Picea glauca (n=972)
Picea mariana (n=692)
Picea sitchensis (n=113)
Pinus contorta (n=49)
Thuja plicata (n=20)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

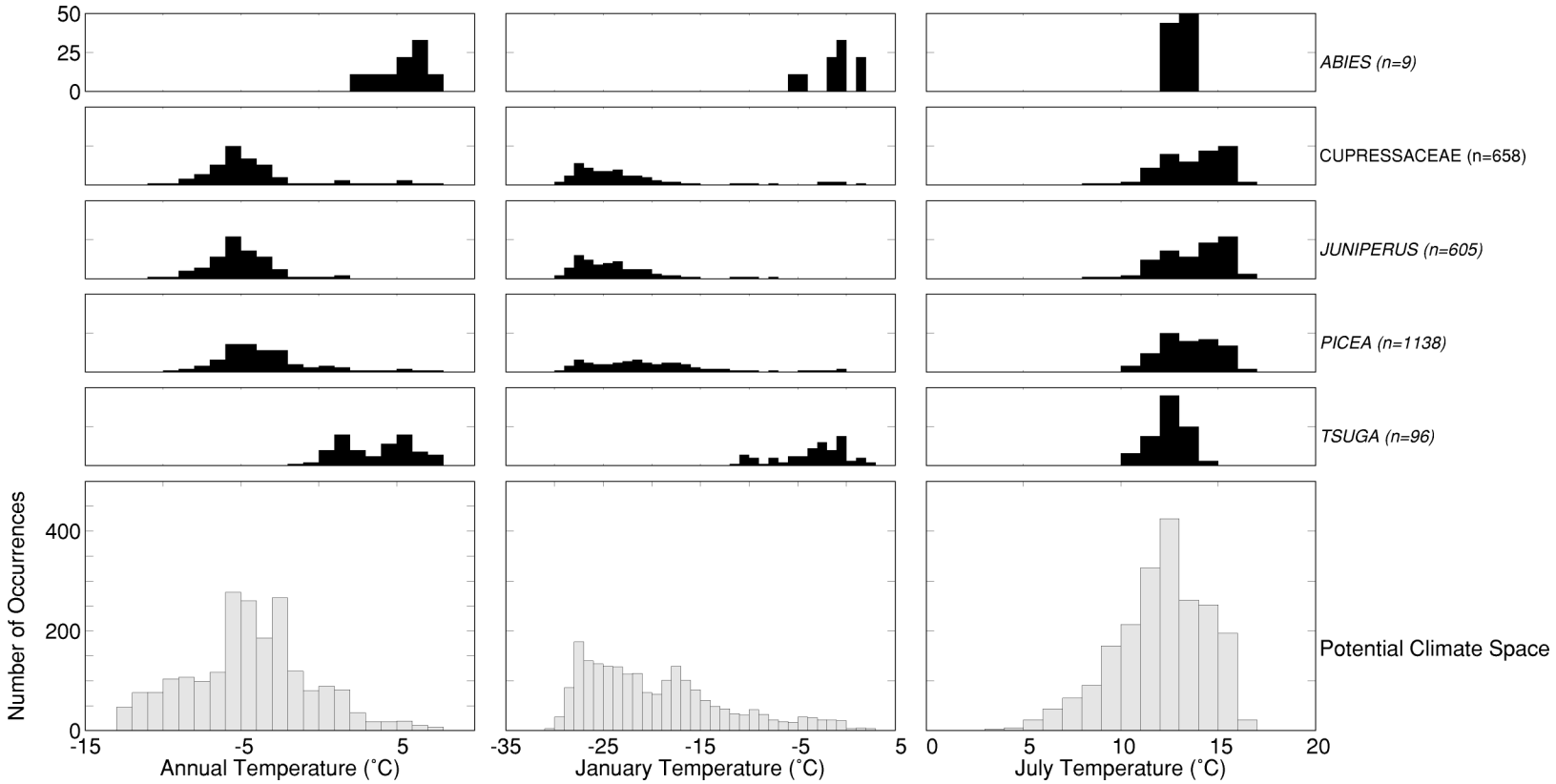

Tsuga heterophylla (n=83)
Tsuga mertensiana (n=87)
Potential Climate Space
Number of Occurrences
50
25
0
400
200
0
-15
-5
5
Annual Temperature (°C)
-35
-25
-15
-5
5
January Temperature (°C)
0
5
10
15
20
July Temperature (°C)

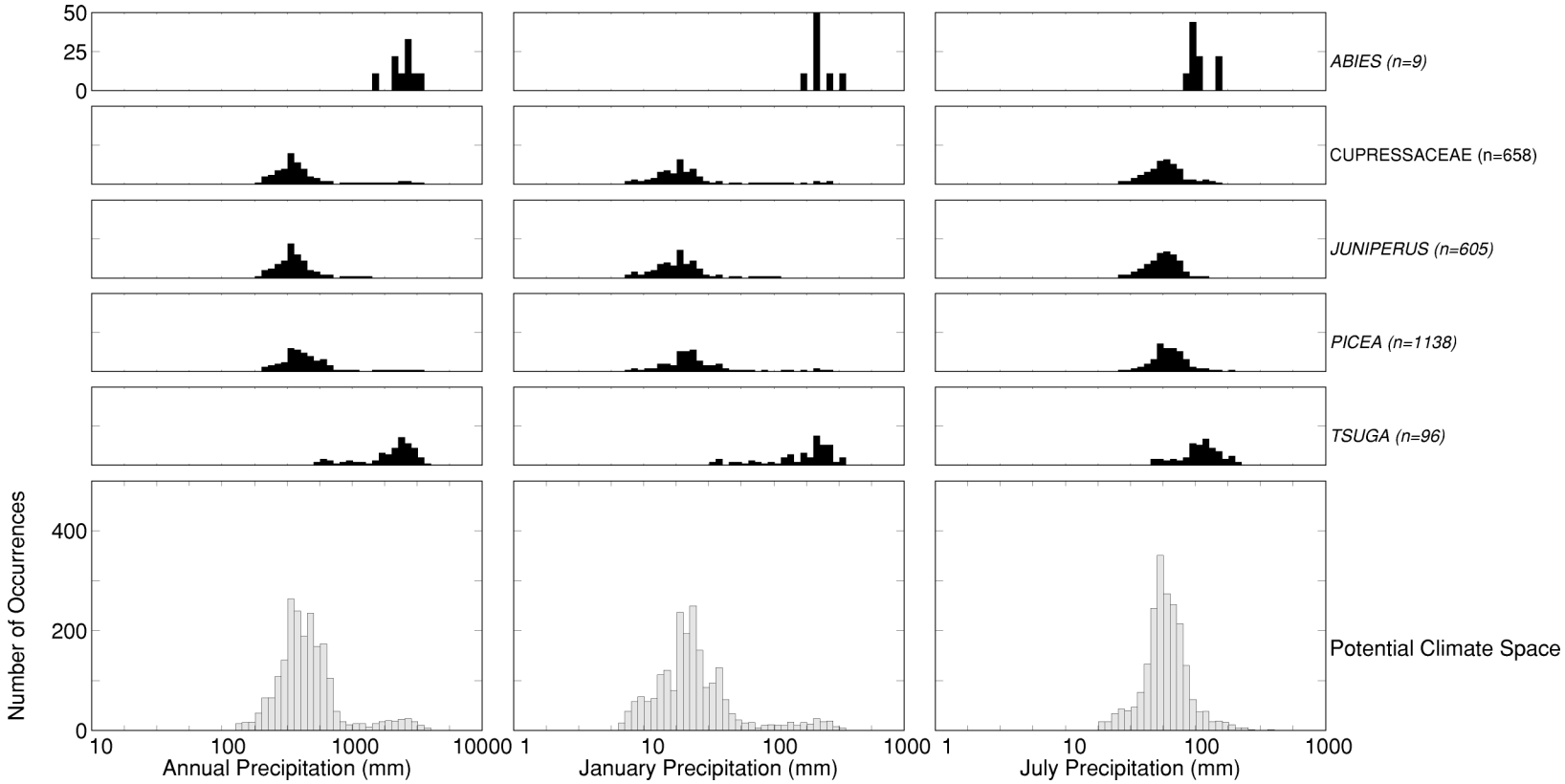

Percent of Total Number of Occurrences of Taxon
50
25
0
Chamaecyparis nootkatensis (n=53)
Juniperus communis (n=603)
Juniperus horizontalis (n=16)
Larix laricina (n=335)
Picea glauca (n=972)
Picea mariana (n=692)
Picea sitchensis (n=113)
Pinus contorta (n=49)
Thuja plicata (n=20)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

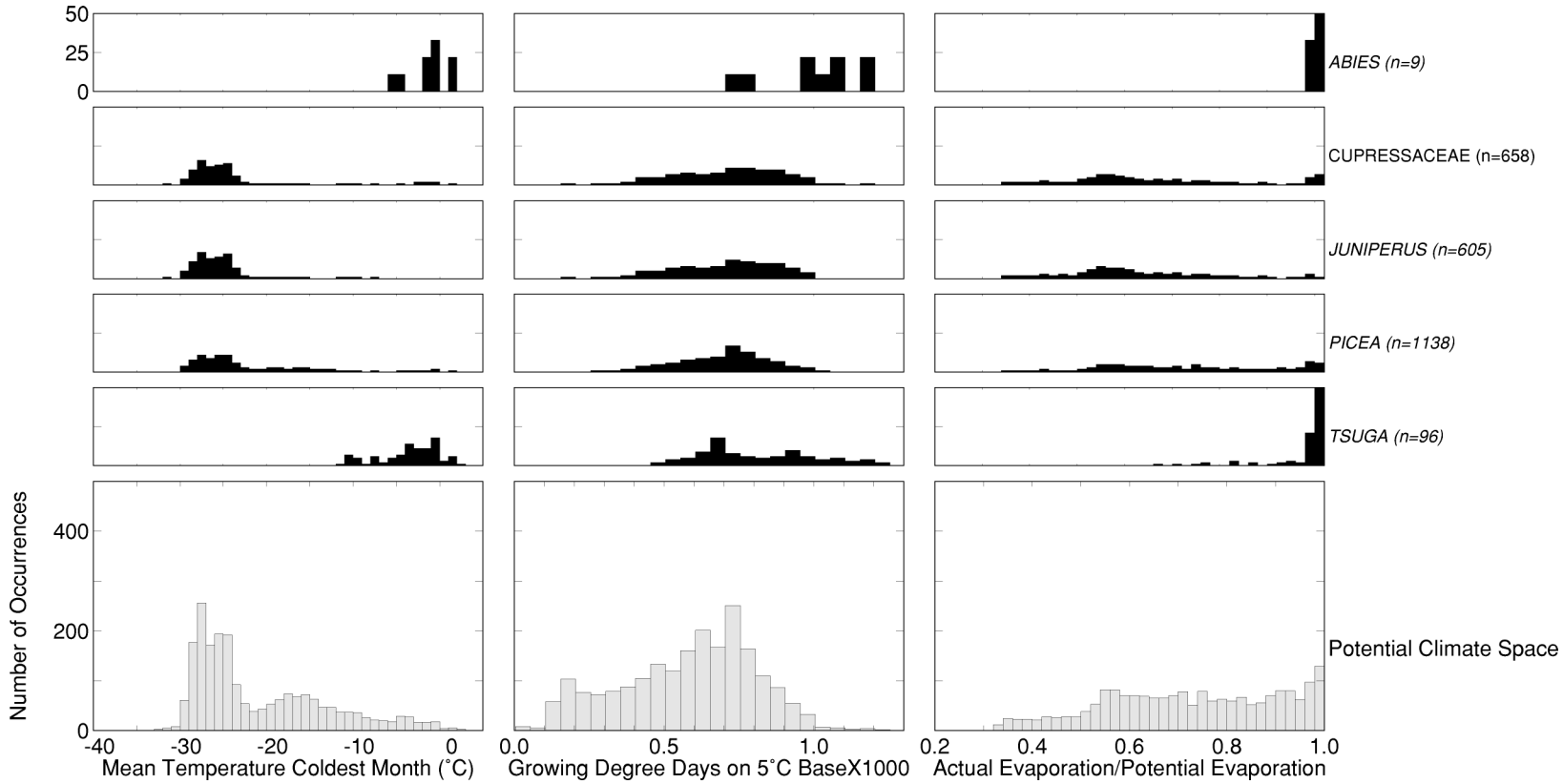

50
25
0
Tsuga heterophylla (n=83)
Tsuga mertensiana (n=87)
400
200
0
Number of Occurrences
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

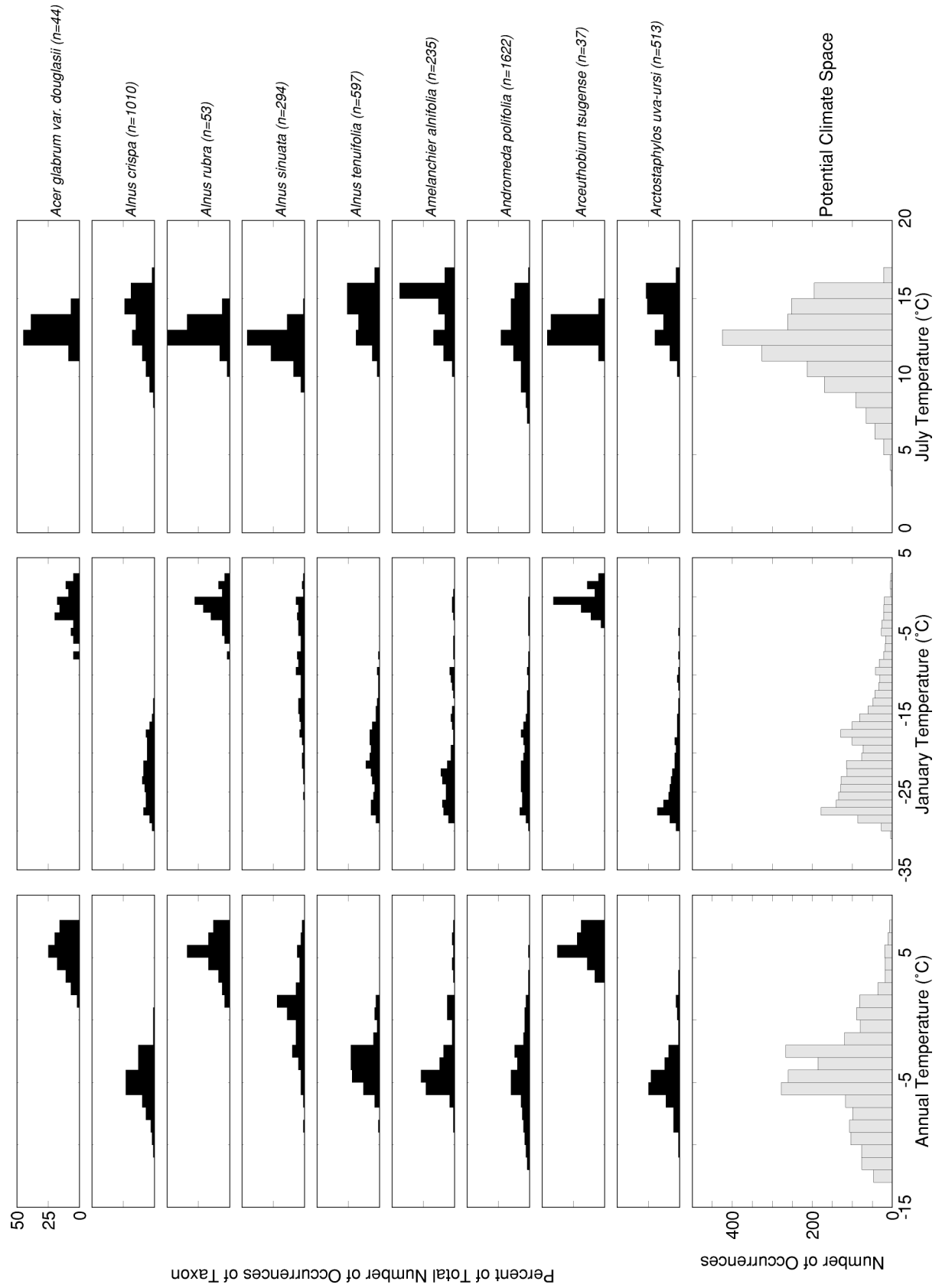

Percent of Total Number of Occurrences of Taxon
50
25
0
Chamaecyparis nootkatensis (n=53)
Juniperus communis (n=603)
Juniperus horizontalis (n=16)
Larix laricina (n=335)
Picea glauca (n=972)
Picea mariana (n=692)
Picea sitchensis (n=113)
Pinus contorta (n=49)
Thuja plicata (n=20)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

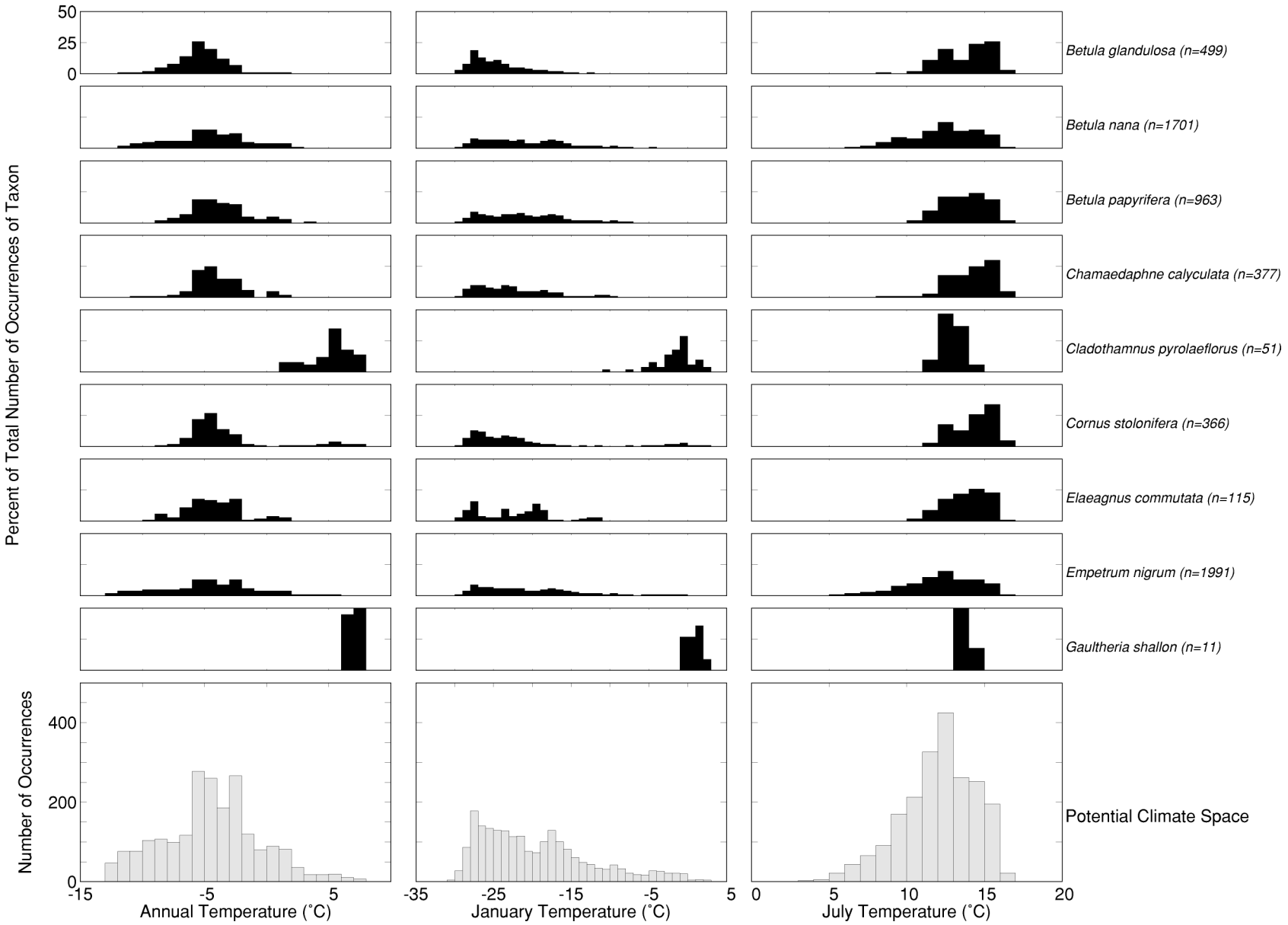

50
25
0
Tsuga heterophylla (n=83)
Tsuga mertensiana (n=87)
400
200
0
Number of Occurrences
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

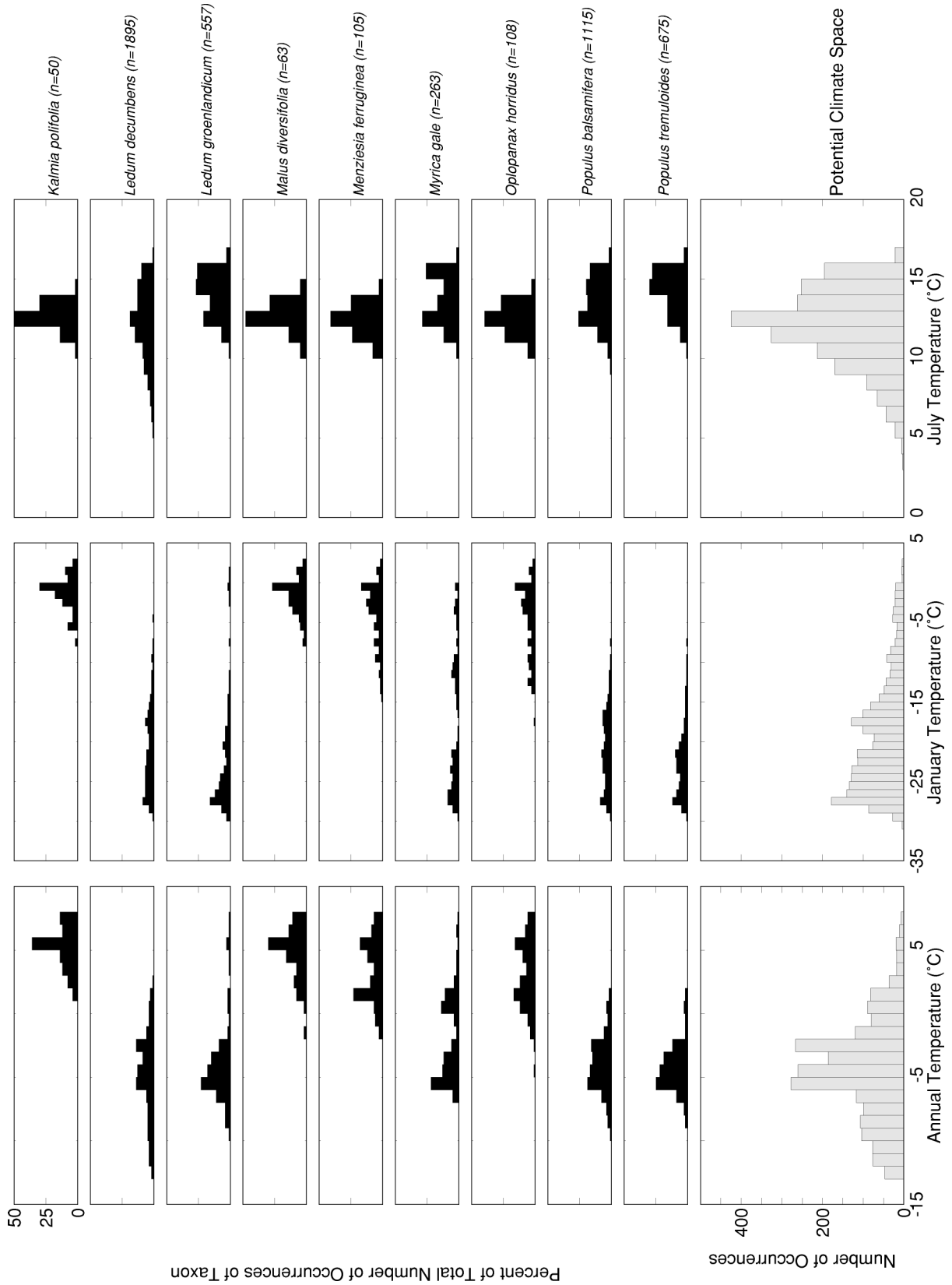

50
25
0
ABIES (n=9)
CUPRESSACEAE (n=658)
JUNIPERUS (n=605)
PICEA (n=1138)
TSUGA (n=96)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

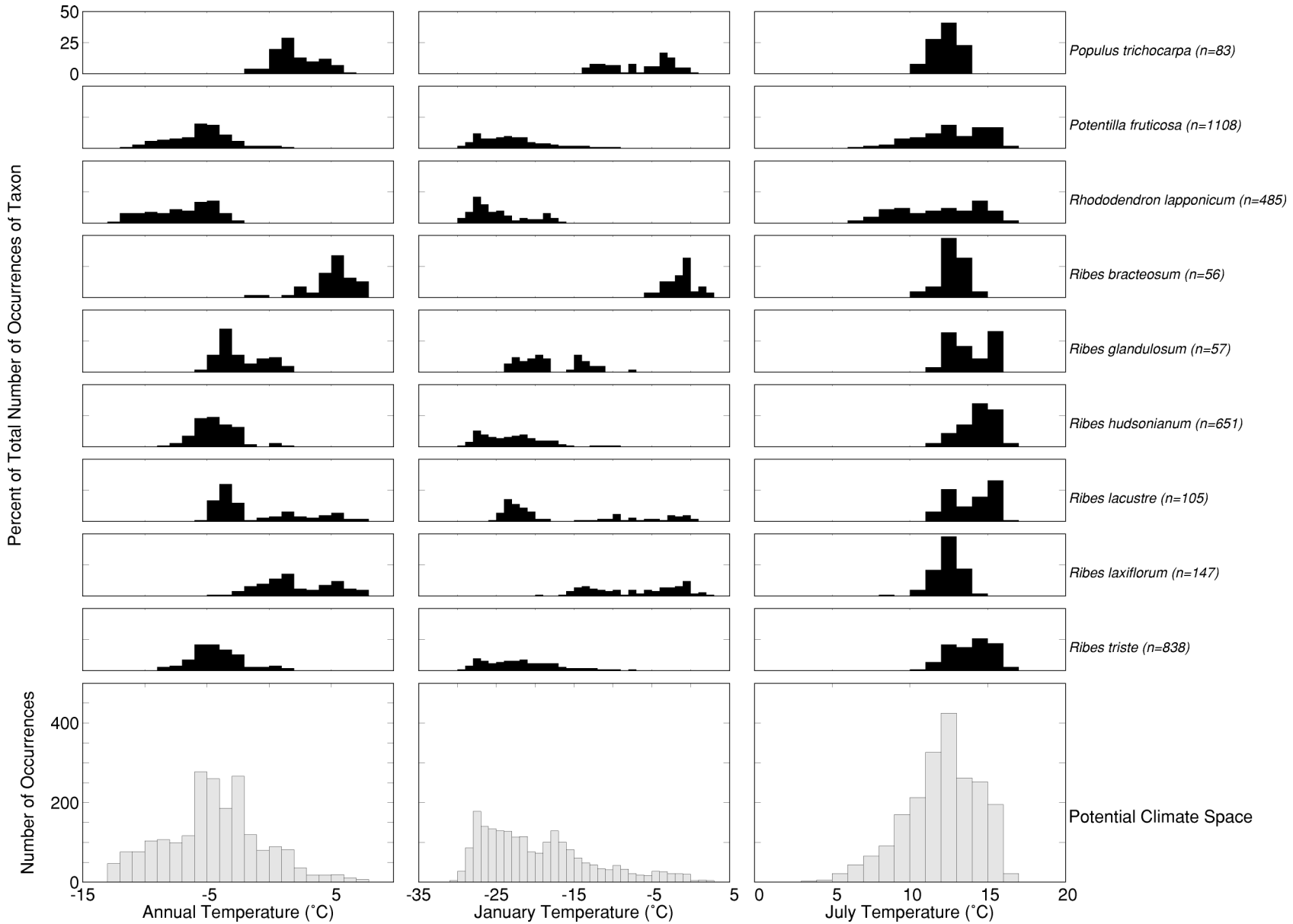

ABIES (n=9)
CUPRESSACEAE (n=658)
JUNIPERUS (n=605)
PICEA (n=1138)
TSUGA (n=96)
Potential Climate Space
Number of Occurrences
Annual Precipitation (mm)
January Precipitation (mm)
July Precipitation (mm)

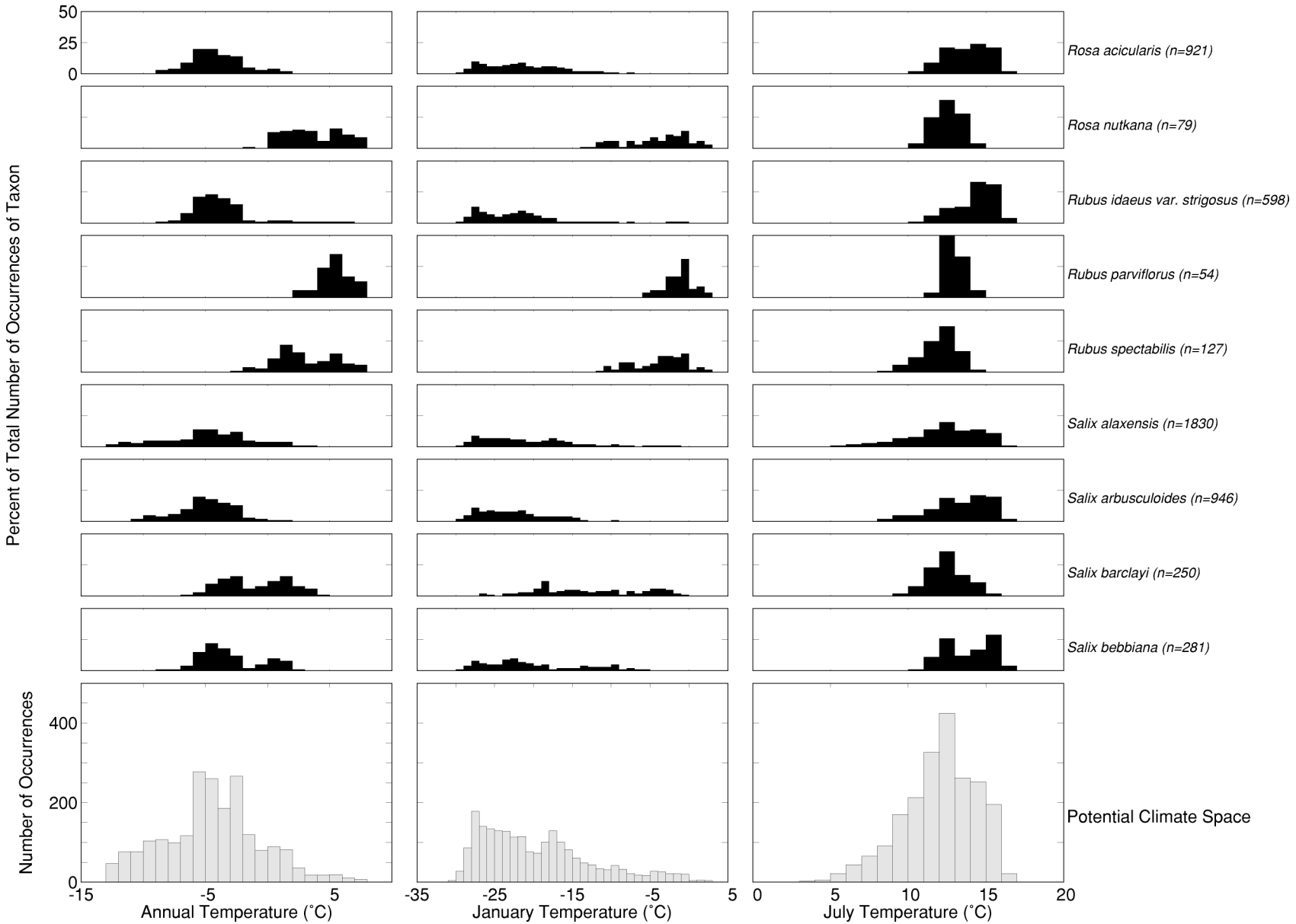

50
25
0
ABIES (n=9)
CUPRESSACEAE (n=658)
JUNIPERUS (n=605)
PICEA (n=1138)
TSUGA (n=96)
400
200
0
Number of Occurrences
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

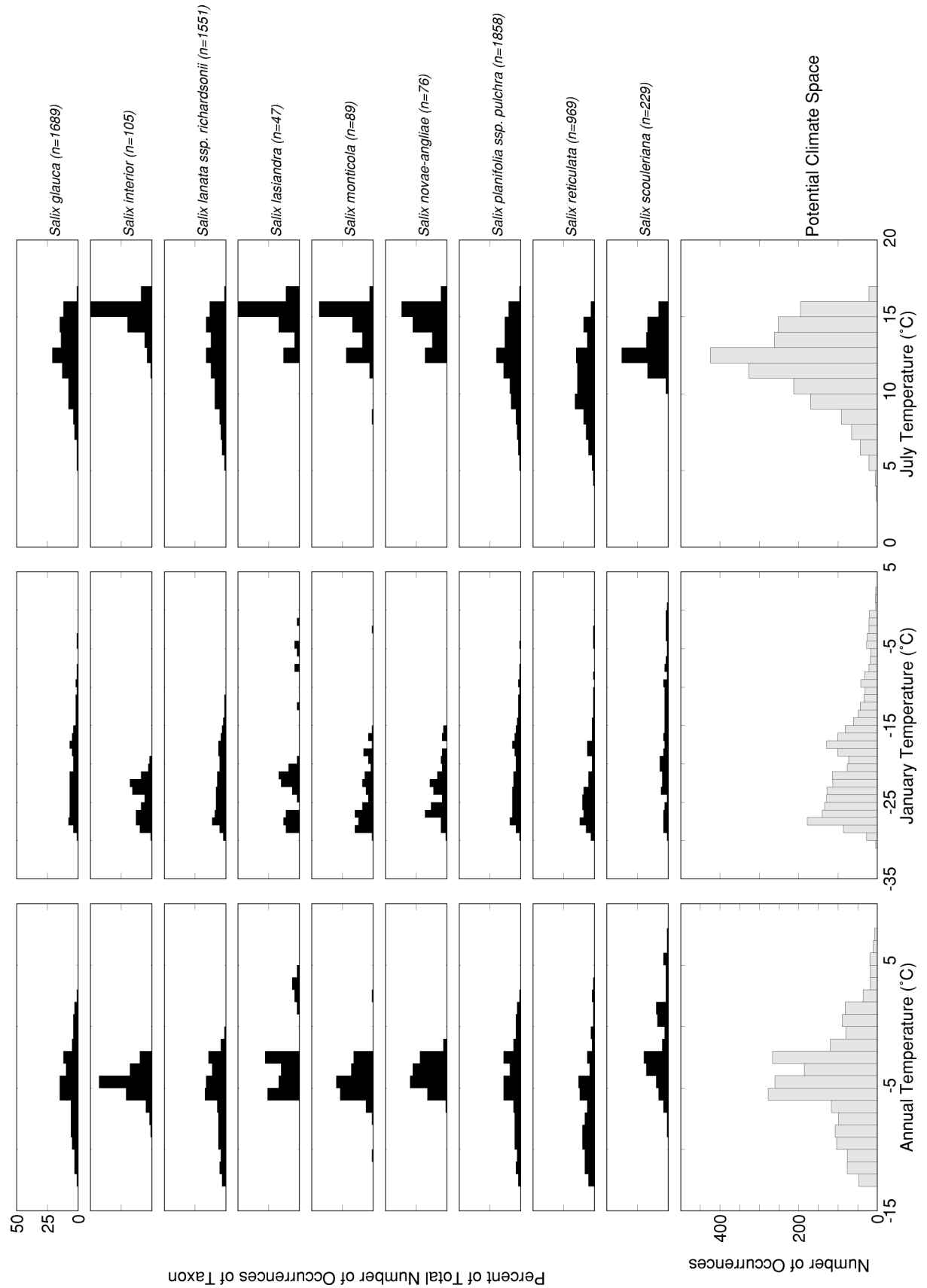

Acer glabrum var. douglasii (n=44)
Alnus crispa (n=1010)
Alnus rubra (n=53)
Alnus sinuata (n=294)
Alnus tenuifolia (n=597)
Amelanchier alnifolia (n=235)
Andromeda polifolia (n=1622)
Arceuthobium tsugense (n=37)
Arctostaphylos uva-ursi (n=513)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
-15
-5
5
Annual Temperature (°C)
-35
-25
-15
-5
5
January Temperature (°C)
0
5
10
15
20
July Temperature (°C)

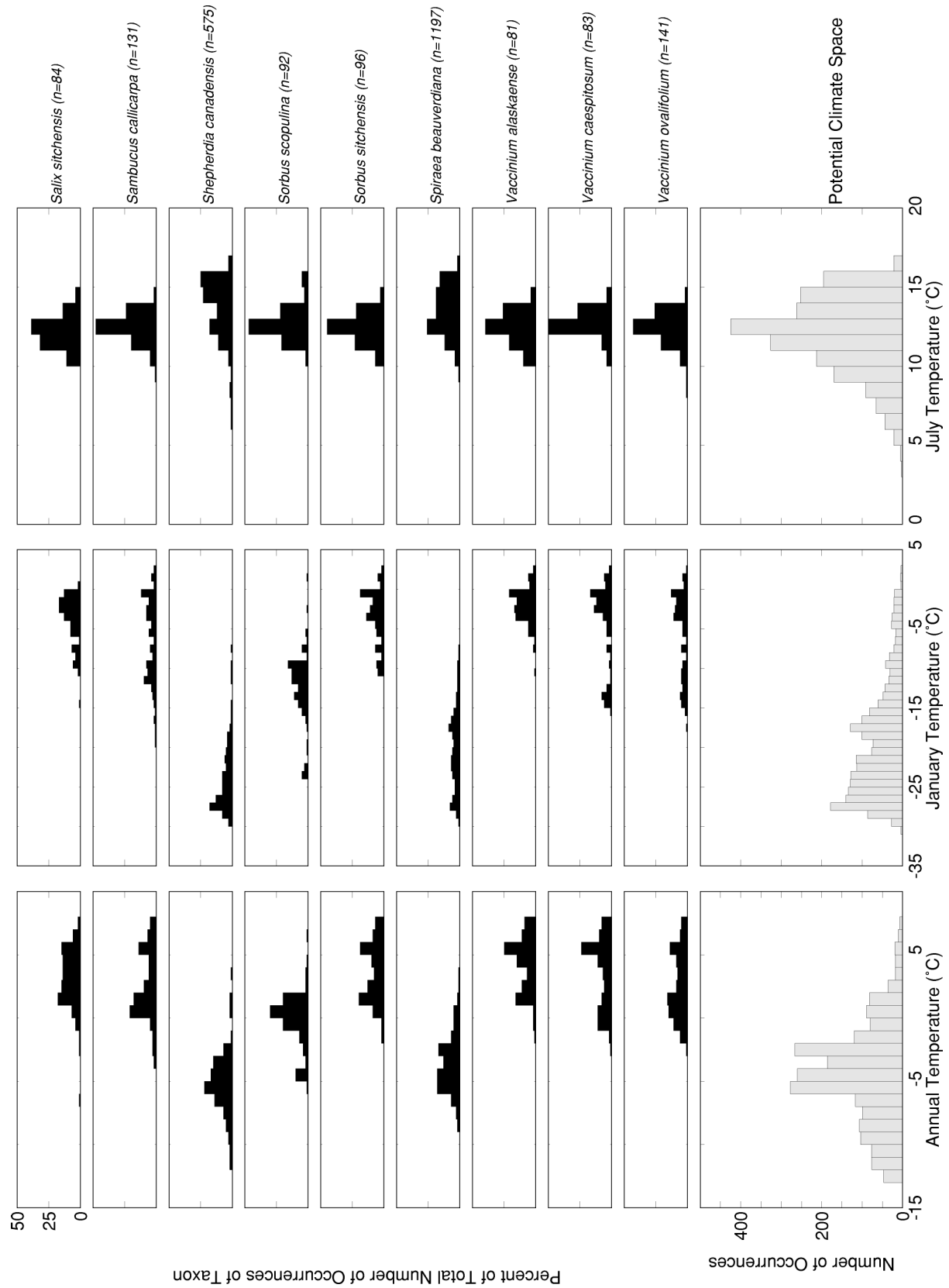

Percent of Total Number of Occurrences of Taxon
50
25
0
Betula glandulosa (n=499)
Betula nana (n=1701)
Betula papyrifera (n=963)
Chamaedaphne calyculata (n=377)
Cladothamnus pyrolaeflorus (n=51)
Cornus stolonifera (n=366)
Elaeagnus commutata (n=115)
Empetrum nigrum (n=1991)
Gaultheria shallon (n=11)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

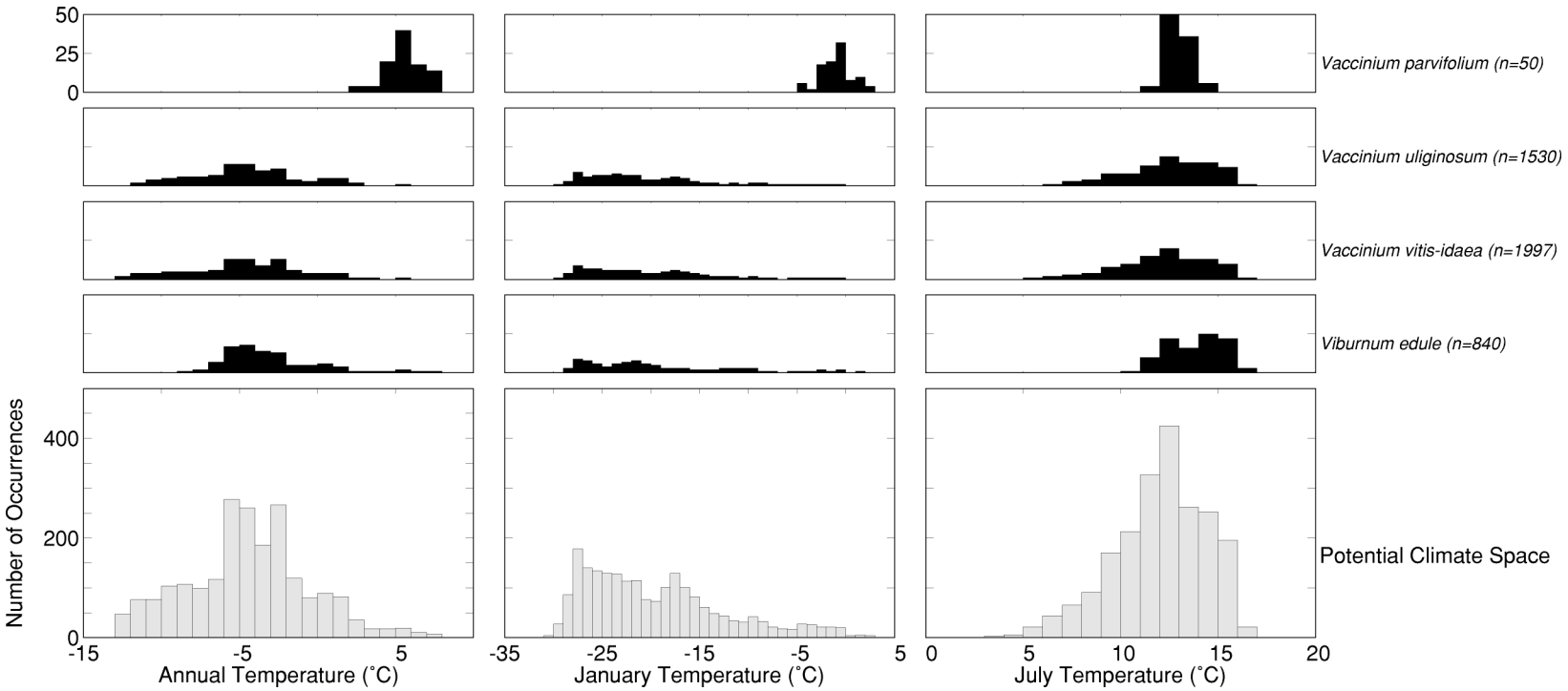

Kalmia polifolia (n=50)
Ledum decumbens (n=1895)
Ledum groenlandicum (n=557)
Malus diversifolia (n=63)
Menziesia ferruginea (n=105)
Myrica gale (n=263)
Oplopanax horridus (n=108)
Populus balsamifera (n=1115)
Populus tremuloides (n=675)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
Number of Occurrences
Annual Temperature (°C)
January Temperature (°C)
July Temperature (°C)

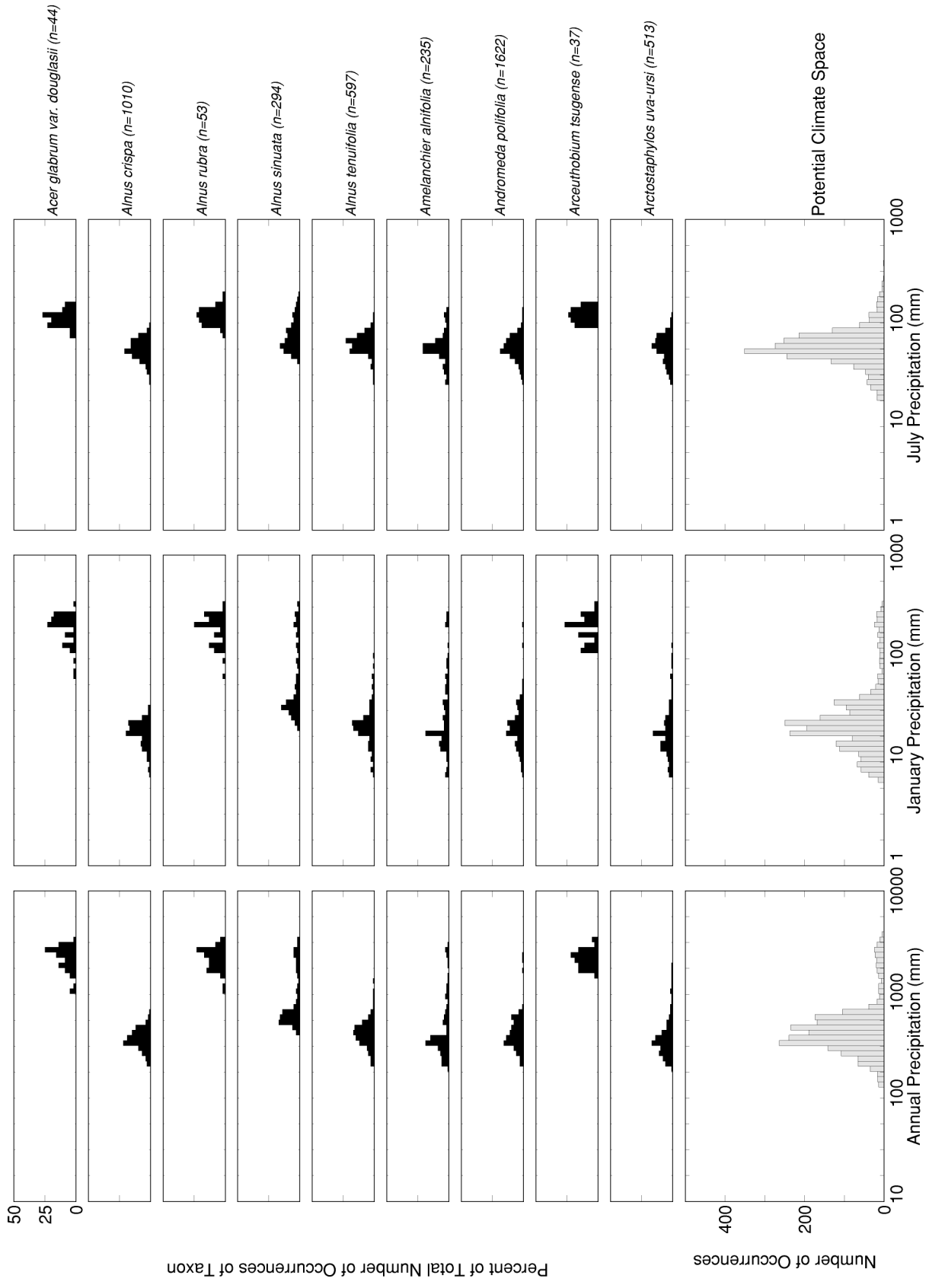

Percent of Total Number of Occurrences of Taxon
50
25
0
Populus trichocarpa (n=83)
Potentilla fruticosa (n=1108)
Rhododendron lapponicum (n=485)
Ribes bracteosum (n=56)
Ribes glandulosum (n=57)
Ribes hudsonianum (n=651)
Ribes lacustre (n=105)
Ribes laxiflorum (n=147)
Ribes triste (n=838)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

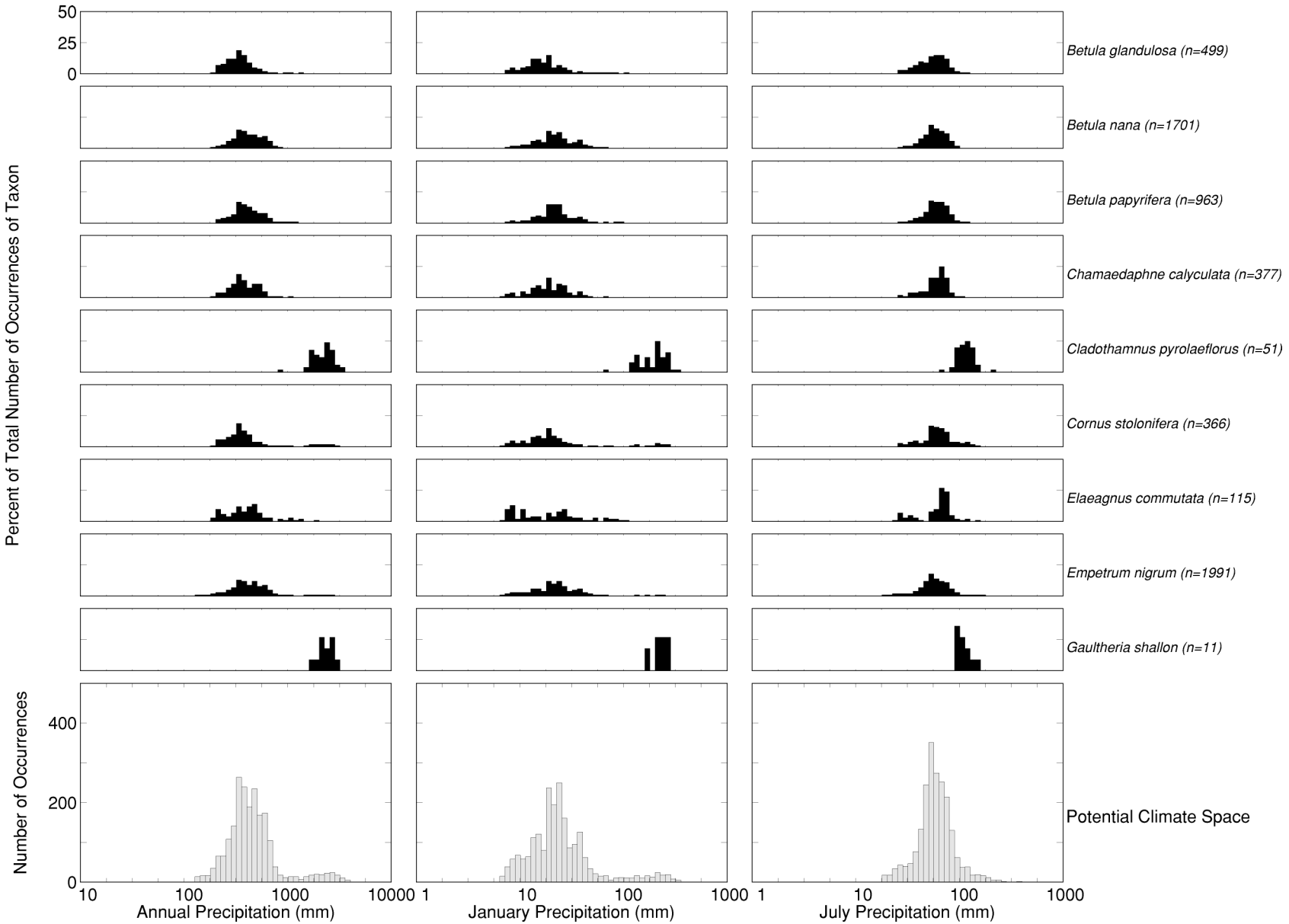

Percent of Total Number of Occurrences of Taxon
50
25
0
Rosa acicularis (n=921)
Rosa nutkana (n=79)
Rubus idaeus var. strigosus (n=598)
Rubus parviflorus (n=54)
Rubus spectabilis (n=127)
Salix alaxensis (n=1830)
Salix arbusculoides (n=946)
Salix barclayi (n=250)
Salix bebbiana (n=281)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

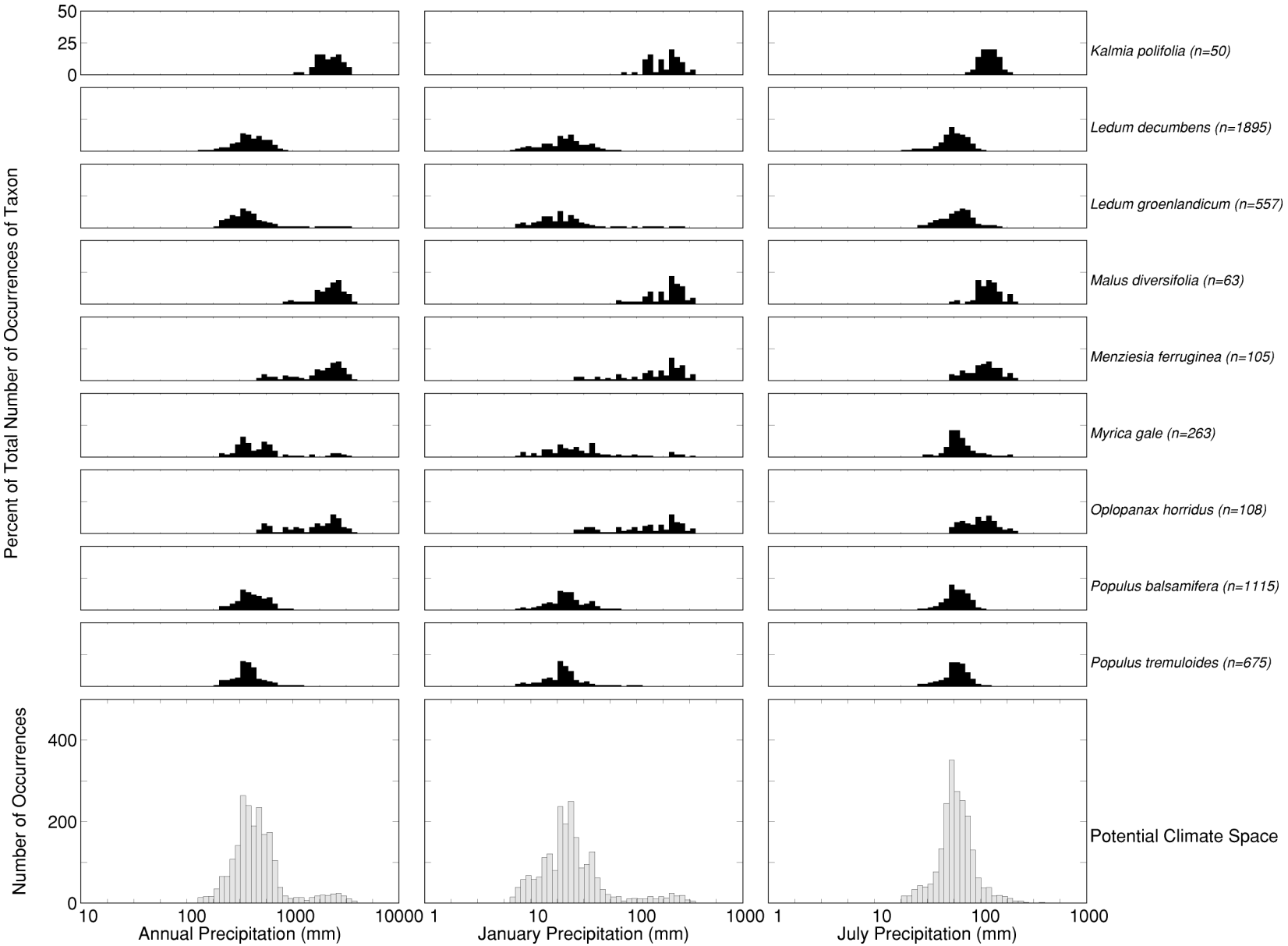

Salix glauca (n=1689)
Salix interior (n=105)
Salix lanata ssp. richardsonii (n=1551)
Salix lasiandra (n=47)
Salix monticola (n=89)
Salix novae-angliae (n=76)
Salix planifolia ssp. pulchra (n=1858)
Salix reticulata (n=969)
Salix scouleriana (n=229)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
-15
-5
5
Annual Temperature (°C)
-35
-25
-15
-5
5
January Temperature (°C)
0
5
10
15
20
July Temperature (°C)

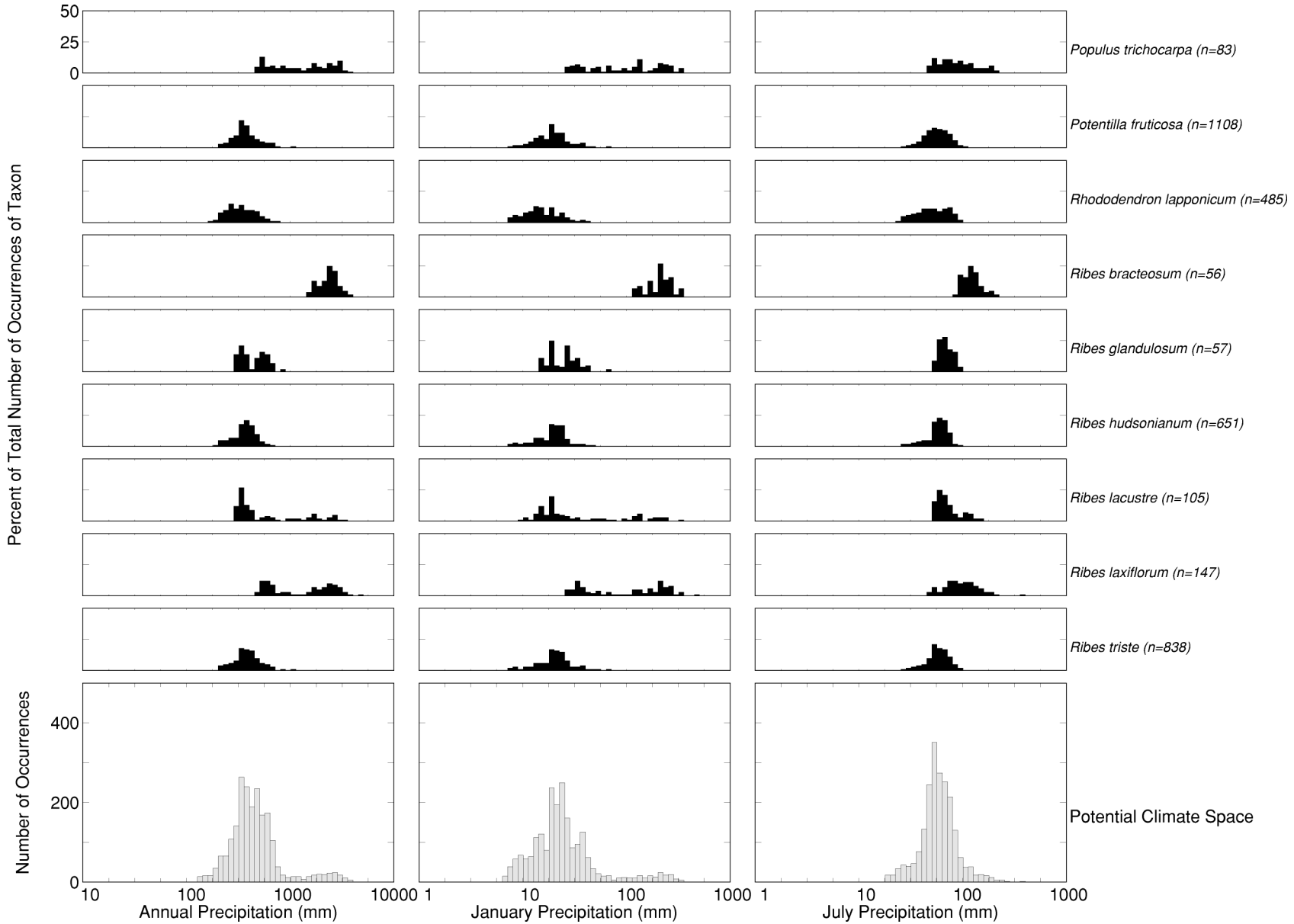

Salix sitchensis (n=84)
Sambucus callicarpa (n=131)
Shepherdia canadensis (n=575)
Sorbus scopulina (n=92)
Sorbus sitchensis (n=96)
Spiraea beauverdiana (n=1197)
Vaccinium alaskaensis (n=81)
Vaccinium caespitosum (n=83)
Vaccinium ovalifolium (n=141)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

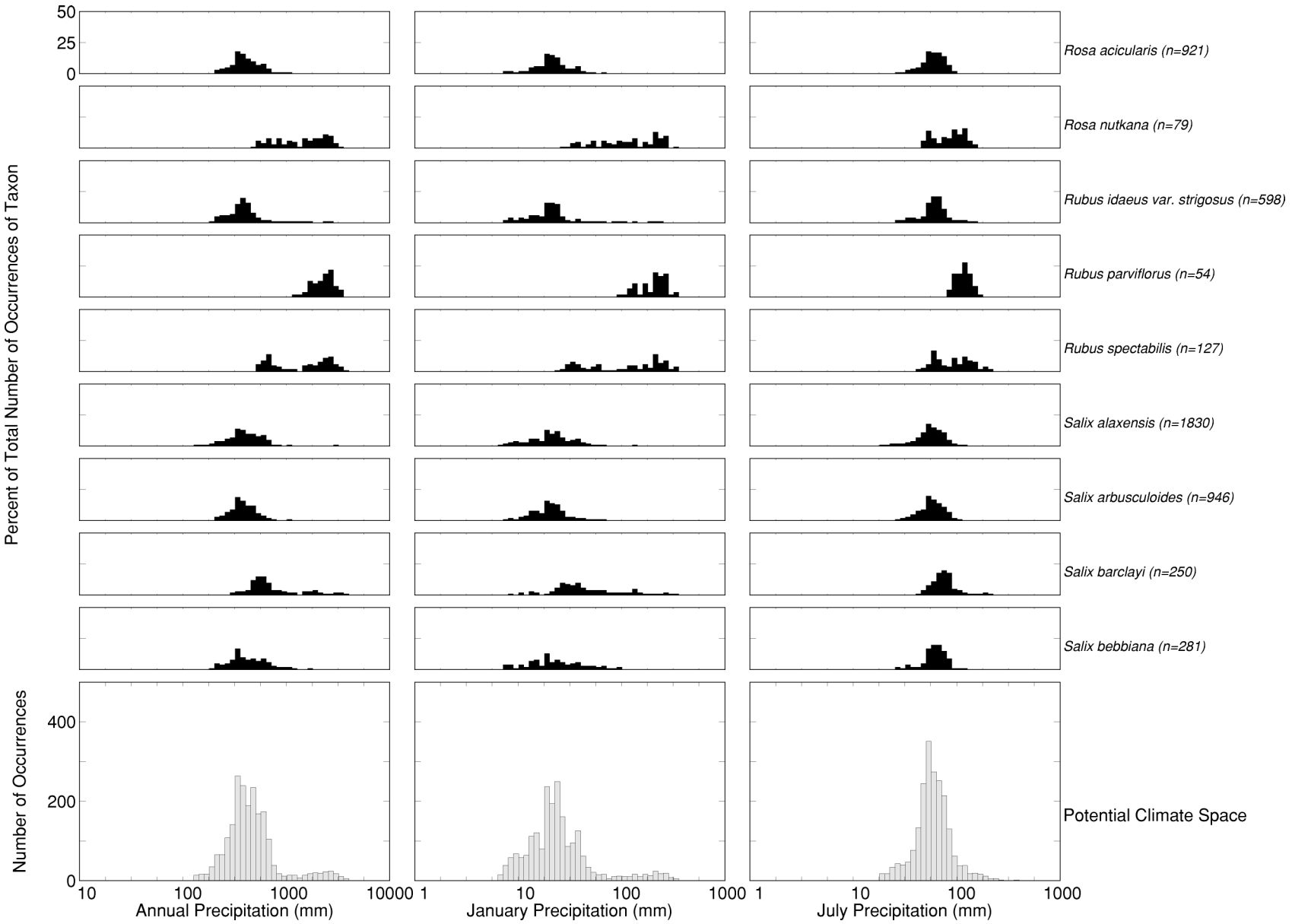

50
25
0
Vaccinium parvifolium (n=50)
Vaccinium uliginosum (n=1530)
Vaccinium vitis-idaea (n=1997)
Viburnum edule (n=840)
400
200
0
Number of Occurrences
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

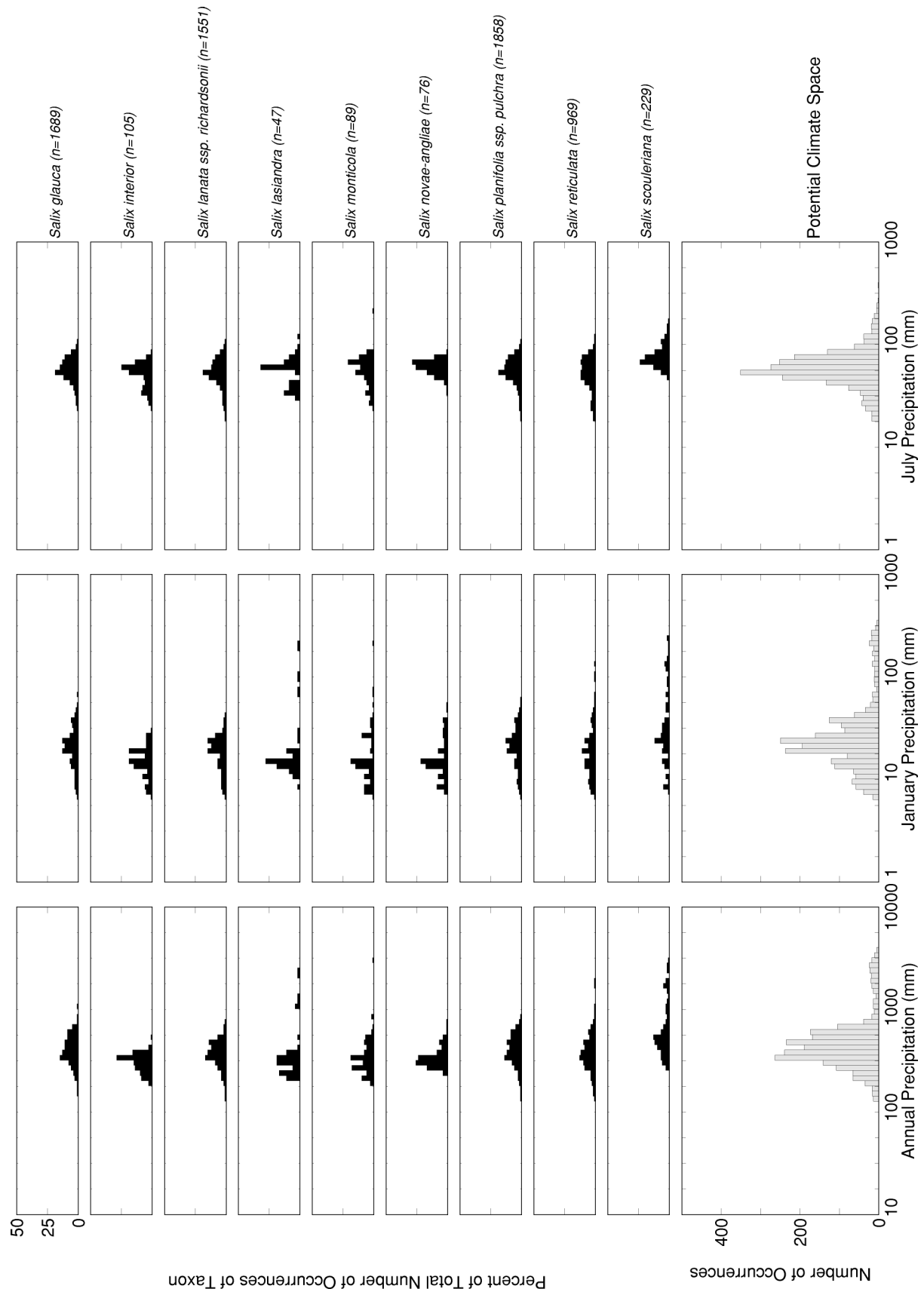

Acer glabrum var. douglasii (n=44)
Alnus crispa (n=1010)
Alnus rubra (n=53)
Alnus sinuata (n=294)
Alnus tenuifolia (n=597)
Amelanchier alnifolia (n=235)
Andromeda polifolia (n=1622)
Arceuthobium tsugense (n=37)
Arctostaphylos uva-ursi (n=513)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

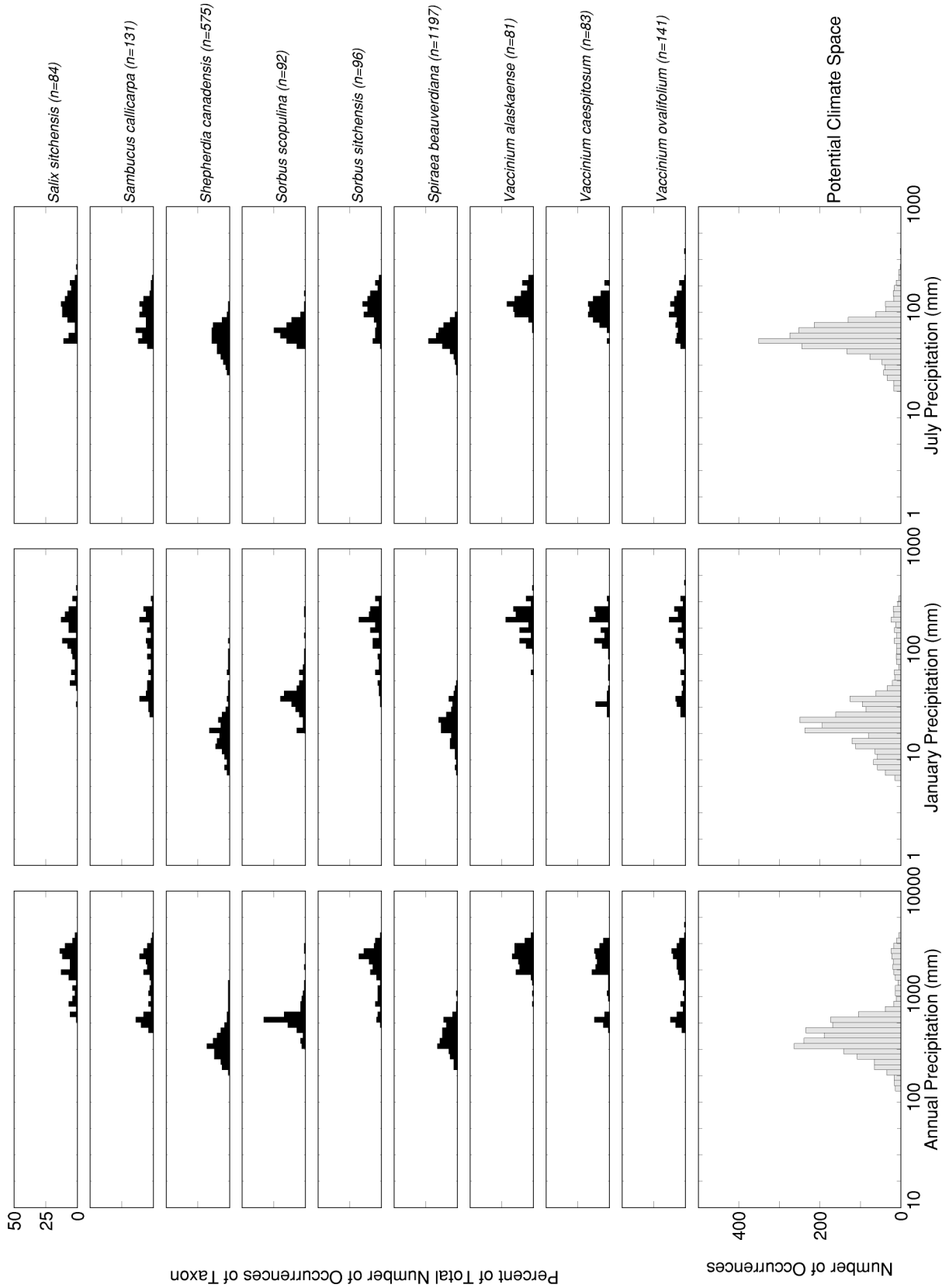

Percent of Total Number of Occurrences of Taxon
50
25
0
Betula glandulosa (n=499)
Betula nana (n=1701)
Betula papyrifera (n=963)
Chamaedaphne calyculata (n=377)
Cladothamnus pyrolaeflorus (n=51)
Cornus stolonifera (n=366)
Elaeagnus commutata (n=115)
Empetrum nigrum (n=1991)
Gaultheria shallon (n=11)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

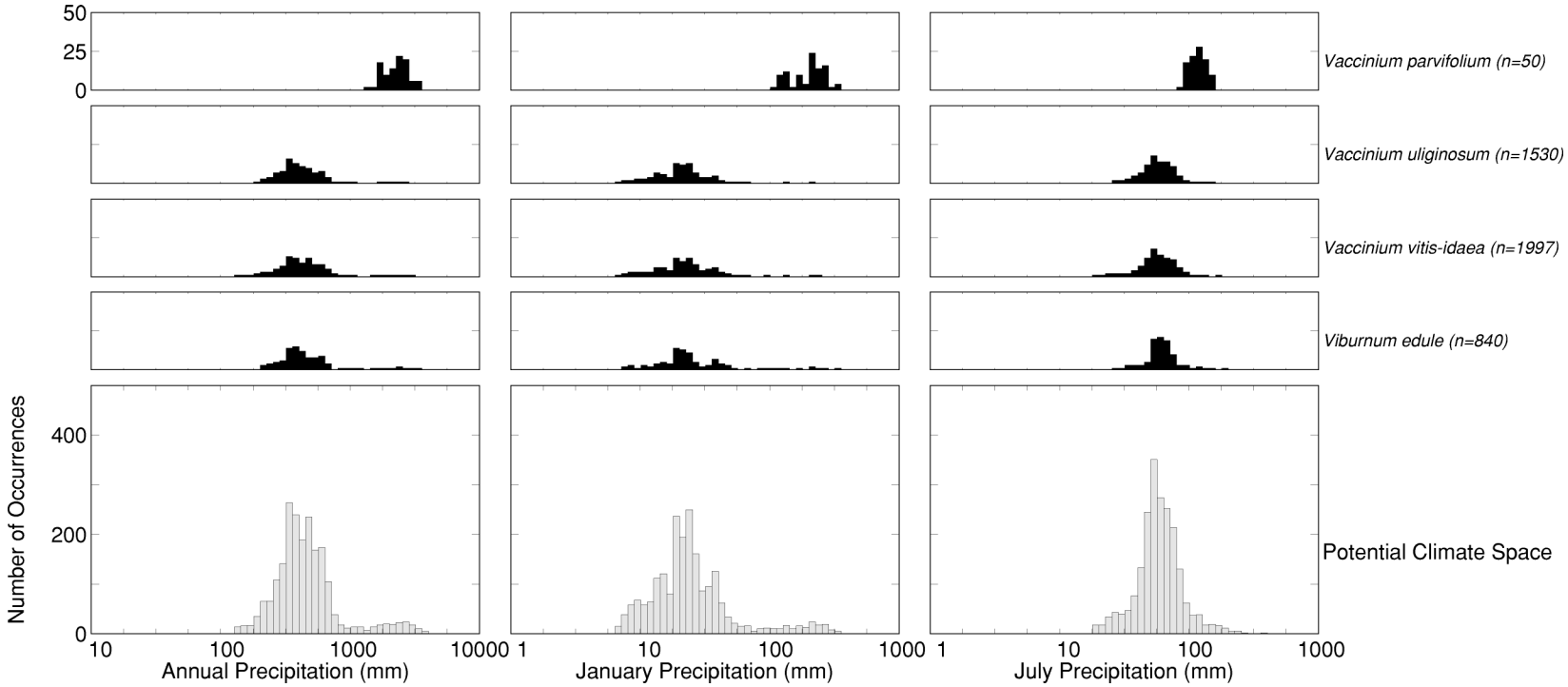

Percent of Total Number of Occurrences of Taxon
50
25
0
Kalmia polifolia (n=50)
Ledum decumbens (n=1895)
Ledum groenlandicum (n=557)
Malus diversifolia (n=63)
Menziesia ferruginea (n=105)
Myrica gale (n=263)
Oplopanax horridus (n=108)
Populus balsamifera (n=1115)
Populus tremuloides (n=675)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

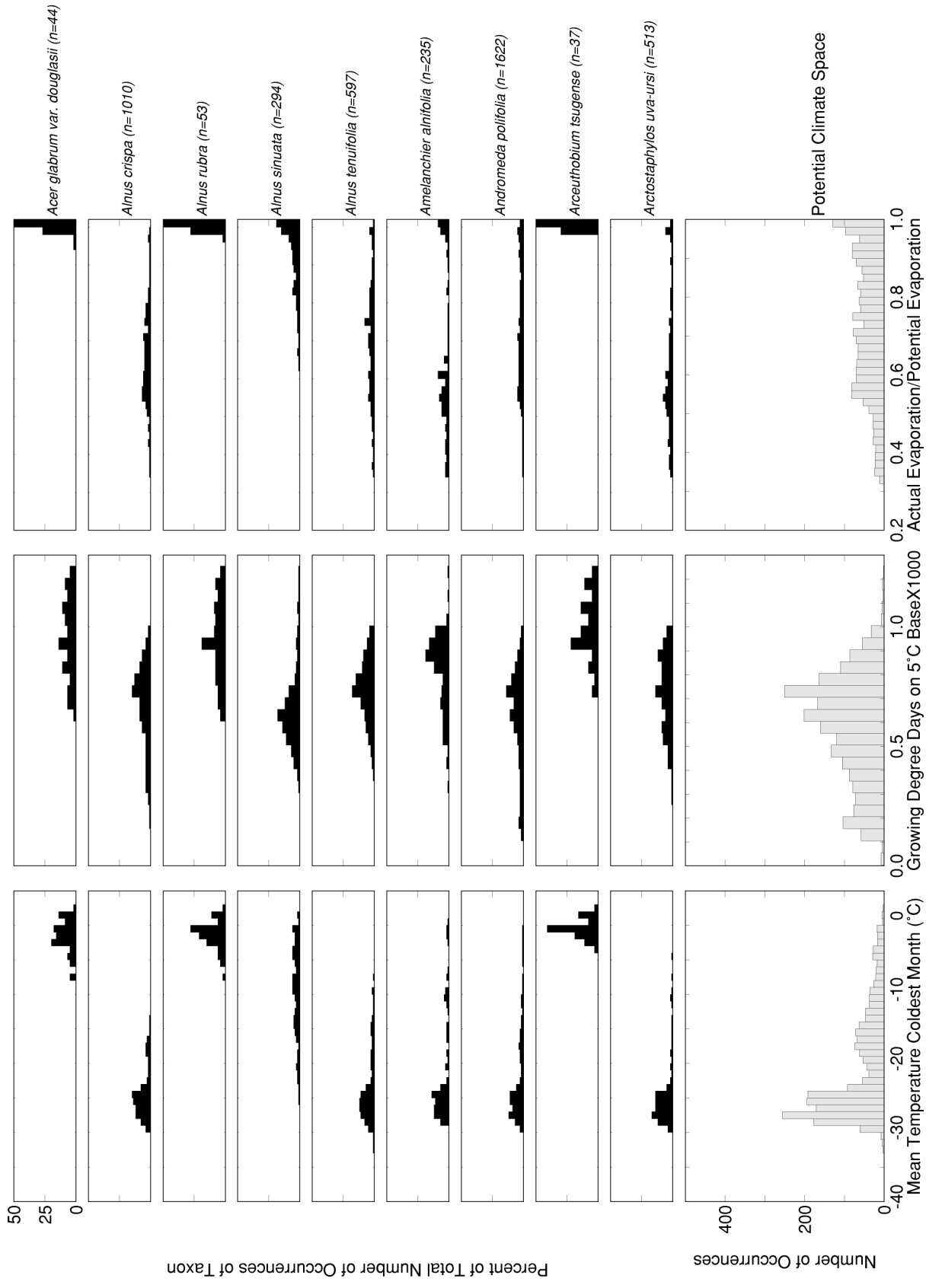

Percent of Total Number of Occurrences of Taxon
50
25
0
Populus trichocarpa (n=83)
Potentilla fruticosa (n=1108)
Rhododendron lapponicum (n=485)
Ribes bracteosum (n=56)
Ribes glandulosum (n=57)
Ribes hudsonianum (n=651)
Ribes lacustre (n=105)
Ribes laxiflorum (n=147)
Ribes triste (n=838)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

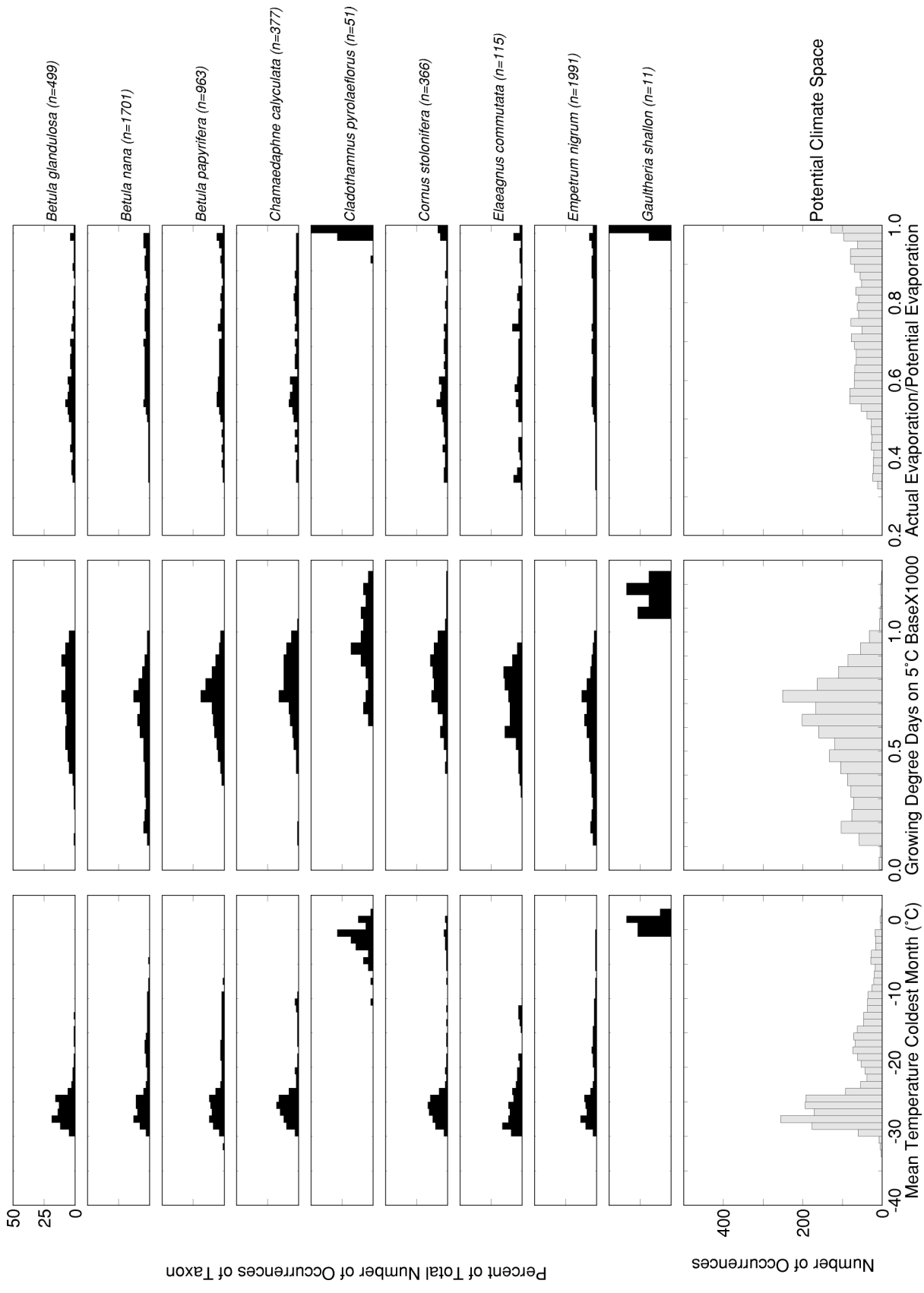

Percent of Total Number of Occurrences of Taxon
50
25
0
Rosa acicularis (n=921)
Rosa nutkana (n=79)
Rubus idaeus var. strigosus (n=598)
Rubus parviflorus (n=54)
Rubus spectabilis (n=127)
Salix alaxensis (n=1830)
Salix arbusculoides (n=946)
Salix barclayi (n=250)
Salix bebbiana (n=281)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

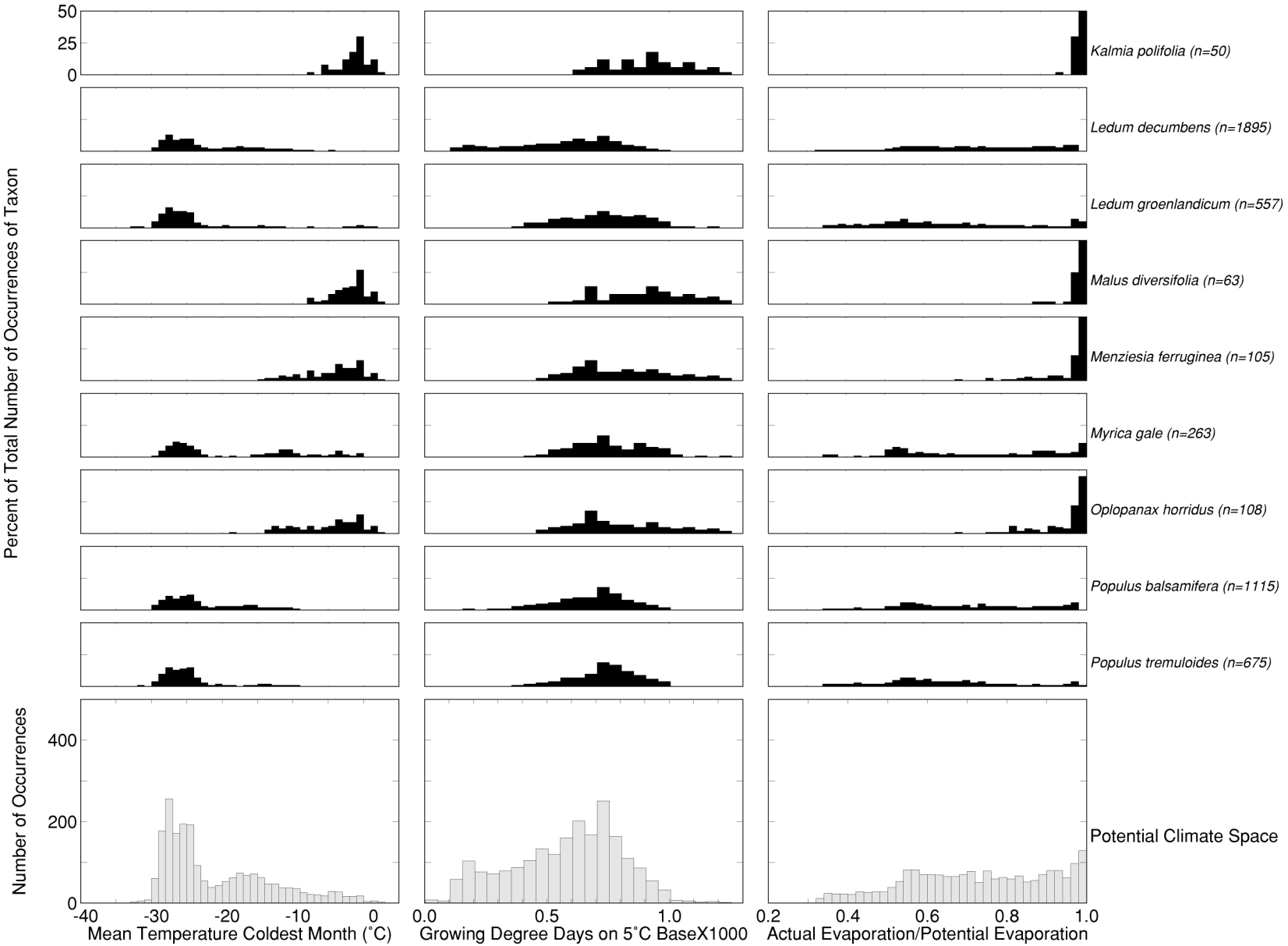

Salix glauca (n=1689)
Salix interior (n=105)
Salix lanata ssp. richardsonii (n=1551)
Salix lasiandra (n=47)
Salix monticola (n=89)
Salix novae-angliae (n=76)
Salix planifolia ssp. pulchra (n=1858)
Salix reticulata (n=969)
Salix scouleriana (n=229)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
Annual Precipitation (mm)
10
100
1000
10000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)
1
10
100
1000

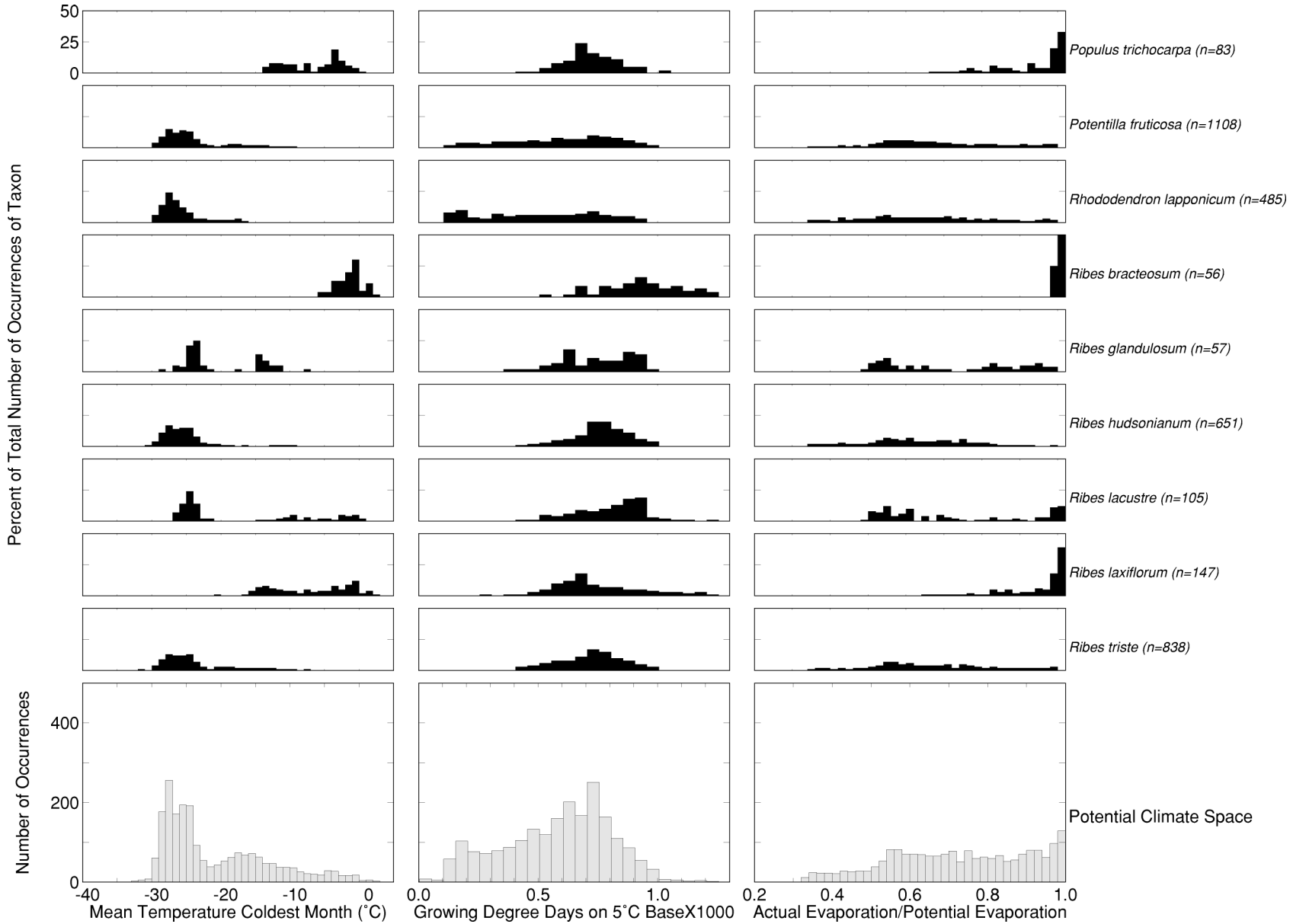

Salix sitchensis (n=84)
Sambucus callicarpa (n=131)
Shepherdia canadensis (n=575)
Sorbus scopulina (n=92)
Sorbus sitchensis (n=96)
Spiraea beauverdiana (n=1197)
Vaccinium alaskaensis (n=81)
Vaccinium caespitosum (n=83)
Vaccinium ovalifolium (n=141)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

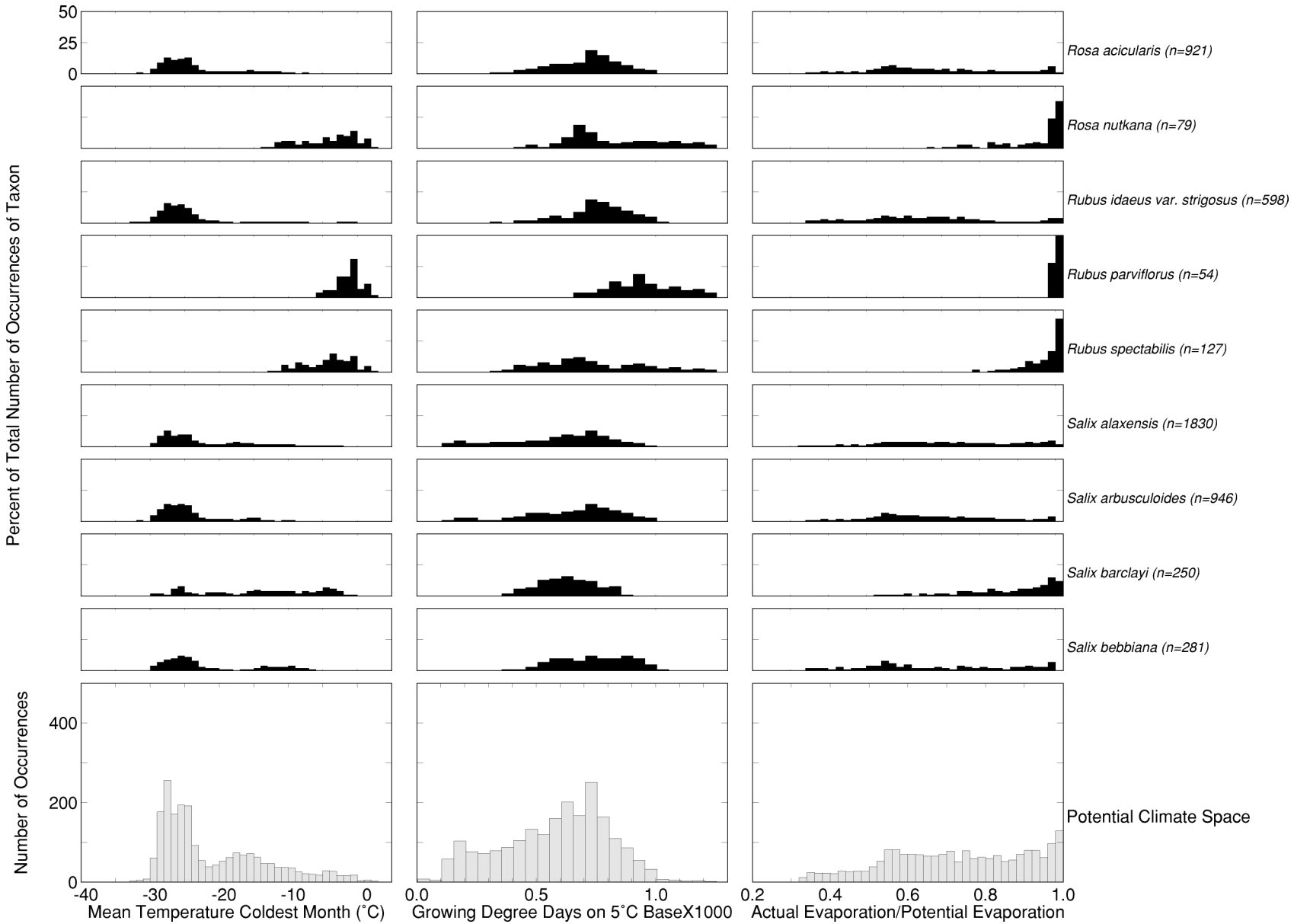

50
25
0
Vaccinium parvifolium (n=50)
Vaccinium uliginosum (n=1530)
Vaccinium vitis-idaea (n=1997)
Viburnum edule (n=840)
400
200
0
Number of Occurrences
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


Acer glabrum var. douglasii (n=44)
Alnus crispa (n=1010)
Alnus rubra (n=53)
Alnus sinuata (n=294)
Alnus tenuifolia (n=597)
Amelanchier alnifolia (n=235)
Andromeda polifolia (n=1622)
Arceuthobium tsugense (n=37)
Arctostaphylos uva-ursi (n=513)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
Mean Temperature Coldest Month (°C)
-40
-30
-20
-10
0
Growing Degree Days on 5°C BaseX1000
0.0
0.5
1.0
Actual Evaporation/Potential Evaporation
0.2
0.4
0.6
0.8
1.0

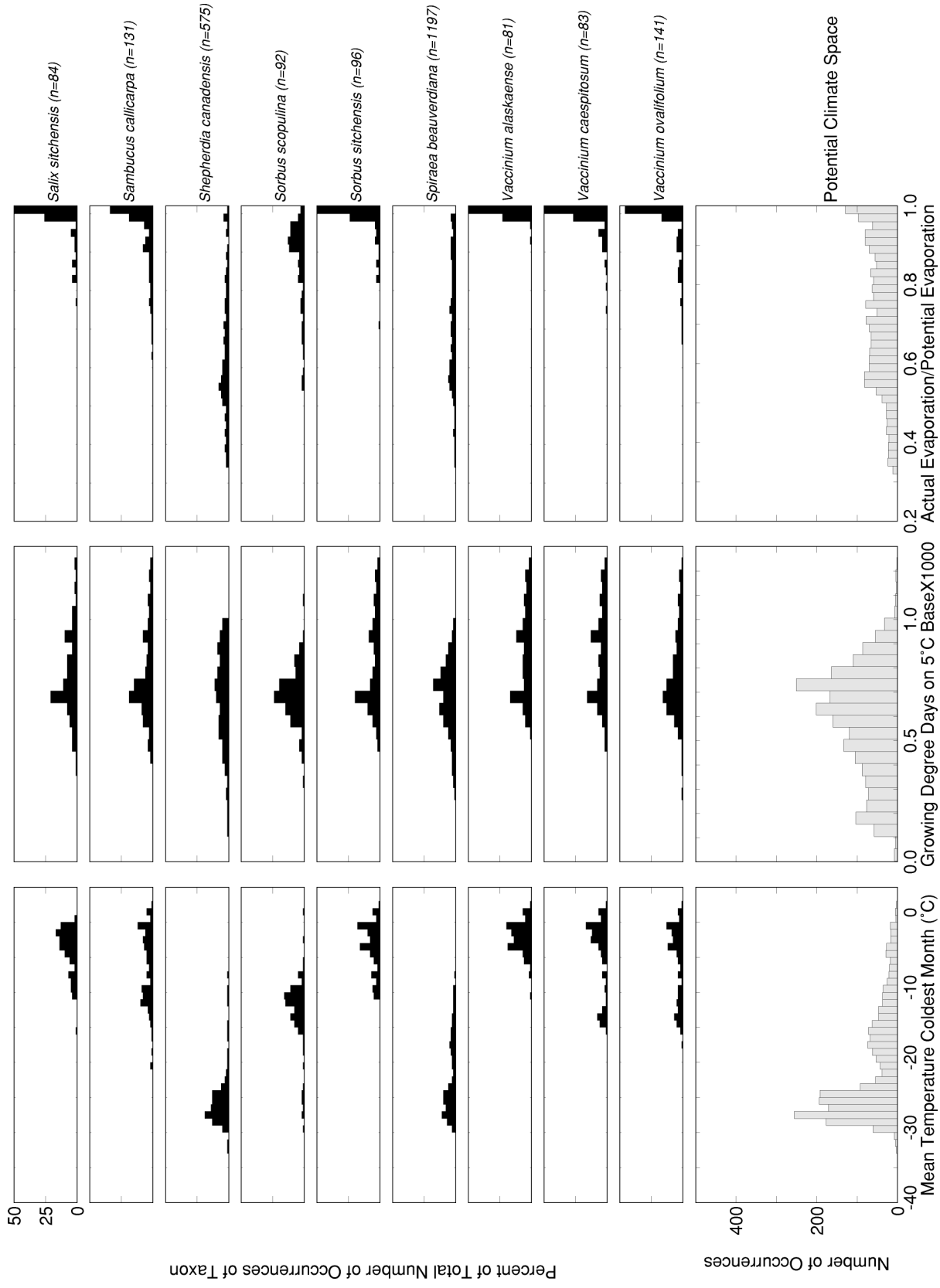

Betula glandulosa (n=499)
Betula nana (n=1701)
Betula papyrifera (n=963)
Chamaedaphne calyculata (n=377)
Cladothamnus pyrolaeflorus (n=51)
Cornus stolonifera (n=366)
Elaeagnus commutata (n=115)
Empetrum nigrum (n=1991)
Gaultheria shallon (n=11)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
-40
-30
-20
-10
0
Mean Temperature Coldest Month (°C)
0.0
0.5
1.0
Growing Degree Days on 5°C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

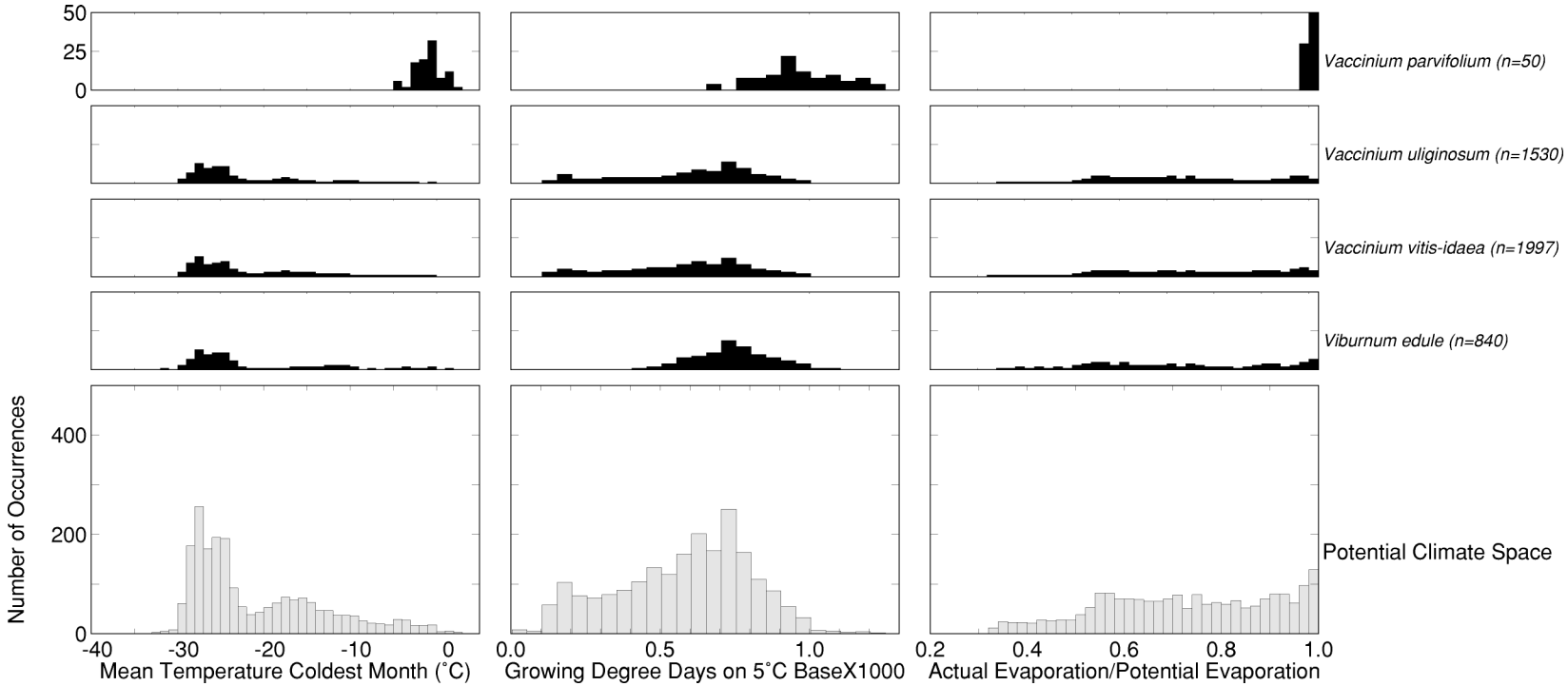

Percent of Total Number of Occurrences of Taxon
50
25
0
Kalmia polifolia (n=50)
Ledum decumbens (n=1895)
Ledum groenlandicum (n=557)
Malus diversifolia (n=63)
Menziesia ferruginea (n=105)
Myrica gale (n=263)
Oplopanax horridus (n=108)
Populus balsamifera (n=1115)
Populus tremuloides (n=675)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

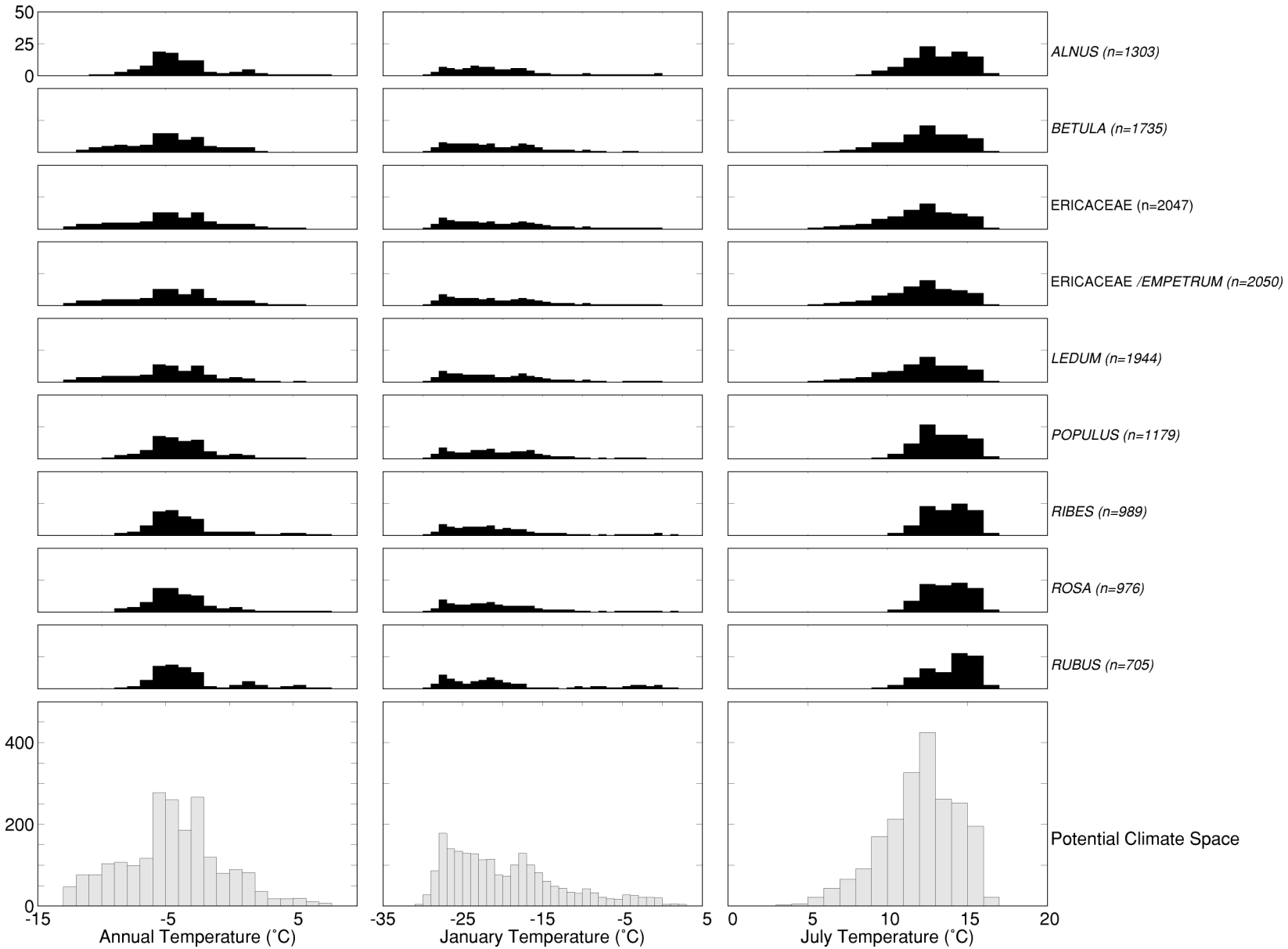

Percent of Total Number of Occurrences of Taxon
50
25
0
Populus trichocarpa (n=83)
Potentilla fruticosa (n=1108)
Rhododendron lapponicum (n=485)
Ribes bracteosum (n=56)
Ribes glandulosum (n=57)
Ribes hudsonianum (n=651)
Ribes lacustre (n=105)
Ribes laxiflorum (n=147)
Ribes triste (n=838)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

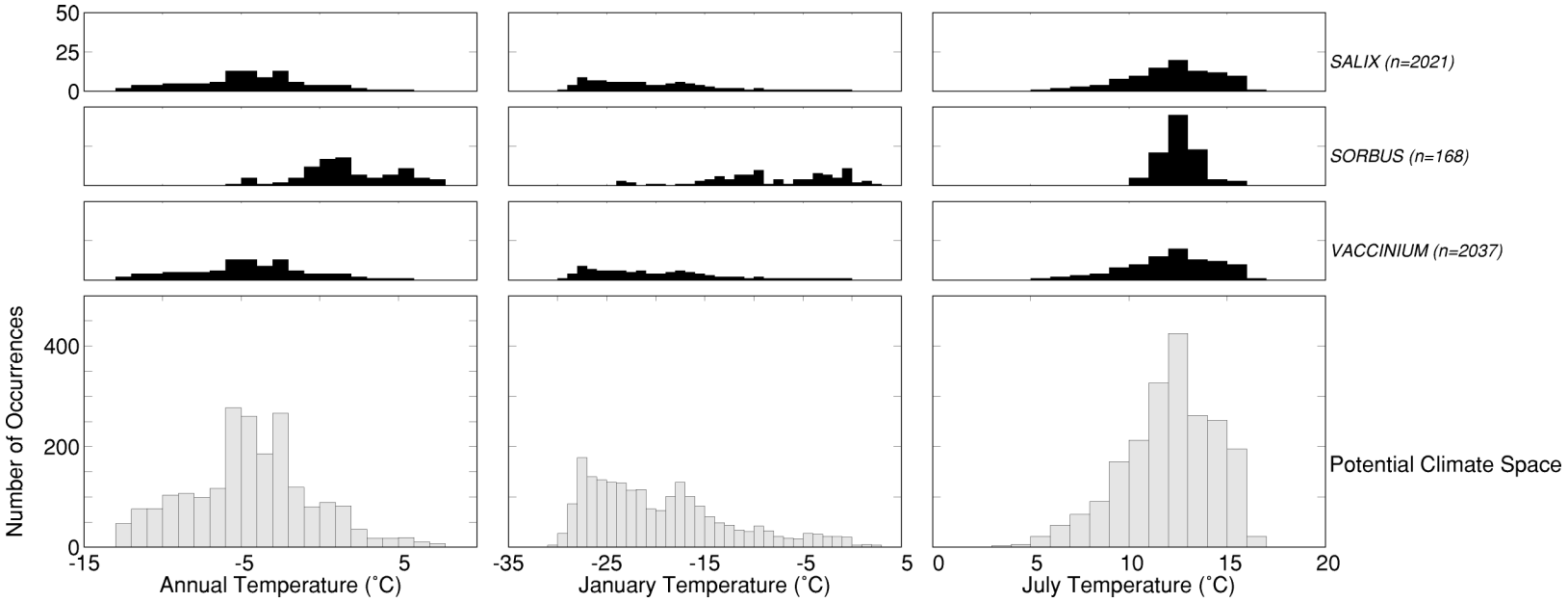

Percent of Total Number of Occurrences of Taxon
50
25
0
Rosa acicularis (n=921)
Rosa nutkana (n=79)
Rubus idaeus var. strigosus (n=598)
Rubus parviflorus (n=54)
Rubus spectabilis (n=127)
Salix alaxensis (n=1830)
Salix arbusculoides (n=946)
Salix barclayi (n=250)
Salix bebbiana (n=281)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

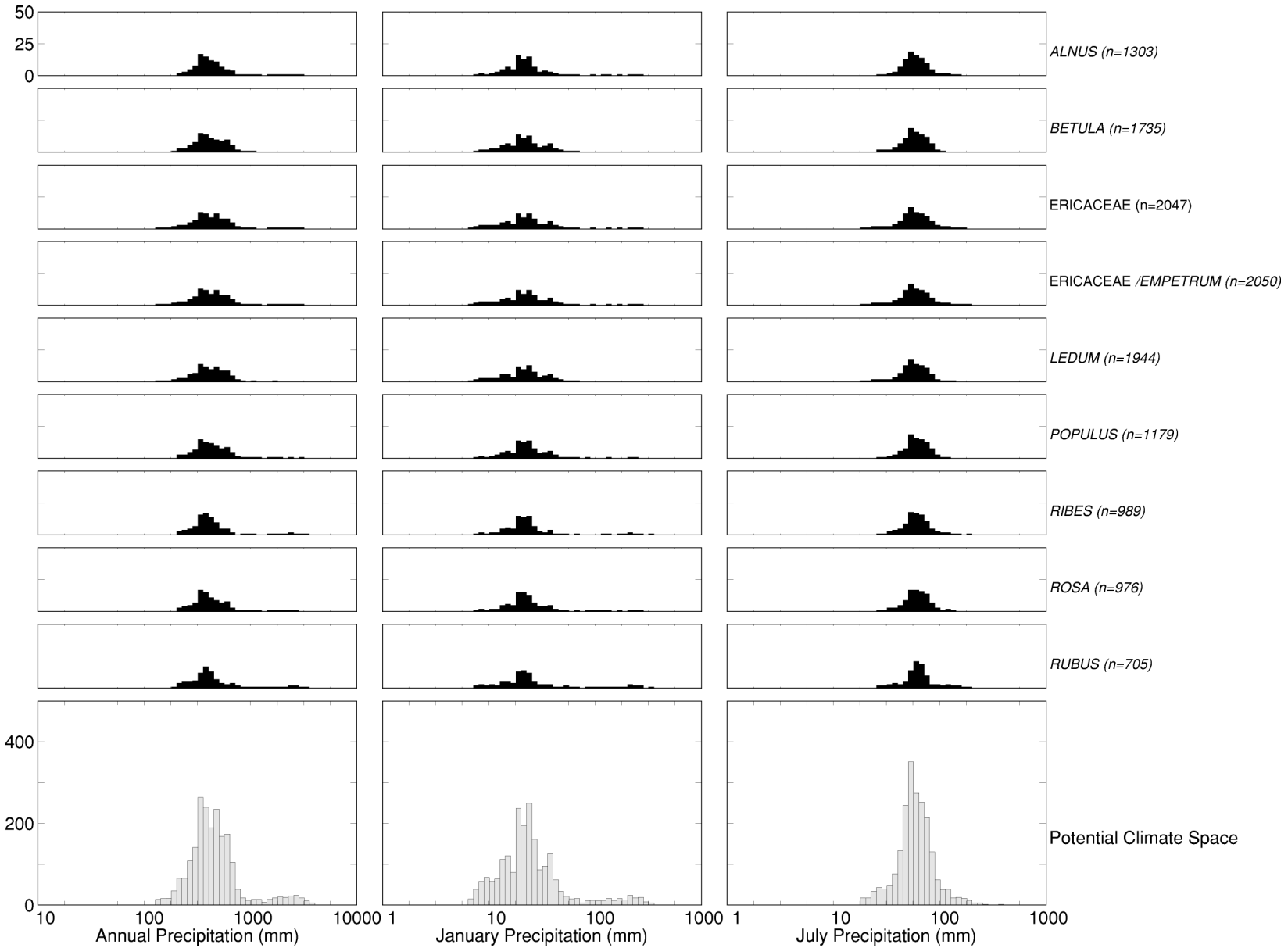
Percent of Total Number of Occurrences of Taxon
50
25
0
Salix glauca (n=1689)
Salix interior (n=105)
Salix lanata ssp. richardsonii (n=1551)
Salix lasiandra (n=47)
Salix monticola (n=89)
Salix novae-angliae (n=76)
Salix planifolia ssp. pulchra (n=1858)
Salix reticulata (n=969)
Salix scouleriana (n=229)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

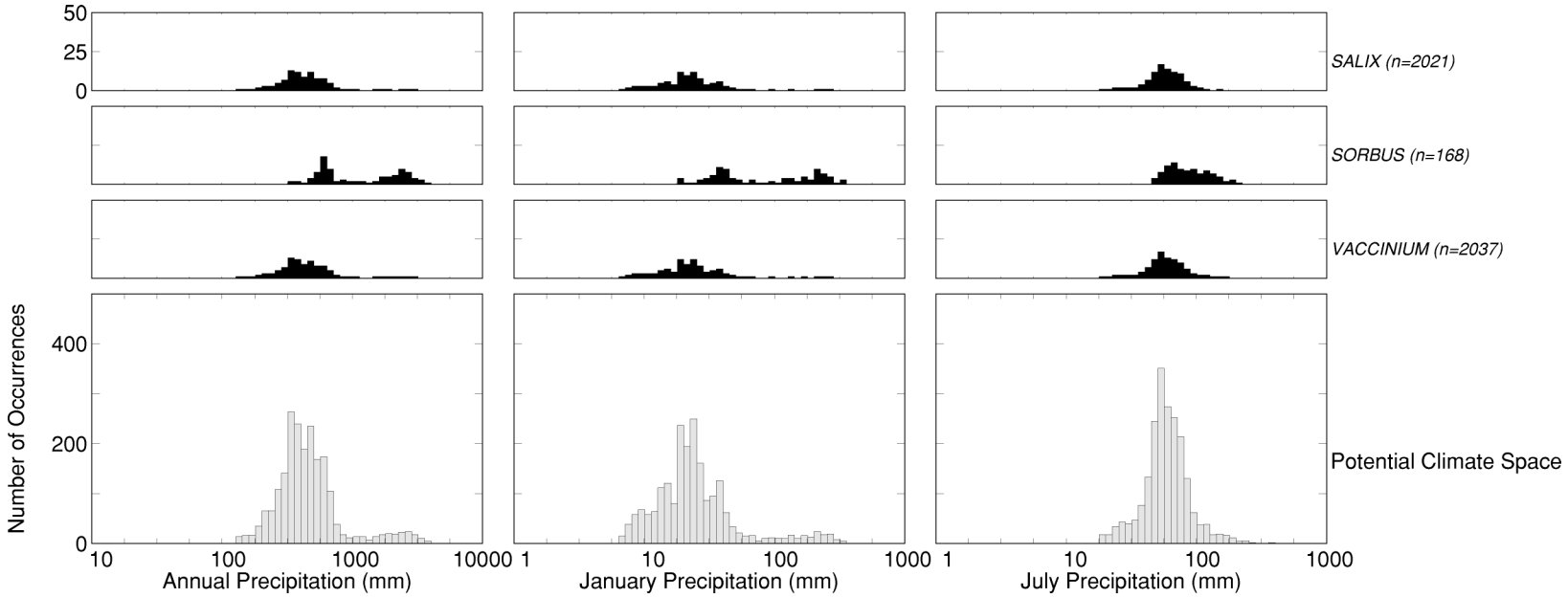

Salix sitchensis (n=84)
Sambucus callicarpa (n=131)
Shepherdia canadensis (n=575)
Sorbus scopulina (n=92)
Sorbus sitchensis (n=96)
Spiraea beauverdiana (n=1197)
Vaccinium alaskaensis (n=81)
Vaccinium caespitosum (n=83)
Vaccinium ovalifolium (n=141)
Potential Climate Space
Percent of Total Number of Occurrences of Taxon
50
25
0
Number of Occurrences
400
200
0
-40
-30
-20
-10
0
Mean Temperature Coldest Month (°C)
0.0
0.5
1.0
Growing Degree Days on 5°C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

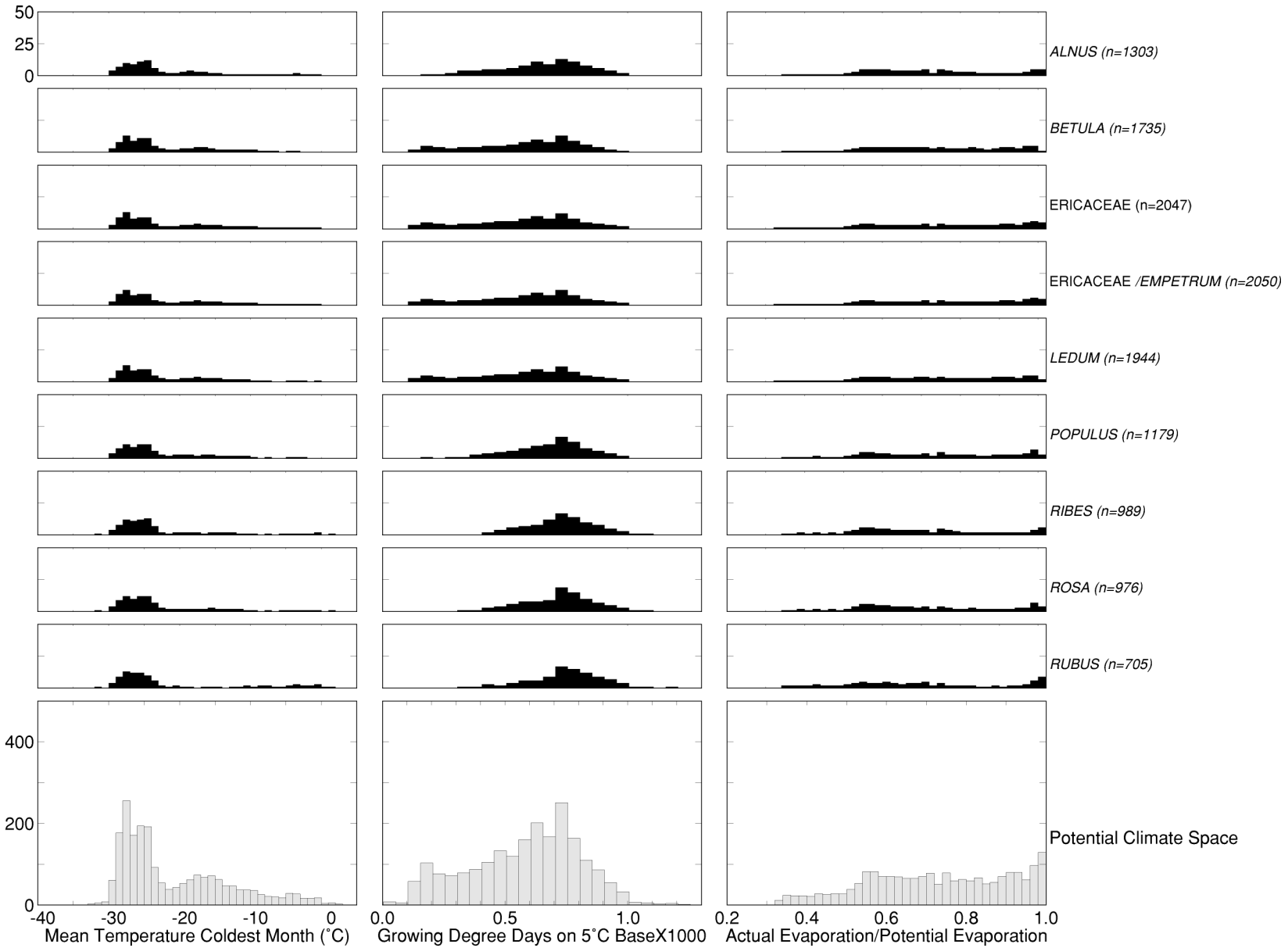

50
25
0
Vaccinium parvifolium (n=50)
Vaccinium uliginosum (n=1530)
Vaccinium vitis-idaea (n=1997)
Viburnum edule (n=840)
400
200
0
Number of Occurrences
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

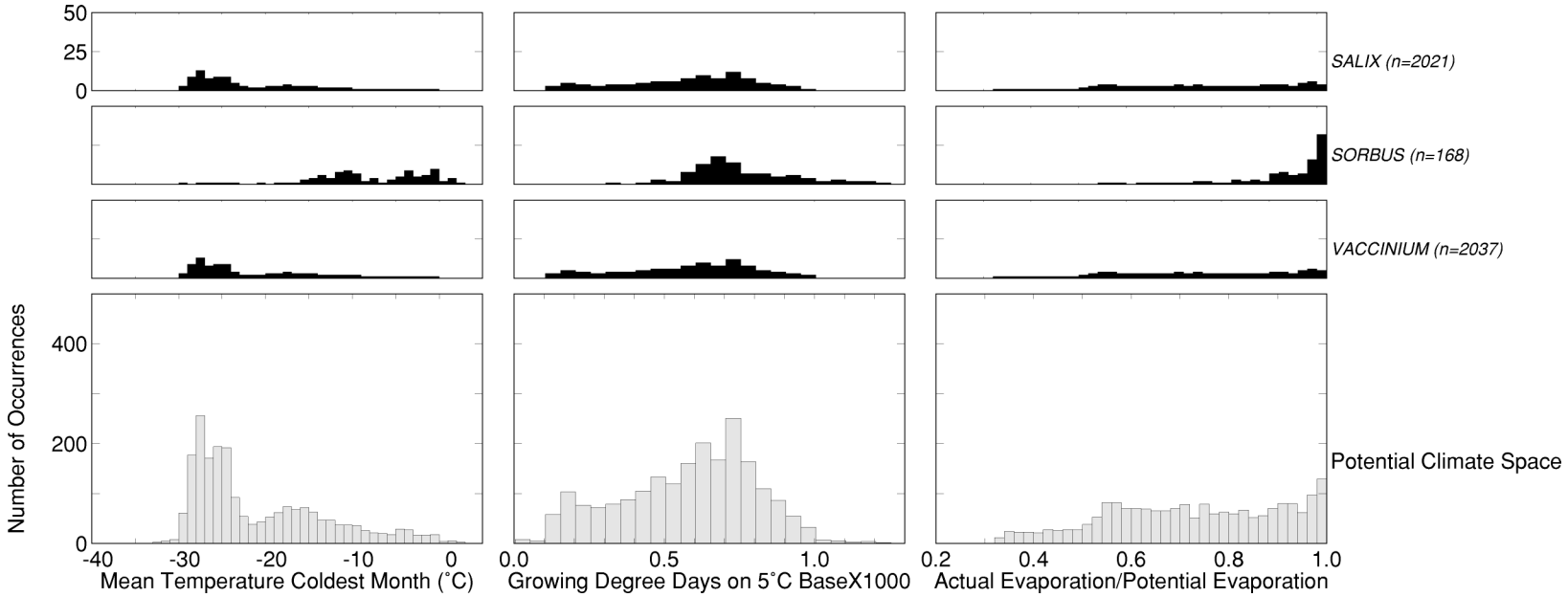

50
25
0
ALNUS (n=1303)
BETULA (n=1735)
ERICACEAE (n=2047)
ERICACEAE /EMPETRUM (n=2050)
LEDUM (n=1944)
POPULUS (n=1179)
RIBES (n=989)
ROSA (n=976)
RUBUS (n=705)
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)


50
25
0
SALIX (n=2021)
SORBUS (n=168)
VACCINIUM (n=2037)
400
200
0
Number of Occurrences
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)


50
25
0
ALNUS (n=1303)
BETULA (n=1735)
ERICACEAE (n=2047)
ERICACEAE /EMPETRUM (n=2050)
LEDUM (n=1944)
POPULUS (n=1179)
RIBES (n=989)
ROSA (n=976)
RUBUS (n=705)
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


50
25
0
SALIX (n=2021)
SORBUS (n=168)
VACCINIUM (n=2037)
400
200
0
Number of Occurrences
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


50
25
0
ALNUS (n=1303)
BETULA (n=1735)
ERICACEAE (n=2047)
ERICACEAE /EMPETRUM (n=2050)
LEDUM (n=1944)
POPULUS (n=1179)
RIBES (n=989)
ROSA (n=976)
RUBUS (n=705)
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation


50
25
0
SALIX (n=2021)
SORBUS (n=168)
VACCINIUM (n=2037)
400
200
0
Number of Occurrences
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

Alaska Species, Genera, and Groups—Tables

Distributions of conifer species in relation to mean annual temperature in Alaska.

[N, number]

Taxon name	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	1.4	2.1	4.2	5.1	6.2	7.0	7.2
Juniperus communis	603	-11.6	-7.8	-6.4	-5.3	-4.0	-3.0	6.0
Juniperus horizontalis	16	-8.3	-6.4	-5.0	-3.1	-2.5	-1.7	-1.1
Larix laricina	335	-7.0	-5.2	-4.7	-3.8	-3.1	-2.6	-1.7
Picea glauca	972	-10.2	-6.9	-5.6	-4.4	-2.9	-1.6	1.5
Picea mariana	692	-9.7	-6.4	-5.6	-4.7	-3.4	-2.5	1.8
Picea sitchensis	113	-6.4	0.5	1.3	3.2	5.1	6.4	7.2
Pinus contorta	49	1.3	3.2	4.5	5.4	6.4	7.0	7.2
Thuja plicata	20	3.2	4.7	5.9	6.4	7.0	7.2	7.2
Tsuga heterophylla	83	-2.0	0.8	1.8	4.2	5.4	6.7	7.2
Tsuga mertensiana	87	-2.0	0.8	1.5	4.1	5.4	6.6	7.2

Distributions of conifer species in relation to mean January temperature in Alaska.

[N, number]

Taxon name	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	-5.8	-3.3	-2.5	-1.2	-0.4	1.1	2.1
Juniperus communis	603	-29.8	-28.1	-27.1	-24.7	-21.7	-18.3	-0.4
Juniperus horizontalis	16	-20.3	-19.5	-19.0	-17.2	-15.5	-15.4	-14.4
Larix laricina	335	-27.8	-24.1	-23.0	-21.4	-19.7	-18.1	-16.8
Picea glauca	972	-29.8	-27.8	-25.7	-21.8	-18.0	-15.0	-6.9
Picea mariana	692	-29.6	-27.8	-26.1	-22.9	-19.6	-15.6	-8.0
Picea sitchensis	113	-14.7	-9.4	-6.2	-3.1	-1.0	-0.2	2.1
Pinus contorta	49	-7.6	-3.6	-2.3	-0.9	-0.3	1.1	2.1
Thuja plicata	20	-4.4	-2.4	-1.0	-0.3	1.1	1.7	2.1
Tsuga heterophylla	83	-11.0	-8.1	-4.7	-2.5	-0.7	0.7	2.1
Tsuga mertensiana	87	-11.9	-10.0	-5.7	-2.6	-0.8	0.6	2.1

Distributions of conifer species in relation to mean July temperature in Alaska.

[N, number]

Taxon name	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	10.3	11.8	12.3	12.8	13.3	13.7	14.3
Juniperus communis	603	6.9	11.3	12.4	14.0	15.0	15.5	16.3
Juniperus horizontalis	16	10.7	11.1	11.5	11.7	12.4	12.7	13.1
Larix laricina	335	10.6	13.2	13.8	14.5	15.1	15.6	16.0
Picea glauca	972	9.2	11.7	12.4	13.6	14.6	15.4	16.3
Picea mariana	692	10.0	11.9	12.7	14.2	15.0	15.6	16.3
Picea sitchensis	113	10.1	10.7	11.6	12.3	12.8	13.4	14.3
Pinus contorta	49	10.3	11.8	12.4	12.8	13.3	13.7	14.3
Thuja plicata	20	12.2	12.7	13.2	13.3	13.7	13.9	14.3
Tsuga heterophylla	83	10.1	11.0	11.8	12.5	13.0	13.6	14.3
Tsuga mertensiana	87	10.1	11.0	11.9	12.6	13.0	13.5	14.3

Distributions of conifer species in relation to mean annual precipitation in Alaska.

[N, number]

Taxon name	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	1465	1745	2005	2450	2820	2995	3505
Juniperus communis	603	195	245	300	345	420	565	2800
Juniperus horizontalis	16	460	610	625	940	1030	1105	1530
Larix laricina	335	250	330	350	390	435	470	780
Picea glauca	972	195	265	330	390	495	610	2635
Picea mariana	692	195	255	330	370	475	610	1845
Picea sitchensis	113	545	690	1240	2155	2705	2920	3615
Pinus contorta	49	1040	1610	1760	2215	2585	2920	3505
Thuja plicata	20	1780	1870	2235	2490	2710	2820	3505
Tsuga heterophylla	83	585	960	1745	2285	2725	2945	3615
Tsuga mertensiana	87	565	710	1725	2260	2705	2900	3615

Distributions of conifer species in relation to mean January precipitation in Alaska.

[N, number]

Taxon name	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	115	130	171	218	259	280	344
Juniperus communis	603	7	11	14	18	24	35	208
Juniperus horizontalis	16	36	39	48	62	81	88	94
Larix laricina	335	10	17	19	22	23	25	41
Picea glauca	972	7	12	17	22	26	38	199
Picea mariana	692	7	11	17	21	26	35	148
Picea sitchensis	113	35	52	97	176	238	279	349
Pinus contorta	49	74	118	133	211	245	277	344
Thuja plicata	20	172	176	213	222	261	280	321
Tsuga heterophylla	83	35	74	133	210	246	284	349
Tsuga mertensiana	87	32	52	133	208	245	281	349

Distributions of conifer species in relation to mean July precipitation in Alaska.

[N, number]

Taxon name	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	91	97	105	123	136	158	202
Juniperus communis	603	25	37	46	56	67	76	144
Juniperus horizontalis	16	52	61	65	80	87	91	121
Larix laricina	335	38	53	56	60	68	73	110
Picea glauca	972	25	42	51	59	71	81	166
Picea mariana	692	25	40	51	61	73	82	144
Picea sitchensis	113	49	57	75	109	134	164	202
Pinus contorta	49	74	94	103	121	133	146	176
Thuja plicata	20	95	97	100	109	125	138	149
Tsuga heterophylla	83	51	71	95	119	136	167	202
Tsuga mertensiana	87	49	69	95	117	136	167	202

Distributions of conifer species in relation to mean temperature of the coldest month in Alaska.

[N, number]

Taxon name	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	-5.8	-4.0	-2.6	-1.2	-0.4	1.1	2.1
Juniperus communis	603	-33.0	-28.7	-27.9	-26.1	-24.3	-19.2	-0.4
Juniperus horizontalis	16	-21.1	-20.3	-20.2	-18.7	-15.7	-15.4	-14.4
Larix laricina	335	-33.0	-29.1	-27.4	-25.4	-24.2	-23.0	-17.4
Picea glauca	972	-33.0	-28.5	-27.4	-25.1	-20.2	-15.1	-6.9
Picea mariana	692	-33.0	-28.6	-27.5	-25.5	-23.5	-15.8	-8.1
Picea sitchensis	113	-15.4	-9.9	-6.7	-3.2	-1.1	-0.2	2.1
Pinus contorta	49	-7.6	-3.6	-2.3	-0.9	-0.3	1.1	2.1
Thuja plicata	20	-4.4	-2.4	-1.0	-0.3	1.1	1.5	2.1
Tsuga heterophylla	83	-11.0	-8.1	-4.8	-2.6	-0.8	0.7	2.1
Tsuga mertensiana	87	-11.9	-10.0	-5.7	-2.9	-0.8	0.6	2.1

Distributions of conifer species in relation to growing degree days in Alaska.

[N, number]

Taxon name	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	0.61	0.67	0.83	0.94	1.07	1.16	1.23
Juniperus communis	603	0.12	0.45	0.56	0.72	0.82	0.90	1.07
Juniperus horizontalis	16	0.33	0.41	0.48	0.51	0.57	0.59	0.66
Larix laricina	335	0.33	0.65	0.72	0.77	0.82	0.88	0.99
Picea glauca	972	0.19	0.47	0.58	0.72	0.78	0.87	1.00
Picea mariana	692	0.33	0.51	0.62	0.74	0.82	0.89	1.00
Picea sitchensis	113	0.41	0.56	0.65	0.77	0.94	1.07	1.23
Pinus contorta	49	0.56	0.70	0.83	0.94	1.07	1.16	1.23
Thuja plicata	20	0.75	0.96	1.02	1.08	1.16	1.19	1.23
Tsuga heterophylla	83	0.47	0.59	0.66	0.82	0.96	1.11	1.23
Tsuga mertensiana	87	0.50	0.60	0.66	0.79	0.96	1.08	1.23

Distributions of conifer species in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Taxon name	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
Chamaecyparis nootkatensis	53	0.99	0.99	0.99	1.00	1.00	1.00	1.00
Juniperus communis	603	0.33	0.42	0.52	0.59	0.71	0.87	1.00
Juniperus horizontalis	16	0.62	0.77	0.81	0.98	0.98	0.99	1.00
Larix laricina	335	0.42	0.54	0.58	0.65	0.74	0.79	0.99
Picea glauca	972	0.33	0.47	0.56	0.67	0.81	0.94	1.00
Picea mariana	692	0.33	0.44	0.54	0.62	0.78	0.93	1.00
Picea sitchensis	113	0.70	0.87	0.98	1.00	1.00	1.00	1.00
Pinus contorta	49	0.95	0.99	0.99	1.00	1.00	1.00	1.00
Thuja plicata	20	0.99	0.99	1.00	1.00	1.00	1.00	1.00
Tsuga heterophylla	83	0.77	0.94	0.99	1.00	1.00	1.00	1.00
Tsuga mertensiana	87	0.67	0.87	0.99	1.00	1.00	1.00	1.00

Distributions of conifer genera and groups in relation to mean annual temperature in Alaska.

[N, number]

Taxon name	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	2.7	2.7	3.2	5.4	6.4	6.4	7.2
CUPRESSACEAE	658	-11.6	-7.7	-6.2	-5.2	-3.5	1.2	7.2
JUNIPERUS	605	-11.6	-7.8	-6.4	-5.3	-4.0	-3.0	6.0
PICEA	1138	-10.2	-6.7	-5.5	-4.2	-2.5	0.8	7.2
TSUGA	96	-2.0	0.7	1.4	3.7	5.3	6.4	7.2

Distributions of conifer genera and groups in relation to mean January temperature in Alaska.

[N, number]

Taxon name	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	-6.0	-6.0	-4.4	-1.0	-0.3	1.0	1.7
CUPRESSACEAE	658	-29.8	-28.0	-26.9	-24.2	-20.4	-9.4	2.1
JUNIPERUS	605	-29.8	-28.1	-27.1	-24.7	-21.7	-18.2	-0.4
PICEA	1138	-29.8	-27.6	-25.0	-21.2	-16.7	-10.0	2.1
TSUGA	96	-11.9	-9.9	-5.8	-3.0	-0.9	-0.2	2.1

Distributions of conifer genera and groups in relation to mean July temperature in Alaska.

[N, number]

Taxon name	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	12.1	12.1	12.2	13.2	13.3	13.6	13.8
CUPRESSACEAE	658	6.9	11.4	12.4	13.8	14.9	15.5	16.3
JUNIPERUS	605	6.9	11.3	12.4	14.0	15.0	15.5	16.3
PICEA	1138	9.2	11.5	12.3	13.3	14.5	15.3	16.3
TSUGA	96	10.1	11.0	11.8	12.4	12.9	13.4	14.3

Distributions of conifer genera and groups in relation to mean annual precipitation in Alaska.

[N, number]

Taxon name	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	1460	1460	2050	2710	2820	2895	3505
CUPRESSACEAE	658	195	250	305	355	460	1105	3505
JUNIPERUS	605	195	245	300	350	425	565	2800
PICEA	1138	195	275	335	415	565	915	3615
TSUGA	96	565	765	1610	2255	2710	2940	3615

Distributions of conifer genera and groups in relation to mean January precipitation in Alaska.

[N, number]

Taxon name	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	174	174	208	216	222	265	321
CUPRESSACEAE	658	7	11	15	19	26	86	344
JUNIPERUS	605	7	11	14	19	24	36	208
PICEA	1138	7	13	18	22	31	64	349
TSUGA	96	32	52	124	205	244	280	349

Distributions of conifer genera and groups in relation to mean July precipitation in Alaska.

[N, number]

Taxon name	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	89	89	95	100	109	146	149
CUPRESSACEAE	658	25	37	47	58	71	92	202
JUNIPERUS	605	25	37	46	56	67	76	144
PICEA	1138	25	43	52	61	75	92	202
TSUGA	96	49	57	91	112	136	164	202

Distributions of conifer genera and groups in relation to mean temperature of the coldest month in Alaska.

[N, number]

Taxon name	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	-6.0	-6.0	-4.4	-1.0	-0.3	1.0	1.7
CUPRESSACEAE	658	-33.0	-28.5	-27.7	-25.8	-23.7	-9.4	2.1
JUNIPERUS	605	-33.0	-28.6	-27.9	-26.1	-24.3	-19.1	-0.4
PICEA	1138	-33.0	-28.3	-27.0	-24.5	-17.4	-10.1	2.1
TSUGA	96	-11.9	-9.9	-5.8	-3.0	-0.9	-0.2	2.1

Distributions of conifer genera and groups in relation to growing degree days in Alaska.

[N, number]

Taxon name	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	0.70	0.70	0.75	1.02	1.07	1.16	1.18
CUPRESSACEAE	658	0.12	0.46	0.58	0.73	0.85	0.93	1.23
JUNIPERUS	605	0.12	0.45	0.56	0.72	0.82	0.90	1.07
PICEA	1138	0.19	0.47	0.59	0.71	0.79	0.89	1.23
TSUGA	96	0.47	0.59	0.65	0.77	0.94	1.08	1.23

Distributions of conifer genera and groups in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Taxon name	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
ABIES	9	0.99	0.99	0.99	1.00	1.00	1.00	1.00
CUPRESSACEAE	658	0.33	0.43	0.53	0.61	0.77	0.99	1.00
JUNIPERUS	605	0.33	0.42	0.52	0.59	0.72	0.87	1.00
PICEA	1138	0.33	0.49	0.57	0.70	0.89	0.98	1.00
TSUGA	96	0.67	0.87	0.99	1.00	1.00	1.00	1.00

Distributions of hardwood species in relation to mean annual temperature in Alaska.

[N, number]

Taxon name	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	1.8	2.7	4.2	5.1	6.4	7.1	7.2
Alnus crispa	1010	-11.6	-7.6	-6.0	-5.1	-3.7	-2.7	1.2
Alnus rubra	53	1.7	2.7	4.2	5.1	6.2	7.0	7.2
Alnus sinuata	294	-9.7	-3.5	-1.7	0.8	2.2	5.0	7.2
Alnus tenuifolia	597	-9.7	-5.6	-4.9	-3.7	-2.7	-1.5	3.2
Amelanchier alnifolia	235	-9.7	-5.7	-5.3	-4.4	-2.5	1.2	7.1
Andromeda polifolia	1622	-12.4	-8.9	-6.3	-4.7	-2.5	0.3	7.2
Arceuthobium tsugense	37	3.1	4.5	4.9	5.4	6.6	7.1	7.2
Arctostaphylos uva-ursi	513	-10.4	-7.6	-6.1	-5.1	-3.8	-2.5	3.7
Betula glandulosa	499	-11.5	-8.1	-6.6	-5.4	-4.3	-3.1	2.7
Betula nana	1701	-12.9	-9.4	-6.8	-4.9	-2.7	-0.4	3.7
Betula papyrifera	963	-9.7	-6.6	-5.5	-4.3	-2.7	-0.6	3.7
Chamaedaphne calyculata	377	-10.9	-6.2	-5.4	-4.5	-3.0	-1.9	1.2
Cladothamnus pyrolaeflorus	51	1.1	2.1	4.1	5.1	6.2	7.0	7.2
Cornus stolonifera	366	-9.0	-6.3	-5.4	-4.6	-3.0	3.7	7.2
Elaeagnus commutata	115	-9.7	-7.3	-6.0	-4.4	-3.0	-2.5	1.2
Empetrum nigrum	1991	-13.1	-10.1	-7.2	-4.8	-2.5	0.2	7.2
Gaultheria shallon	11	6.4	6.4	6.4	7.0	7.1	7.2	7.2
Kalmia polifolia	50	1.7	2.7	4.1	5.1	5.9	7.0	7.2
Ledum decumbens	1895	-13.1	-10.2	-7.3	-4.9	-2.6	-0.6	3.7
Ledum groenlandicum	557	-9.8	-7.2	-5.9	-4.9	-3.3	0.1	7.2
Malus diversifolia	63	-2.0	1.6	3.2	5.0	5.7	7.0	7.2
Menziesia ferruginea	105	-2.0	0.3	1.2	3.1	5.1	6.4	7.2
Myrica gale	263	-7.7	-5.9	-5.3	-3.2	0.7	2.2	7.1
Oplopanax horridus	108	-4.6	-0.7	1.0	2.7	5.1	6.4	7.2
Populus balsamifera	1115	-11.6	-7.0	-5.6	-4.4	-2.7	-1.2	2.9
Populus tremuloides	675	-10.3	-6.5	-5.6	-4.7	-3.4	-2.3	3.2
Populus trichocarpa	83	-2.0	0.1	0.8	1.5	3.2	4.5	5.9
Potentilla fruticosa	1108	-12.5	-9.4	-7.3	-5.3	-4.1	-2.6	3.2
Rhododendron lapponicum	485	-12.9	-11.0	-9.3	-6.6	-5.1	-4.1	-0.4
Ribes bracteosum	56	-2.0	2.3	4.2	5.1	6.0	7.0	7.2
Ribes glandulosum	57	-5.2	-4.2	-3.7	-3.2	-1.0	0.3	1.3
Ribes hudsonianum	651	-9.0	-6.5	-5.5	-4.7	-3.3	-2.5	1.5
Ribes lacustre	105	-5.3	-4.7	-3.8	-3.0	1.2	4.7	7.1
Ribes laxiflorum	147	-4.6	-1.4	-0.1	1.3	4.5	5.9	7.2

Distributions of hardwood species in relation to mean annual temperature in Alaska—*Continued*.

Taxon name	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	-10.9	-6.7	-5.6	-4.6	-3.2	-1.5	3.2
Rosa acicularis	921	-10.9	-6.7	-5.6	-4.6	-2.9	-1.1	3.2
Rosa nutkana	79	-1.3	0.6	1.5	3.2	5.4	6.7	7.2
Rubus idaeus var. strigosus	598	-9.7	-6.3	-5.4	-4.4	-3.2	-2.2	7.1
Rubus parviflorus	54	2.1	3.2	4.3	5.1	6.2	7.0	7.2
Rubus spectabilis	127	-2.2	0.1	1.1	2.3	5.0	6.2	7.2
Salix alaxensis	1830	-13.1	-10.1	-7.1	-4.9	-2.6	0.1	5.9
Salix arbusculoides	946	-11.6	-8.5	-6.3	-5.0	-3.4	-2.5	1.5
Salix barclayi	250	-6.3	-4.4	-3.2	-1.1	1.2	2.3	5.5
Salix bebbiana	281	-8.8	-5.7	-5.0	-3.7	-1.3	0.8	3.4
Salix glauca	1689	-12.8	-9.7	-6.9	-4.9	-2.7	-0.4	3.7
Salix interior	105	-8.4	-5.9	-5.3	-4.8	-4.0	-3.2	-2.5
Salix lanata ssp. richardsonii	1551	-13.1	-10.6	-7.9	-5.3	-3.6	-2.5	3.2
Salix lasiandra	47	-5.9	-5.3	-5.2	-3.3	-2.7	2.5	4.3
Salix monticola	89	-10.7	-5.9	-5.4	-4.8	-3.4	-2.9	2.3
Salix novae-angliae	76	-6.2	-5.4	-5.0	-4.0	-3.2	-2.8	-1.3
Salix planifolia ssp. pulchra	1858	-13.1	-10.1	-7.1	-4.9	-2.6	-0.4	3.7
Salix reticulata	969	-13.1	-11.4	-9.7	-6.9	-4.6	-1.8	6.4
Salix scouleriana	229	-8.8	-5.6	-4.2	-2.9	0.5	2.7	7.1
Salix sitchensis	84	-6.4	0.5	1.5	3.0	4.7	5.5	7.1
Sambucus callicarpa	131	-3.9	-0.9	0.5	1.8	4.9	6.2	7.2
Shepherdia canadensis	575	-12.2	-8.4	-6.7	-5.4	-4.0	-2.9	3.2
Sorbus scopulina	92	-5.7	-4.2	-1.0	0.1	0.9	1.3	6.4
Sorbus sitchensis	96	-2.0	0.7	1.4	3.2	5.3	6.4	7.2
Spiraea beauverdiana	1197	-12.1	-6.6	-5.4	-4.1	-2.5	-0.6	3.7
Vaccinium alaskaense	81	-2.0	1.1	2.2	4.3	5.4	6.7	7.2
Vaccinium caespitosum	83	-2.2	-0.8	0.8	4.2	5.4	6.7	7.2
Vaccinium ovalifolium	141	-2.6	-0.9	0.5	2.1	4.9	6.0	7.2
Vaccinium parvifolium	50	2.3	4.1	4.7	5.3	6.4	7.0	7.2
Vaccinium uliginosum	1530	-12.9	-9.5	-6.9	-4.8	-2.6	0.6	7.2
Vaccinium vitis-idaea	1997	-13.1	-10.1	-7.2	-4.8	-2.5	0.2	7.2
Viburnum edule	840	-11.6	-6.2	-5.2	-3.8	-1.8	1.1	7.2

Distributions of hardwood species in relation to mean January temperature in Alaska.

[N, number]

Taxon name	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	-7.6	-5.8	-3.0	-1.7	-0.2	1.5	2.1
Alnus crispa	1010	-30.0	-27.8	-25.8	-22.9	-19.6	-17.3	-8.1
Alnus rubra	53	-7.2	-4.4	-2.5	-1.3	-0.4	1.1	2.1
Alnus sinuata	294	-25.7	-18.7	-14.7	-9.2	-3.9	-1.1	2.1
Alnus tenuifolia	597	-29.6	-27.1	-24.3	-21.0	-17.8	-14.7	-7.2
Amelanchier alnifolia	235	-28.5	-27.8	-26.1	-23.0	-15.6	-8.6	0.8
Andromeda polifolia	1622	-30.0	-27.6	-25.2	-21.6	-17.0	-10.2	2.1
Arceuthobium tsugense	37	-3.4	-2.6	-1.6	-0.6	0.6	1.5	2.1
Arctostaphylos uva-ursi	513	-30.0	-28.2	-27.4	-25.2	-21.3	-16.1	-1.8
Betula glandulosa	499	-30.0	-28.2	-27.6	-25.5	-22.9	-19.1	-7.6
Betula nana	1701	-30.0	-27.6	-25.4	-21.8	-17.2	-12.6	-0.5
Betula papyrifera	963	-29.8	-27.7	-25.5	-21.6	-17.6	-13.6	-2.8
Chamaedaphne calyculata	377	-30.0	-28.0	-26.5	-23.3	-19.3	-16.2	-9.0
Cladothamnus pyrolaeflorus	51	-10.6	-4.7	-2.6	-1.2	-0.4	1.1	2.1
Cornus stolonifera	366	-29.6	-28.0	-26.8	-23.9	-20.2	-4.1	2.1
Elaeagnus commutata	115	-29.6	-28.2	-27.8	-22.6	-19.5	-17.6	-11.7
Empetrum nigrum	1991	-30.8	-27.8	-25.7	-21.6	-16.4	-10.6	2.1
Gaultheria shallon	11	-1.0	-1.0	-0.4	0.8	1.1	1.7	2.1
Kalmia polifolia	50	-7.6	-5.5	-2.5	-1.1	-0.3	1.1	2.1
Ledum decumbens	1895	-30.8	-27.8	-25.8	-21.8	-17.0	-12.5	-0.5
Ledum groenlandicum	557	-30.0	-28.1	-27.2	-24.8	-19.7	-13.4	2.1
Malus diversifolia	63	-7.2	-5.8	-3.2	-1.5	-0.4	1.0	2.1
Menziesia ferruginea	105	-14.7	-10.1	-7.2	-3.2	-1.0	-0.3	2.1
Myrica gale	263	-29.6	-27.8	-26.1	-21.8	-10.9	-3.8	0.8
Oplopanax horridus	108	-17.6	-12.0	-8.7	-3.8	-1.2	-0.3	2.1
Populus balsamifera	1115	-30.0	-27.7	-25.2	-21.5	-17.4	-14.3	-4.6
Populus tremuloides	675	-29.6	-27.8	-26.5	-23.0	-20.2	-15.6	-5.8
Populus trichocarpa	83	-13.7	-12.7	-10.8	-5.8	-3.3	-1.8	0.0
Potentilla fruticosa	1108	-30.0	-27.9	-26.4	-23.4	-20.4	-16.2	-5.8
Rhododendron lapponicum	485	-30.0	-28.3	-27.7	-26.1	-23.0	-18.9	-13.7
Ribes bracteosum	56	-6.0	-4.0	-2.6	-1.2	-0.4	1.0	2.1
Ribes glandulosum	57	-23.6	-23.0	-21.7	-19.4	-14.5	-13.1	-7.2
Ribes hudsonianum	651	-29.6	-27.8	-26.6	-23.2	-20.6	-17.7	-8.1
Ribes lacustre	105	-25.2	-24.1	-23.2	-21.2	-9.4	-2.3	0.8
Ribes laxiflorum	147	-19.2	-14.6	-12.7	-6.1	-2.0	-0.4	2.1

Distributions of hardwood species in relation to mean January temperature in Alaska—*Continued*.

Taxon name	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	-30.0	-27.8	-25.9	-22.5	-18.8	-15.3	-5.8
Rosa acicularis	921	-30.0	-27.7	-25.8	-22.0	-18.1	-14.7	-5.4
Rosa nutkana	79	-13.3	-11.0	-7.6	-3.8	-1.0	0.7	2.1
Rubus idaeus var. strigosus	598	-29.6	-27.8	-26.5	-22.8	-19.7	-14.8	0.8
Rubus parviflorus	54	-6.0	-4.4	-2.4	-1.1	-0.3	1.1	2.1
Rubus spectabilis	127	-11.6	-8.7	-6.6	-3.3	-1.4	-0.4	2.1
Salix alaxensis	1830	-30.8	-27.7	-25.8	-21.8	-17.0	-10.8	-0.2
Salix arbusculoides	946	-30.0	-27.8	-26.4	-23.2	-19.9	-16.3	-8.1
Salix barclayi	250	-27.1	-21.6	-18.8	-14.0	-6.6	-3.4	-0.2
Salix bebbiana	281	-29.6	-27.8	-25.1	-21.8	-14.7	-10.1	-3.8
Salix glauca	1689	-30.8	-27.6	-25.6	-22.0	-17.4	-12.9	-0.5
Salix interior	105	-29.3	-28.2	-27.3	-24.5	-22.8	-21.8	-19.5
Salix lanata ssp. richardsonii	1551	-30.8	-27.9	-26.3	-23.2	-19.0	-16.4	-4.8
Salix lasiandra	47	-28.4	-28.2	-27.1	-22.4	-21.2	-7.6	-1.8
Salix monticola	89	-29.6	-28.3	-27.8	-25.7	-21.8	-18.8	-2.6
Salix novae-angliae	76	-29.6	-27.3	-26.5	-24.1	-21.8	-19.2	-15.4
Salix planifolia ssp. pulchra	1858	-30.8	-27.8	-25.8	-21.8	-16.9	-12.3	-0.5
Salix reticulata	969	-30.8	-28.2	-26.8	-24.4	-19.0	-15.1	1.7
Salix scouleriana	229	-29.6	-27.0	-22.9	-18.8	-11.1	-4.8	1.7
Salix sitchensis	84	-14.7	-9.3	-5.8	-3.2	-1.7	-0.8	0.8
Sambucus callicarpa	131	-19.3	-12.9	-11.0	-5.8	-2.0	-0.4	2.1
Shepherdia canadensis	575	-30.0	-28.2	-27.5	-25.2	-21.6	-18.4	-3.4
Sorbus scopulina	92	-24.1	-20.4	-14.5	-11.9	-10.1	-8.0	1.7
Sorbus sitchensis	96	-11.1	-9.4	-6.0	-3.3	-0.9	-0.2	2.1
Spiraea beauverdiana	1197	-30.0	-27.5	-24.7	-20.5	-16.8	-13.1	-2.5
Vaccinium alaskaense	81	-10.6	-5.4	-3.6	-2.3	-0.6	0.7	2.1
Vaccinium caespitosum	83	-15.5	-13.9	-8.7	-2.6	-0.8	0.7	2.1
Vaccinium ovalifolium	141	-17.5	-14.1	-11.1	-4.0	-1.7	-0.4	2.1
Vaccinium parvifolium	50	-4.8	-3.0	-2.3	-1.0	-0.3	1.1	2.1
Vaccinium uliginosum	1530	-30.0	-27.6	-25.5	-21.9	-17.1	-9.5	2.1
Vaccinium vitis-idaea	1997	-30.8	-27.8	-25.7	-21.5	-16.3	-10.6	2.1
Viburnum edule	840	-29.6	-27.6	-25.5	-21.3	-14.7	-8.2	2.1

Distributions of hardwood species in relation to mean July temperature in Alaska.

[N, number]

Taxon name	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	11.3	11.8	12.3	12.8	13.3	13.7	14.3
Alnus crispa	1010	6.7	10.7	12.1	13.7	14.7	15.4	16.3
Alnus rubra	53	10.3	11.8	12.3	12.7	13.3	13.7	14.3
Alnus sinuata	294	8.7	10.7	11.5	12.1	12.7	13.2	14.8
Alnus tenuifolia	597	10.4	12.0	12.8	14.1	15.0	15.6	16.3
Amelanchier alnifolia	235	10.6	11.8	12.8	14.9	15.5	15.8	16.1
Andromeda polifolia	1622	4.5	9.5	11.3	12.6	14.1	15.1	16.3
Arceuthobium tsugense	37	11.4	12.1	12.6	12.8	13.4	13.7	14.3
Arctostaphylos uva-ursi	513	8.3	11.8	12.6	14.1	15.1	15.6	16.3
Betula glandulosa	499	6.7	11.5	12.4	14.0	15.0	15.5	16.3
Betula nana	1701	4.5	9.2	11.0	12.4	14.0	15.0	16.3
Betula papyrifera	963	9.2	11.7	12.5	13.7	14.7	15.4	16.3
Chamaedaphne calyculata	377	7.7	12.2	13.0	14.2	15.2	15.7	16.1
Cladothamnus pyrolaeflorus	51	11.3	11.8	12.3	12.8	13.3	13.7	14.3
Cornus stolonifera	366	10.9	12.4	13.2	14.3	15.3	15.7	16.3
Elaeagnus commutata	115	10.5	11.8	12.8	13.8	14.7	15.4	15.9
Empetrum nigrum	1991	3.1	8.6	10.5	12.2	13.7	14.9	16.3
Gaultheria shallon	11	13.2	13.2	13.3	13.6	13.7	13.9	14.3
Kalmia polifolia	50	10.3	11.6	12.1	12.7	13.2	13.5	14.3
Ledum decumbens	1895	3.1	8.5	10.4	12.2	13.8	15.0	16.3
Ledum groenlandicum	557	10.3	12.0	12.8	14.0	15.0	15.5	16.3
Malus diversifolia	63	10.2	11.3	12.0	12.7	13.3	13.6	14.3
Menziesia ferruginea	105	10.1	11.0	11.7	12.4	13.0	13.5	14.3
Myrica gale	263	10.2	11.6	12.3	13.1	15.0	15.6	16.0
Oplopanax horridus	108	10.1	11.0	11.7	12.4	13.0	13.5	14.3
Populus balsamifera	1115	6.8	11.5	12.3	13.2	14.5	15.3	16.3
Populus tremuloides	675	10.1	12.1	13.0	14.2	15.0	15.6	16.3
Populus trichocarpa	83	10.1	10.9	11.7	12.2	12.8	13.3	13.6
Potentilla fruticosa	1108	4.5	9.4	11.0	12.6	14.5	15.3	16.3
Rhododendron lapponicum	485	4.5	8.1	9.3	12.0	14.1	15.0	16.3
Ribes bracteosum	56	10.2	11.1	12.2	12.7	13.3	13.6	14.3
Ribes glandulosum	57	11.6	12.2	12.5	13.5	15.1	15.3	15.7
Ribes hudsonianum	651	9.6	12.6	13.6	14.3	15.1	15.6	16.3
Ribes lacustre	105	11.0	12.1	12.5	14.1	15.2	15.5	15.9
Ribes laxiflorum	147	8.2	11.1	11.7	12.4	12.8	13.4	14.3

Distributions of hardwood species in relation to mean July temperature in Alaska—*Continued*.

Taxon name	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	7.9	11.9	12.6	13.9	14.8	15.5	16.3
Rosa acicularis	921	7.9	11.8	12.6	13.7	14.7	15.4	16.3
Rosa nutkana	79	10.7	11.3	11.7	12.4	13.0	13.5	14.3
Rubus idaeus var. strigosus	598	10.6	12.2	13.5	14.3	15.1	15.6	16.3
Rubus parviflorus	54	11.5	12.0	12.4	12.7	13.3	13.7	14.3
Rubus spectabilis	127	8.7	10.1	11.1	12.0	12.7	13.3	14.3
Salix alaxensis	1830	4.2	8.6	10.7	12.3	13.9	15.0	16.3
Salix arbusculoides	946	6.7	10.5	12.0	13.5	14.7	15.4	16.3
Salix barclayi	250	8.7	10.8	11.6	12.3	13.0	14.0	15.4
Salix bebbiana	281	10.7	11.7	12.4	13.9	15.2	15.7	16.1
Salix glauca	1689	4.5	9.0	10.9	12.4	14.0	15.0	16.3
Salix interior	105	11.0	13.8	14.6	15.3	15.6	15.8	16.1
Salix lanata ssp. richardsonii	1551	3.1	8.2	10.2	12.3	14.1	15.1	16.3
Salix lasiandra	47	11.9	12.4	14.6	15.3	15.6	15.8	16.1
Salix monticola	89	8.4	12.1	12.8	14.6	15.4	15.7	16.1
Salix novae-angliae	76	12.0	12.6	13.7	14.3	15.3	15.7	16.1
Salix planifolia ssp. pulchra	1858	3.1	8.6	10.5	12.2	13.9	15.0	16.3
Salix reticulata	969	3.1	7.3	8.9	10.7	12.4	14.1	15.9
Salix scouleriana	229	10.3	11.5	12.0	12.7	13.8	14.6	15.6
Salix sitchensis	84	10.2	10.5	11.4	12.0	12.7	13.3	14.3
Sambucus callicarpa	131	9.5	11.3	11.8	12.5	12.9	13.4	14.3
Shepherdia canadensis	575	5.6	11.0	12.1	13.9	14.9	15.5	16.3
Sorbus scopulina	92	10.1	11.3	12.1	12.4	13.0	13.5	15.7
Sorbus sitchensis	96	10.1	11.0	11.7	12.3	12.8	13.4	14.3
Spiraea beauverdiana	1197	6.5	11.3	12.1	13.1	14.4	15.3	16.3
Vaccinium alaskaense	81	10.1	10.3	11.6	12.5	13.0	13.6	14.3
Vaccinium caespitosum	83	10.3	11.8	12.2	12.6	13.0	13.6	14.3
Vaccinium ovalifolium	141	8.2	11.0	11.7	12.4	13.0	13.4	14.3
Vaccinium parvifolium	50	11.5	12.0	12.4	12.8	13.3	13.7	14.3
Vaccinium uliginosum	1530	4.5	9.1	10.9	12.6	14.1	15.1	16.3
Vaccinium vitis-idaea	1997	3.1	8.6	10.5	12.2	13.7	14.9	16.3
Viburnum edule	840	6.8	11.7	12.5	13.9	14.8	15.5	16.3

Distributions of hardwood species in relation to mean annual precipitation in Alaska.

[N, number]

Taxon name	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	1025	1460	1805	2380	2725	2895	3505
Alnus crispa	1010	195	265	320	365	430	485	1100
Alnus rubra	53	1025	1610	1805	2320	2665	2895	3455
Alnus sinuata	294	340	505	560	660	1475	2490	3615
Alnus tenuifolia	597	200	280	340	420	500	610	1845
Amelanchier alnifolia	235	195	235	310	360	610	1330	2995
Andromeda polifolia	1622	145	270	330	395	535	645	3615
Arceuthobium tsugense	37	1465	1720	1810	2215	2530	2800	3455
Arctostaphylos uva-ursi	513	195	235	280	350	445	700	2255
Betula glandulosa	499	195	235	280	335	410	550	1845
Betula nana	1701	145	270	330	400	530	630	1515
Betula papyrifera	963	195	270	335	395	510	635	2635
Chamaedaphne calyculata	377	195	260	315	365	485	560	1035
Cladothamnus pyrolaeflorus	51	885	1610	1805	2280	2550	2820	3455
Cornus stolonifera	366	195	240	305	355	475	1755	3505
Elaeagnus commutata	115	195	210	300	390	485	690	1845
Empetrum nigrum	1991	130	250	325	410	545	685	3615
Gaultheria shallon	11	1780	1780	2050	2340	2550	2795	2895
Kalmia polifolia	50	1040	1570	1780	2175	2615	2920	3505
Ledum decumbens	1895	130	245	320	395	520	630	2945
Ledum groenlandicum	557	195	240	300	365	495	940	3505
Malus diversifolia	63	840	1415	1805	2385	2795	2940	3615
Menziesia ferruginea	105	495	660	1245	2175	2710	2895	3615
Myrica gale	263	205	305	330	460	610	2160	3615
Oplopanax horridus	108	490	560	910	1805	2455	2820	3615
Populus balsamifera	1115	195	275	335	405	520	630	1845
Populus tremuloides	675	195	250	320	370	445	610	2185
Populus trichocarpa	83	485	530	660	1315	2320	2880	3615
Potentilla fruticosa	1108	195	265	315	360	440	575	1935
Rhododendron lapponicum	485	160	220	265	325	420	500	1035
Ribes bracteosum	56	1460	1745	2005	2410	2725	2895	3615
Ribes glandulosum	57	305	315	330	440	555	620	840
Ribes hudsonianum	651	195	250	320	370	435	500	1935
Ribes lacustre	105	305	315	330	385	1025	1845	3505
Ribes laxiflorum	147	475	545	620	1570	2395	2860	4685

Distributions of hardwood species in relation to mean annual precipitation in Alaska—*Continued*.

Taxon name	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	195	260	325	380	460	575	2180
Rosa acicularis	921	195	265	330	385	495	615	2860
Rosa nutkana	79	485	590	815	1515	2320	2710	3505
Rubus idaeus var. strigosus	598	195	245	320	380	455	690	3505
Rubus parviflorus	54	1245	1610	1845	2380	2710	2900	3505
Rubus spectabilis	127	535	595	695	1645	2475	2855	3615
Salix alaxensis	1830	130	245	320	395	535	650	3715
Salix arbusculoides	946	195	265	320	370	465	565	1475
Salix barclayi	250	300	430	505	615	915	1850	3715
Salix bebbiana	281	195	260	320	405	580	775	2180
Salix glauca	1689	135	255	320	390	515	620	2000
Salix interior	105	195	225	260	315	350	365	520
Salix lanata ssp. richardsonii	1551	130	230	305	365	460	520	1945
Salix lasiandra	47	205	225	250	315	360	1025	2320
Salix monticola	89	195	215	270	320	430	535	2880
Salix novae-angliae	76	225	270	300	320	370	465	775
Salix planifolia ssp. pulchra	1858	130	240	320	395	515	625	2635
Salix reticulata	969	130	205	285	365	485	650	2895
Salix scouleriana	229	225	320	410	530	815	1750	3505
Salix sitchensis	84	585	805	1260	1910	2615	2940	3715
Sambucus callicarpa	131	460	555	610	1245	2280	2795	3615
Shepherdia canadensis	575	195	240	285	340	430	580	1845
Sorbus scopulina	92	340	450	545	605	670	910	2895
Sorbus sitchensis	96	565	810	1415	2160	2550	2860	3615
Spiraea beauverdiana	1197	195	275	335	405	520	610	2940
Vaccinium alaskaense	81	885	1645	1845	2395	2830	3160	3715
Vaccinium caespitosum	83	500	590	1040	1910	2530	2900	3505
Vaccinium ovalifolium	141	485	565	650	1760	2495	2895	4685
Vaccinium parvifolium	50	1415	1720	1845	2340	2665	2895	3505
Vaccinium uliginosum	1530	145	260	325	395	525	660	3615
Vaccinium vitis-idaea	1997	130	250	325	410	545	695	3615
Viburnum edule	840	195	270	335	410	575	1105	3615

Distributions of hardwood species in relation to mean January precipitation in Alaska.

[N, number]

Taxon name	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	67	121	151	216	246	272	321
Alnus crispa	1010	7	12	16	20	23	26	63
Alnus rubra	53	67	121	142	213	246	277	344
Alnus sinuata	294	14	27	32	42	115	222	349
Alnus tenuifolia	597	7	13	18	22	26	38	130
Amelanchier alnifolia	235	7	13	16	21	43	94	284
Andromeda polifolia	1622	7	12	17	22	29	41	349
Arceuthobium tsugense	37	115	124	142	208	238	265	344
Arctostaphylos uva-ursi	513	7	10	13	18	26	43	214
Betula glandulosa	499	7	10	13	17	23	31	130
Betula nana	1701	7	12	16	22	28	39	130
Betula papyrifera	963	7	13	17	22	28	40	214
Chamaedaphne calyculata	377	7	11	15	19	26	32	87
Cladothamnus pyrolaeflorus	51	67	125	148	211	238	272	344
Cornus stolonifera	366	7	10	14	19	26	133	321
Elaeagnus commutata	115	7	8	10	19	28	51	107
Empetrum nigrum	1991	7	11	16	22	30	44	349
Gaultheria shallon	11	172	172	208	232	247	272	280
Kalmia polifolia	50	74	118	137	201	238	265	344
Ledum decumbens	1895	7	11	15	21	28	39	241
Ledum groenlandicum	557	7	11	14	19	27	66	344
Malus diversifolia	63	64	105	142	216	246	284	349
Menziesia ferruginea	105	27	42	93	185	238	277	349
Myrica gale	263	8	12	18	27	41	178	349
Oplopanax horridus	108	27	35	67	142	221	265	349
Populus balsamifera	1115	7	13	17	22	28	39	148
Populus tremuloides	675	7	11	16	20	24	35	153
Populus trichocarpa	83	27	30	47	105	205	259	349
Potentilla fruticosa	1108	7	12	15	19	24	33	151
Rhododendron lapponicum	485	7	9	12	15	20	26	65
Ribes bracteosum	56	115	133	172	216	254	284	349
Ribes glandulosum	57	16	16	18	26	30	35	64
Ribes hudsonianum	651	7	11	15	20	23	28	151
Ribes lacustre	105	10	14	17	21	67	174	321
Ribes laxiflorum	147	26	31	37	124	216	265	479

Distributions of hardwood species in relation to mean January precipitation in Alaska—*Continued*.

Taxon name	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	7	12	17	21	25	36	178
Rosa acicularis	921	7	12	17	21	26	38	281
Rosa nutkana	79	27	38	64	124	214	258	321
Rubus idaeus var. strigosus	598	7	11	16	21	24	47	321
Rubus parviflorus	54	91	121	161	214	254	277	344
Rubus spectabilis	127	25	32	41	130	220	265	349
Salix alaxensis	1830	7	11	15	21	28	41	403
Salix arbusculoides	946	7	12	15	20	25	31	124
Salix barclayi	250	8	20	27	38	67	148	403
Salix bebbiana	281	8	11	16	22	36	54	178
Salix glauca	1689	7	11	16	21	27	38	168
Salix interior	105	7	9	12	15	19	22	30
Salix lanata ssp. richardsonii	1551	7	10	14	20	24	28	136
Salix lasiandra	47	9	12	13	16	18	67	214
Salix monticola	89	7	9	11	15	25	32	221
Salix novae-angliae	76	8	9	12	15	18	30	51
Salix planifolia ssp. pulchra	1858	7	11	15	21	28	38	199
Salix reticulata	969	7	9	12	18	25	40	265
Salix scouleriana	229	7	11	18	28	58	133	321
Salix sitchensis	84	35	60	104	148	222	277	403
Sambucus callicarpa	131	27	34	43	102	208	247	349
Shepherdia canadensis	575	7	11	13	18	24	36	168
Sorbus scopulina	92	19	24	32	39	48	67	265
Sorbus sitchensis	96	35	63	114	178	232	280	349
Spiraea beauverdiana	1197	7	13	18	22	28	39	281
Vaccinium alaskaense	81	67	125	161	216	258	285	403
Vaccinium caespitosum	83	28	32	74	161	232	272	344
Vaccinium ovalifolium	141	26	32	42	136	221	277	479
Vaccinium parvifolium	50	105	124	151	213	247	277	344
Vaccinium uliginosum	1530	7	11	16	21	28	42	349
Vaccinium vitis-idaea	1997	7	11	16	22	30	44	349
Viburnum edule	840	7	12	18	22	37	87	349

Distributions of hardwood species in relation to mean July precipitation in Alaska.

[N, number]

Taxon name	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	74	89	100	112	126	141	160
Alnus crispa	1010	25	41	48	55	66	74	104
Alnus rubra	53	75	94	100	119	130	145	182
Alnus sinuata	294	42	51	58	72	98	128	202
Alnus tenuifolia	597	26	49	55	63	72	81	144
Amelanchier alnifolia	235	25	36	50	57	66	95	144
Andromeda polifolia	1622	20	40	49	57	70	81	202
Arceuthobium tsugense	37	91	98	105	121	132	145	158
Arctostaphylos uva-ursi	513	25	36	46	59	71	83	166
Betula glandulosa	499	25	34	44	56	68	78	144
Betula nana	1701	20	40	49	57	70	80	127
Betula papyrifera	963	25	42	52	60	72	82	152
Chamaedaphne calyculata	377	25	39	52	62	70	77	119
Cladothamnus pyrolaeflorus	51	69	94	100	117	128	138	202
Cornus stolonifera	366	25	37	52	61	73	100	149
Elaeagnus commutata	115	25	29	56	67	73	80	144
Empetrum nigrum	1991	18	35	48	56	71	84	223
Gaultheria shallon	11	97	97	100	109	121	138	146
Kalmia polifolia	50	74	94	105	123	138	158	182
Ledum decumbens	1895	18	34	48	56	69	79	163
Ledum groenlandicum	557	25	37	48	63	75	92	182
Malus diversifolia	63	53	88	100	121	137	167	202
Menziesia ferruginea	105	51	66	87	110	134	160	202
Myrica gale	263	28	47	54	61	72	100	202
Oplopanax horridus	108	52	63	72	100	126	155	202
Populus balsamifera	1115	25	42	51	59	71	82	144
Populus tremuloides	675	25	38	52	59	70	81	169
Populus trichocarpa	83	48	52	63	85	118	167	202
Potentilla fruticosa	1108	25	39	47	56	69	79	144
Rhododendron lapponicum	485	24	30	39	51	69	80	119
Ribes bracteosum	56	89	95	105	123	136	158	202
Ribes glandulosum	57	53	57	61	68	78	84	100
Ribes hudsonianum	651	25	38	52	59	67	74	120
Ribes lacustre	105	51	56	59	67	80	112	152
Ribes laxiflorum	147	48	56	74	96	123	155	364

Distributions of hardwood species in relation to mean July precipitation in Alaska—*Continued*.

Taxon name	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	25	40	50	57	68	77	120
Rosa acicularis	921	25	42	51	59	71	80	170
Rosa nutkana	79	48	52	58	91	112	127	149
Rubus idaeus var. strigosus	598	25	37	53	61	70	80	160
Rubus parviflorus	54	83	94	103	119	128	145	161
Rubus spectabilis	127	43	55	63	95	127	155	202
Salix alaxensis	1830	18	34	47	56	69	81	217
Salix arbusculoides	946	25	39	49	57	69	80	116
Salix barclayi	250	42	54	64	75	85	108	283
Salix bebbiana	281	25	42	54	63	72	82	123
Salix glauca	1689	18	37	48	56	69	79	144
Salix interior	105	25	32	41	56	61	69	85
Salix lanata ssp. richardsonii	1551	18	32	45	53	66	78	125
Salix lasiandra	47	29	34	38	59	65	75	118
Salix monticola	89	25	32	44	59	69	77	202
Salix novae-angliae	76	35	49	54	61	67	72	82
Salix planifolia ssp. pulchra	1858	18	34	47	55	68	79	155
Salix reticulata	969	18	28	43	54	70	82	223
Salix scouleriana	229	32	57	64	72	87	108	163
Salix sitchensis	84	51	55	83	106	136	176	283
Sambucus callicarpa	131	48	52	61	87	118	134	202
Shepherdia canadensis	575	25	36	44	56	69	79	144
Sorbus scopulina	92	48	52	57	67	77	88	146
Sorbus sitchensis	96	49	57	84	109	133	158	202
Spiraea beauverdiana	1197	25	43	50	57	68	77	202
Vaccinium alaskaense	81	69	94	105	123	146	182	217
Vaccinium caespitosum	83	54	78	89	107	127	145	185
Vaccinium ovalifolium	141	48	54	71	100	128	160	364
Vaccinium parvifolium	50	88	95	104	119	128	141	158
Vaccinium uliginosum	1530	20	38	48	57	70	81	202
Vaccinium vitis-idaea	1997	18	36	48	56	71	85	230
Viburnum edule	840	25	42	54	61	71	89	202

Distributions of hardwood species in relation to mean temperature of the coldest month in Alaska.

[N, number]

Taxon name	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	-7.6	-5.8	-3.0	-1.7	-0.2	1.1	2.1
Alnus crispa	1010	-33.0	-28.5	-27.3	-25.3	-23.2	-17.8	-9.5
Alnus rubra	53	-7.2	-4.4	-2.6	-1.3	-0.4	1.1	2.1
Alnus sinuata	294	-26.2	-20.5	-14.7	-9.3	-4.4	-1.3	2.1
Alnus tenuifolia	597	-33.0	-28.6	-27.2	-25.2	-20.6	-14.7	-7.2
Amelanchier alnifolia	235	-29.9	-28.0	-26.8	-24.8	-16.4	-9.4	0.8
Andromeda polifolia	1622	-33.0	-28.2	-26.9	-24.5	-17.5	-10.8	2.1
Arceuthobium tsugense	37	-3.4	-2.6	-1.6	-0.6	0.6	1.1	2.1
Arctostaphylos uva-ursi	513	-30.0	-28.5	-27.8	-26.1	-24.2	-16.5	-2.4
Betula glandulosa	499	-30.0	-28.5	-27.9	-26.1	-24.5	-21.3	-7.6
Betula nana	1701	-33.0	-28.2	-27.1	-24.7	-18.1	-12.8	-2.6
Betula papyrifera	963	-33.0	-28.4	-27.3	-24.9	-19.3	-13.7	-2.8
Chamaedaphne calyculata	377	-30.0	-28.2	-27.1	-25.7	-24.0	-16.7	-9.3
Cladothamnus pyrolaeflorus	51	-10.6	-4.7	-2.7	-1.2	-0.4	1.1	2.1
Cornus stolonifera	366	-30.0	-28.3	-27.2	-25.6	-23.5	-4.1	2.1
Elaeagnus commutata	115	-29.9	-29.1	-28.1	-25.9	-22.7	-18.7	-11.7
Empetrum nigrum	1991	-33.0	-28.3	-27.2	-24.5	-16.7	-11.0	2.1
Gaultheria shallon	11	-1.0	-1.0	-0.4	0.8	1.1	1.7	2.1
Kalmia polifolia	50	-7.6	-5.5	-2.6	-1.1	-0.3	1.1	2.1
Ledum decumbens	1895	-33.0	-28.3	-27.3	-24.7	-17.4	-12.7	-1.7
Ledum groenlandicum	557	-33.0	-28.8	-27.9	-26.0	-23.6	-13.4	2.1
Malus diversifolia	63	-7.8	-5.8	-3.5	-1.5	-0.4	1.0	2.1
Menziesia ferruginea	105	-14.7	-10.5	-7.2	-3.4	-1.0	-0.3	2.1
Myrica gale	263	-29.6	-27.8	-26.4	-23.7	-11.0	-3.9	0.8
Oplopanax horridus	108	-18.4	-12.0	-9.1	-3.8	-1.3	-0.3	2.1
Populus balsamifera	1115	-33.0	-28.4	-27.1	-24.8	-19.1	-14.3	-4.6
Populus tremuloides	675	-33.0	-28.6	-27.6	-25.7	-23.9	-15.7	-5.8
Populus trichocarpa	83	-13.7	-12.7	-10.8	-5.8	-3.5	-1.8	0.0
Potentilla fruticosa	1108	-33.0	-28.4	-27.6	-25.6	-23.1	-16.4	-5.8
Rhododendron lapponicum	485	-30.0	-28.7	-28.0	-26.9	-25.0	-21.3	-13.7
Ribes bracteosum	56	-6.0	-4.0	-2.6	-1.3	-0.4	1.0	2.1
Ribes glandulosum	57	-28.6	-25.7	-24.3	-23.5	-14.5	-13.1	-7.2
Ribes hudsonianum	651	-32.1	-28.5	-27.7	-26.0	-24.4	-20.7	-8.1
Ribes lacustre	105	-26.7	-25.8	-25.0	-23.8	-9.4	-2.3	0.8
Ribes laxiflorum	147	-20.5	-14.6	-12.7	-6.6	-2.0	-0.4	2.1

Distributions of hardwood species in relation to mean temperature of the coldest month in Alaska—*Continued*.

Taxon name	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	-33.0	-28.5	-27.4	-25.3	-22.5	-15.3	-5.8
Rosa acicularis	921	-33.0	-28.5	-27.4	-25.2	-21.3	-14.7	-5.4
Rosa nutkana	79	-13.3	-11.0	-7.8	-3.8	-1.0	0.7	2.1
Rubus idaeus var. strigosus	598	-33.0	-28.7	-27.7	-26.0	-23.9	-15.0	0.8
Rubus parviflorus	54	-6.0	-4.4	-2.4	-1.1	-0.3	1.1	2.1
Rubus spectabilis	127	-12.7	-9.7	-7.1	-3.8	-1.7	-0.4	2.1
Salix alaxensis	1830	-33.0	-28.3	-27.2	-24.7	-17.4	-11.1	-0.2
Salix arbusculoides	946	-33.0	-28.6	-27.6	-25.7	-23.4	-16.5	-8.1
Salix barclayi	250	-29.9	-26.4	-23.2	-14.0	-7.1	-3.9	-0.2
Salix bebbiana	281	-29.9	-28.2	-26.8	-24.6	-14.7	-10.5	-3.8
Salix glauca	1689	-33.0	-28.3	-27.1	-24.8	-18.3	-13.1	-1.7
Salix interior	105	-29.3	-28.2	-27.4	-26.1	-24.9	-24.0	-23.1
Salix lanata ssp. richardsonii	1551	-33.0	-28.5	-27.6	-25.5	-22.1	-16.7	-4.8
Salix lasiandra	47	-28.4	-28.2	-27.1	-25.0	-23.8	-7.6	-1.8
Salix monticola	89	-29.6	-28.3	-27.8	-26.1	-24.5	-20.3	-2.7
Salix novae-angliae	76	-29.6	-27.3	-26.5	-25.9	-23.8	-22.3	-15.4
Salix planifolia ssp. pulchra	1858	-33.0	-28.3	-27.2	-24.7	-17.3	-12.5	-1.7
Salix reticulata	969	-30.8	-28.6	-27.8	-25.7	-21.1	-15.2	1.7
Salix scouleriana	229	-29.9	-28.2	-26.1	-20.6	-11.1	-4.8	1.7
Salix sitchensis	84	-15.4	-9.3	-5.8	-3.5	-1.7	-0.8	0.8
Sambucus callicarpa	131	-21.1	-12.9	-11.0	-6.0	-2.0	-0.4	2.1
Shepherdia canadensis	575	-33.0	-28.7	-27.9	-26.4	-24.5	-20.3	-3.4
Sorbus scopulina	92	-29.2	-24.1	-14.5	-11.9	-10.5	-9.0	1.7
Sorbus sitchensis	96	-11.1	-9.4	-6.0	-3.5	-0.9	-0.2	2.1
Spiraea beauverdiana	1197	-33.0	-28.2	-26.8	-24.2	-17.3	-13.2	-2.6
Vaccinium alaskaense	81	-10.6	-5.4	-3.6	-2.3	-0.6	0.7	2.1
Vaccinium caespitosum	83	-15.5	-13.9	-8.7	-2.6	-0.8	0.7	2.1
Vaccinium ovalifolium	141	-17.5	-14.1	-11.2	-4.2	-1.7	-0.4	2.1
Vaccinium parvifolium	50	-4.8	-3.0	-2.3	-1.0	-0.3	1.1	2.1
Vaccinium uliginosum	1530	-33.0	-28.2	-27.1	-24.8	-17.6	-10.0	2.1
Vaccinium vitis-idaea	1997	-33.0	-28.3	-27.2	-24.5	-16.7	-10.8	2.1
Viburnum edule	840	-33.0	-28.3	-27.2	-24.9	-14.9	-9.1	2.1

Distributions of hardwood species in relation to growing degree days in Alaska.

[N, number]

Taxon name	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	0.62	0.67	0.82	0.94	1.07	1.18	1.23
Alnus crispa	1010	0.11	0.36	0.54	0.70	0.78	0.87	1.00
Alnus rubra	53	0.61	0.67	0.80	0.94	1.07	1.16	1.23
Alnus sinuata	294	0.31	0.46	0.54	0.62	0.72	0.93	1.23
Alnus tenuifolia	597	0.33	0.54	0.64	0.74	0.82	0.90	1.00
Amelanchier alnifolia	235	0.33	0.57	0.68	0.85	0.91	0.97	1.23
Andromeda polifolia	1622	0.10	0.27	0.48	0.64	0.75	0.85	1.22
Arceuthobium tsugense	37	0.73	0.80	0.91	0.96	1.08	1.18	1.23
Arctostaphylos uva-ursi	513	0.17	0.48	0.58	0.73	0.84	0.91	1.00
Betula glandulosa	499	0.12	0.44	0.55	0.70	0.83	0.91	1.00
Betula nana	1701	0.10	0.21	0.43	0.62	0.74	0.83	1.00
Betula papyrifera	963	0.19	0.49	0.60	0.72	0.79	0.87	1.00
Chamaedaphne calyculata	377	0.11	0.54	0.66	0.76	0.86	0.92	1.00
Cladothamnus pyrolaeflorus	51	0.62	0.67	0.82	0.94	1.07	1.16	1.23
Cornus stolonifera	366	0.39	0.58	0.70	0.80	0.89	0.96	1.23
Elaeagnus commutata	115	0.33	0.51	0.59	0.72	0.80	0.86	0.95
Empetrum nigrum	1991	0.00	0.21	0.42	0.61	0.74	0.84	1.22
Gaultheria shallon	11	1.07	1.07	1.08	1.16	1.19	1.22	1.23
Kalmia polifolia	50	0.61	0.67	0.79	0.93	1.02	1.11	1.22
Ledum decumbens	1895	0.00	0.21	0.41	0.60	0.74	0.83	1.00
Ledum groenlandicum	557	0.32	0.50	0.60	0.73	0.85	0.94	1.22
Malus diversifolia	63	0.50	0.65	0.75	0.91	1.02	1.13	1.23
Menziesia ferruginea	105	0.47	0.59	0.65	0.77	0.94	1.07	1.23
Myrica gale	263	0.40	0.57	0.64	0.74	0.87	0.95	1.23
Oplopanax horridus	108	0.47	0.57	0.65	0.74	0.94	1.07	1.23
Populus balsamifera	1115	0.16	0.46	0.57	0.70	0.77	0.86	1.00
Populus tremuloides	675	0.26	0.54	0.65	0.74	0.82	0.89	1.00
Populus trichocarpa	83	0.43	0.56	0.65	0.70	0.78	0.86	1.03
Potentilla fruticosa	1108	0.10	0.23	0.41	0.62	0.77	0.86	1.00
Rhododendron lapponicum	485	0.10	0.16	0.30	0.52	0.72	0.82	0.99
Ribes bracteosum	56	0.50	0.68	0.80	0.94	1.03	1.13	1.23
Ribes glandulosum	57	0.39	0.54	0.61	0.74	0.87	0.90	0.96
Ribes hudsonianum	651	0.28	0.58	0.69	0.75	0.83	0.90	1.00
Ribes lacustre	105	0.43	0.59	0.68	0.83	0.90	0.94	1.22
Ribes laxiflorum	147	0.28	0.54	0.62	0.68	0.85	1.02	1.23

Distributions of hardwood species in relation to growing degree days in Alaska—*Continued*.

Taxon name	N	Growing degree days (on 5°C base X 1000)						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	0.11	0.51	0.62	0.73	0.80	0.88	1.00
Rosa acicularis	921	0.11	0.50	0.60	0.72	0.79	0.87	1.00
Rosa nutkana	79	0.43	0.60	0.66	0.75	0.96	1.11	1.23
Rubus idaeus var. strigosus	598	0.33	0.56	0.68	0.75	0.83	0.91	1.23
Rubus parviflorus	54	0.67	0.75	0.83	0.94	1.07	1.16	1.23
Rubus spectabilis	127	0.31	0.47	0.56	0.69	0.91	1.07	1.23
Salix alaxensis	1830	0.00	0.21	0.43	0.62	0.74	0.83	1.03
Salix arbusculoides	946	0.11	0.37	0.51	0.68	0.78	0.87	1.00
Salix barclayi	250	0.31	0.47	0.54	0.62	0.71	0.79	1.00
Salix bebbiana	281	0.39	0.53	0.61	0.73	0.86	0.92	1.00
Salix glauca	1689	0.00	0.21	0.44	0.63	0.74	0.83	1.00
Salix interior	105	0.44	0.72	0.78	0.87	0.92	0.96	1.00
Salix lanata ssp. richardsonii	1551	0.00	0.19	0.39	0.60	0.75	0.84	1.00
Salix lasiandra	47	0.65	0.73	0.83	0.90	0.93	0.96	1.00
Salix monticola	89	0.15	0.52	0.61	0.78	0.90	0.95	1.00
Salix novae-angliae	76	0.54	0.58	0.66	0.77	0.89	0.93	0.99
Salix planifolia ssp. pulchra	1858	0.00	0.21	0.42	0.61	0.74	0.83	1.00
Salix reticulata	969	0.00	0.16	0.24	0.43	0.62	0.75	1.07
Salix scouleriana	229	0.33	0.49	0.55	0.66	0.77	0.87	1.22
Salix sitchensis	84	0.38	0.54	0.65	0.71	0.87	1.00	1.23
Sambucus callicarpa	131	0.41	0.55	0.64	0.71	0.91	1.07	1.23
Shepherdia canadensis	575	0.10	0.40	0.54	0.69	0.82	0.90	1.00
Sorbus scopulina	92	0.33	0.54	0.61	0.67	0.73	0.81	1.07
Sorbus sitchensis	96	0.47	0.59	0.65	0.74	0.94	1.08	1.23
Spiraea beauverdiana	1197	0.11	0.46	0.58	0.69	0.77	0.86	1.00
Vaccinium alaskaense	81	0.50	0.63	0.67	0.83	0.96	1.11	1.23
Vaccinium caespitosum	83	0.49	0.60	0.66	0.82	0.96	1.11	1.23
Vaccinium ovalifolium	141	0.28	0.56	0.64	0.72	0.87	1.03	1.23
Vaccinium parvifolium	50	0.67	0.79	0.87	0.94	1.07	1.16	1.23
Vaccinium uliginosum	1530	0.10	0.21	0.43	0.64	0.76	0.86	1.22
Vaccinium vitis-idaea	1997	0.00	0.21	0.42	0.61	0.74	0.84	1.22
Viburnum edule	840	0.33	0.56	0.65	0.74	0.82	0.91	1.23

Distributions of hardwood species in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Taxon name	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
Acer glabrum var. douglasii	44	0.95	0.99	0.99	1.00	1.00	1.00	1.00
Alnus crispa	1010	0.33	0.48	0.56	0.64	0.74	0.83	0.99
Alnus rubra	53	0.97	0.99	0.99	1.00	1.00	1.00	1.00
Alnus sinuata	294	0.60	0.76	0.84	0.94	0.99	1.00	1.00
Alnus tenuifolia	597	0.34	0.48	0.57	0.70	0.80	0.91	1.00
Amelanchier alnifolia	235	0.33	0.40	0.51	0.59	0.84	0.99	1.00
Andromeda polifolia	1622	0.33	0.51	0.59	0.71	0.88	0.96	1.00
Arceuthobium tsugense	37	0.99	0.99	0.99	1.00	1.00	1.00	1.00
Arctostaphylos uva-ursi	513	0.33	0.41	0.51	0.59	0.74	0.94	1.00
Betula glandulosa	499	0.33	0.41	0.50	0.58	0.70	0.87	1.00
Betula nana	1701	0.33	0.52	0.59	0.72	0.86	0.95	1.00
Betula papyrifera	963	0.33	0.47	0.56	0.67	0.82	0.96	1.00
Chamaedaphne calyculata	377	0.33	0.43	0.53	0.60	0.79	0.89	0.99
Cladothamnus pyrolaeflorus	51	0.92	0.99	0.99	1.00	1.00	1.00	1.00
Cornus stolonifera	366	0.33	0.41	0.51	0.59	0.75	0.99	1.00
Elaeagnus commutata	115	0.33	0.36	0.52	0.65	0.79	0.94	1.00
Empetrum nigrum	1991	0.28	0.48	0.58	0.73	0.89	0.97	1.00
Gaultheria shallon	11	0.99	0.99	1.00	1.00	1.00	1.00	1.00
Kalmia polifolia	50	0.95	0.99	0.99	1.00	1.00	1.00	1.00
Ledum decumbens	1895	0.28	0.48	0.58	0.71	0.87	0.95	1.00
Ledum groenlandicum	557	0.33	0.42	0.51	0.61	0.80	0.98	1.00
Malus diversifolia	63	0.88	0.99	0.99	1.00	1.00	1.00	1.00
Menziesia ferruginea	105	0.68	0.88	0.98	1.00	1.00	1.00	1.00
Myrica gale	263	0.34	0.50	0.54	0.71	0.92	1.00	1.00
Oplopanax horridus	108	0.68	0.84	0.94	0.99	1.00	1.00	1.00
Populus balsamifera	1115	0.33	0.49	0.57	0.69	0.84	0.96	1.00
Populus tremuloides	675	0.33	0.43	0.54	0.61	0.74	0.90	1.00
Populus trichocarpa	83	0.67	0.77	0.87	0.98	1.00	1.00	1.00
Potentilla fruticosa	1108	0.33	0.48	0.56	0.65	0.80	0.93	1.00
Rhododendron lapponicum	485	0.33	0.42	0.52	0.63	0.76	0.89	0.99
Ribes bracteosum	56	0.99	0.99	0.99	1.00	1.00	1.00	1.00
Ribes glandulosum	57	0.49	0.52	0.54	0.68	0.88	0.94	0.98
Ribes hudsonianum	651	0.33	0.43	0.54	0.61	0.72	0.80	1.00
Ribes lacustre	105	0.49	0.52	0.55	0.65	0.97	1.00	1.00
Ribes laxiflorum	147	0.65	0.82	0.90	0.99	1.00	1.00	1.00

Distributions of hardwood species in relation to moisture index (actual evaporation/potential evaporation) in Alaska—*Continued*.

Taxon name	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
Ribes triste	838	0.33	0.46	0.55	0.64	0.76	0.89	1.00
Rosa acicularis	921	0.33	0.47	0.56	0.65	0.81	0.95	1.00
Rosa nutkana	79	0.67	0.78	0.91	0.99	1.00	1.00	1.00
Rubus idaeus var. strigosus	598	0.33	0.42	0.53	0.63	0.75	0.93	1.00
Rubus parviflorus	54	0.98	0.99	0.99	1.00	1.00	1.00	1.00
Rubus spectabilis	127	0.78	0.90	0.94	0.99	1.00	1.00	1.00
Salix alaxensis	1830	0.28	0.48	0.57	0.71	0.87	0.96	1.00
Salix arbusculoides	946	0.33	0.47	0.55	0.65	0.79	0.91	1.00
Salix barclayi	250	0.52	0.68	0.80	0.91	0.98	1.00	1.00
Salix bebbiana	281	0.33	0.43	0.54	0.66	0.86	0.96	1.00
Salix glauca	1689	0.32	0.50	0.58	0.70	0.85	0.95	1.00
Salix interior	105	0.33	0.37	0.43	0.53	0.58	0.61	0.89
Salix lanata ssp. richardsonii	1551	0.28	0.45	0.56	0.66	0.79	0.90	1.00
Salix lasiandra	47	0.34	0.37	0.42	0.53	0.60	0.95	1.00
Salix monticola	89	0.33	0.36	0.44	0.55	0.67	0.85	1.00
Salix novae-angliae	76	0.38	0.46	0.51	0.55	0.62	0.72	0.96
Salix planifolia ssp. pulchra	1858	0.28	0.47	0.57	0.71	0.87	0.95	1.00
Salix reticulata	969	0.28	0.46	0.57	0.70	0.86	0.96	1.00
Salix scouleriana	229	0.42	0.56	0.66	0.81	0.97	0.99	1.00
Salix sitchensis	84	0.77	0.87	0.98	1.00	1.00	1.00	1.00
Sambucus callicarpa	131	0.62	0.79	0.90	0.98	1.00	1.00	1.00
Shepherdia canadensis	575	0.33	0.42	0.52	0.60	0.74	0.88	1.00
Sorbus scopulina	92	0.54	0.67	0.80	0.90	0.95	0.97	1.00
Sorbus sitchensis	96	0.70	0.91	0.98	1.00	1.00	1.00	1.00
Spiraea beauverdiana	1197	0.33	0.50	0.57	0.69	0.84	0.93	1.00
Vaccinium alaskaense	81	0.92	0.99	0.99	1.00	1.00	1.00	1.00
Vaccinium caespitosum	83	0.75	0.90	0.98	1.00	1.00	1.00	1.00
Vaccinium ovalifolium	141	0.67	0.83	0.90	0.99	1.00	1.00	1.00
Vaccinium parvifolium	50	0.99	0.99	0.99	1.00	1.00	1.00	1.00
Vaccinium uliginosum	1530	0.33	0.51	0.58	0.71	0.86	0.97	1.00
Vaccinium vitis-idaea	1997	0.28	0.48	0.58	0.73	0.89	0.97	1.00
Viburnum edule	840	0.33	0.46	0.56	0.70	0.89	0.98	1.00

Distributions of hardwood genera and groups in relation to mean annual temperature in Alaska.

[N, number]

Taxon name	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	-11.6	-7.3	-5.7	-4.6	-2.6	1.2	7.2
BETULA	1735	-12.9	-9.4	-6.8	-4.9	-2.7	-0.3	3.7
ERICACEAE	2047	-13.1	-10.1	-7.0	-4.7	-2.4	0.6	7.2
ERICACEAE/*EMPETRUM*	2050	-13.1	-10.1	-7.0	-4.8	-2.4	0.6	7.2
LEDUM	1944	-13.1	-10.1	-7.2	-4.8	-2.5	0.0	7.2
POPULUS	1179	-11.6	-7.0	-5.6	-4.2	-2.5	-0.1	5.9
RIBES	989	-10.9	-6.6	-5.5	-4.3	-2.7	0.8	7.2
ROSA	976	-10.9	-6.6	-5.5	-4.4	-2.6	0.3	7.2
RUBUS	705	-9.7	-6.1	-5.3	-4.0	-2.3	2.3	7.2
SALIX	2021	-13.1	-10.1	-7.0	-4.8	-2.4	0.5	7.1
SORBUS	168	-5.7	-2.0	-0.3	1.1	4.2	5.5	7.2
VACCINIUM	2037	-13.1	-10.1	-7.0	-4.8	-2.4	0.6	7.2

Distributions of hardwood genera and groups in relation to mean January temperature in Alaska.

[N, number]

Taxon name	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	-30.0	-27.4	-24.8	-21.3	-17.1	-7.9	2.1
BETULA	1735	-30.0	-27.6	-25.4	-21.7	-17.1	-12.1	-0.5
ERICACEAE	2047	-30.8	-27.7	-25.6	-21.3	-16.0	-9.4	2.1
ERICACEAE/*EMPETRUM*	2050	-30.8	-27.7	-25.6	-21.3	-16.0	-9.4	2.1
LEDUM	1944	-30.8	-27.8	-25.7	-21.7	-16.7	-11.3	2.1
POPULUS	1179	-30.0	-27.7	-25.1	-21.2	-17.0	-12.5	0.0
RIBES	989	-30.0	-27.6	-25.4	-21.8	-17.6	-9.8	2.1
ROSA	976	-30.0	-27.6	-25.5	-21.7	-17.4	-12.1	2.1
RUBUS	705	-29.6	-27.8	-26.0	-21.7	-16.2	-3.5	2.1
SALIX	2021	-30.8	-27.8	-25.6	-21.4	-16.2	-9.8	1.7
SORBUS	168	-24.1	-15.7	-12.5	-8.2	-2.6	-0.6	2.1
VACCINIUM	2037	-30.8	-27.8	-25.6	-21.3	-16.0	-9.4	2.1

Distributions of hardwood genera and groups in relation to mean July temperature in Alaska.

[N, number]

Taxon name	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	6.7	10.7	11.8	12.9	14.3	15.2	16.3
BETULA	1735	4.5	9.2	11.0	12.4	14.0	15.0	16.3
ERICACEAE	2047	3.1	8.6	10.5	12.1	13.7	14.9	16.3
ERICACEAE/*EMPETRUM*	2050	3.1	8.6	10.5	12.1	13.7	14.9	16.3
LEDUM	1944	3.1	8.5	10.5	12.2	13.8	14.9	16.3
POPULUS	1179	6.8	11.3	12.2	13.1	14.4	15.3	16.3
RIBES	989	7.9	11.8	12.5	13.7	14.7	15.4	16.3
ROSA	976	7.9	11.7	12.5	13.6	14.7	15.4	16.3
RUBUS	705	8.7	11.6	12.6	14.1	15.0	15.5	16.3
SALIX	2021	3.1	8.6	10.5	12.1	13.7	14.9	16.3
SORBUS	168	10.1	11.2	11.8	12.5	13.0	13.6	15.7
VACCINIUM	2037	3.1	8.6	10.5	12.2	13.7	14.9	16.3

Distributions of hardwood genera and groups in relation to mean annual precipitation in Alaska.

[N, number]

Taxon name	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	195	280	335	395	510	755	3615
BETULA	1735	145	270	330	400	535	645	2635
ERICACEAE	2047	130	250	325	415	560	750	4685
ERICACEAE/*EMPETRUM*	2050	130	250	325	415	560	750	4685
LEDUM	1944	130	245	320	400	535	650	3505
POPULUS	1179	195	275	335	415	550	685	3615
RIBES	989	195	270	335	395	500	940	4685
ROSA	976	195	270	330	390	535	700	3505
RUBUS	705	195	255	330	400	590	1725	3615
SALIX	2021	130	250	325	410	550	705	3715
SORBUS	168	340	505	590	910	2280	2725	3615
VACCINIUM	2037	130	250	325	415	560	745	4685

Distributions of hardwood genera and groups in relation to mean January precipitation in Alaska.

[N, number]

Taxon name	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	7	13	17	22	27	53	349
BETULA	1735	7	12	17	22	29	40	214
ERICACEAE	2047	7	11	16	22	31	49	479
ERICACEAE/*EMPETRUM*	2050	7	11	16	22	31	50	479
LEDUM	1944	7	11	16	22	29	41	344
POPULUS	1179	7	13	18	22	30	43	349
RIBES	989	7	13	17	22	27	67	479
ROSA	976	7	13	17	22	29	46	321
RUBUS	705	7	11	17	22	33	130	349
SALIX	2021	7	11	16	22	30	46	403
SORBUS	168	19	29	39	67	206	247	349
VACCINIUM	2037	7	11	16	22	31	49	479

Distributions of hardwood genera and groups in relation to mean July precipitation in Alaska.

[N, number]

Taxon name	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	25	43	50	57	70	85	202
BETULA	1735	20	40	49	57	70	81	152
ERICACEAE	2047	18	36	48	57	72	88	364
ERICACEAE/*EMPETRUM*	2050	18	36	48	57	72	89	364
LEDUM	1944	18	35	48	56	70	82	182
POPULUS	1179	25	43	52	60	73	86	202
RIBES	989	25	42	52	60	72	89	364
ROSA	976	25	42	52	60	73	84	170
RUBUS	705	25	40	54	62	72	100	202
SALIX	2021	18	36	48	57	71	86	283
SORBUS	168	48	55	64	84	119	146	202
VACCINIUM	2037	18	36	48	57	72	88	364

Distributions of hardwood genera and groups in relation to mean temperature of the coldest month in Alaska.

[N, number]

Taxon name	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	-33.0	-28.2	-26.7	-24.5	-17.6	-8.0	2.1
BETULA	1735	-33.0	-28.2	-27.0	-24.6	-17.8	-12.3	-2.6
ERICACEAE	2047	-33.0	-28.3	-27.1	-24.4	-16.2	-9.8	2.1
ERICACEAE/*EMPETRUM*	2050	-33.0	-28.3	-27.1	-24.4	-16.2	-9.8	2.1
LEDUM	1944	-33.0	-28.3	-27.2	-24.6	-17.0	-11.7	2.1
POPULUS	1179	-33.0	-28.3	-27.0	-24.5	-18.0	-12.5	0.0
RIBES	989	-33.0	-28.4	-27.2	-25.0	-19.3	-9.9	2.1
ROSA	976	-33.0	-28.4	-27.2	-25.0	-18.9	-12.1	2.1
RUBUS	705	-33.0	-28.5	-27.4	-25.3	-16.5	-3.9	2.1
SALIX	2021	-33.0	-28.3	-27.2	-24.4	-16.5	-10.2	1.7
SORBUS	168	-29.2	-15.7	-12.5	-9.0	-2.7	-0.6	2.1
VACCINIUM	2037	-33.0	-28.3	-27.2	-24.4	-16.2	-9.9	2.1

Distributions of hardwood genera and groups in relation to growing degree days in Alaska.

[N, number]

Taxon name	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	0.11	0.39	0.54	0.67	0.78	0.87	1.23
BETULA	1735	0.10	0.22	0.43	0.62	0.74	0.83	1.00
ERICACEAE	2047	0.00	0.21	0.42	0.61	0.74	0.84	1.23
ERICACEAE/*EMPETRUM*	2050	0.00	0.21	0.42	0.61	0.74	0.84	1.23
LEDUM	1944	0.00	0.21	0.42	0.61	0.74	0.84	1.22
POPULUS	1179	0.16	0.46	0.58	0.70	0.77	0.86	1.03
RIBES	989	0.11	0.51	0.62	0.73	0.81	0.90	1.23
ROSA	976	0.11	0.50	0.61	0.73	0.80	0.89	1.23
RUBUS	705	0.31	0.54	0.66	0.75	0.83	0.92	1.23
SALIX	2021	0.00	0.21	0.42	0.61	0.74	0.83	1.23
SORBUS	168	0.33	0.56	0.64	0.70	0.85	1.00	1.23
VACCINIUM	2037	0.00	0.21	0.42	0.61	0.74	0.84	1.23

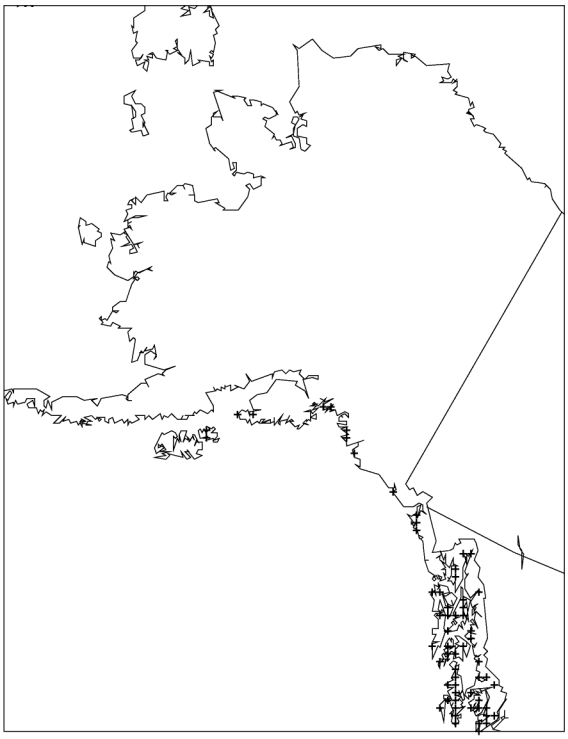
Distributions of hardwood genera and groups in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

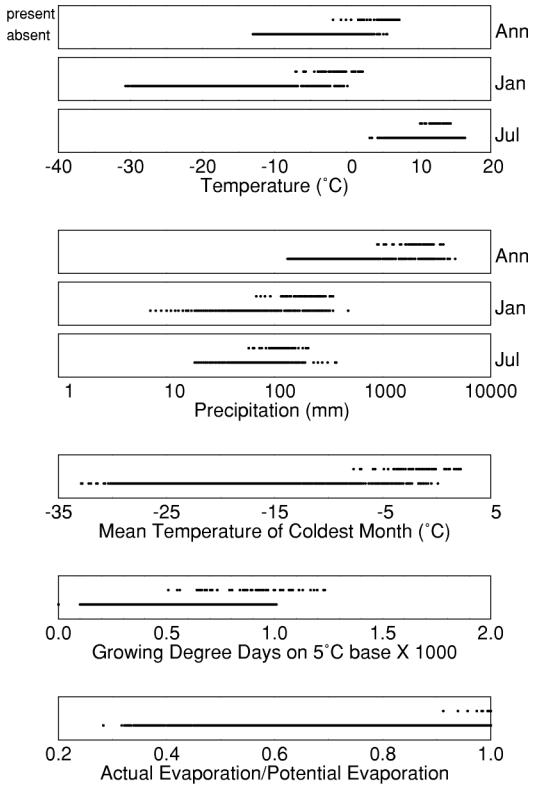
[N, number]

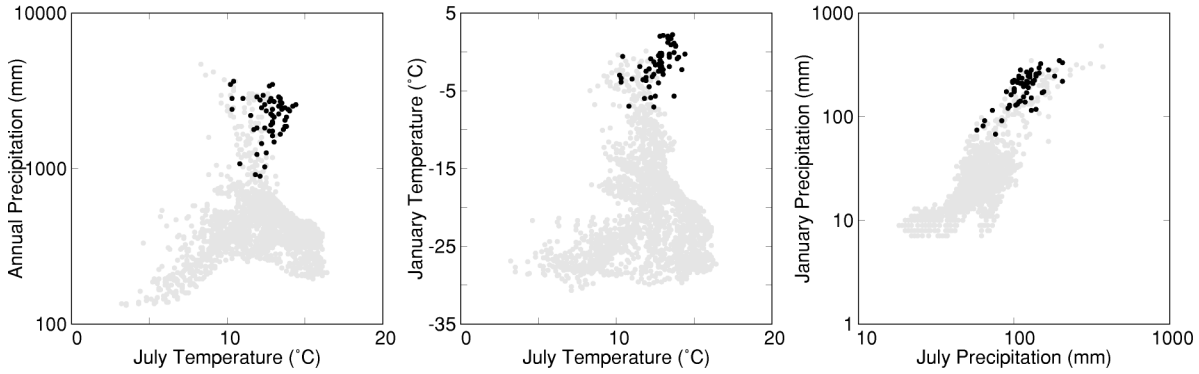
Taxon name	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
ALNUS	1303	0.33	0.51	0.58	0.69	0.84	0.97	1.00
BETULA	1735	0.33	0.52	0.59	0.72	0.88	0.96	1.00
ERICACEAE	2047	0.28	0.49	0.59	0.74	0.90	0.98	1.00
ERICACEAE/*EMPETRUM*	2050	0.28	0.49	0.59	0.74	0.90	0.98	1.00
LEDUM	1944	0.28	0.48	0.58	0.72	0.88	0.96	1.00
POPULUS	1179	0.33	0.50	0.57	0.71	0.88	0.97	1.00
RIBES	989	0.33	0.47	0.56	0.67	0.82	0.98	1.00
ROSA	976	0.33	0.47	0.56	0.67	0.85	0.98	1.00
RUBUS	705	0.33	0.44	0.55	0.67	0.86	0.99	1.00
SALIX	2021	0.28	0.49	0.58	0.74	0.90	0.98	1.00
SORBUS	168	0.54	0.75	0.90	0.96	1.00	1.00	1.00
VACCINIUM	2037	0.28	0.49	0.59	0.74	0.90	0.98	1.00

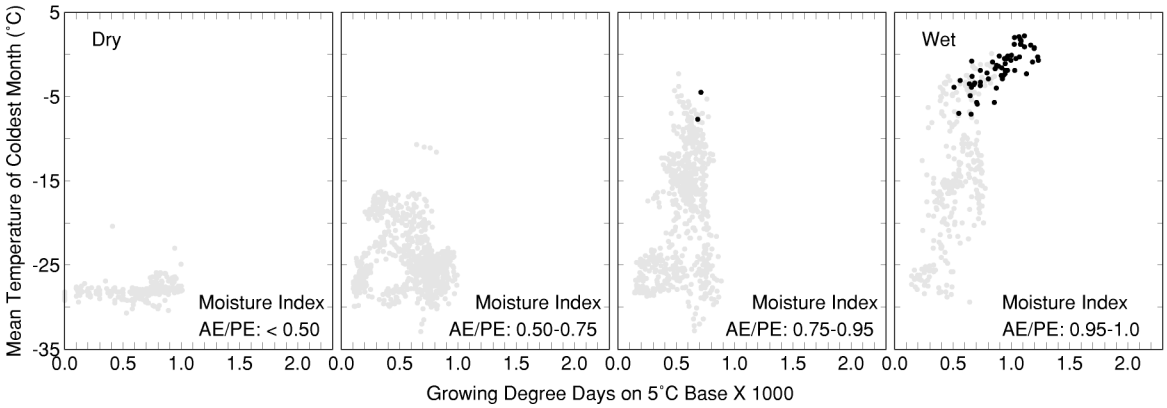
Alaska Ecoregions—
Küchler Potential Natural Vegetation

Hemlock-spruce forest (Tsuga-Picea)

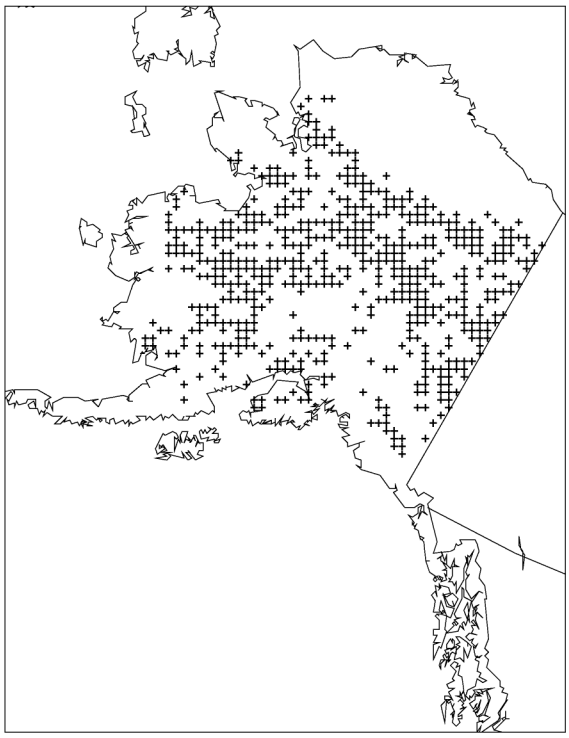


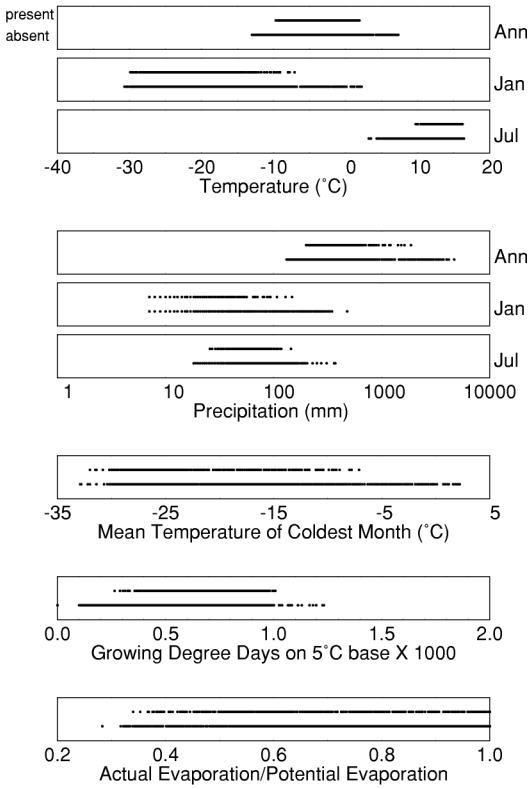


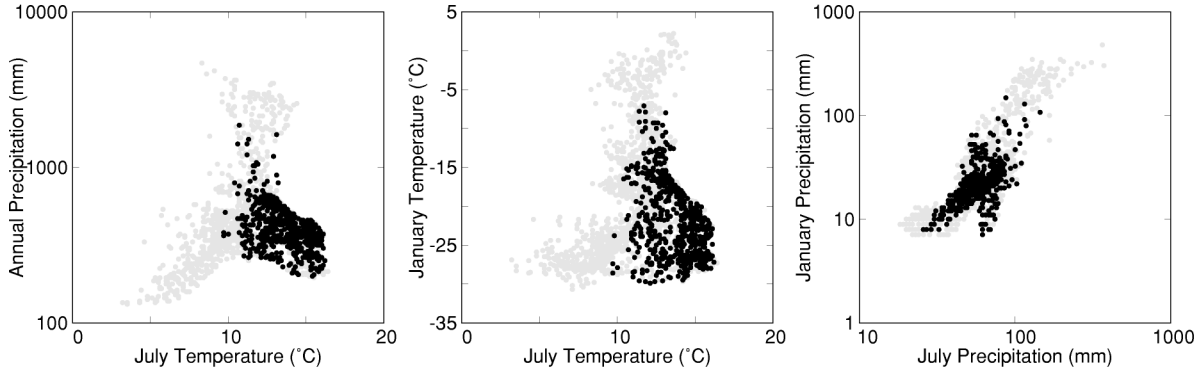


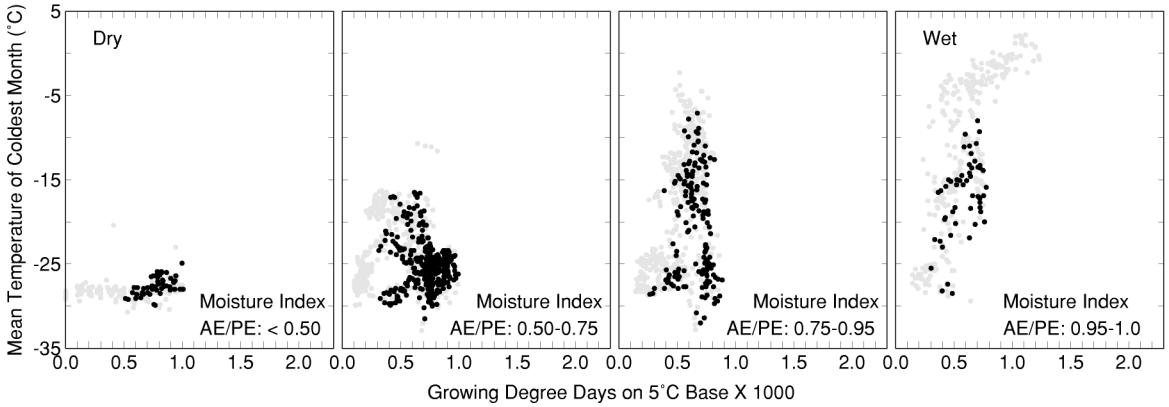


Spruce-birch forest (Picea-Betula)

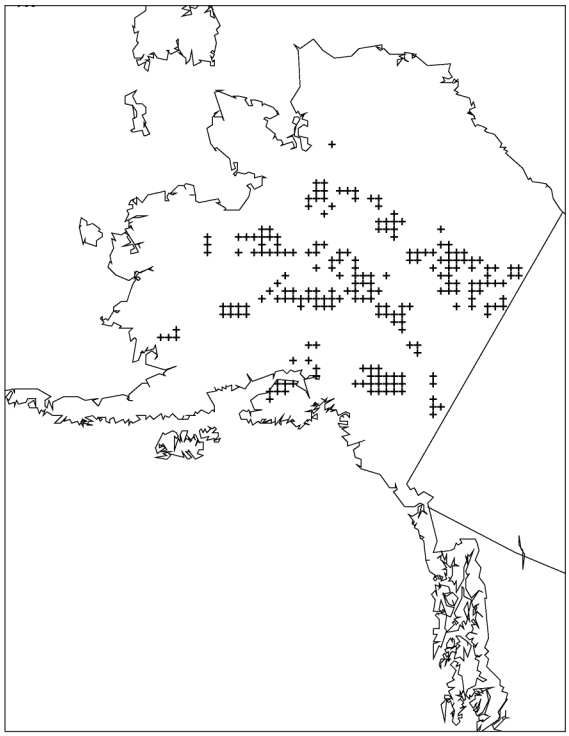


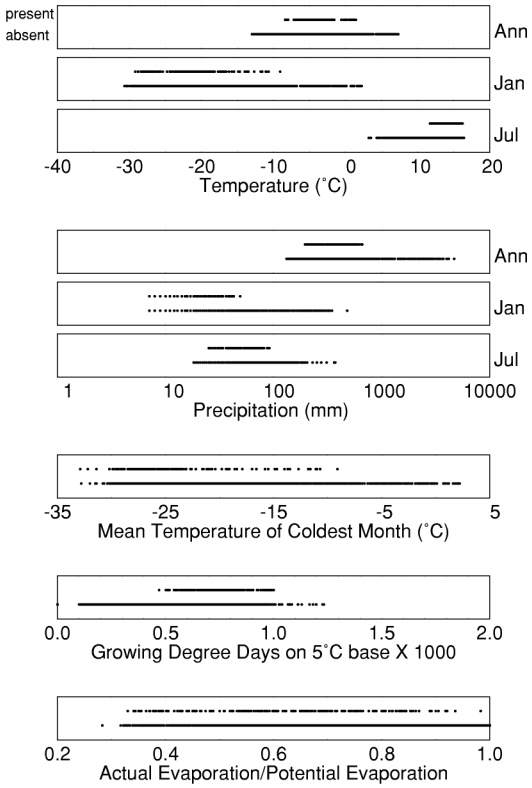


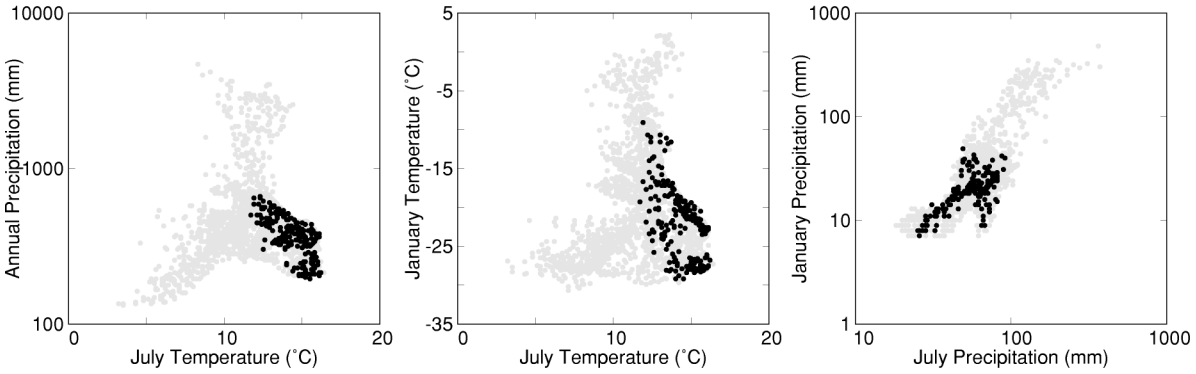


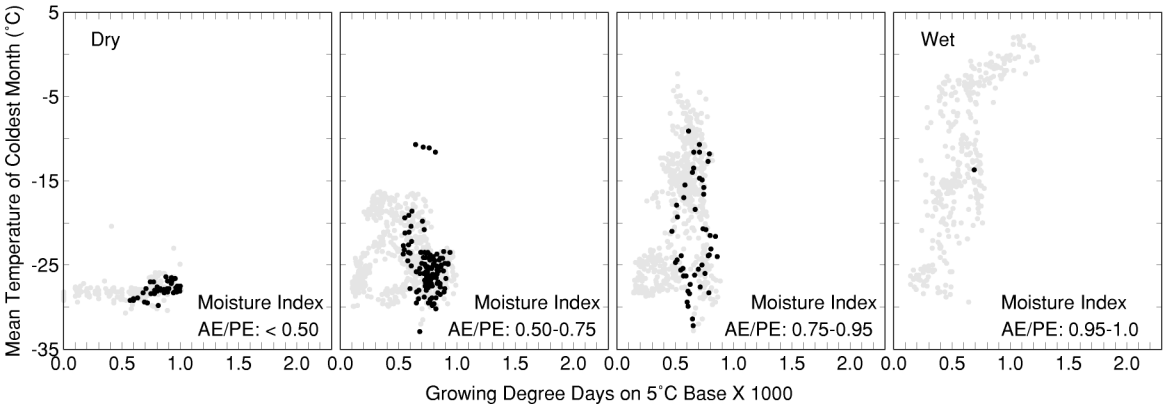


Black spruce forest (Picea)

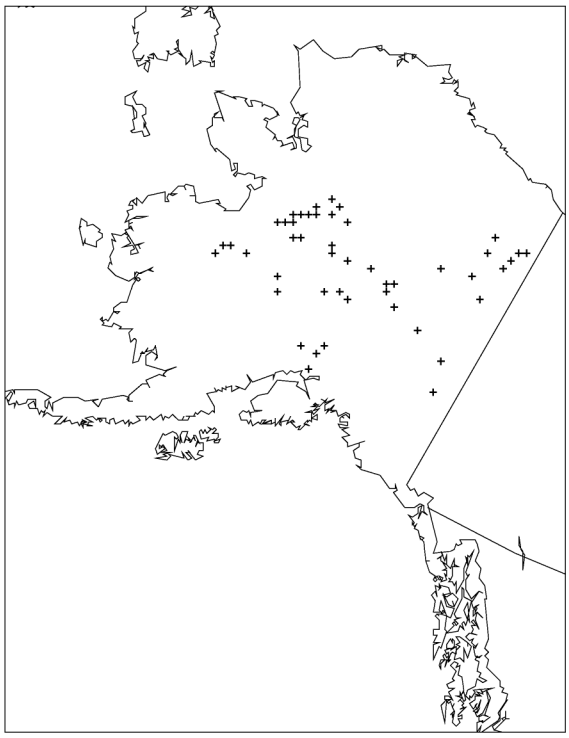


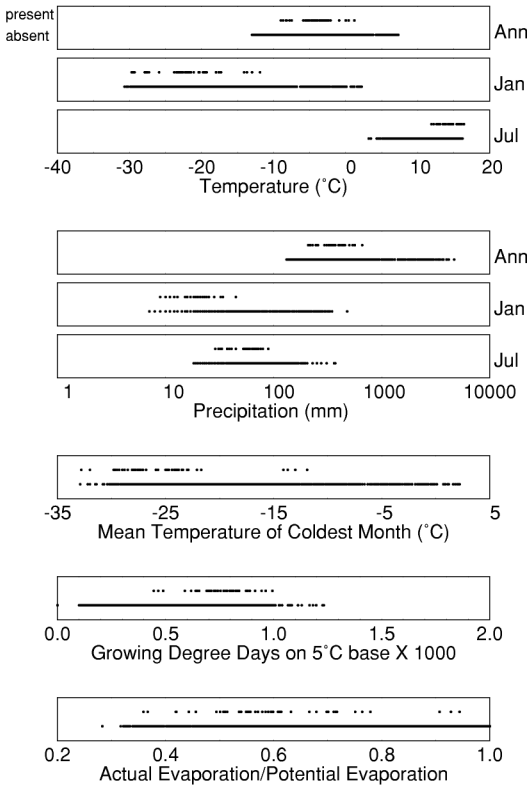


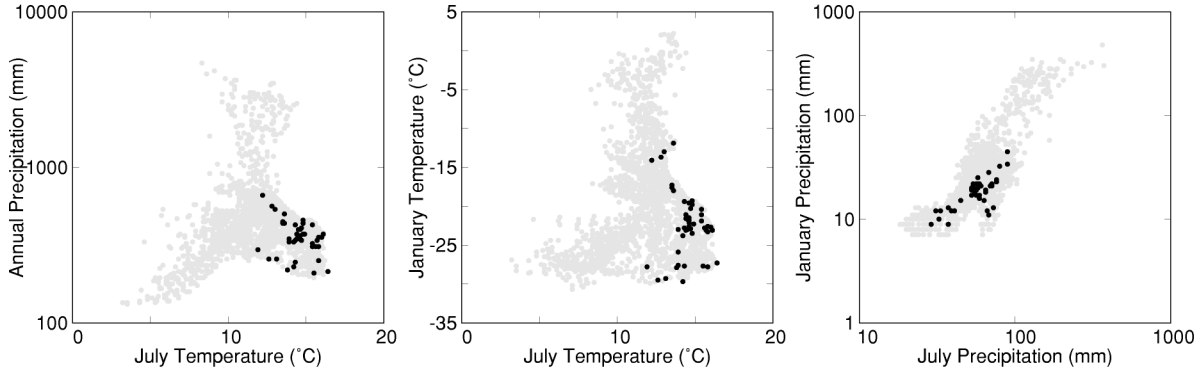


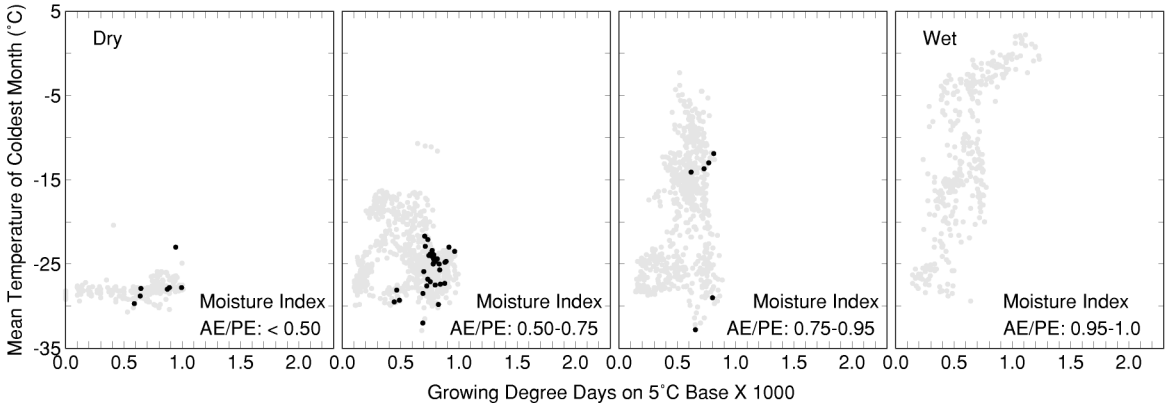


Muskeg (Eriophorum-Sphagnum-Betula)

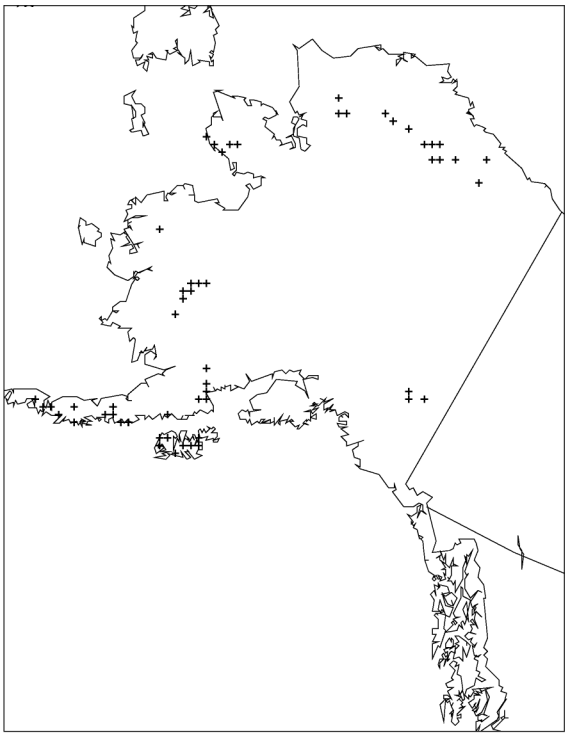


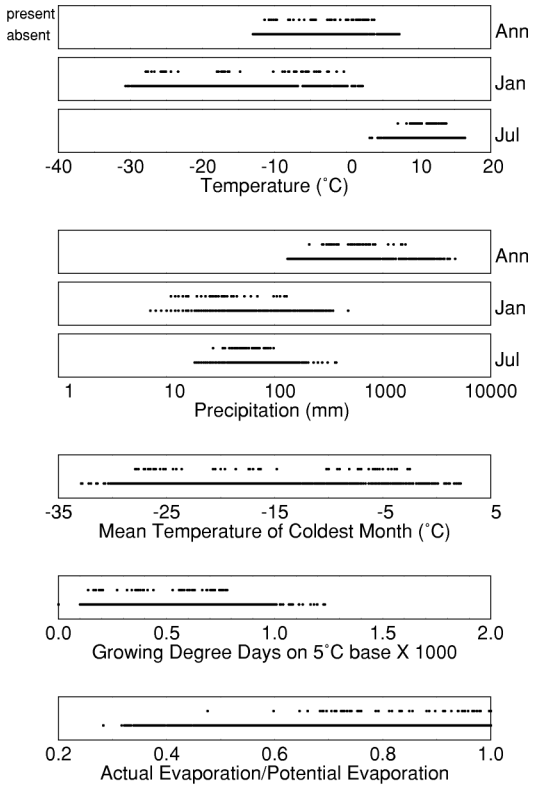


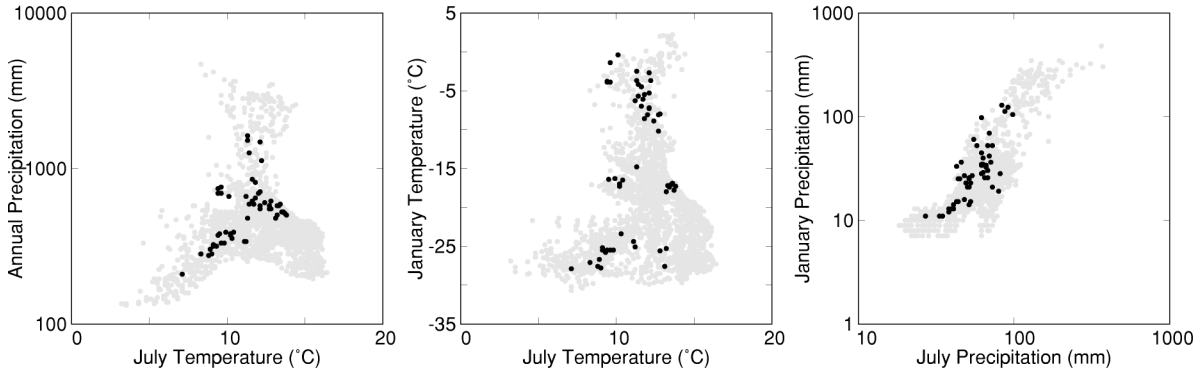


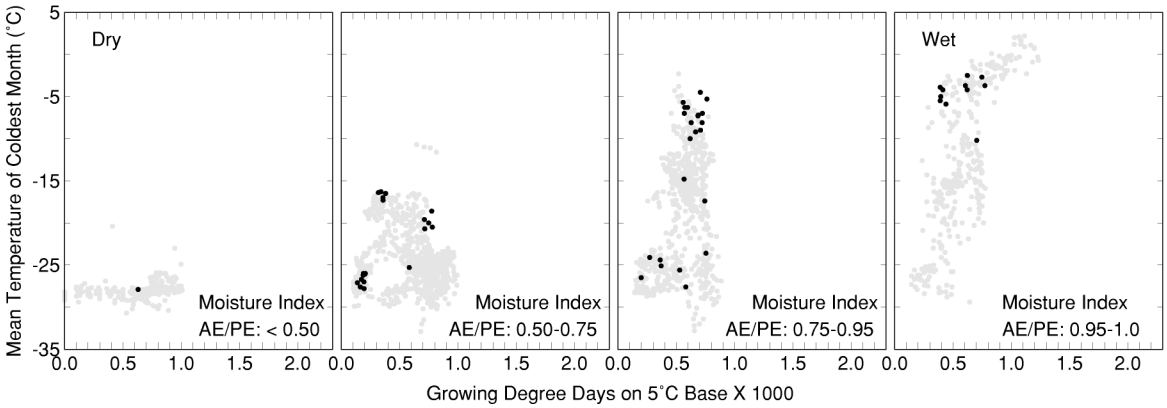


Alder thickets (Alnus)

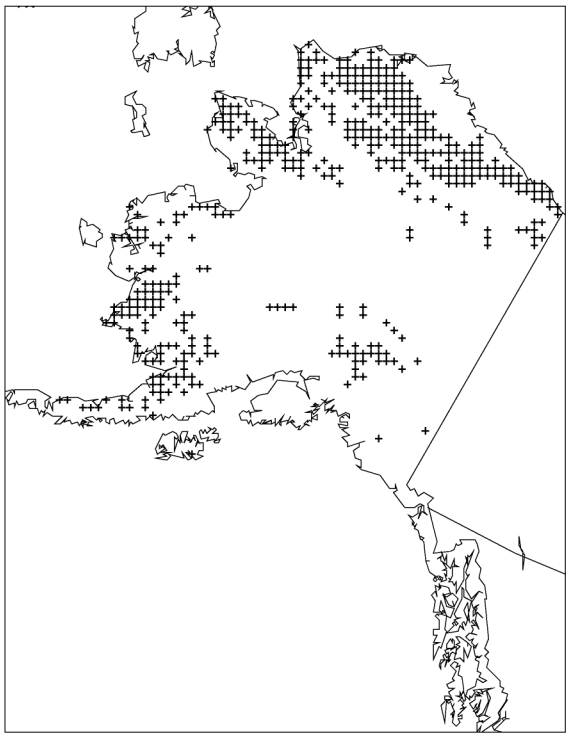


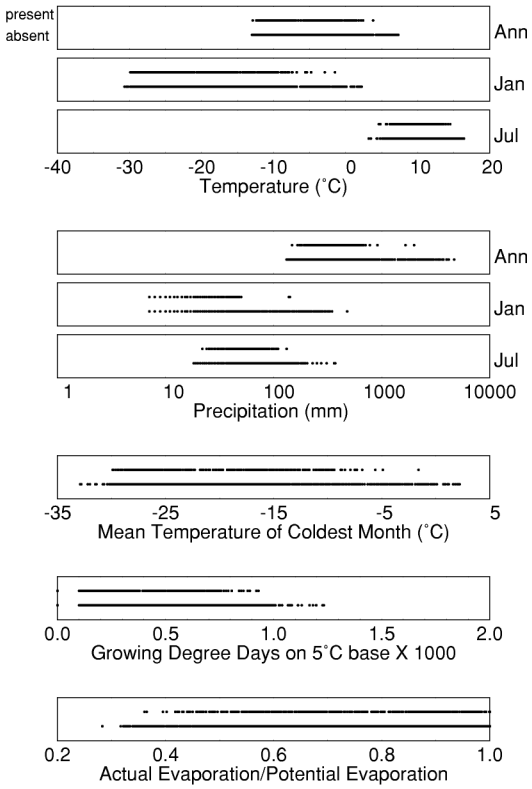


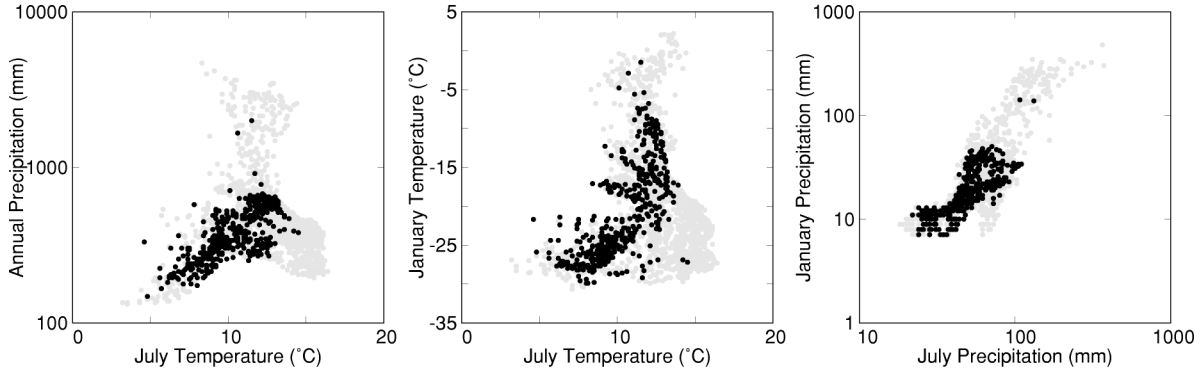


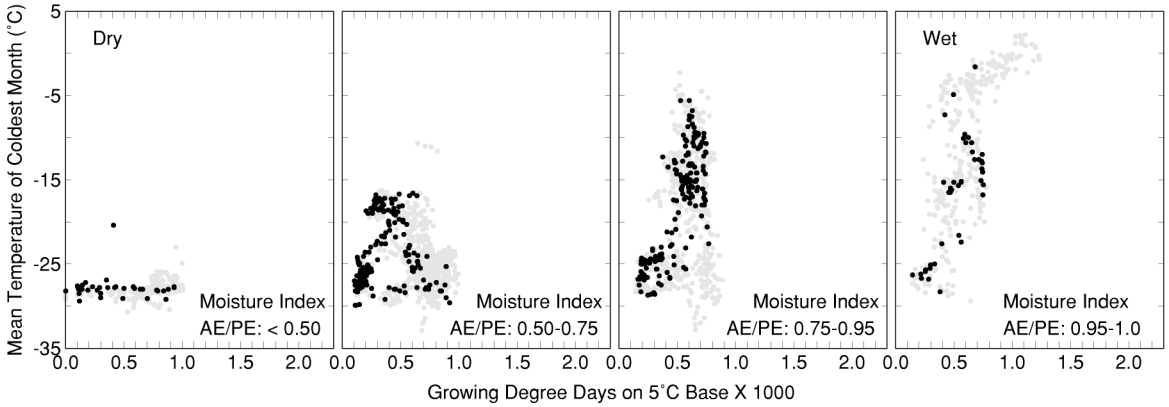


Cottonsedge tundra (Eriophorum)

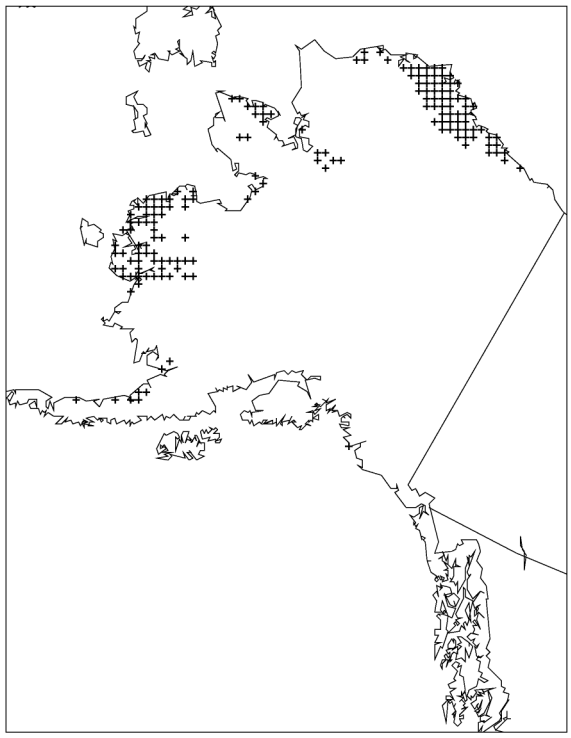


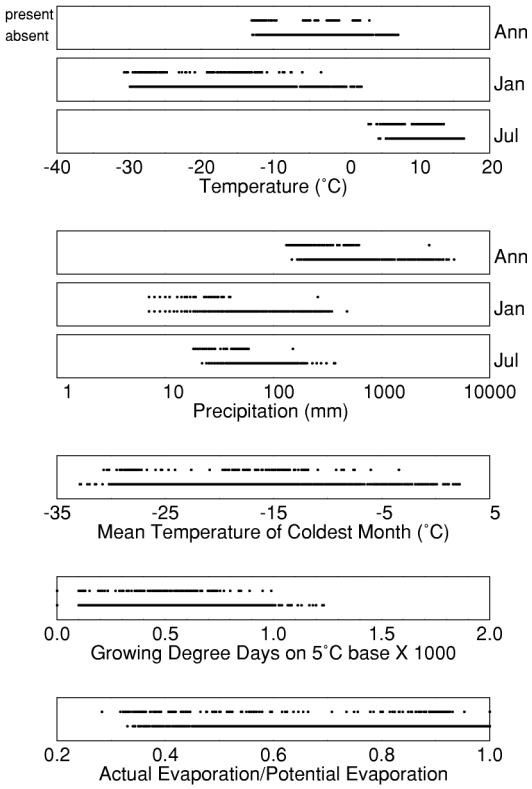


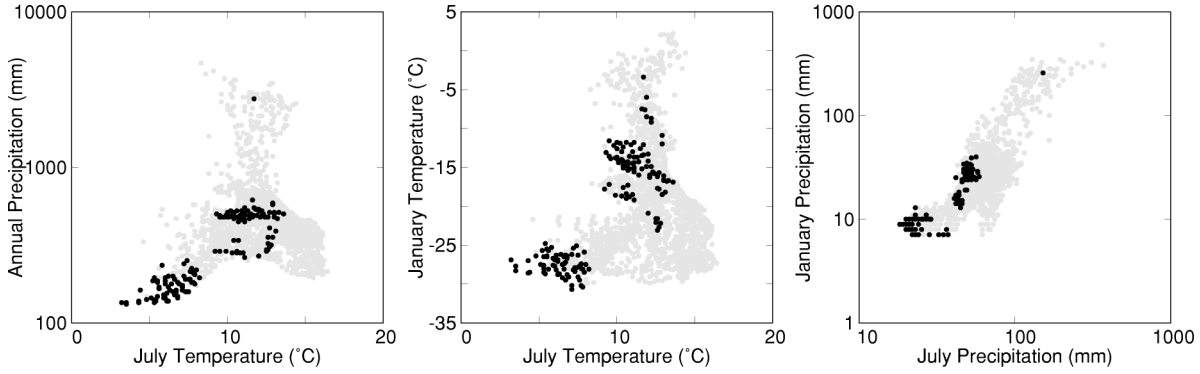


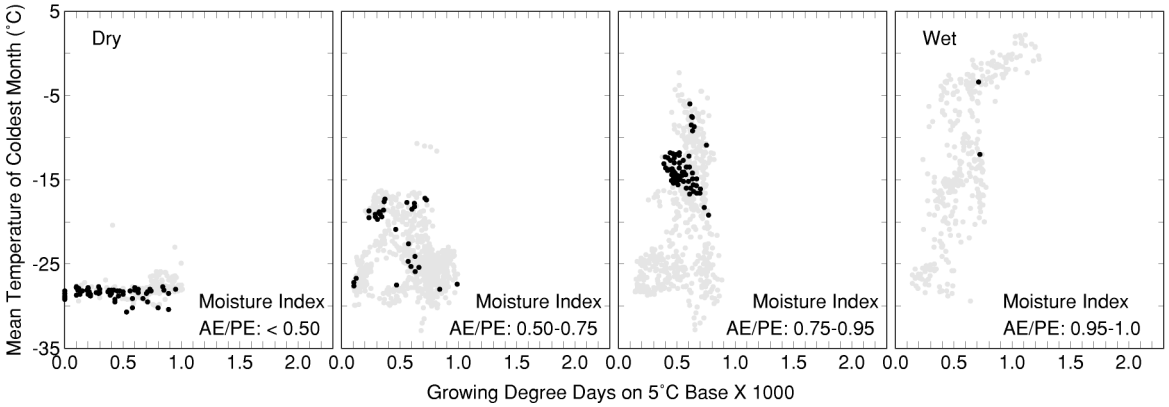


Watersedge tundra (Carex)

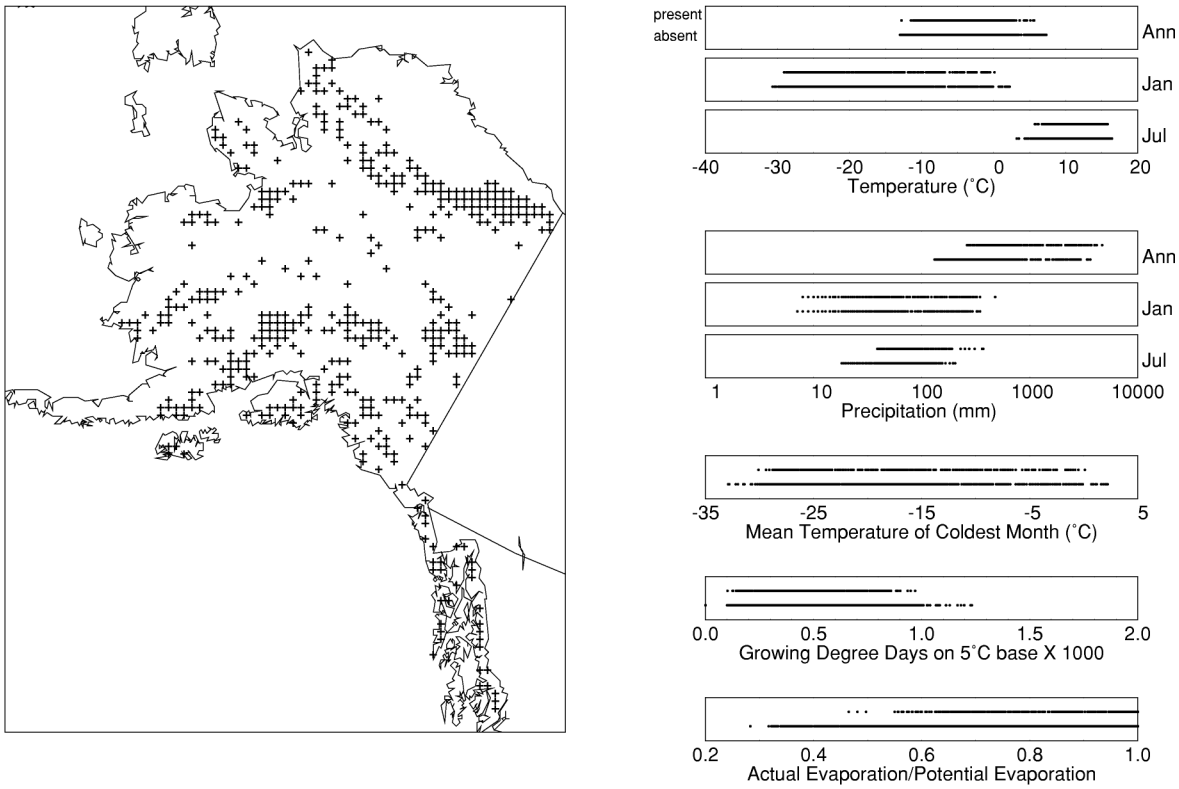


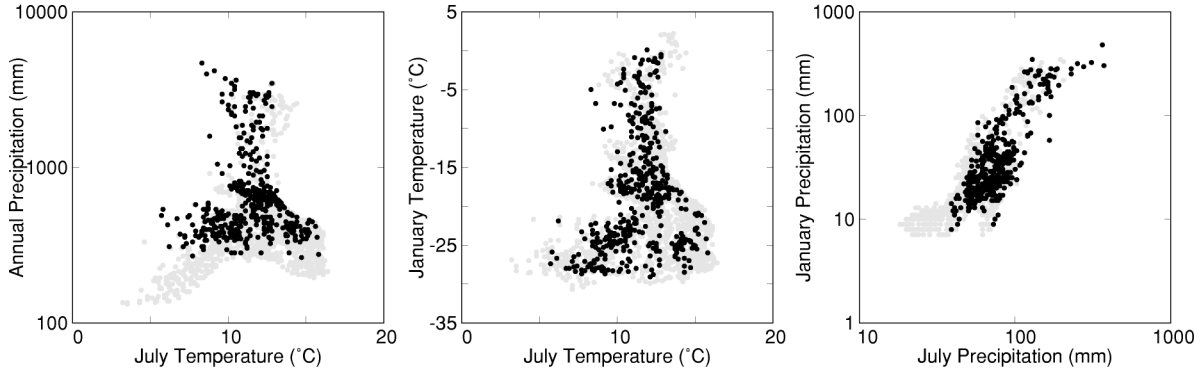


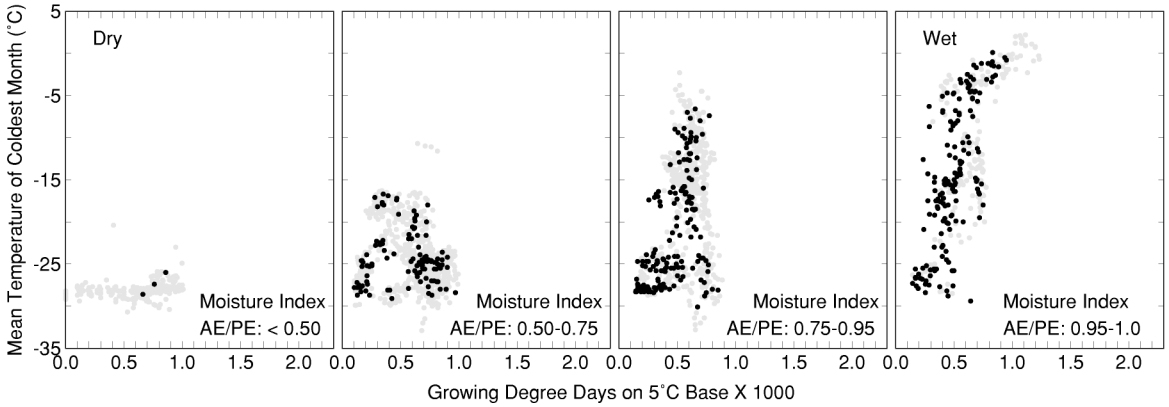




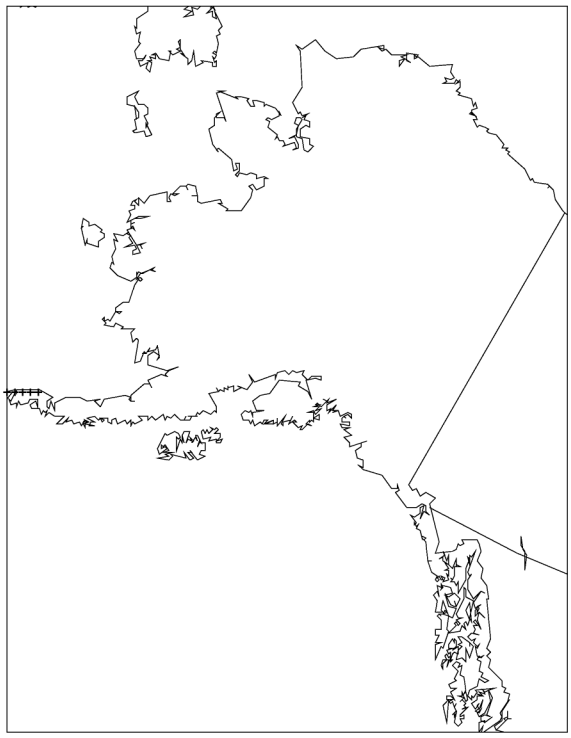
Dryas meadows and barren (Dryas-Carex-Betula)

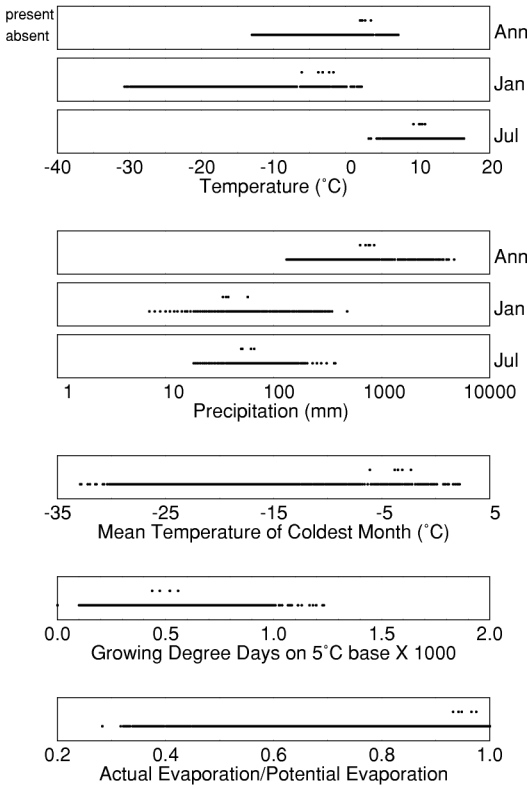


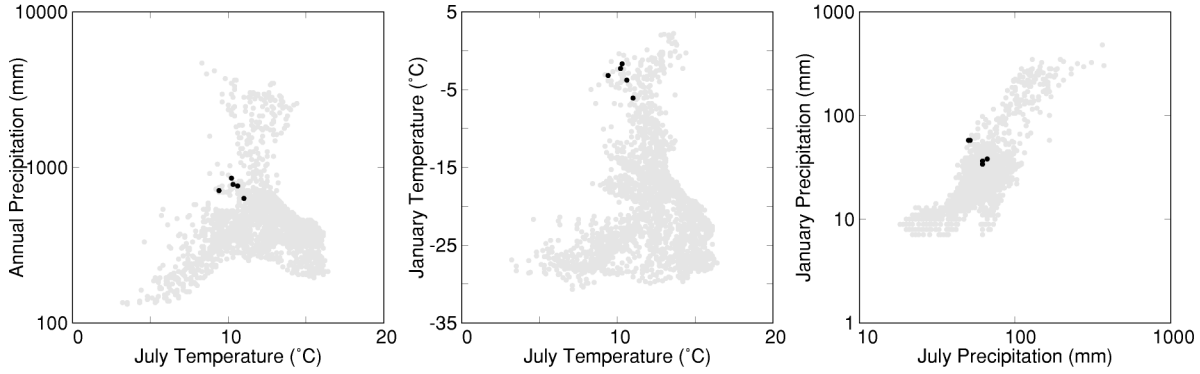


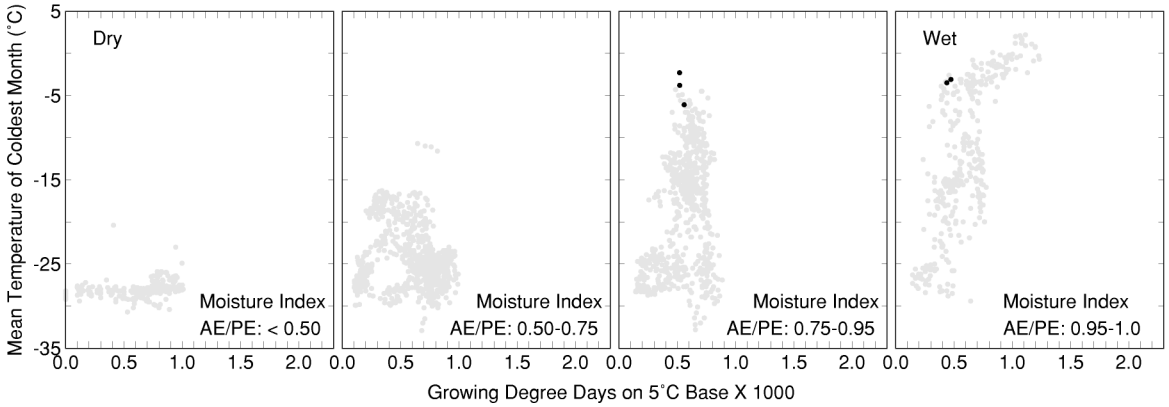


Aleutian meadows (Calamagrostis-Anemone)

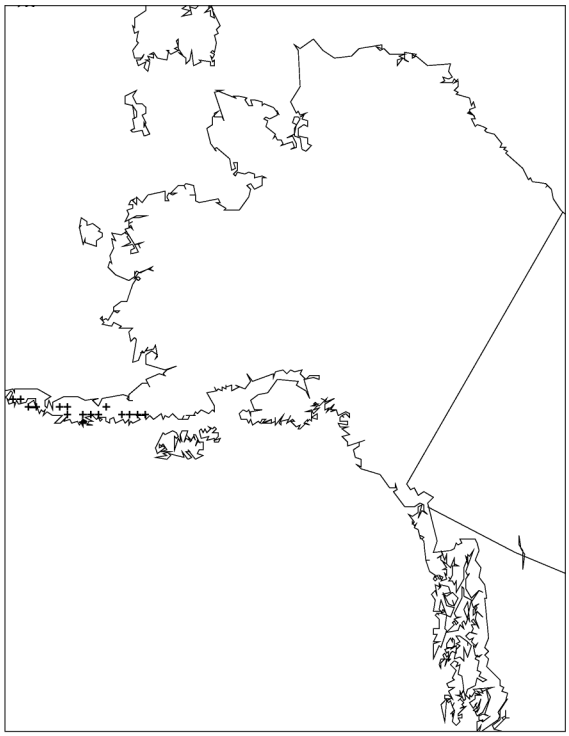


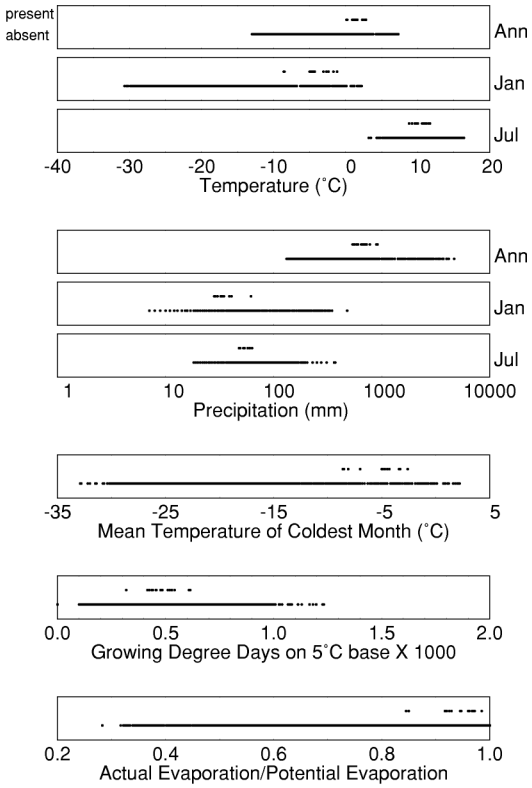


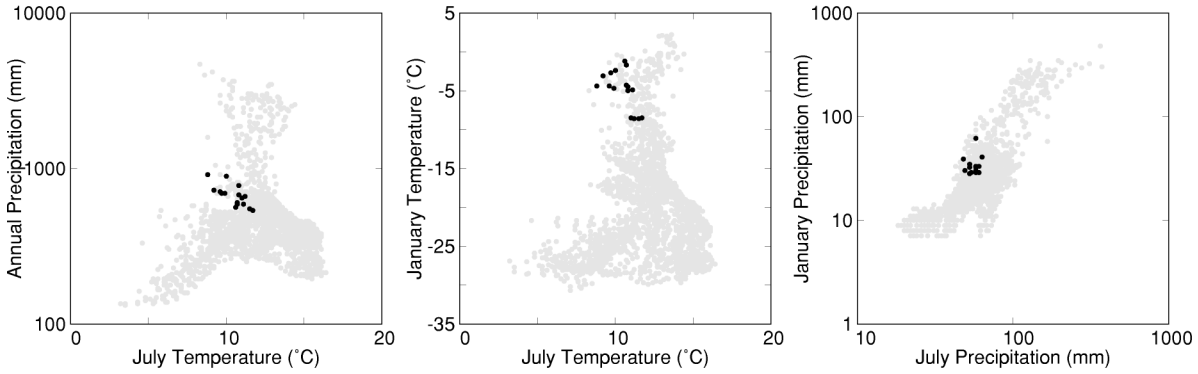


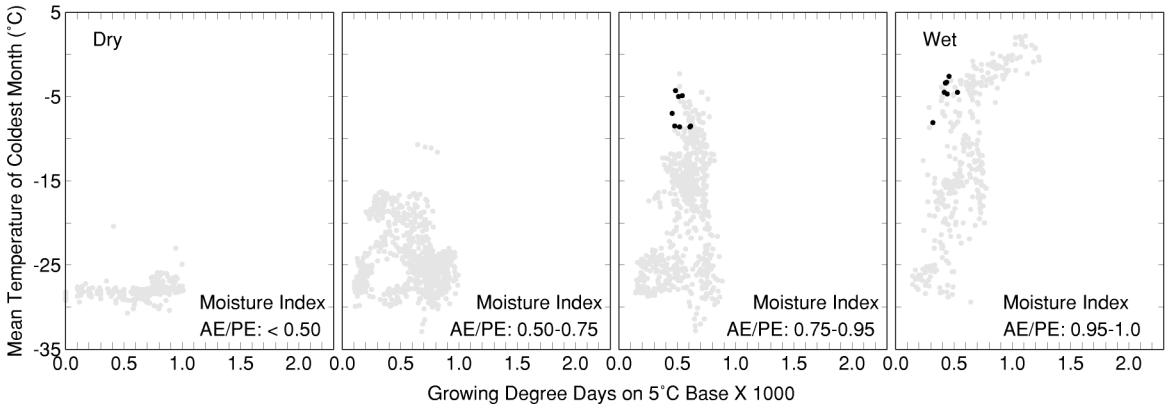


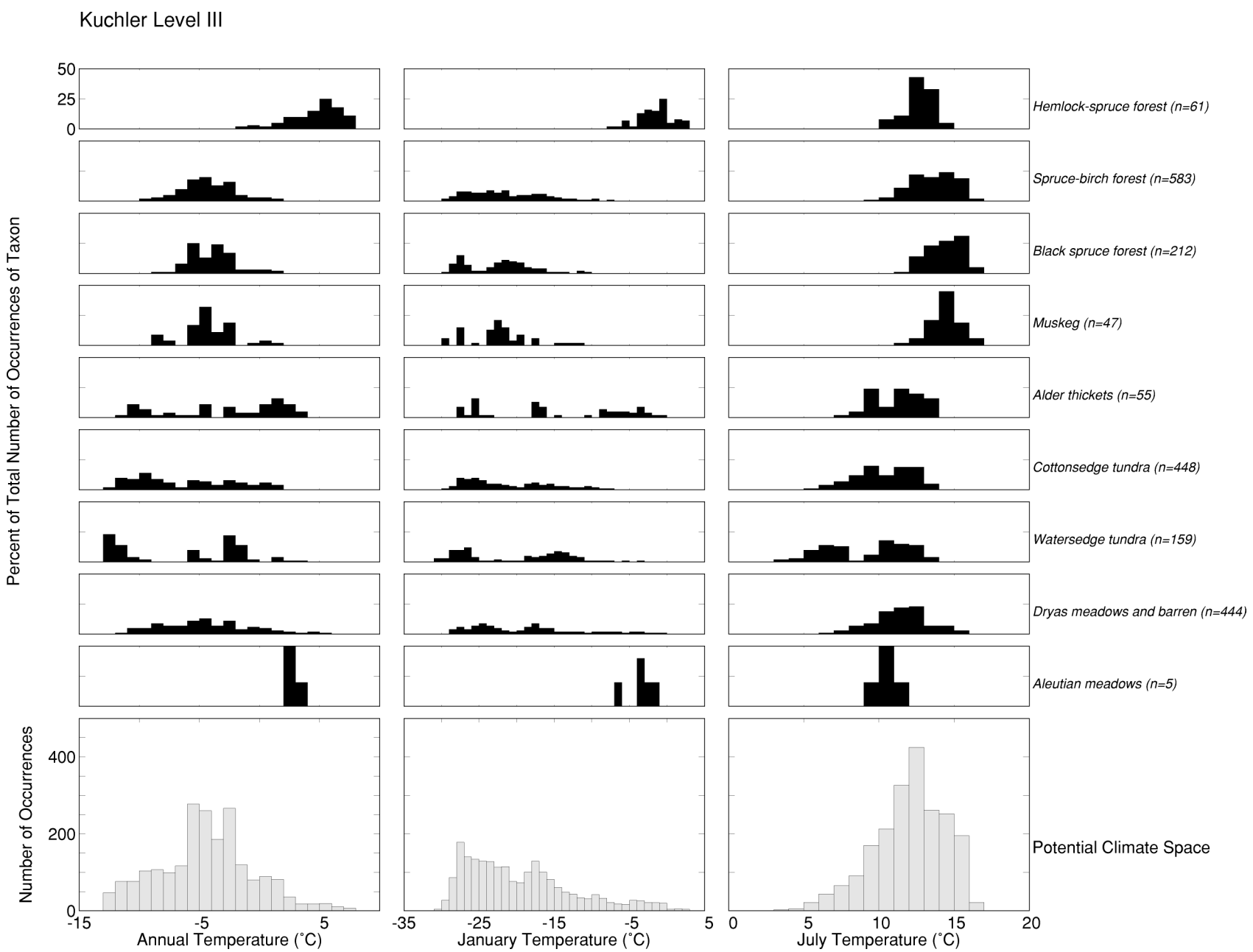
Aleutian heath and barren (Empetrum-Vaccinium)

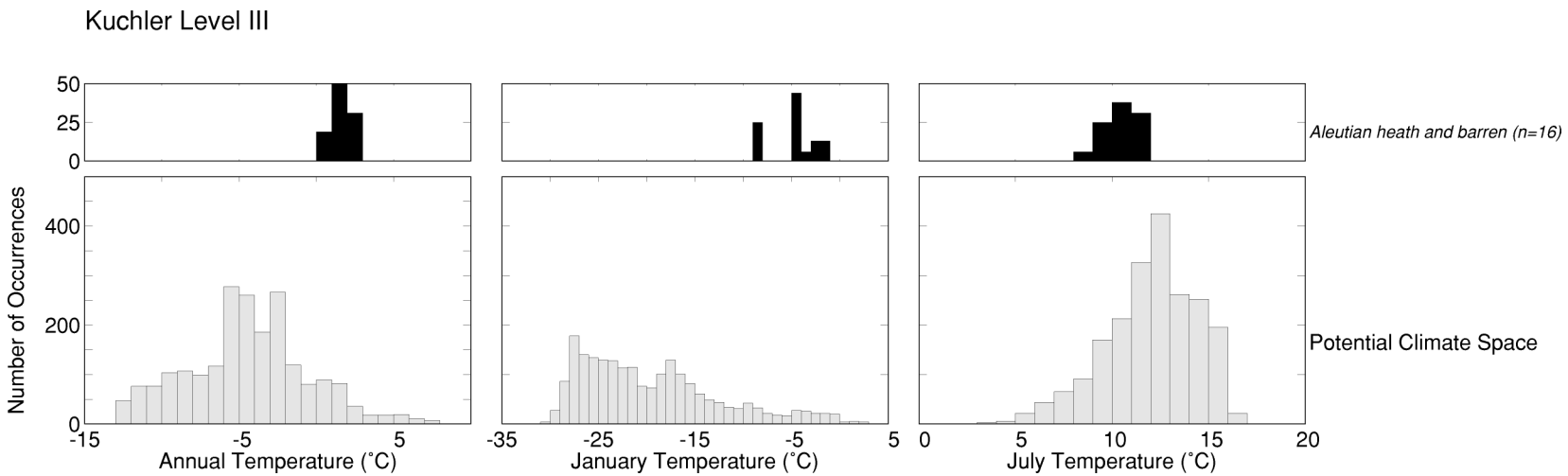


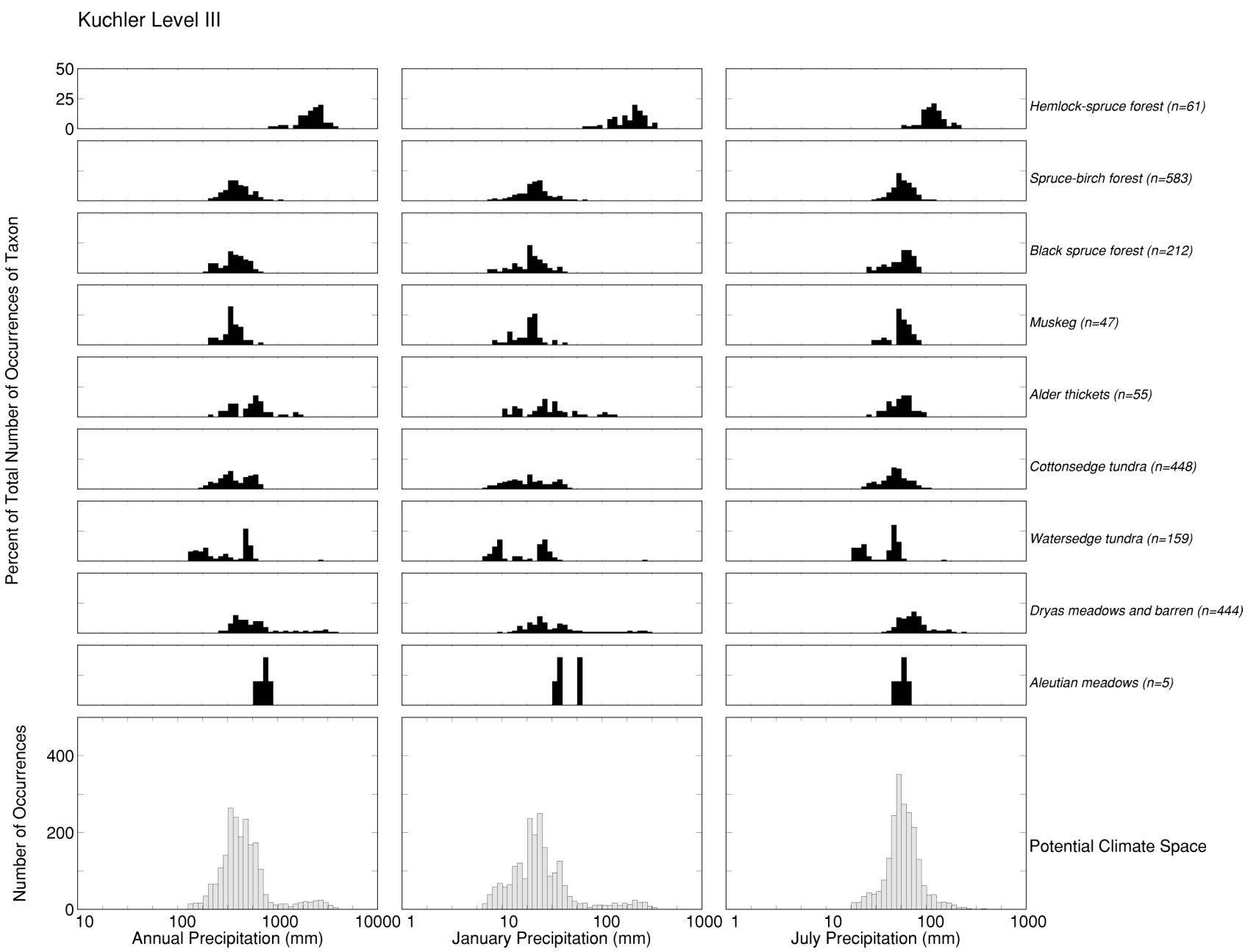


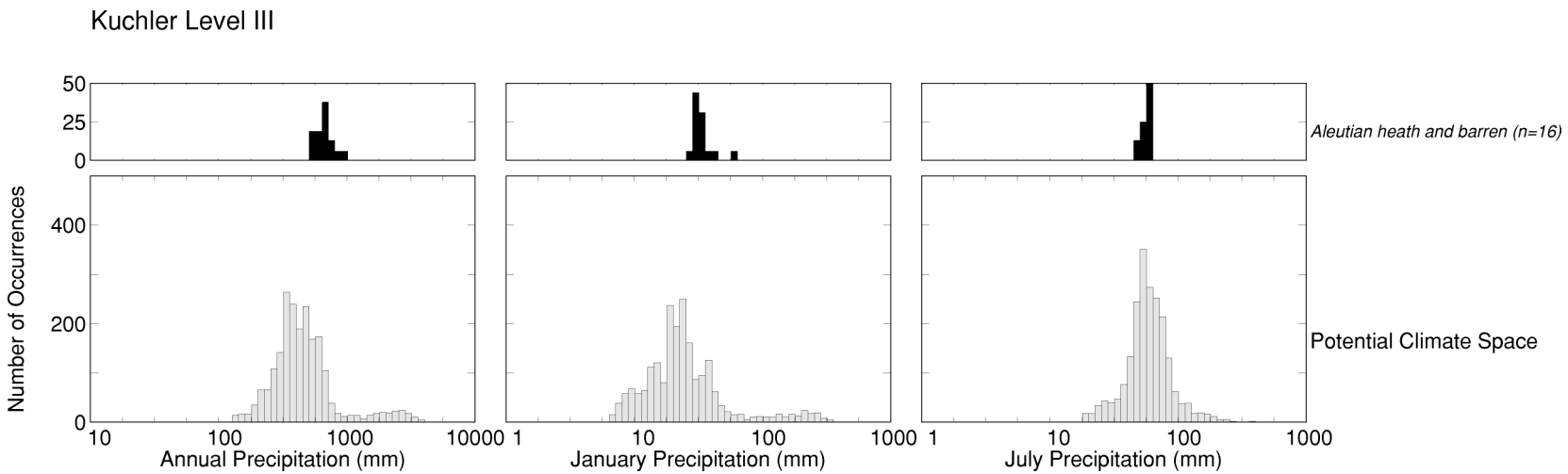


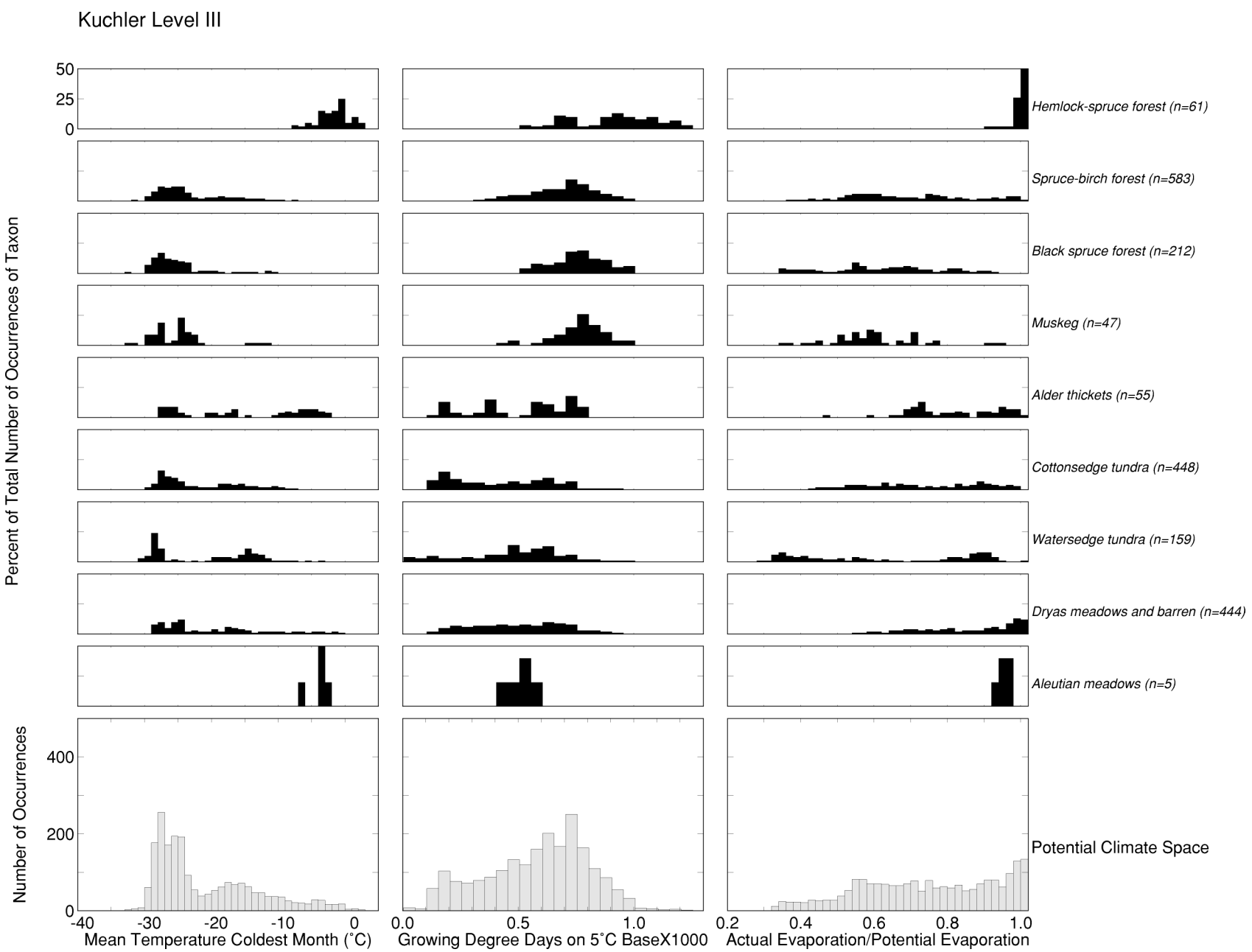


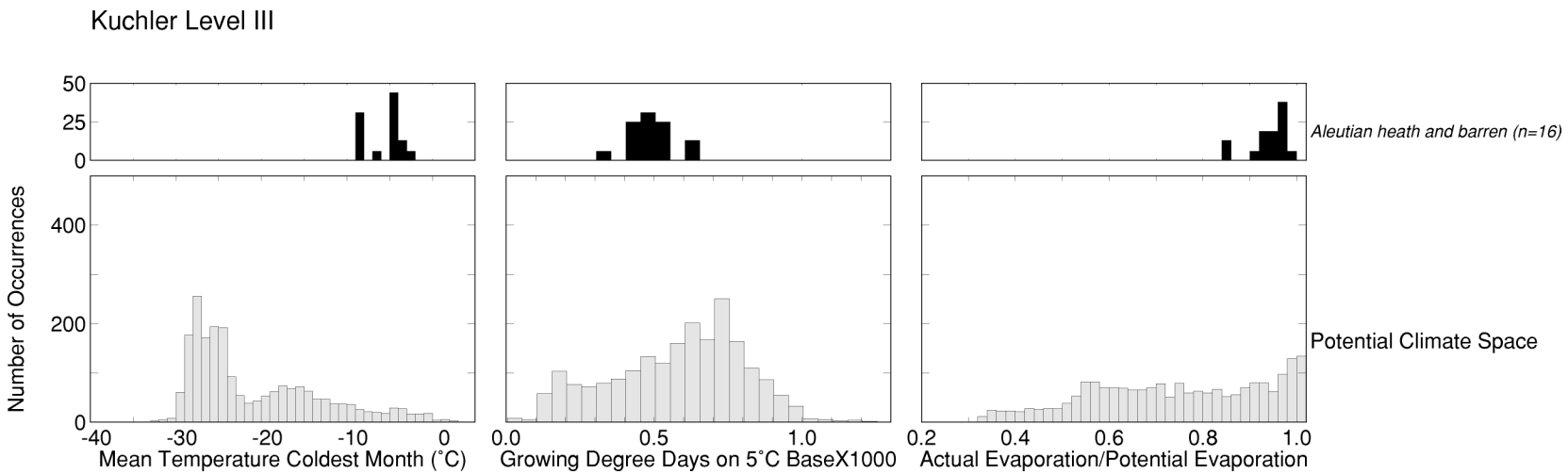

Kuchler Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
Hemlock-spruce forest (n=61)
Spruce-birch forest (n=583)
Black spruce forest (n=212)
Muskeg (n=47)
Alder thickets (n=55)
Cottonsedge tundra (n=448)
Watersedge tundra (n=159)
Dryas meadows and barren (n=444)
Aleutian meadows (n=5)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)


Kuchler Level III
50
25
0
400
200
0
Number of Occurrences
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)
Aleutian heath and barren (n=16)
Potential Climate Space


Kuchler Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
Hemlock-spruce forest (n=61)
Spruce-birch forest (n=583)
Black spruce forest (n=212)
Muskeg (n=47)
Alder thickets (n=55)
Cottonsedge tundra (n=448)
Watersedge tundra (n=159)
Dryas meadows and barren (n=444)
Aleutian meadows (n=5)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


Kuchler Level III
50
25
0
400
200
0
Number of Occurrences
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)
Aleutian heath and barren (n=16)
Potential Climate Space


Kuchler Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
Hemlock-spruce forest (n=61)
Spruce-birch forest (n=583)
Black spruce forest (n=212)
Muskeg (n=47)
Alder thickets (n=55)
Cottonsedge tundra (n=448)
Watersedge tundra (n=159)
Dryas meadows and barren (n=444)
Aleutian meadows (n=5)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation


Kuchler Level III
50
25
0
400
200
0
Number of Occurrences
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation
Aleutian heath and barren (n=16)
Potential Climate Space

Distributions of Küchler Level III ecoregions in relation to mean annual temperature in Alaska.

[N, number]

		Mean annual temperature (°C)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	-2.0	1.6	3.1	5.0	6.2	7.0	7.2
Spruce-birch forest	583	-9.8	-7.2	-5.8	-4.7	-2.8	-1.7	1.8
Black spruce forest	212	-8.5	-6.2	-5.5	-4.0	-3.0	-1.7	1.3
Muskeg	47	-9.1	-7.9	-5.3	-4.4	-3.1	-2.5	1.1
Alder thickets	55	-11.5	-10.3	-7.5	-1.8	1.6	2.3	3.7
Cottonsedge tundra	448	-13.0	-11.3	-9.9	-7.1	-2.5	-0.1	3.7
Watersedge tundra	159	-13.1	-12.5	-12.0	-5.3	-2.2	-1.4	3.2
Dryas meadows and barren	444	-12.9	-9.5	-7.6	-4.9	-2.4	0.5	5.5
Aleutian meadows	5	1.9	*	*	*	*	*	3.4
Aleutian heath and barren	16	0.0	0.1	1.0	1.4	2.2	2.3	2.7

Distributions of Küchler Level III ecoregions in relation to mean January temperature in Alaska.

[N, number]

		Mean January temperature (°C)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	-7.2	-5.8	-3.3	-1.7	-0.4	1.5	2.1
Spruce-birch forest	583	-30.0	-27.6	-25.9	-22.3	-18.0	-15.1	-7.2
Black spruce forest	212	-29.3	-28.1	-27.0	-22.1	-19.4	-16.8	-9.2
Muskeg	47	-29.8	-27.9	-23.9	-22.7	-20.5	-17.7	-12.0
Alder thickets	55	-28.0	-26.8	-25.3	-16.5	-6.2	-3.9	-0.5
Cottonsedge tundra	448	-30.0	-27.6	-26.0	-22.5	-16.4	-11.9	-1.6
Watersedge tundra	159	-30.8	-28.6	-27.3	-18.7	-14.5	-12.3	-3.5
Dryas meadows and barren	444	-29.2	-27.2	-24.7	-19.1	-15.1	-7.1	0.0
Aleutian meadows	5	-6.2	*	*	*	*	*	-1.8
Aleutian heath and barren	16	-8.7	-8.7	-8.6	-4.6	-3.2	-2.5	-1.3

Distributions of Küchler Level III ecoregions in relation to mean July temperature in Alaska.

[N, number]

		Mean July temperature (°C)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	10.1	10.9	12.1	12.7	13.3	13.6	14.3
Spruce-birch forest	583	9.6	11.6	12.4	13.5	14.6	15.3	16.1
Black spruce forest	212	11.6	12.5	13.3	14.2	15.1	15.6	16.1
Muskeg	47	11.8	12.9	13.8	14.4	14.8	15.7	16.3
Alder thickets	55	7.0	9.0	9.5	11.2	12.1	13.1	13.7
Cottonsedge tundra	448	4.5	7.5	8.9	10.3	11.8	12.5	14.4
Watersedge tundra	159	3.1	5.4	6.6	9.9	11.4	12.5	13.5
Dryas meadows and barren	444	5.6	8.7	10.1	11.5	12.4	13.8	15.7
Aleutian meadows	5	9.3	*	*	*	*	*	10.9
Aleutian heath and barren	16	8.7	9.1	9.6	10.6	10.9	11.1	11.6

Distributions of Küchler Level III ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

		Mean annual precipitation (mm)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	890	1245	1780	2260	2665	2880	3615
Spruce-birch forest	583	200	270	330	380	475	605	1845
Black spruce forest	212	195	225	315	365	455	530	655
Muskeg	47	205	240	310	345	395	440	665
Alder thickets	55	210	310	370	545	655	805	1610
Cottonsedge tundra	448	145	220	285	355	520	605	2000
Watersedge tundra	159	130	145	175	295	485	515	2780
Dryas meadows and barren	444	260	350	395	520	715	1810	4685
Aleutian meadows	5	630	*	*	*	*	*	840
Aleutian heath and barren	16	535	550	590	650	705	770	915

Distributions of Küchler Level III ecoregions in relation to mean January precipitation in Alaska.

[N, number]

		Mean January precipitation (mm)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	67	114	138	208	245	280	349
Spruce-birch forest	583	7	13	17	22	26	36	148
Black spruce forest	212	7	11	15	20	24	29	49
Muskeg	47	9	12	15	20	22	24	45
Alder thickets	55	11	13	16	27	36	60	128
Cottonsedge tundra	448	7	10	12	19	28	38	140
Watersedge tundra	159	7	8	10	16	26	29	257
Dryas meadows and barren	444	8	16	21	27	45	141	479
Aleutian meadows	5	34	*	*	*	*	*	58
Aleutian heath and barren	16	28	29	29	30	33	39	62

Distributions of Küchler Level III ecoregions in relation to mean July precipitation in Alaska.

[N, number]

		Mean July precipitation (mm)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	57	83	100	117	133	156	202
Spruce-birch forest	583	26	44	51	57	69	78	144
Black spruce forest	212	25	33	46	59	69	77	91
Muskeg	47	29	37	53	57	65	72	90
Alder thickets	55	27	38	45	57	66	73	98
Cottonsedge tundra	448	22	30	41	50	59	73	131
Watersedge tundra	159	18	20	23	45	50	52	153
Dryas meadows and barren	444	39	51	58	72	87	121	372
Aleutian meadows	5	50	*	*	*	*	*	66
Aleutian heath and barren	16	48	49	53	57	58	60	63

Distributions of Küchler Level III ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

		Mean temperature of the coldest month (°C)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	-7.8	-5.8	-3.5	-1.7	-0.4	1.1	2.1
Spruce-birch forest	583	-32.1	-28.5	-27.2	-25.0	-20.2	-15.2	-7.2
Black spruce forest	212	-33.0	-29.0	-28.0	-26.3	-24.0	-18.7	-9.2
Muskeg	47	-32.9	-29.6	-28.0	-25.1	-24.0	-22.2	-12.0
Alder thickets	55	-28.0	-27.1	-25.4	-16.5	-6.4	-4.3	-2.6
Cottonsedge tundra	448	-30.0	-28.0	-27.0	-24.4	-16.7	-12.1	-1.7
Watersedge tundra	159	-30.8	-28.9	-28.3	-19.3	-14.6	-12.5	-3.5
Dryas meadows and barren	444	-30.2	-28.1	-25.9	-22.3	-15.2	-7.2	0.0
Aleutian meadows	5	-6.2	*	*	*	*	*	-2.4
Aleutian heath and barren	16	-8.7	-8.7	-8.6	-5.0	-4.4	-3.5	-2.7

Distributions of Küchler Level III ecoregions in relation to growing degree days in Alaska.

[N, number]

		Growing degree days (on 5°C base x 1000)						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	0.50	0.65	0.71	0.93	1.03	1.13	1.23
Spruce-birch forest	583	0.26	0.47	0.59	0.72	0.78	0.87	1.00
Black spruce forest	212	0.47	0.58	0.68	0.76	0.83	0.90	1.00
Muskeg	47	0.44	0.61	0.70	0.77	0.82	0.89	0.99
Alder thickets	55	0.13	0.19	0.35	0.57	0.70	0.74	0.78
Cottonsedge tundra	448	0.00	0.15	0.20	0.40	0.60	0.71	0.93
Watersedge tundra	159	0.00	0.12	0.35	0.50	0.62	0.71	0.99
Dryas meadows and barren	444	0.10	0.21	0.33	0.50	0.65	0.74	0.97
Aleutian meadows	5	0.43	*	*	*	*	*	0.55
Aleutian heath and barren	16	0.31	0.41	0.43	0.47	0.51	0.54	0.61

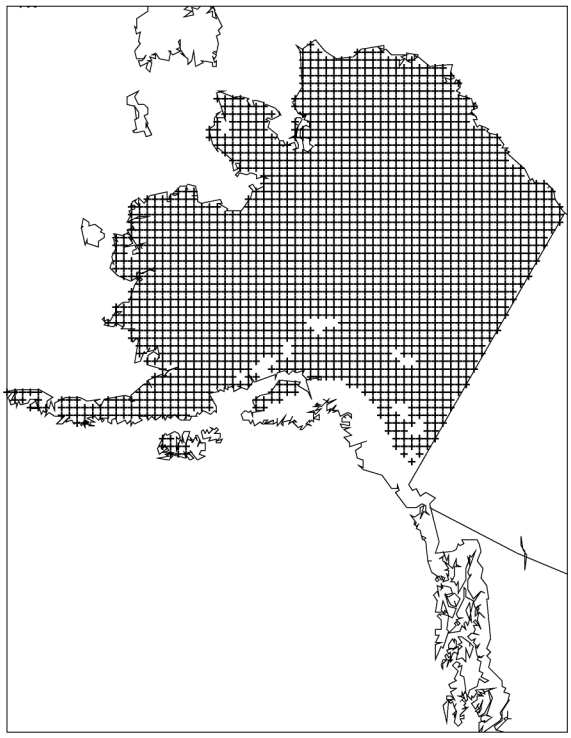
Distributions of Küchler Level III ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

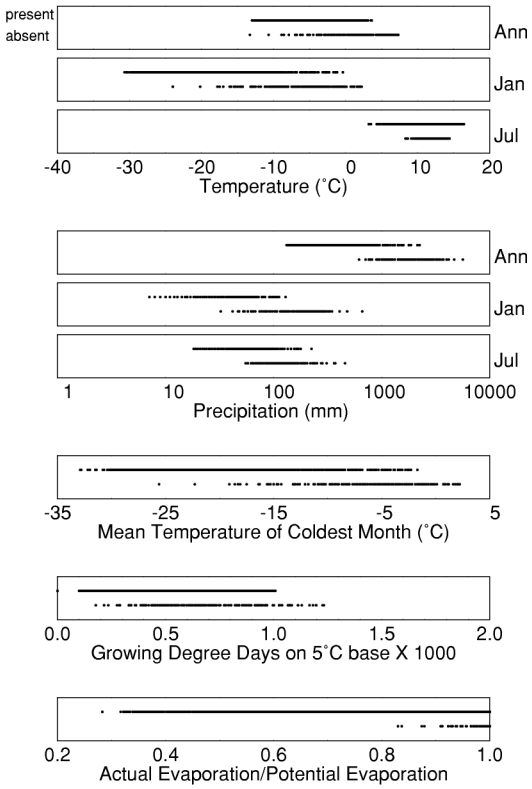
[N, number]

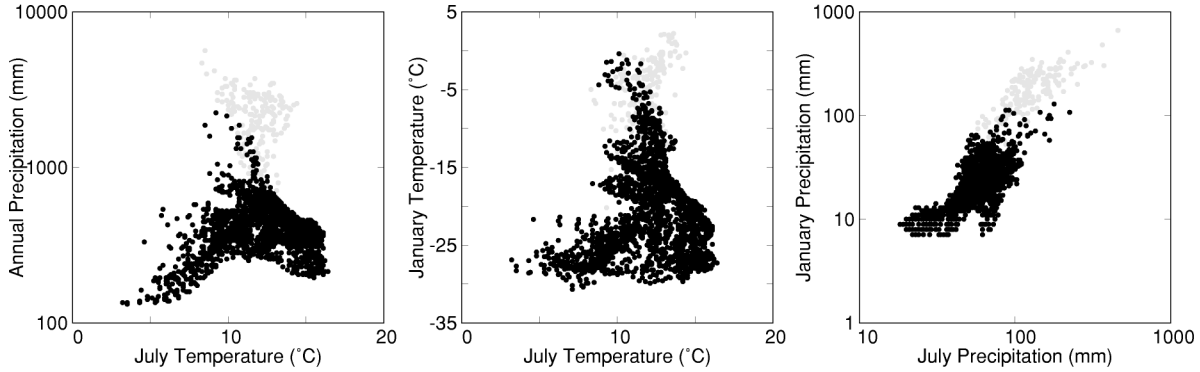
		Moisture index						
Level III ecoregion	N	0%	10%	25%	50%	75%	90%	100%
Hemlock-spruce forest	61	0.91	0.98	0.99	1.00	1.00	1.00	1.00
Spruce-birch forest	583	0.34	0.50	0.56	0.66	0.79	0.94	1.00
Black spruce forest	212	0.33	0.39	0.51	0.62	0.73	0.83	0.98
Muskeg	47	0.35	0.44	0.53	0.59	0.67	0.75	0.94
Alder thickets	55	0.47	0.68	0.72	0.81	0.93	0.97	1.00
Cottonsedge tundra	448	0.36	0.52	0.60	0.72	0.88	0.94	1.00
Watersedge tundra	159	0.28	0.34	0.40	0.59	0.86	0.90	1.00
Dryas meadows and barren	444	0.46	0.65	0.74	0.89	0.98	1.00	1.00
Aleutian meadows	5	0.93	*	*	*	*	*	0.97
Aleutian heath and barren	16	0.84	0.85	0.92	0.94	0.96	0.96	0.98

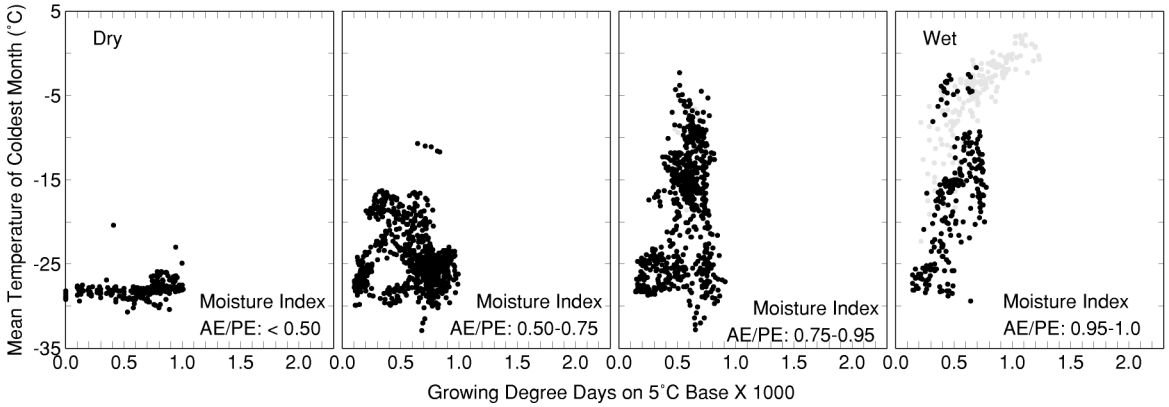
Alaska Ecoregions—
Bailey Ecoregions

POLAR DOMAIN

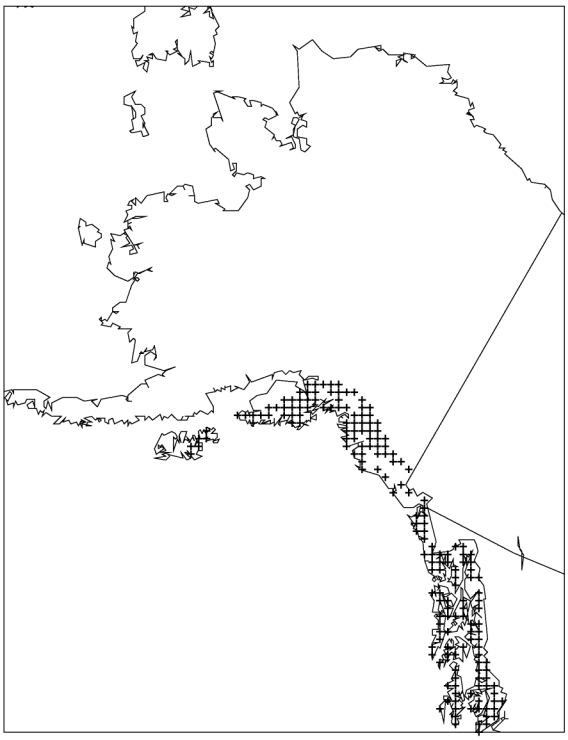


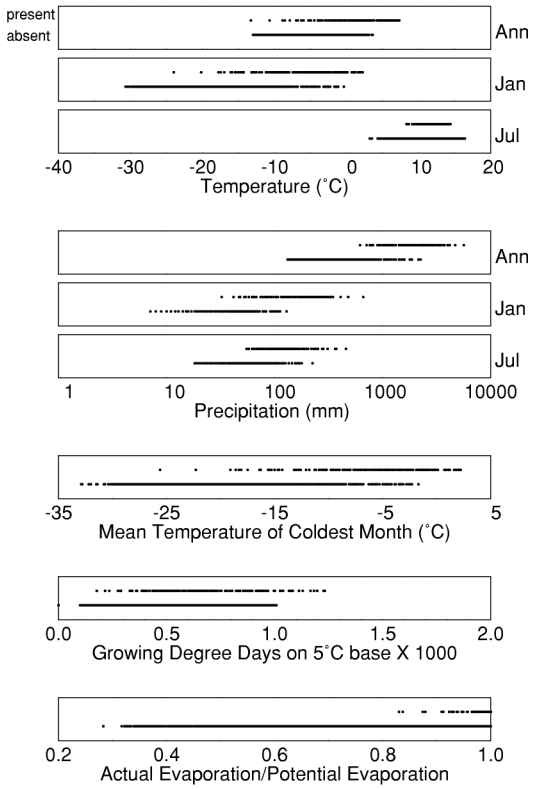


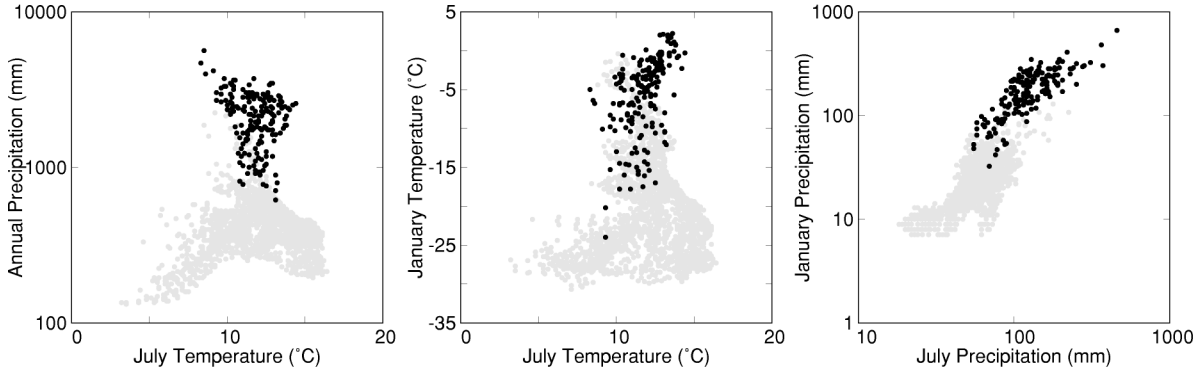


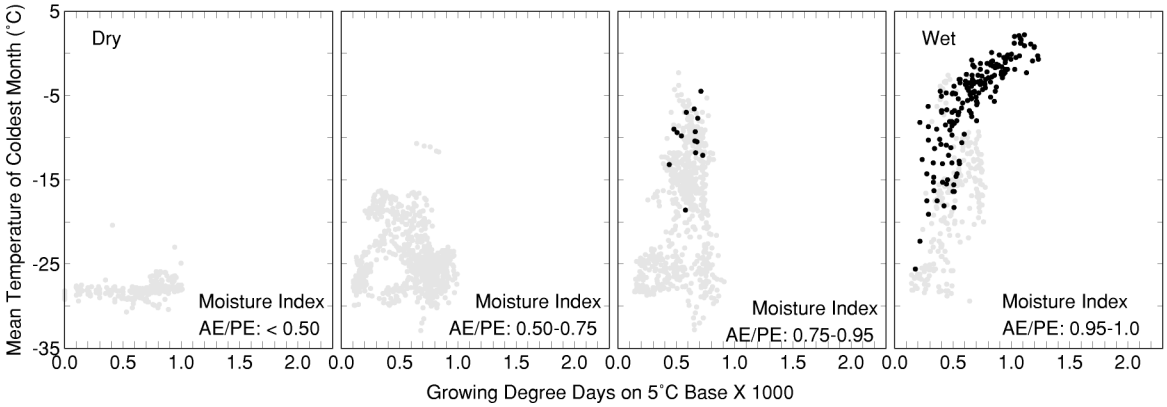


HUMID TEMPERATE DOMAIN

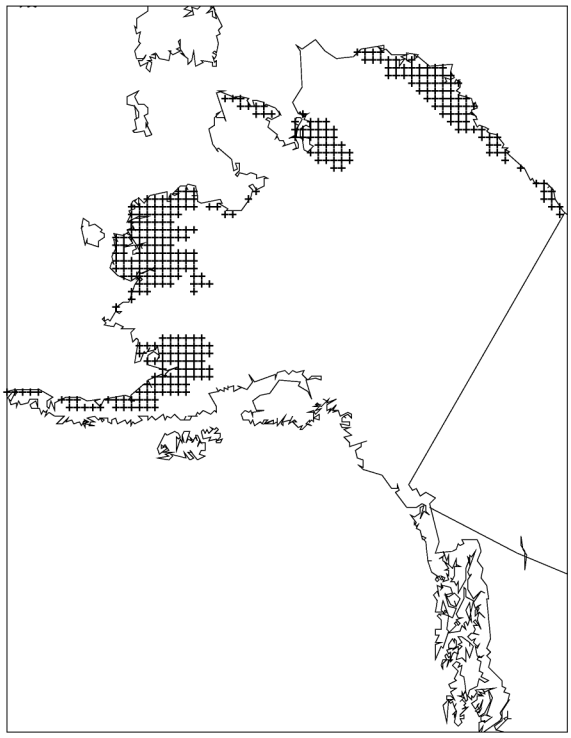


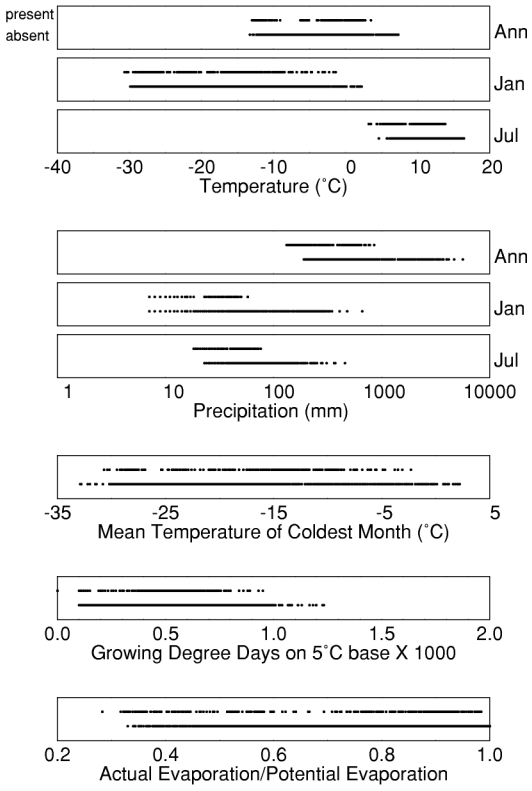


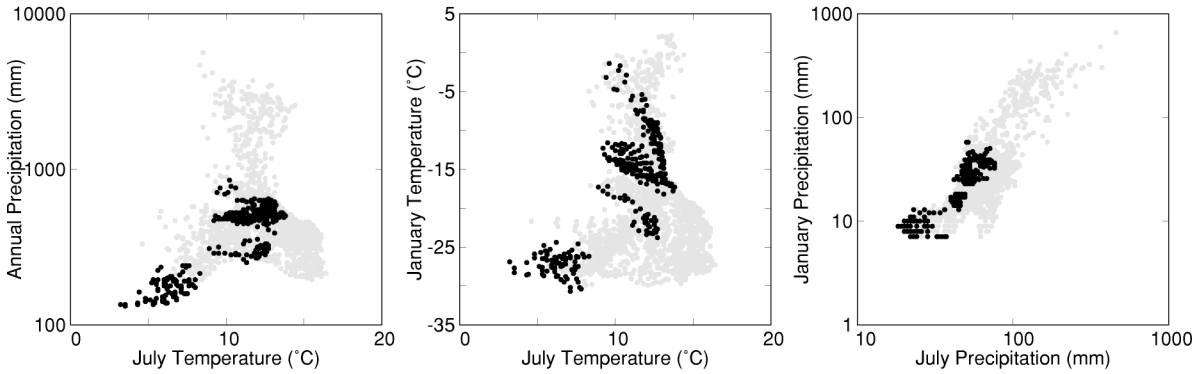


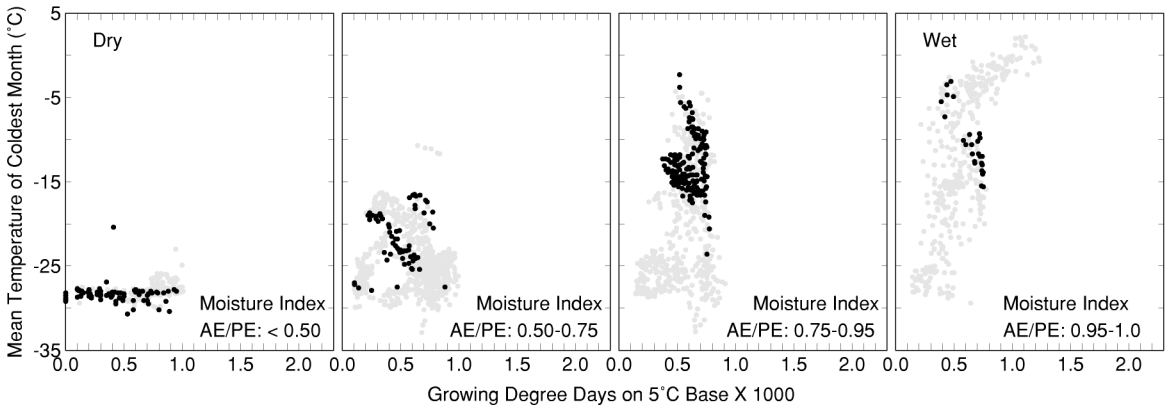


POLAR DOMAIN -
Tundra Division

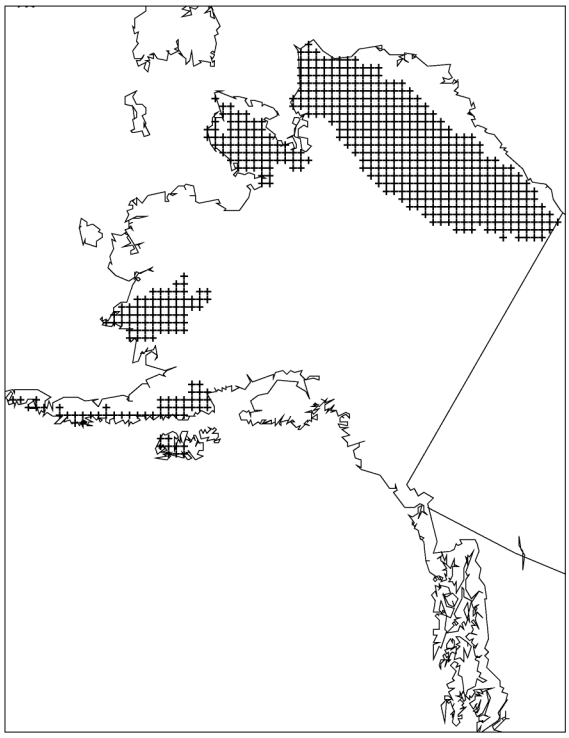


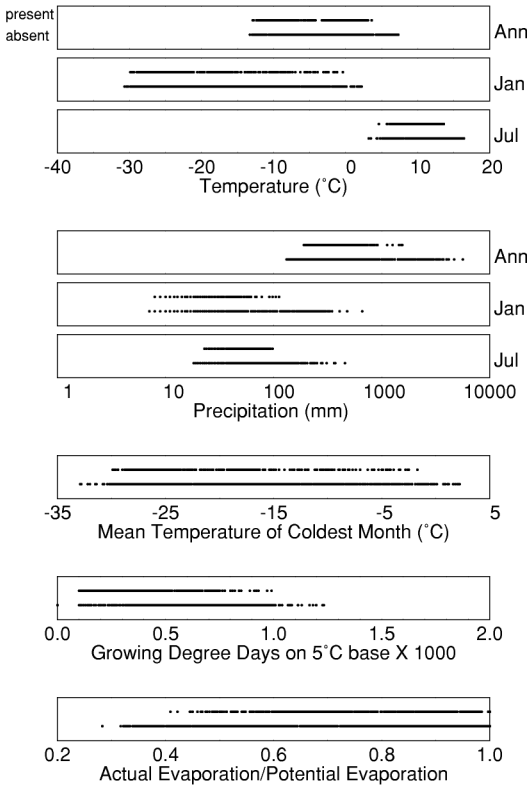


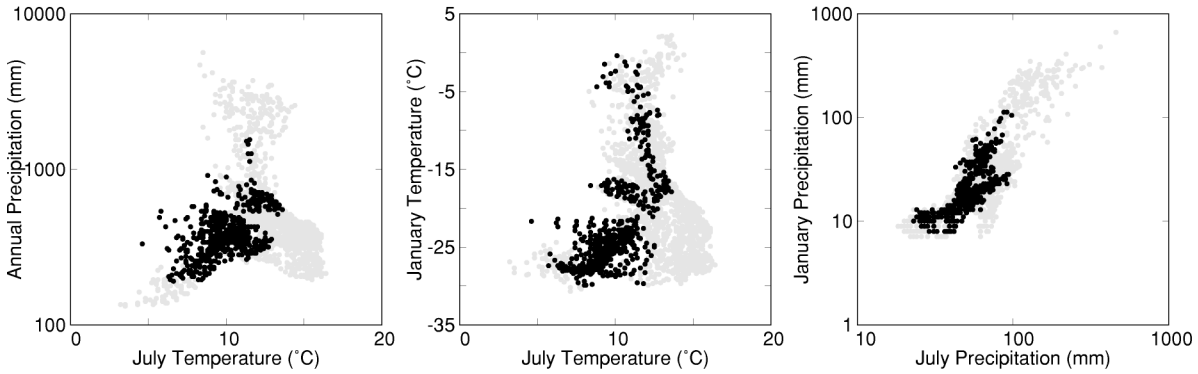


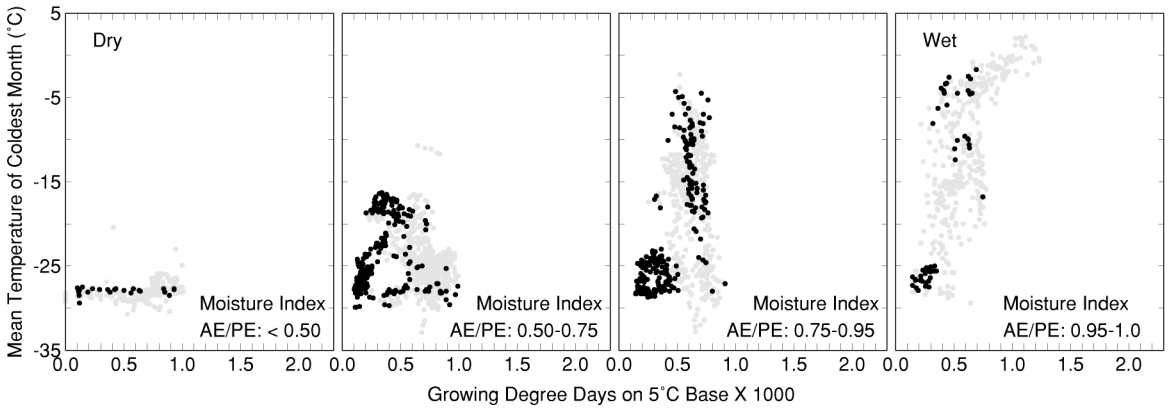


POLAR DOMAIN -
Tundra Mountains

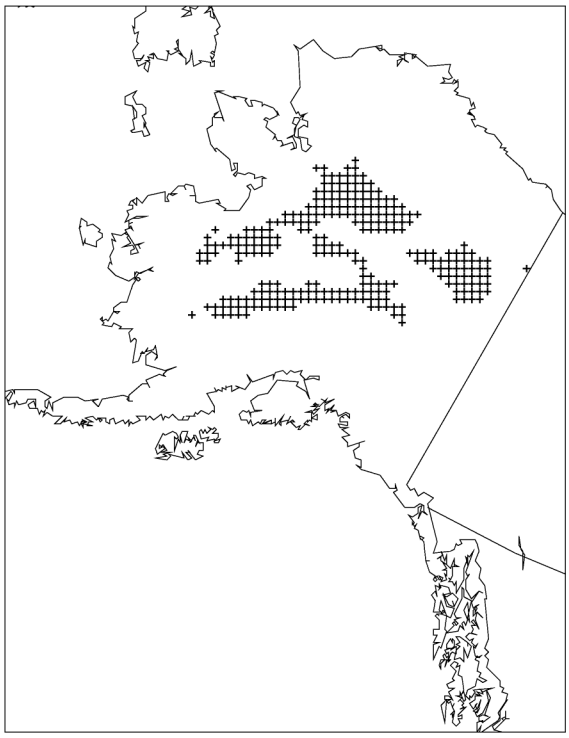


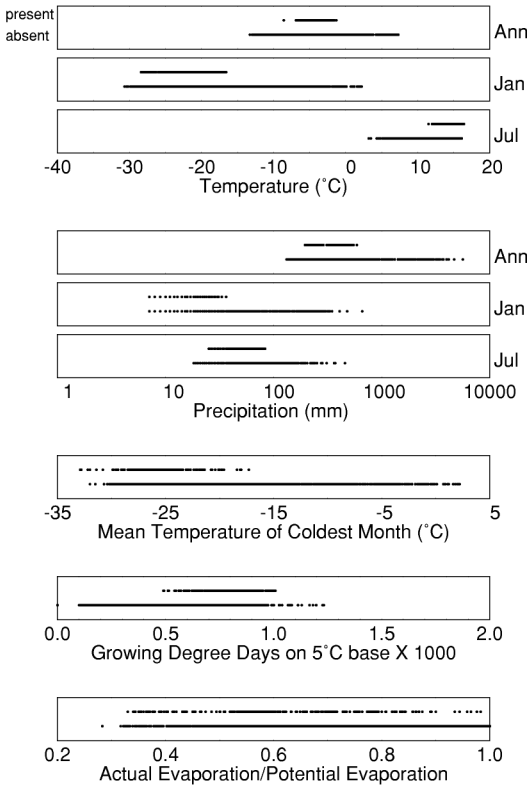


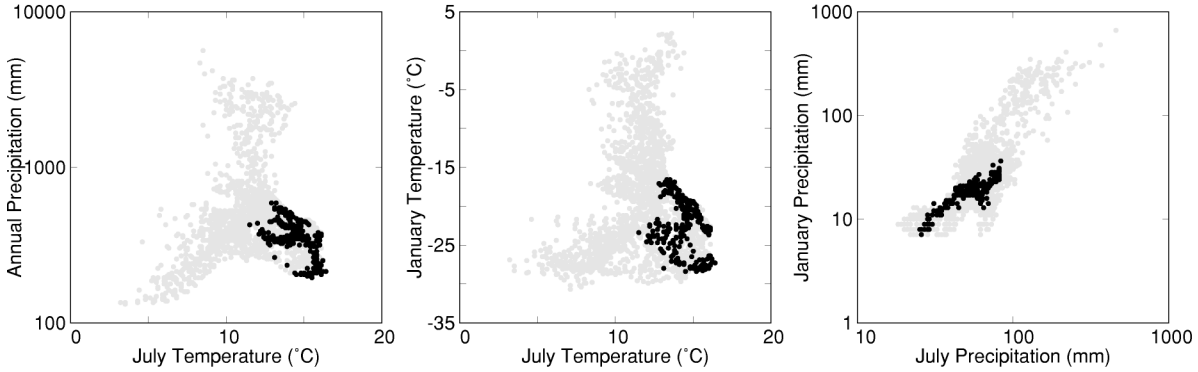


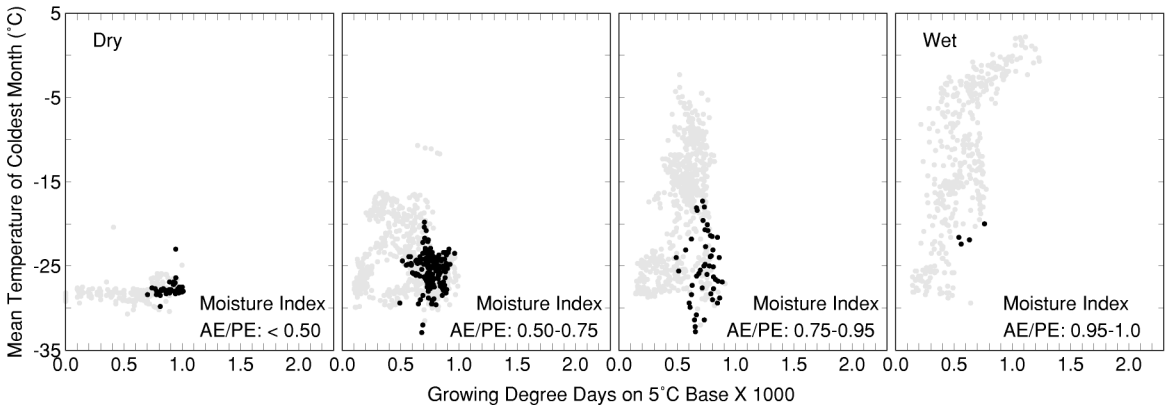


POLAR DOMAIN - Subarctic Division

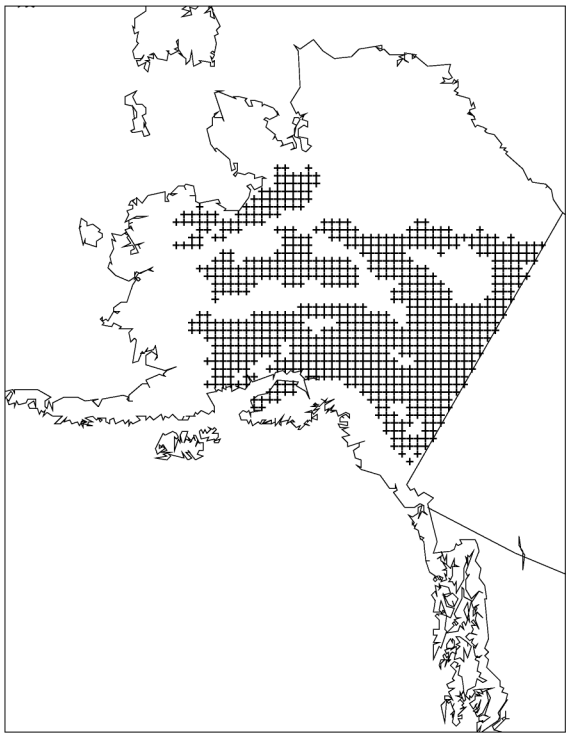


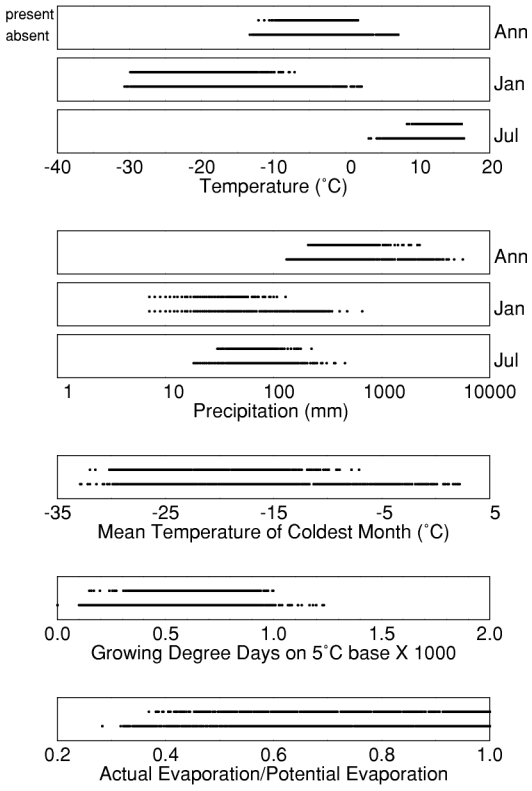


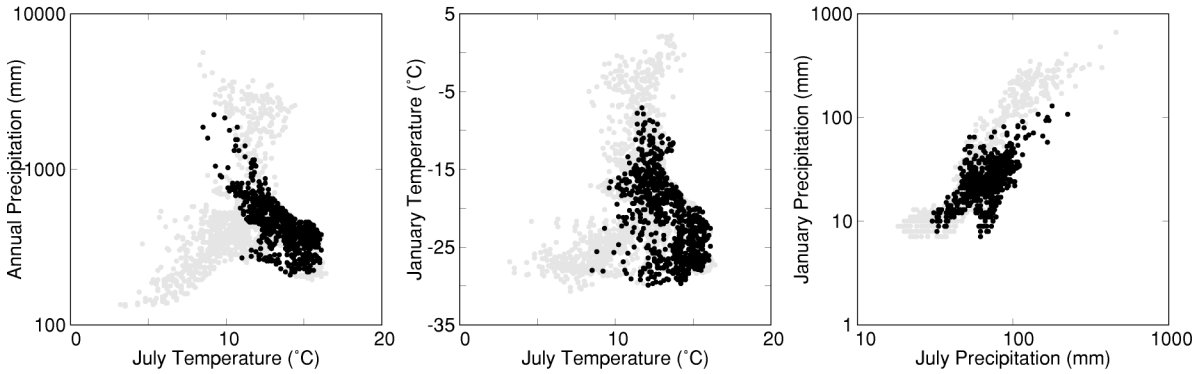


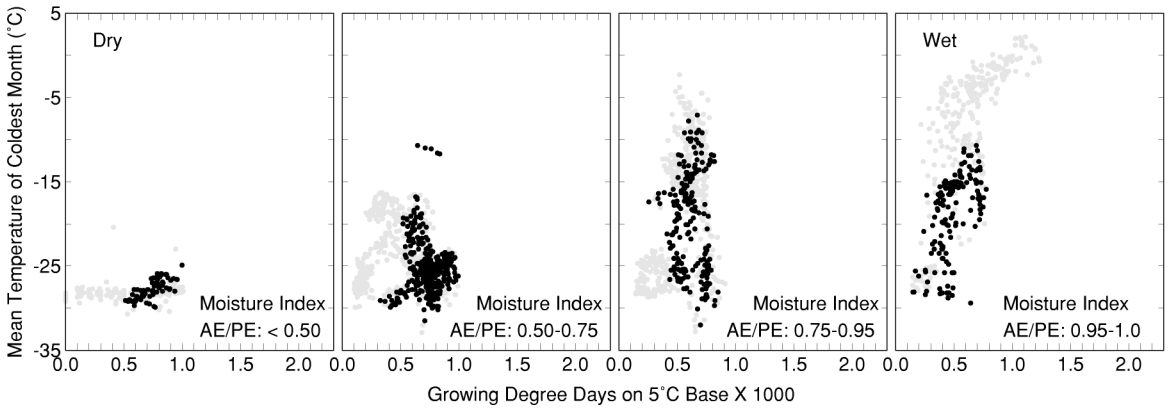


POLAR DOMAIN -
Subarctic Mountains

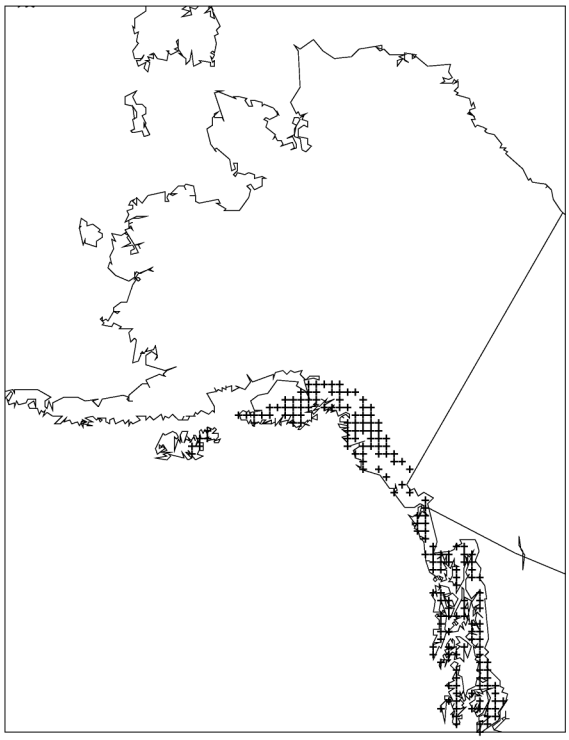


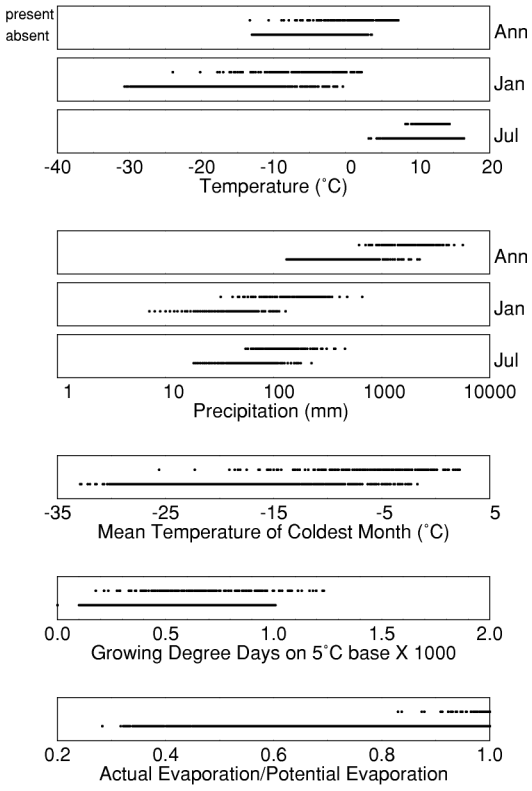


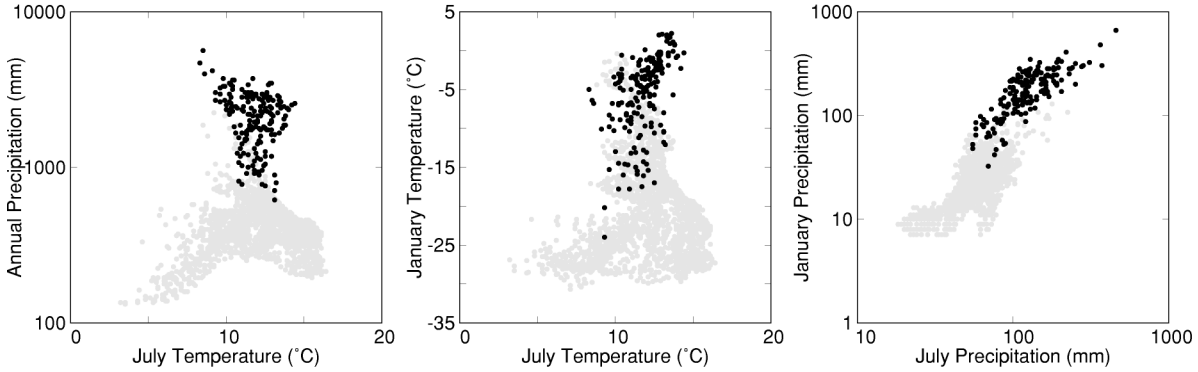


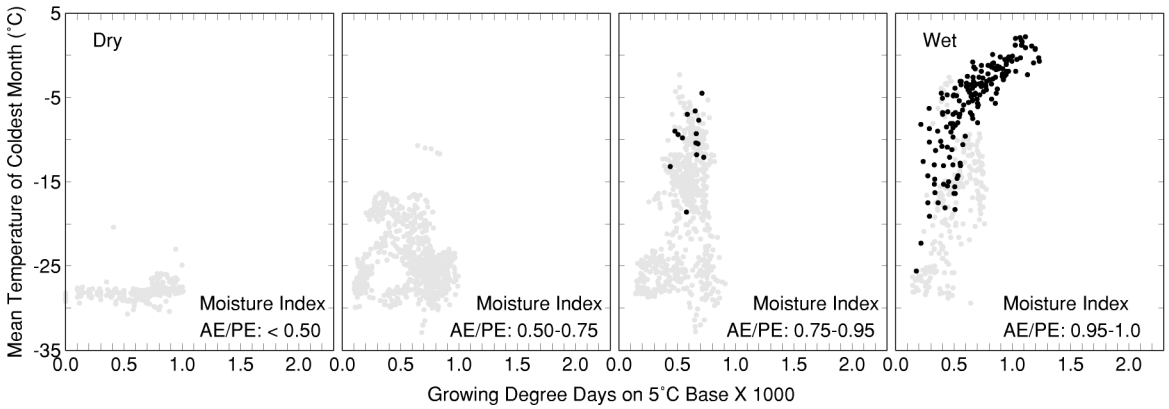


HUMID TEMPERATE DOMAIN - Marine Mountains

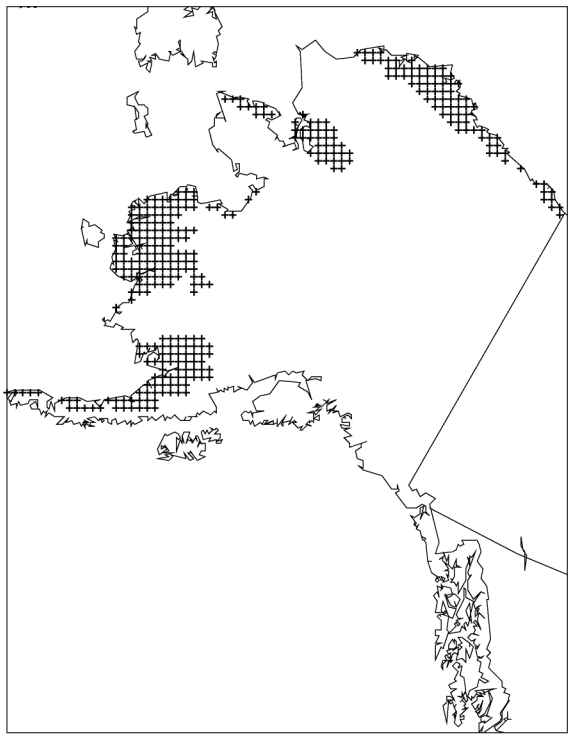


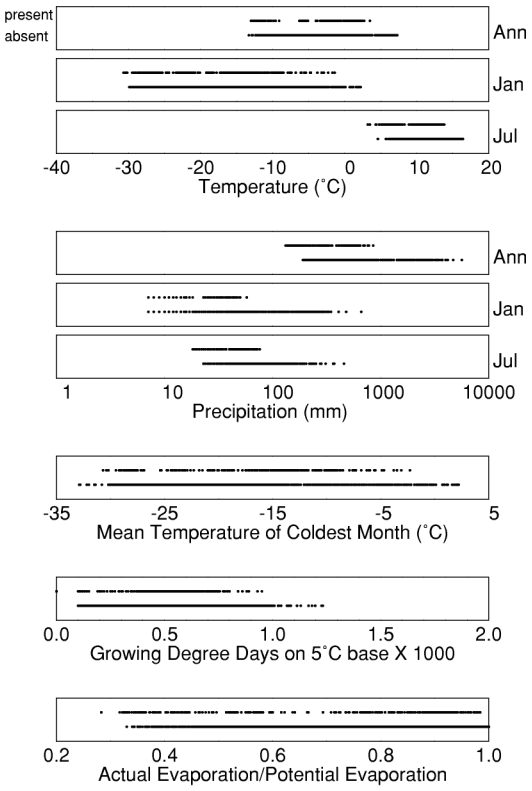


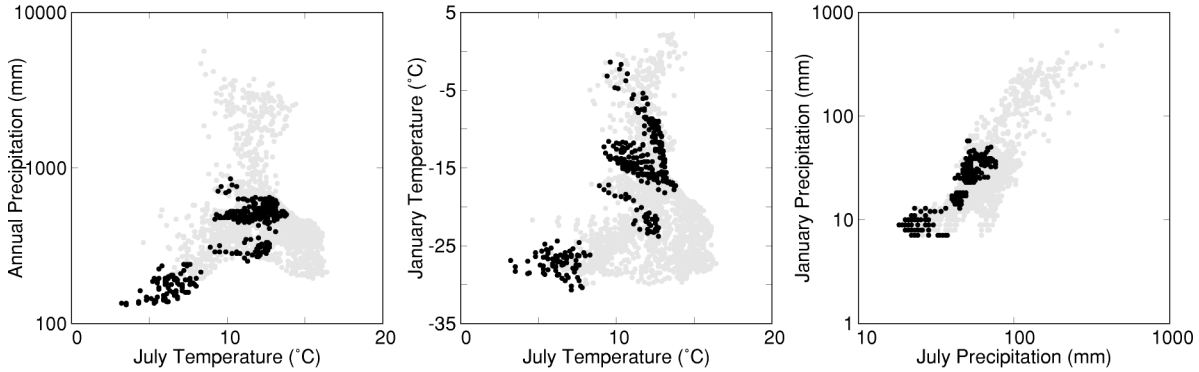


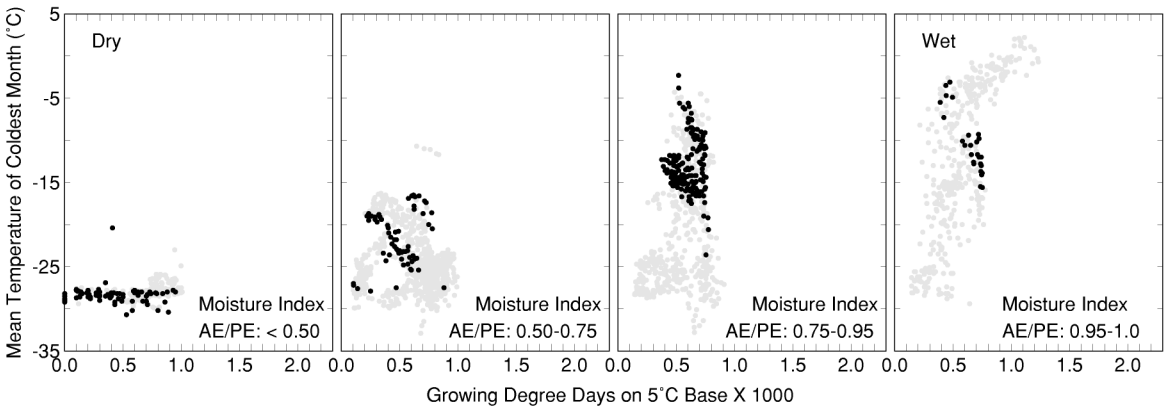


POLAR DOMAIN -
Tundra Division -
Tundras

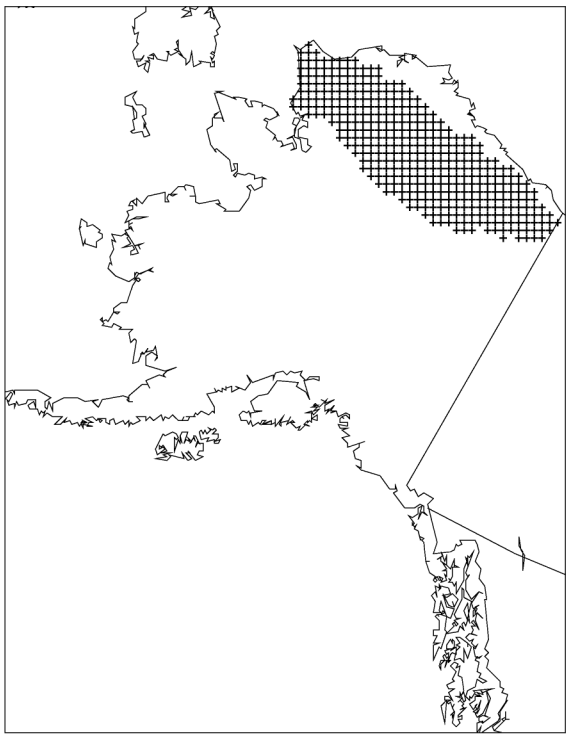


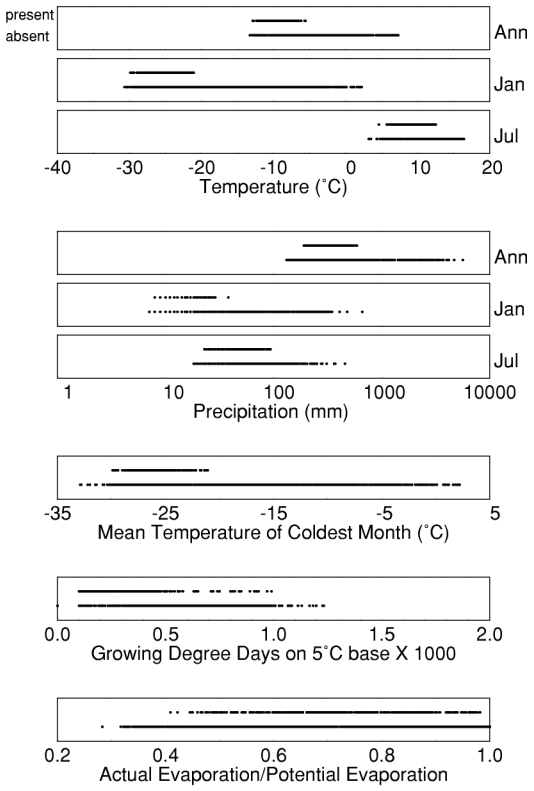


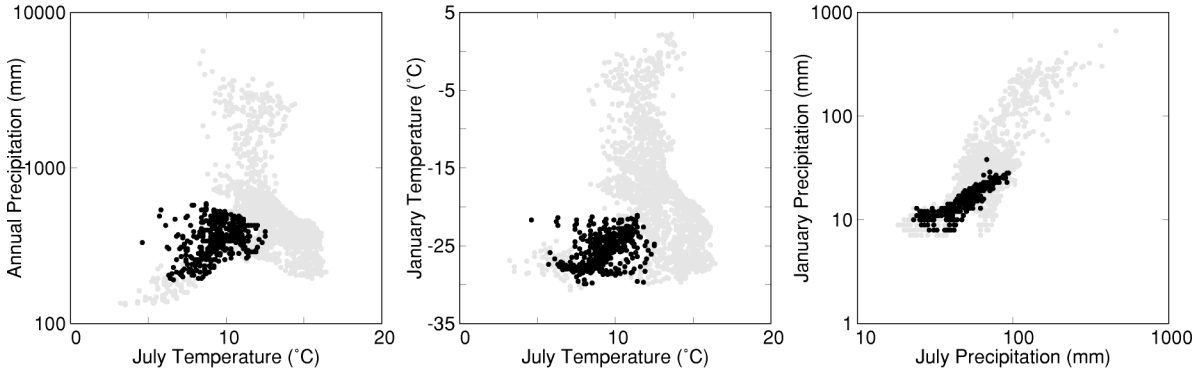


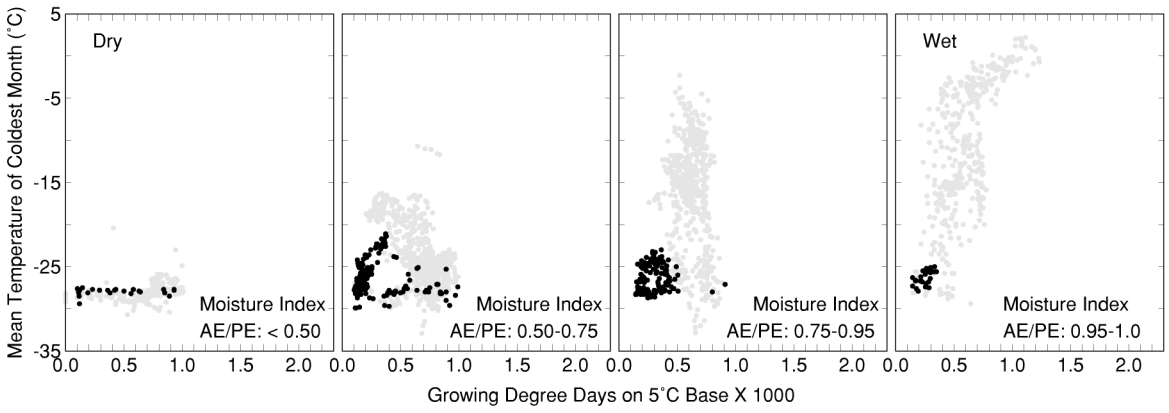


POLAR DOMAIN -
Tundra Mountains -
Tundra - polar desert

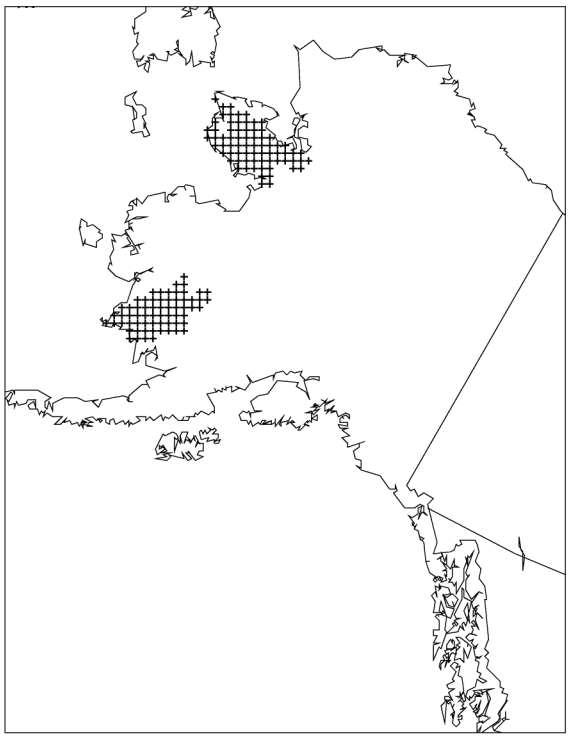


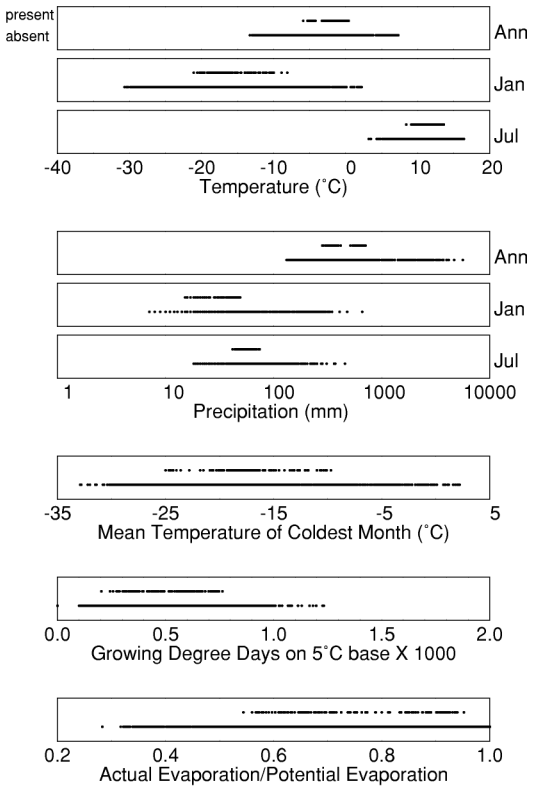


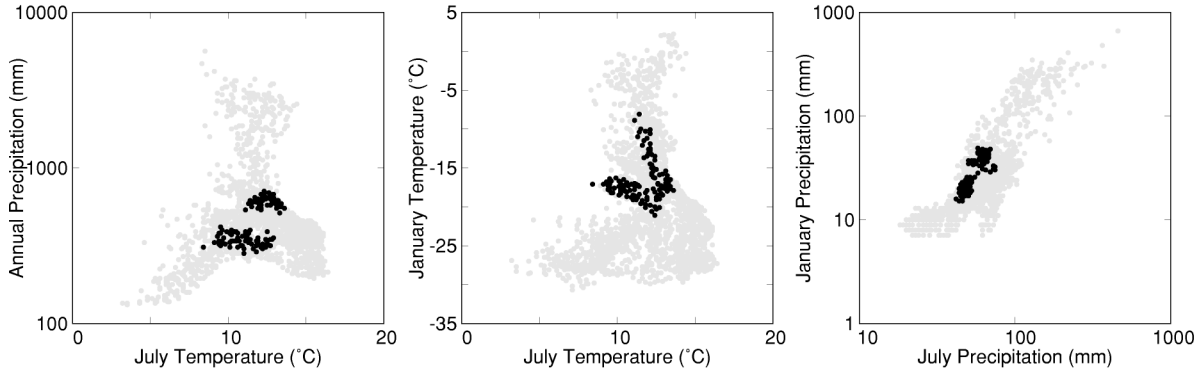


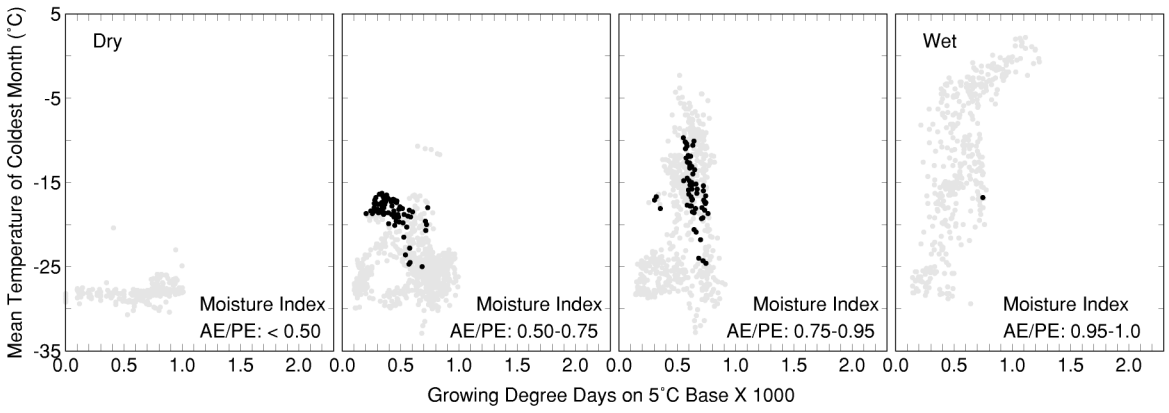


POLAR DOMAIN -
Tundra Mountains -
Tundra - meadow

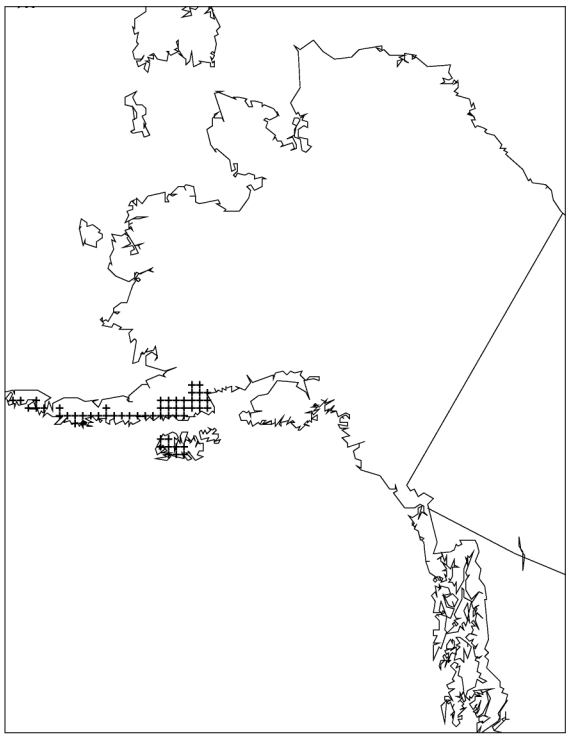


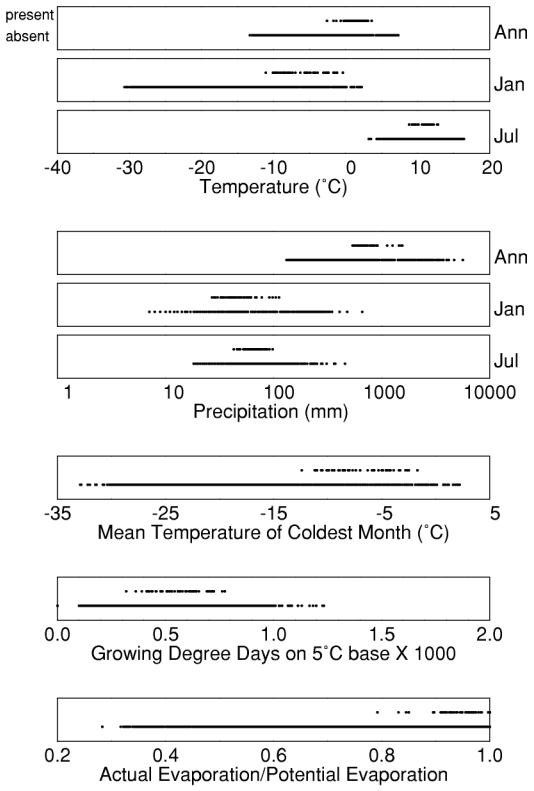


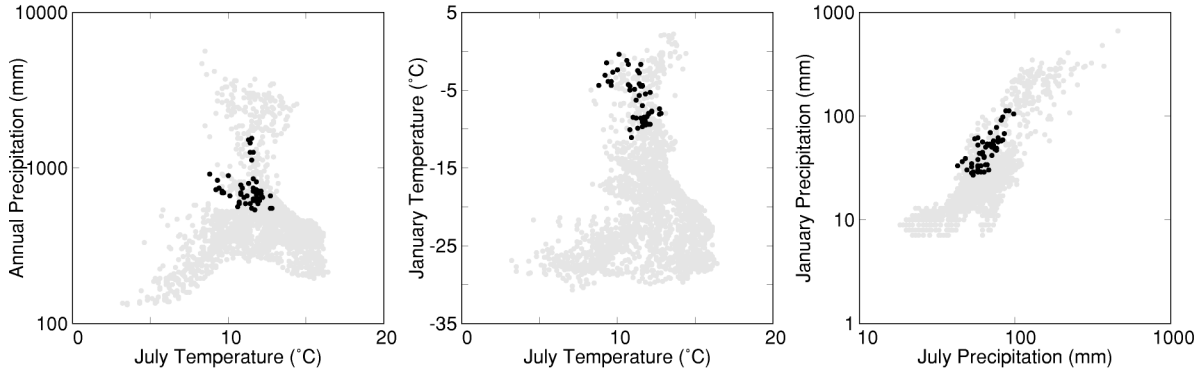


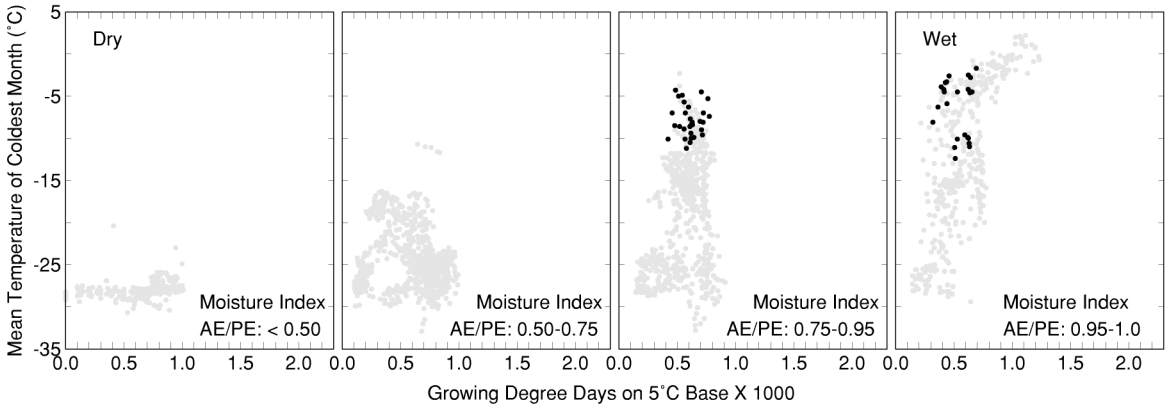


POLAR DOMAIN -
Tundra Mountains -
Oceanic meadow - heath

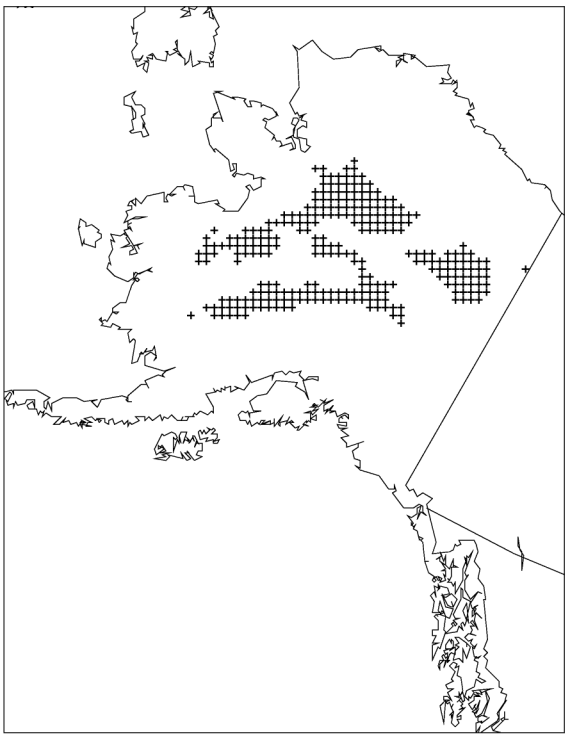


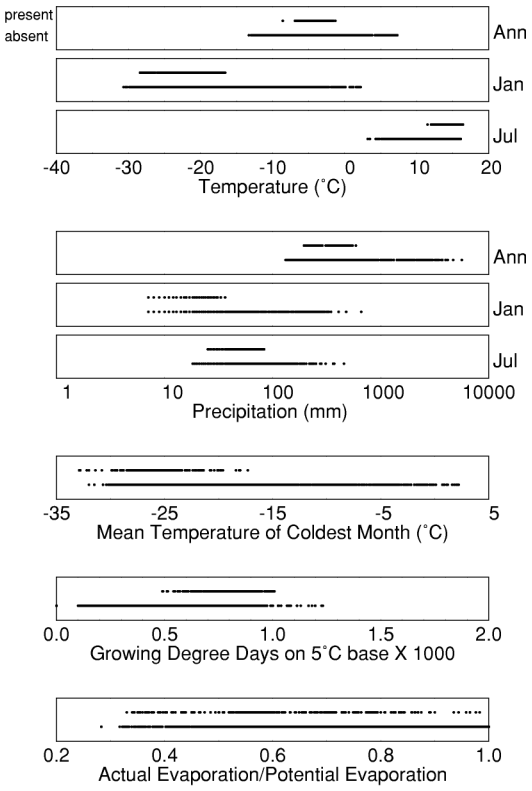


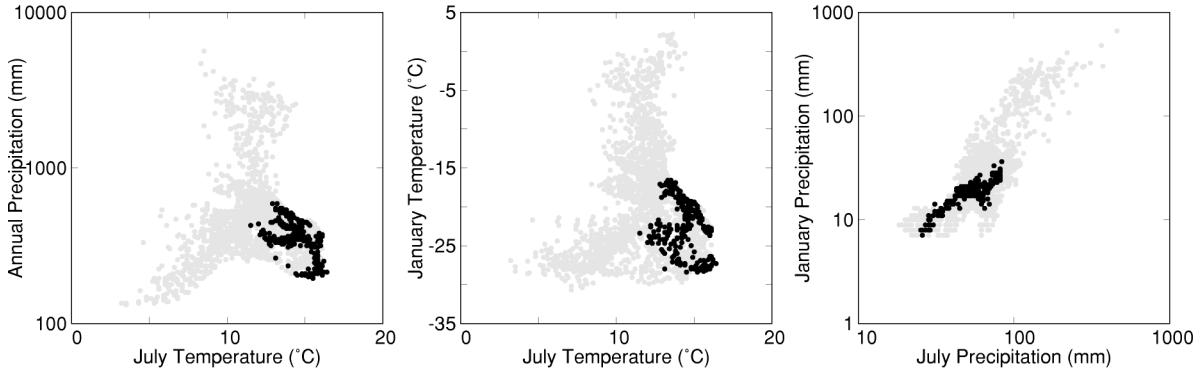


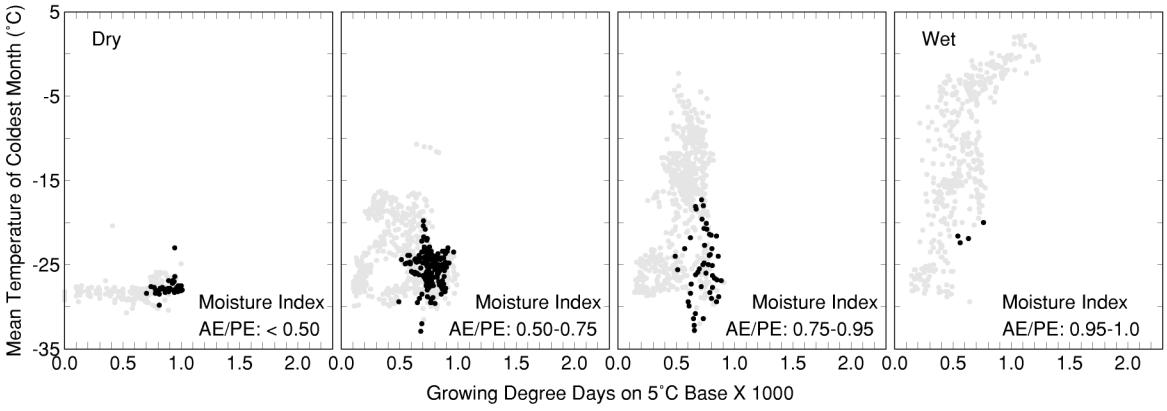


POLAR DOMAIN -
Subarctic Division -
Forest-tundras and open woodlands

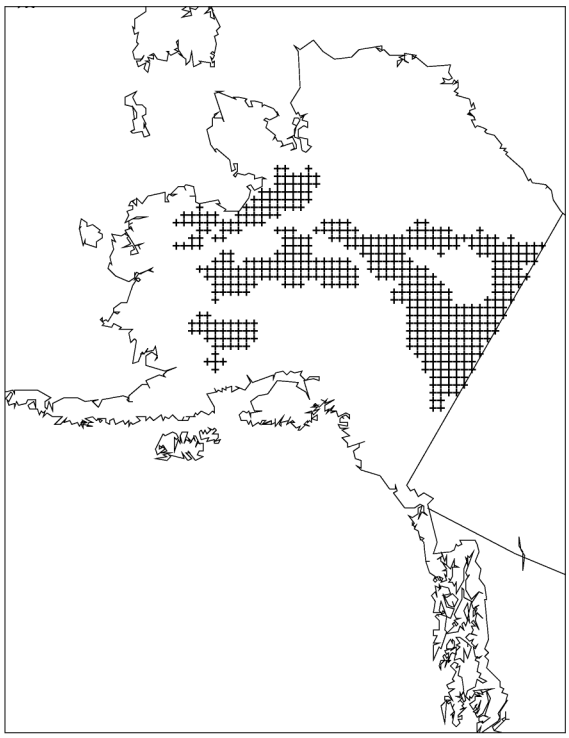


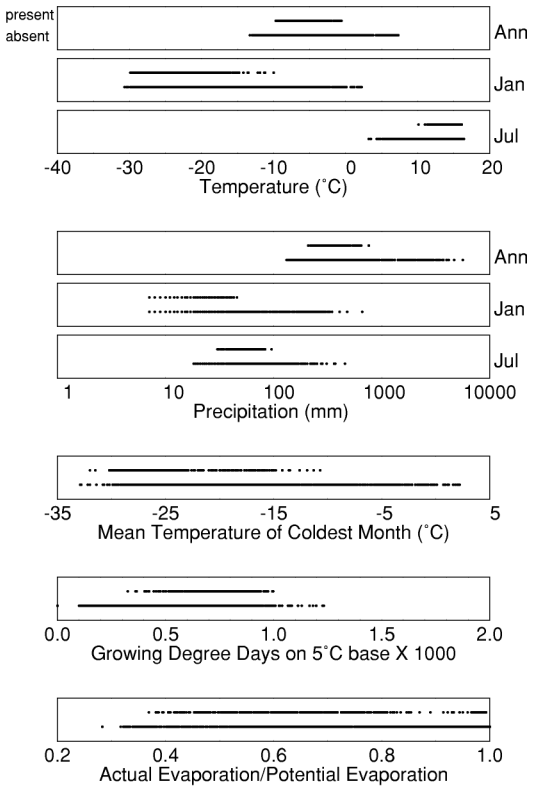


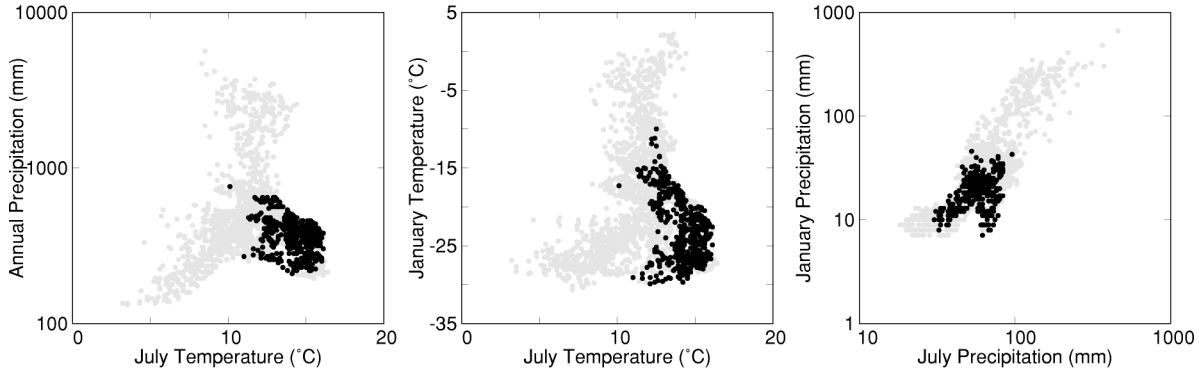


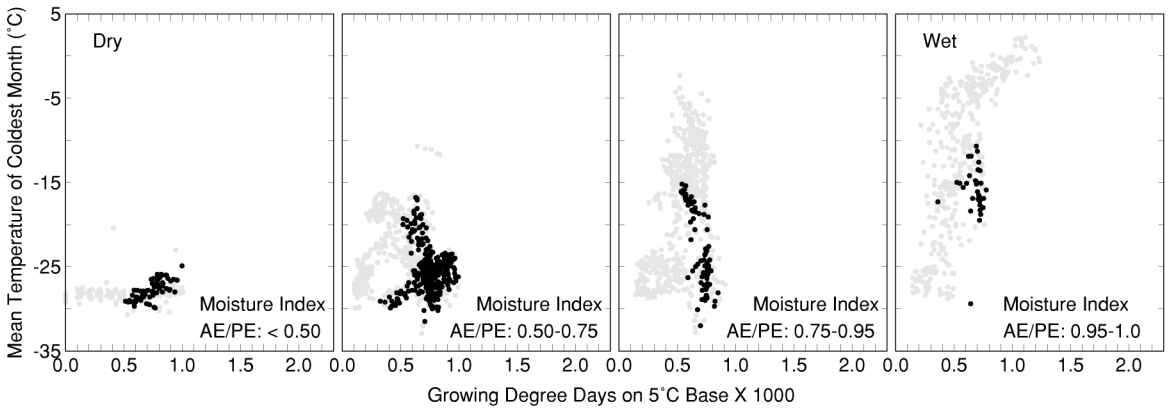


POLAR DOMAIN -
Subarctic Mountains -
Open woodland - tundra

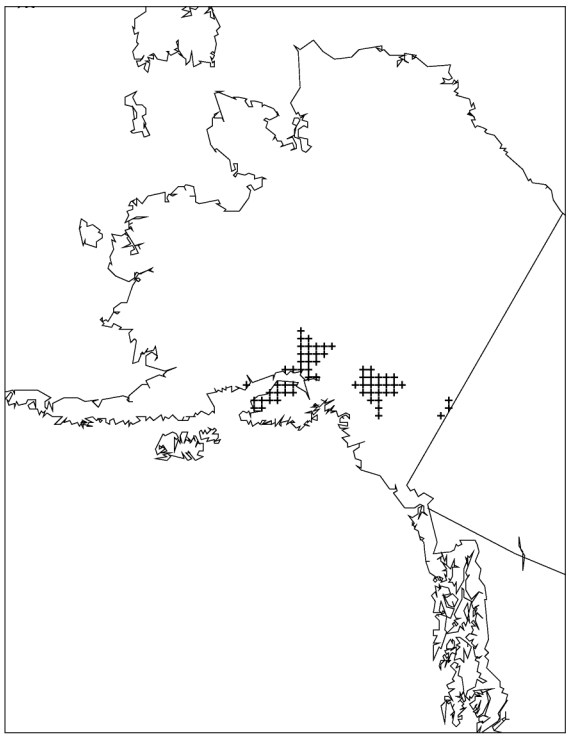


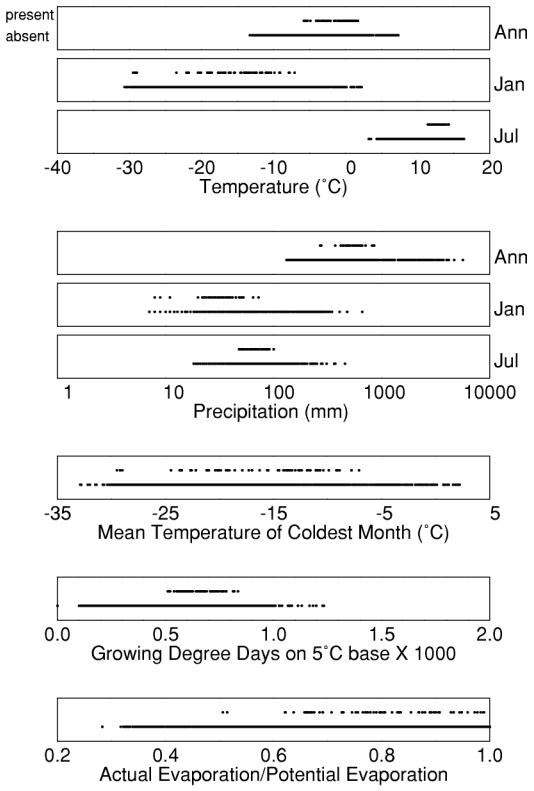


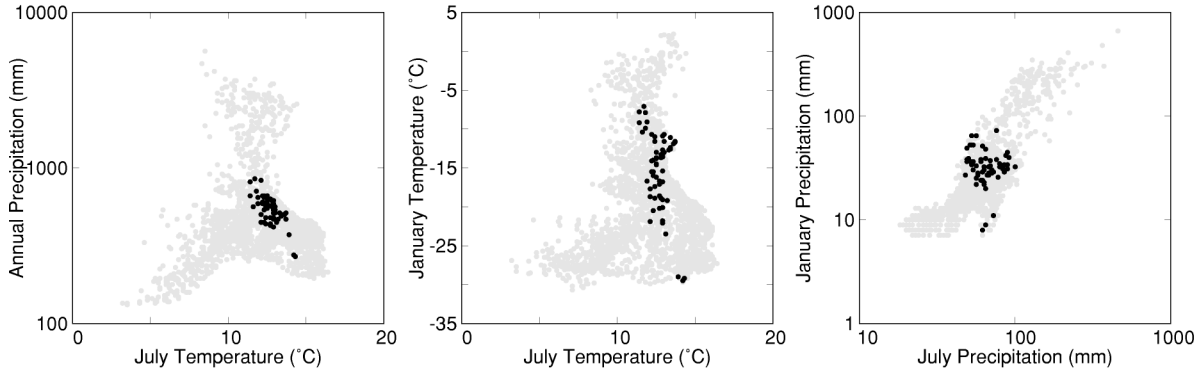


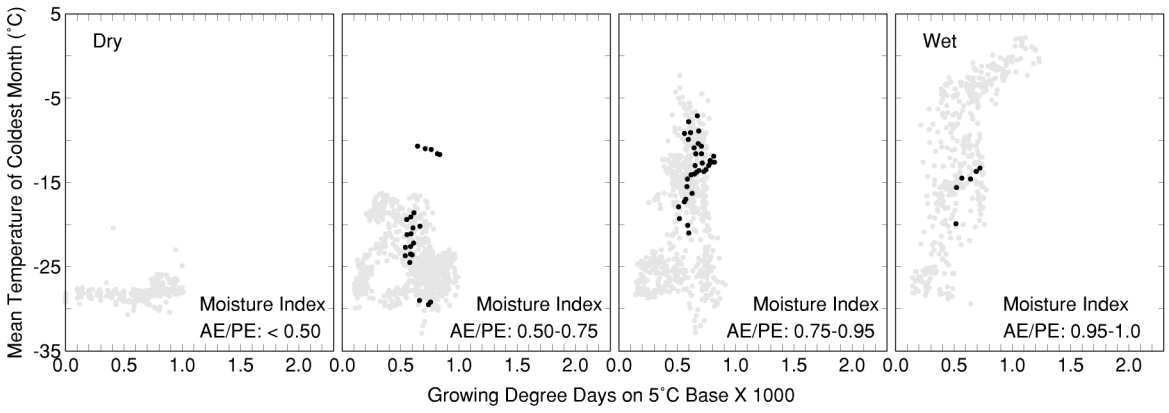


POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, medium

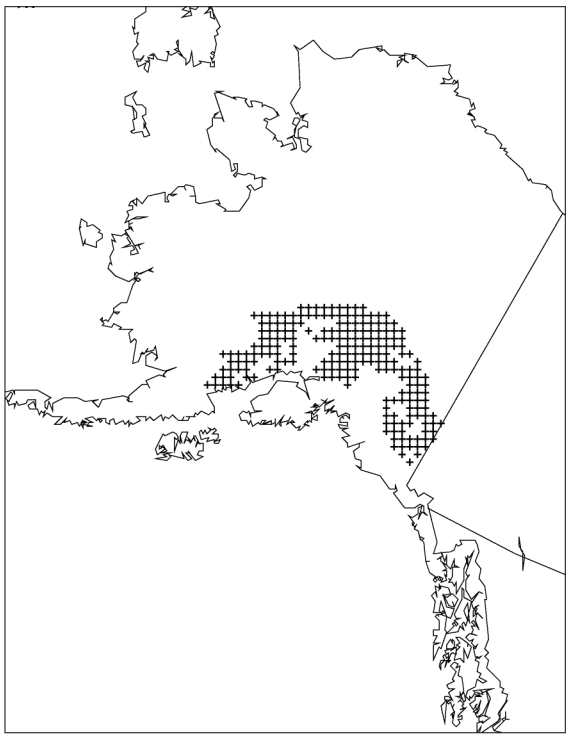


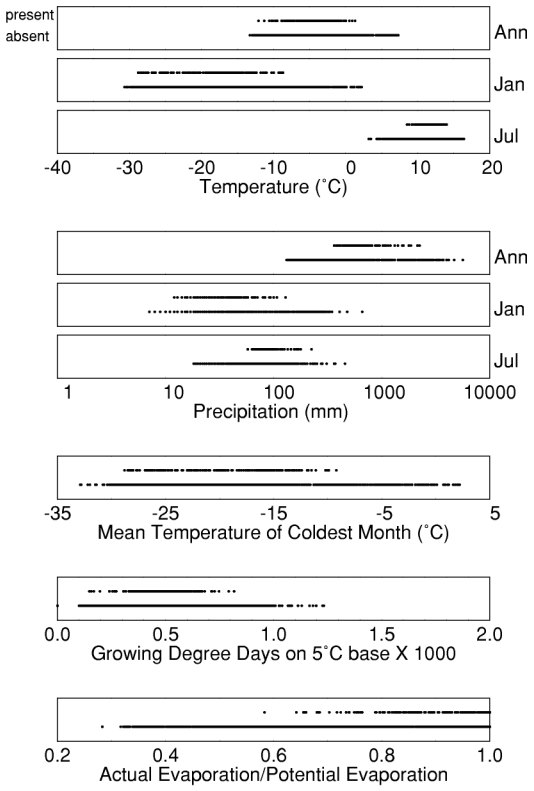


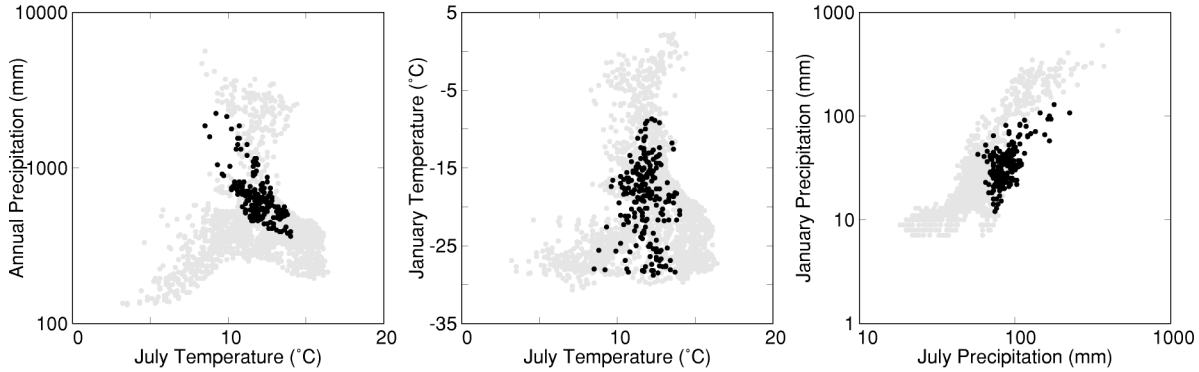


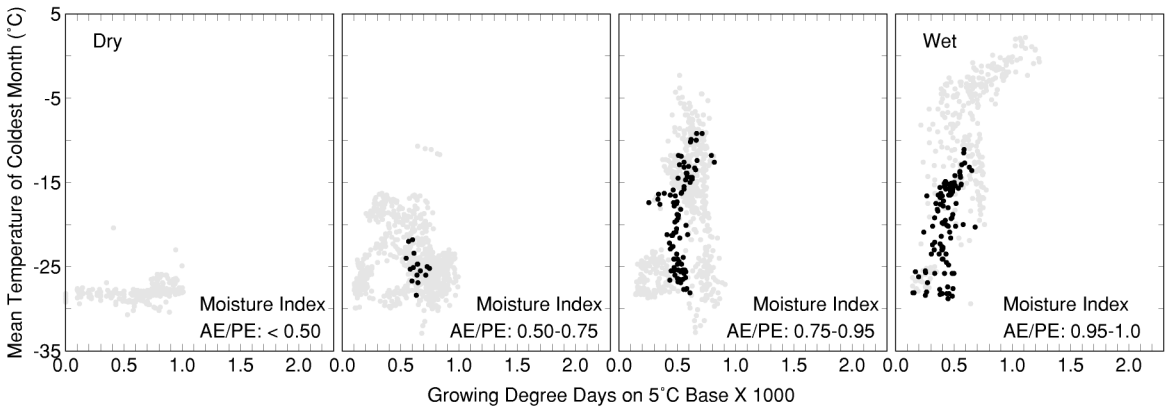


POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, high

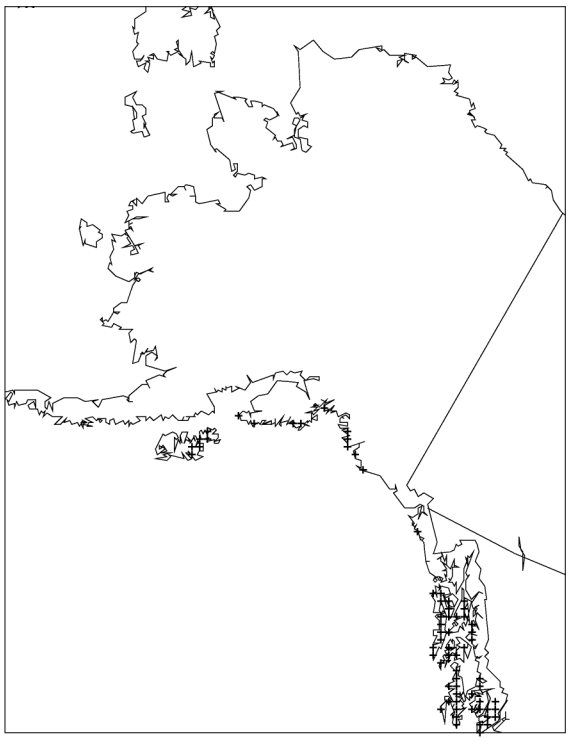


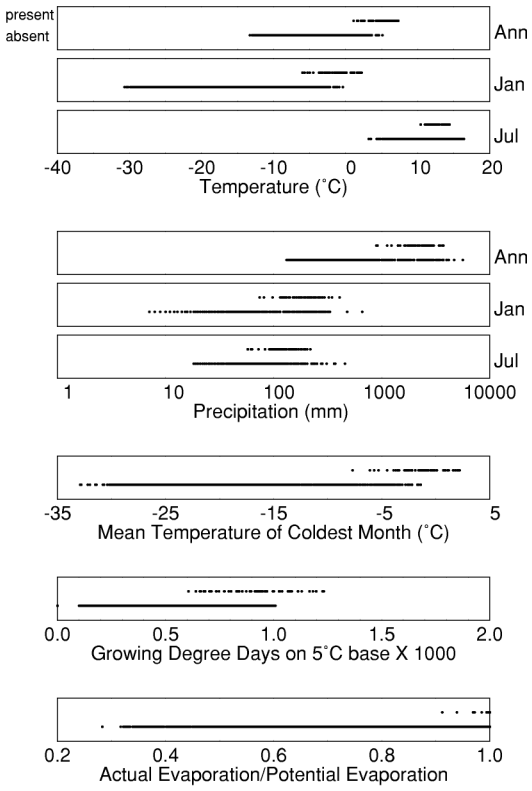


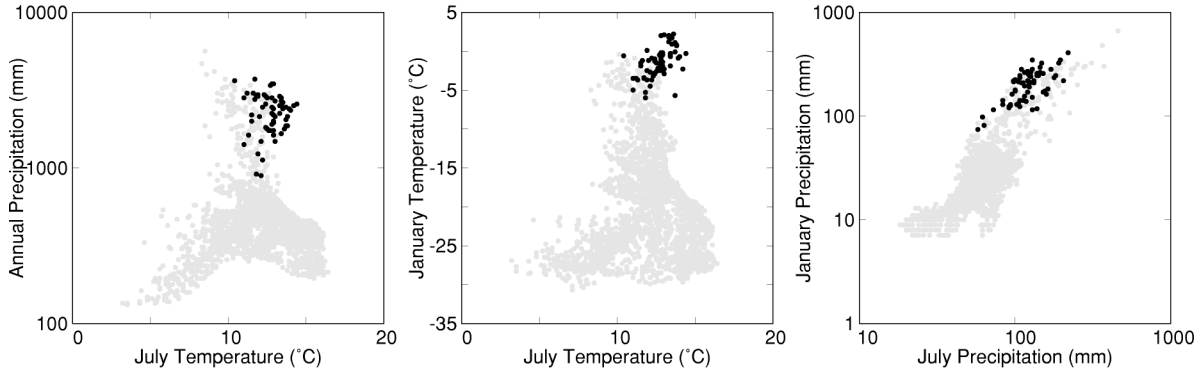


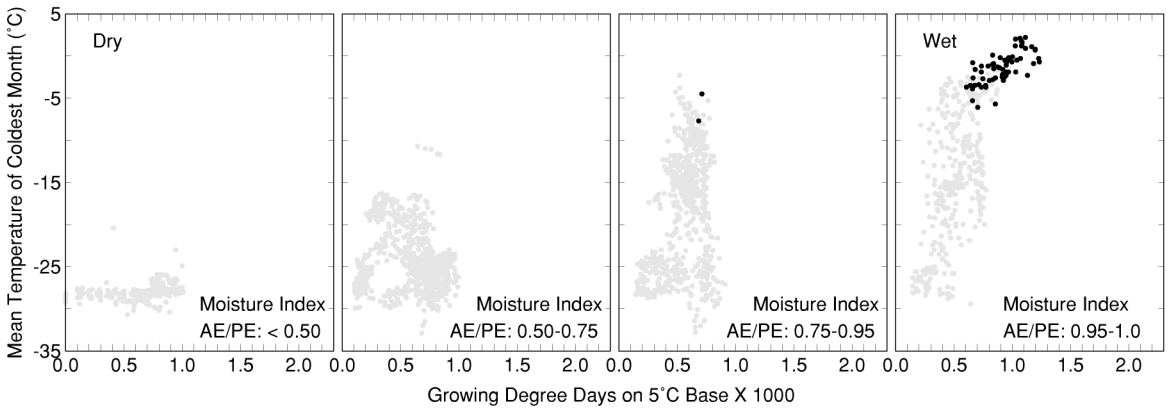


HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, medium

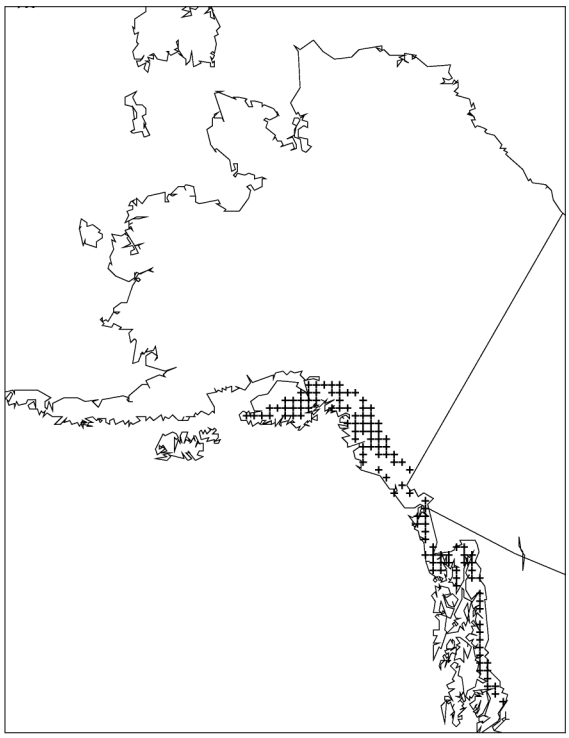


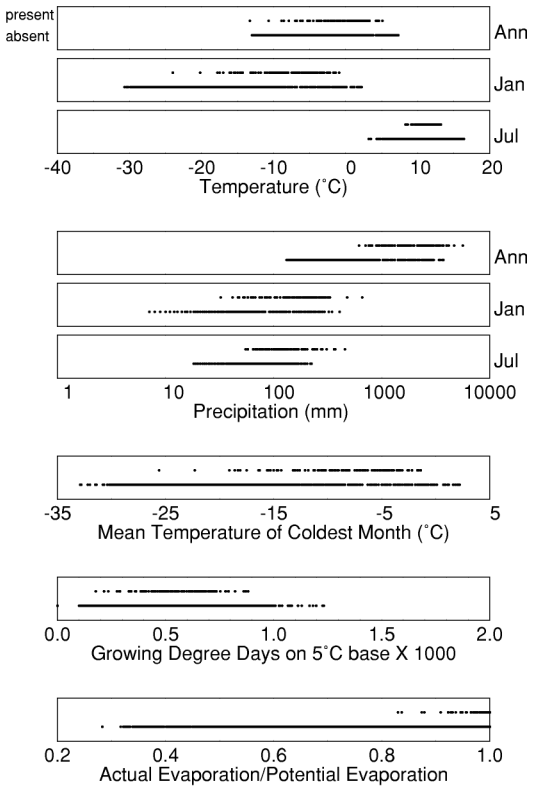


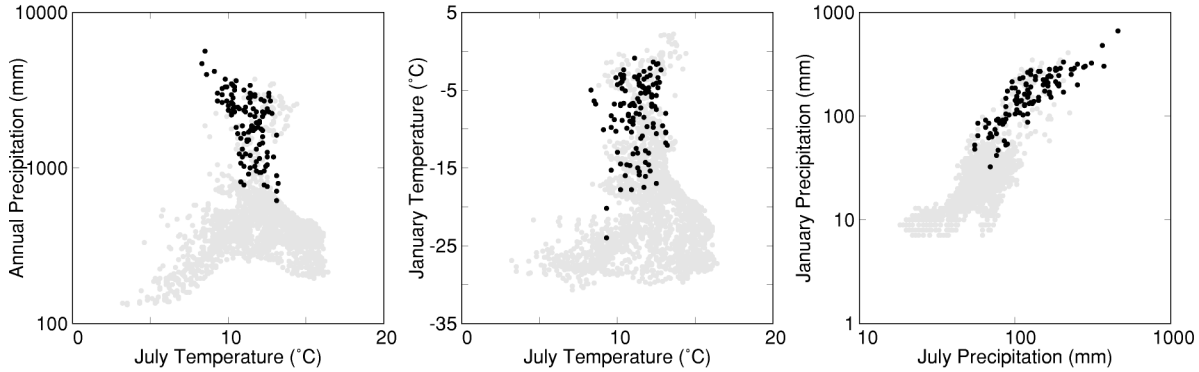


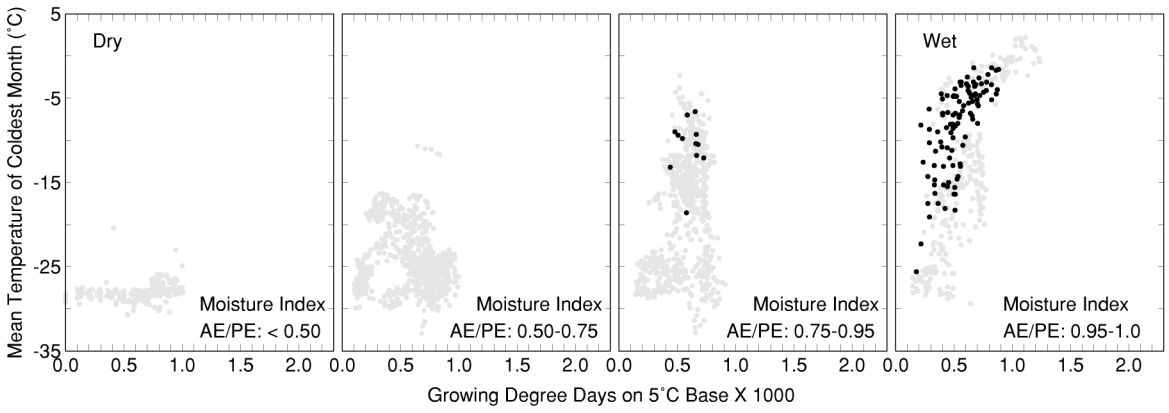


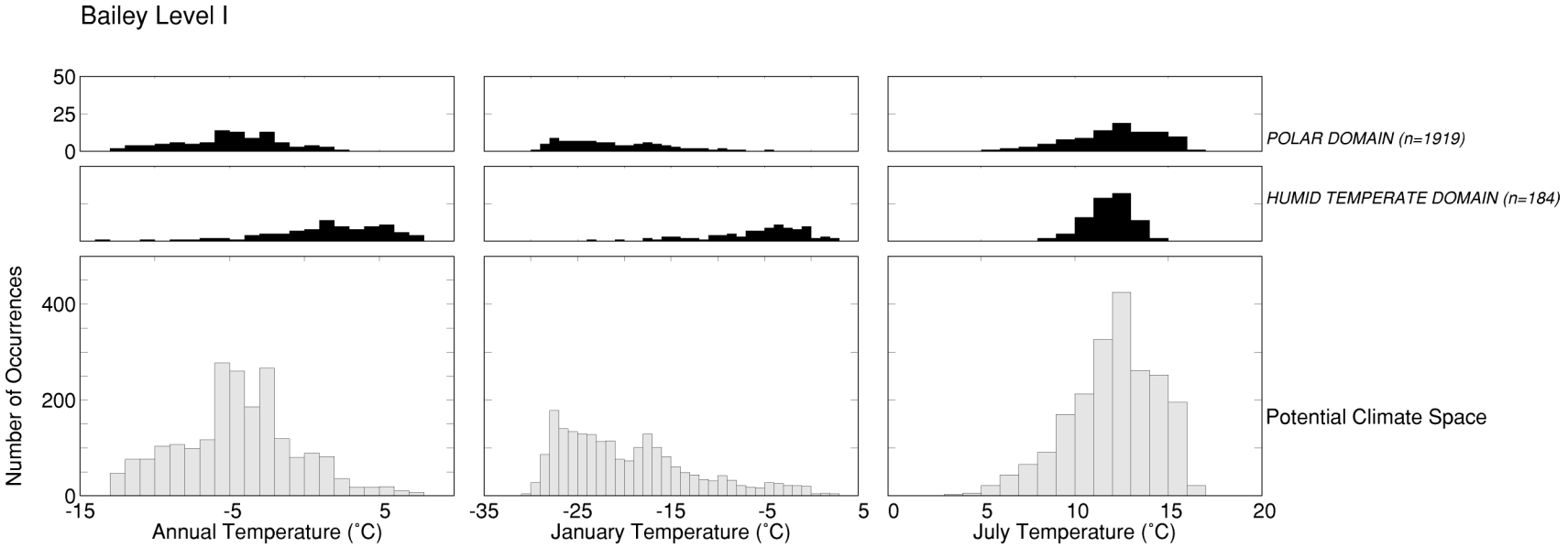
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, high

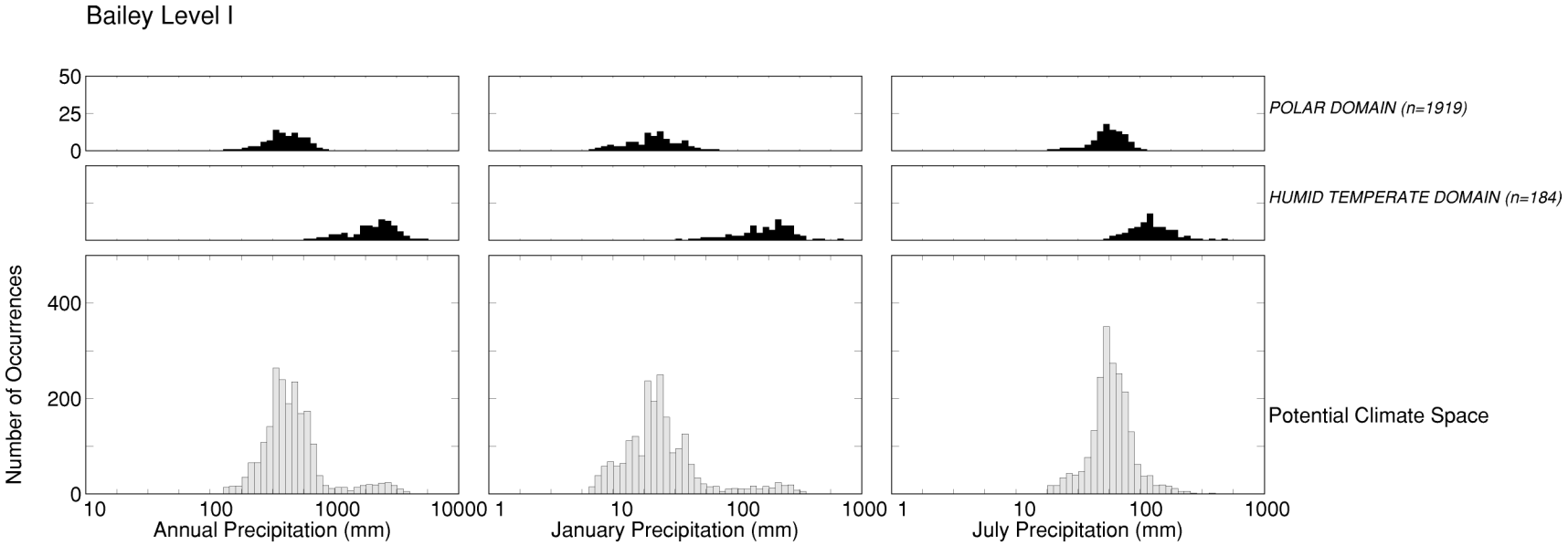


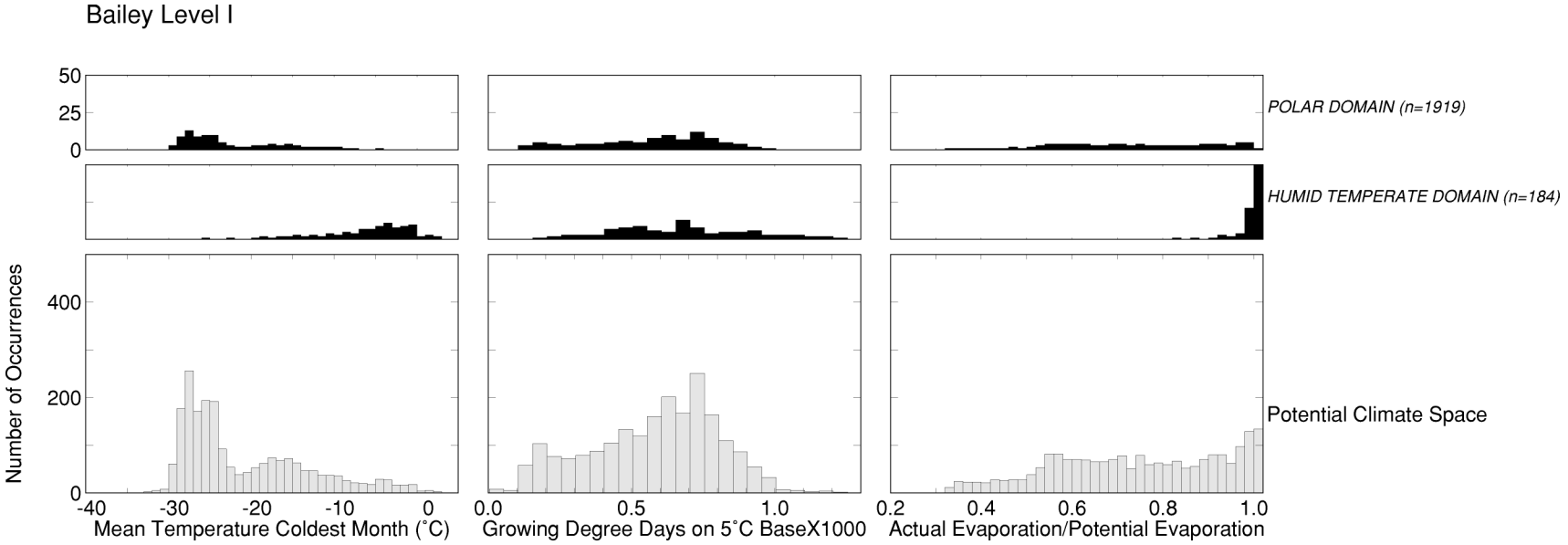


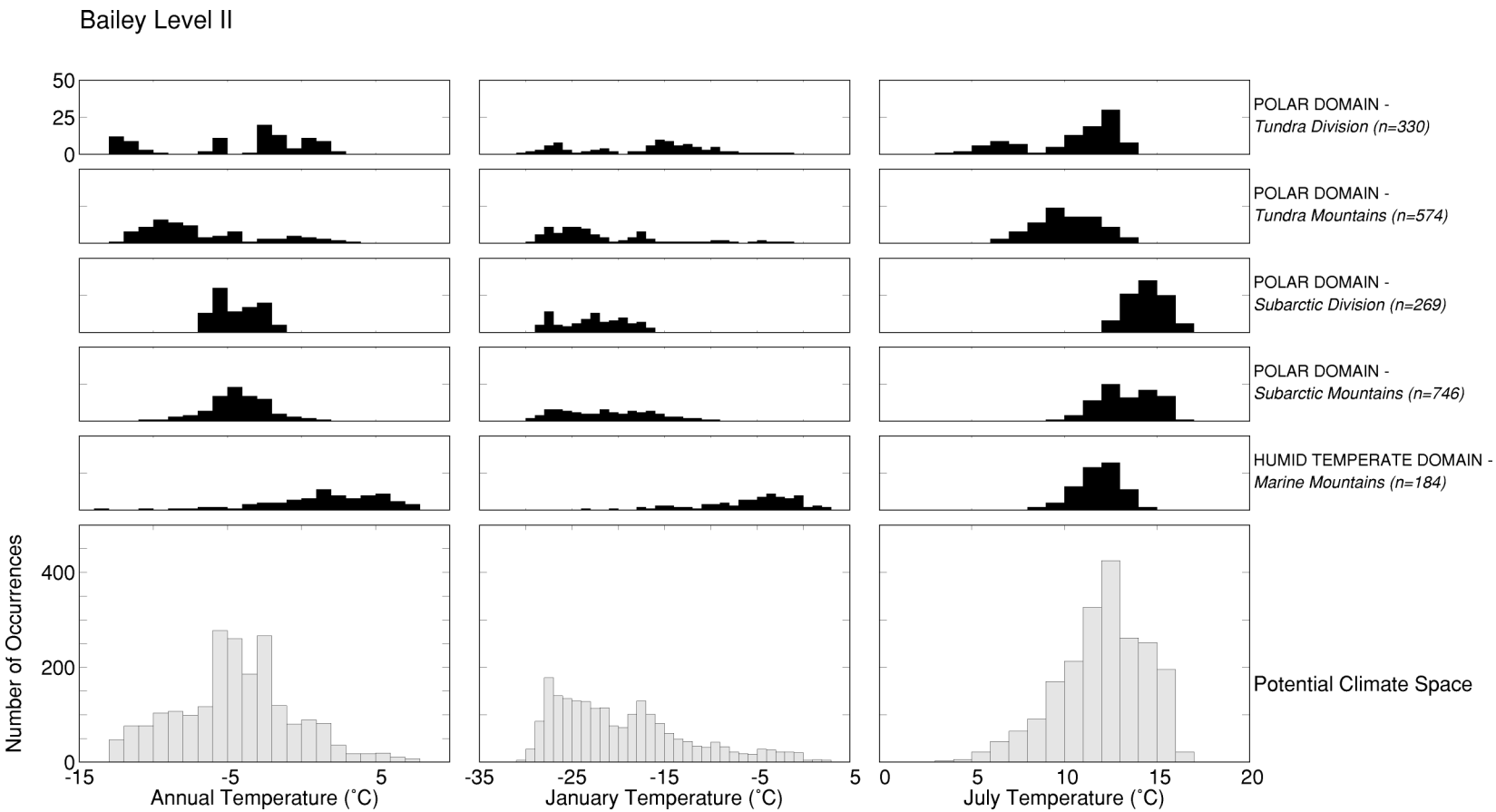


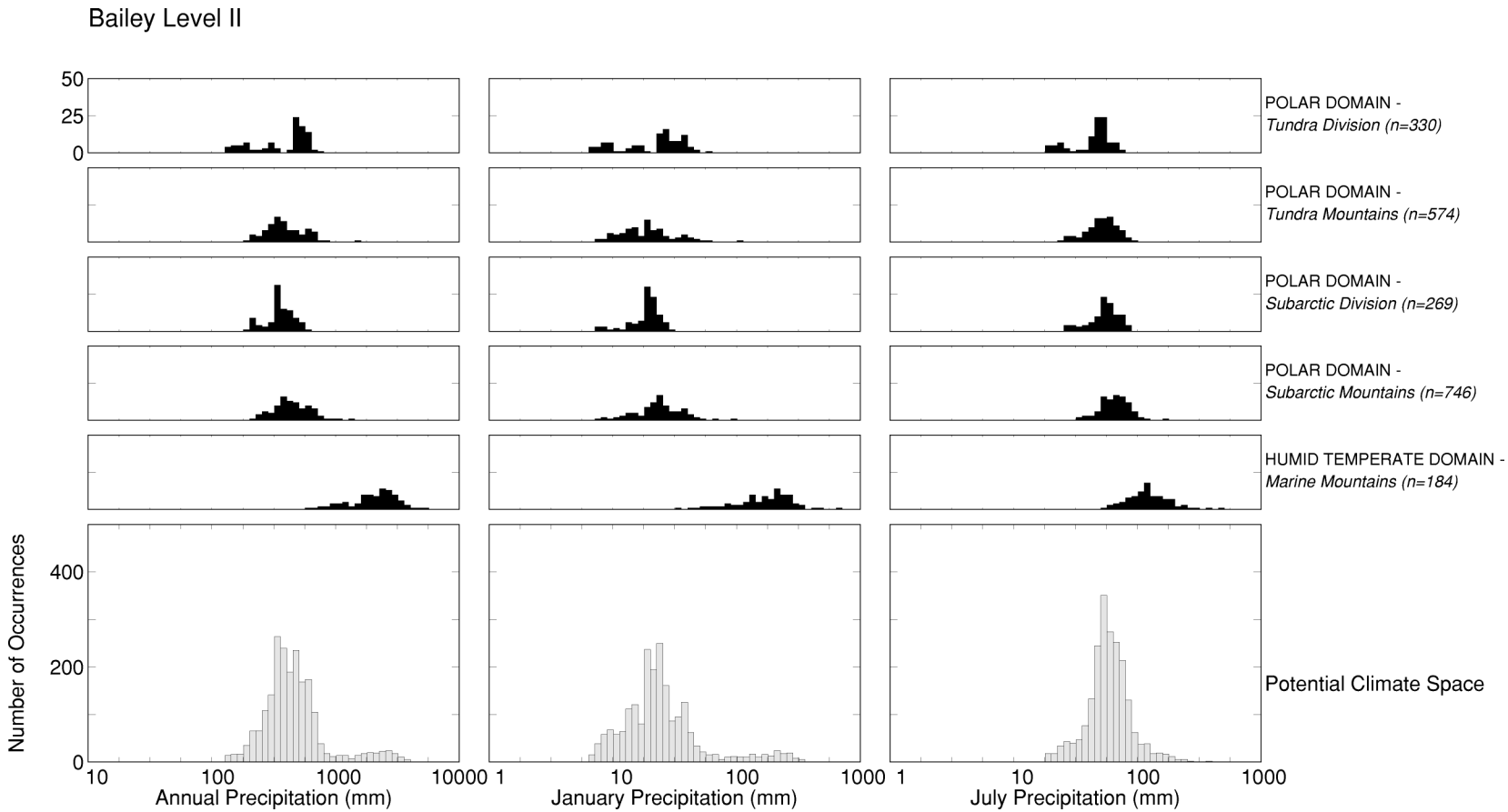


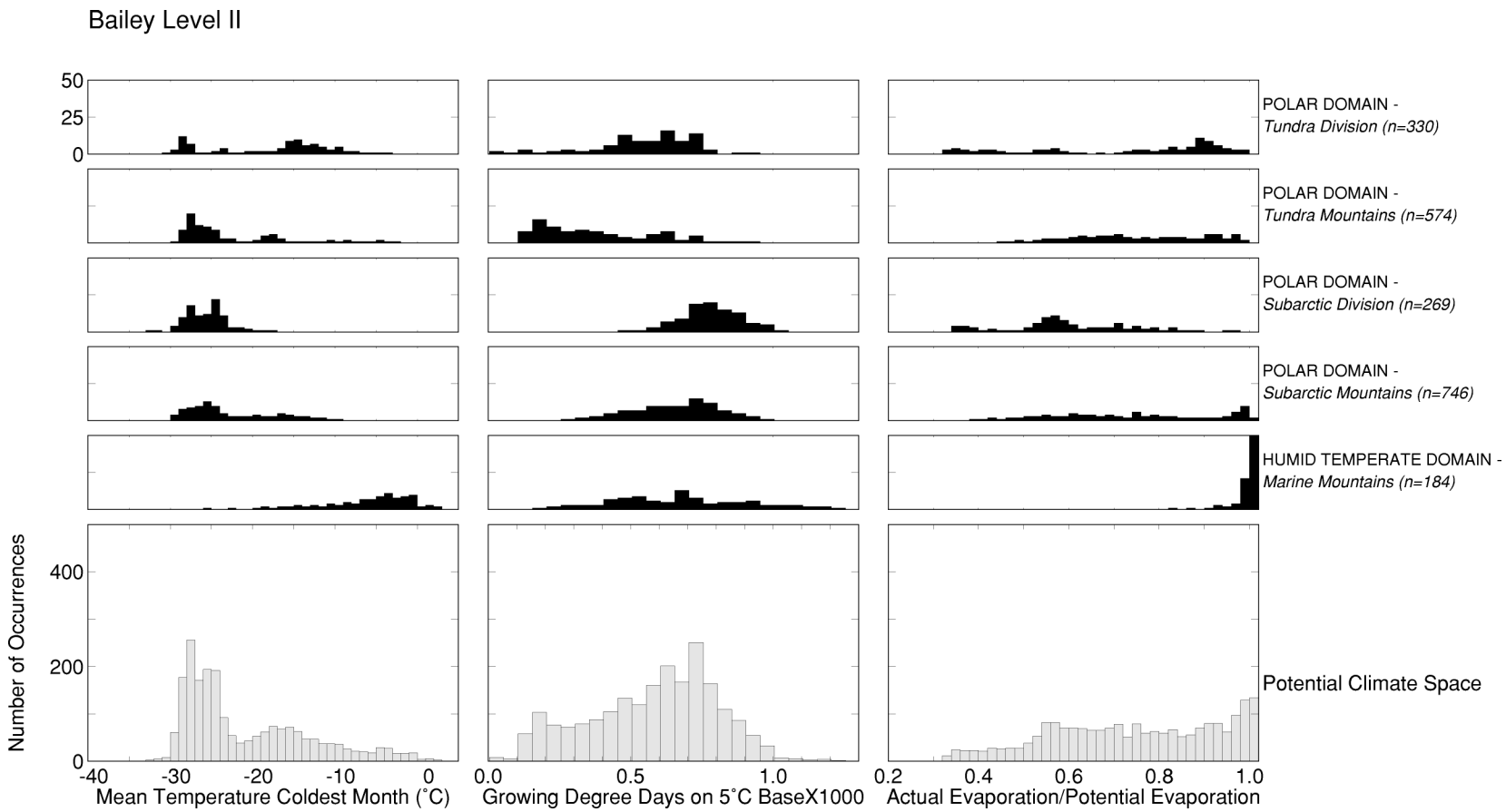

Bailey Level I
50
25
0
POLAR DOMAIN (n=1919)
HUMID TEMPERATE DOMAIN (n=184)
400
200
0
Number of Occurrences
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

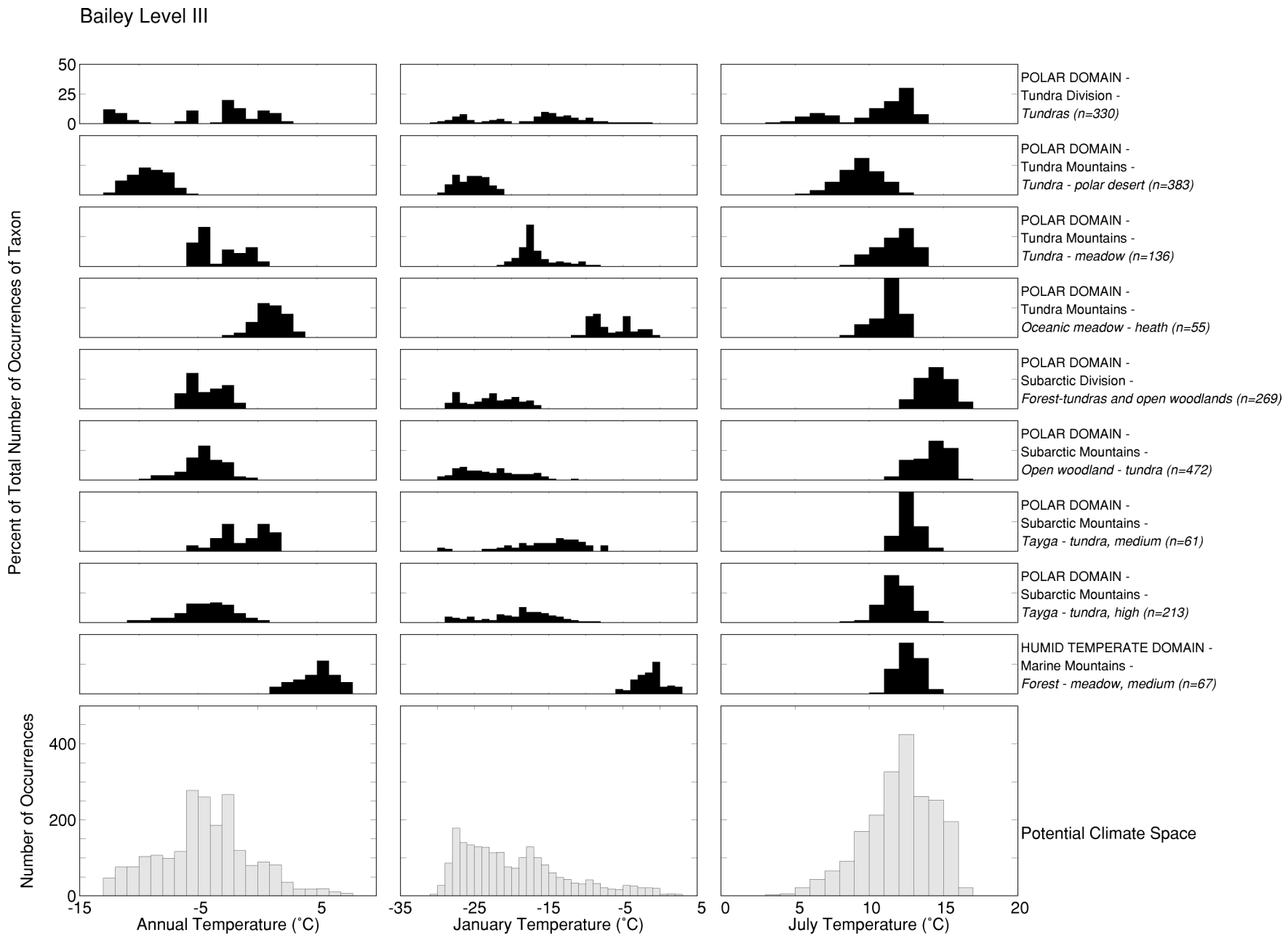

Bailey Level I
50
25
0
POLAR DOMAIN (n=1919)
HUMID TEMPERATE DOMAIN (n=184)
400
200
0
Number of Occurrences
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

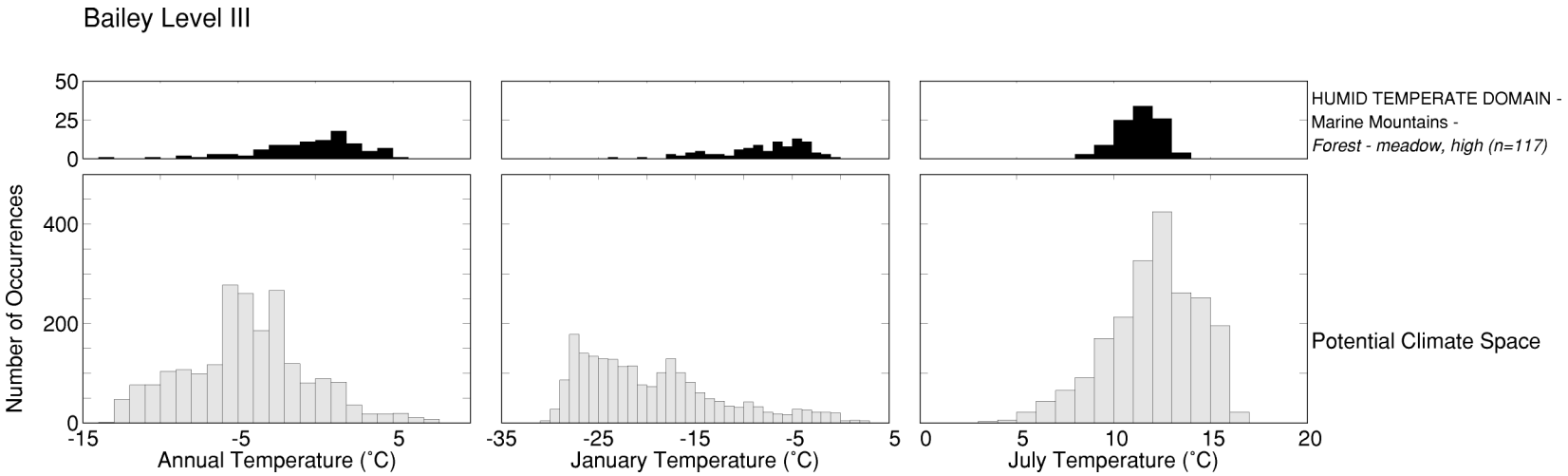

Bailey Level I
POLAR DOMAIN (n=1919)
HUMID TEMPERATE DOMAIN (n=184)
Potential Climate Space
Number of Occurrences
50
25
0
400
200
0
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

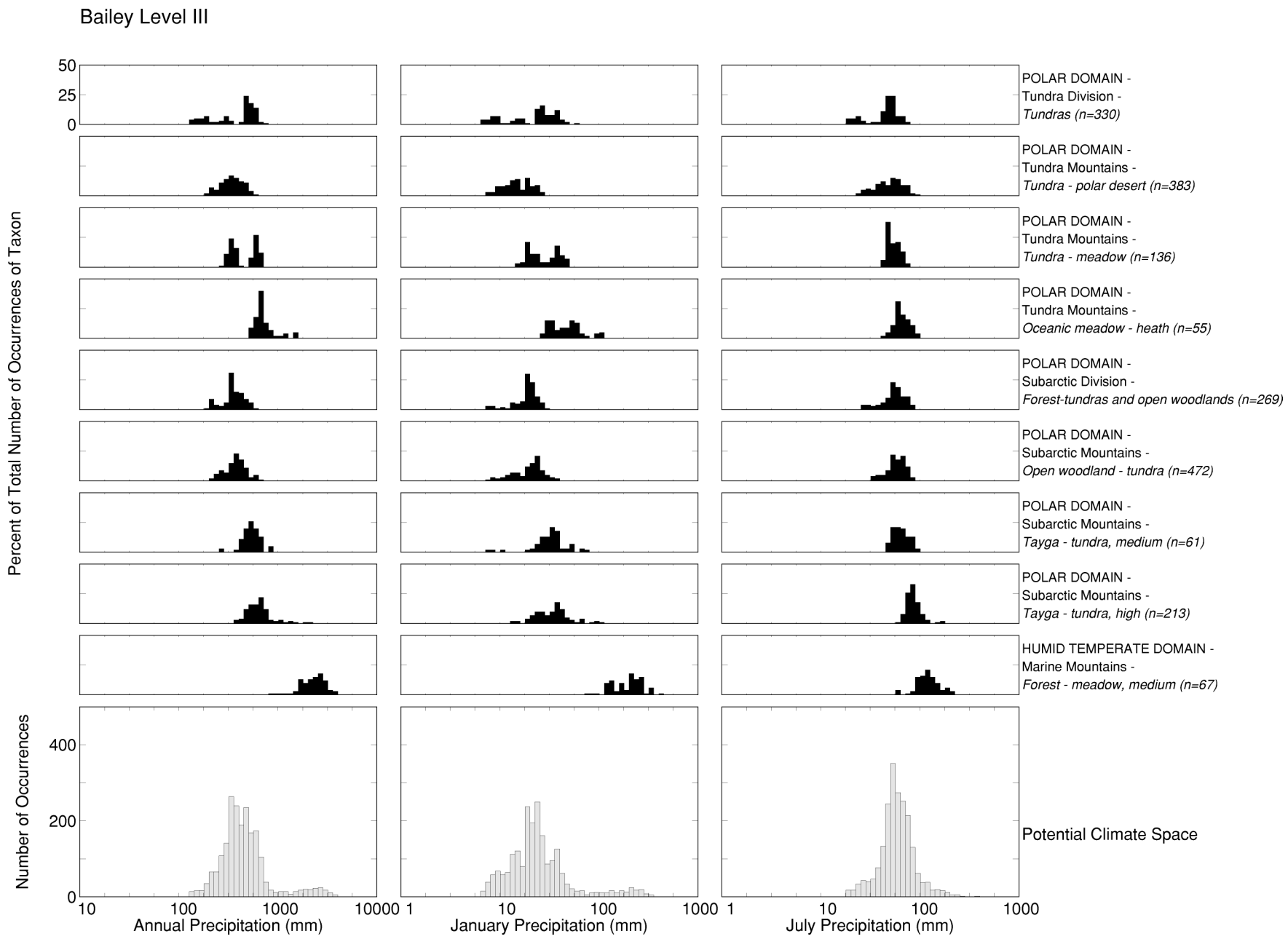

Bailey Level II
50
25
0
POLAR DOMAIN -
Tundra Division (n=330)
POLAR DOMAIN -
Tundra Mountains (n=574)
POLAR DOMAIN -
Subarctic Division (n=269)
POLAR DOMAIN -
Subarctic Mountains (n=746)
HUMID TEMPERATE DOMAIN -
Marine Mountains (n=184)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

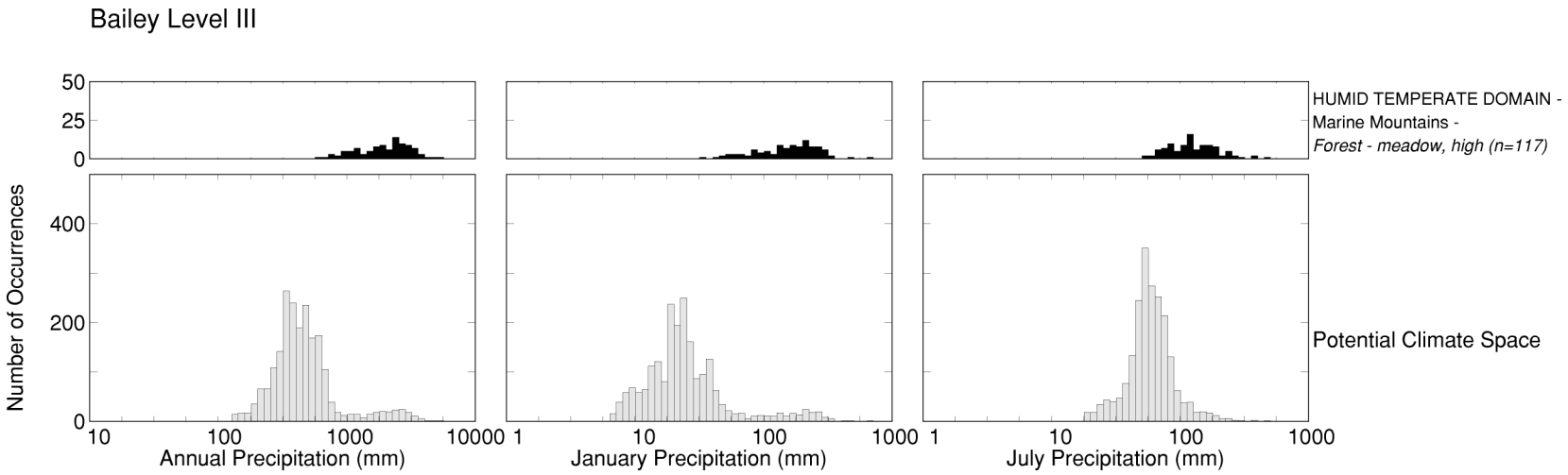

Bailey Level II
50
25
0
POLAR DOMAIN -
Tundra Division (n=330)
POLAR DOMAIN -
Tundra Mountains (n=574)
POLAR DOMAIN -
Subarctic Division (n=269)
POLAR DOMAIN -
Subarctic Mountains (n=746)
HUMID TEMPERATE DOMAIN -
Marine Mountains (n=184)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

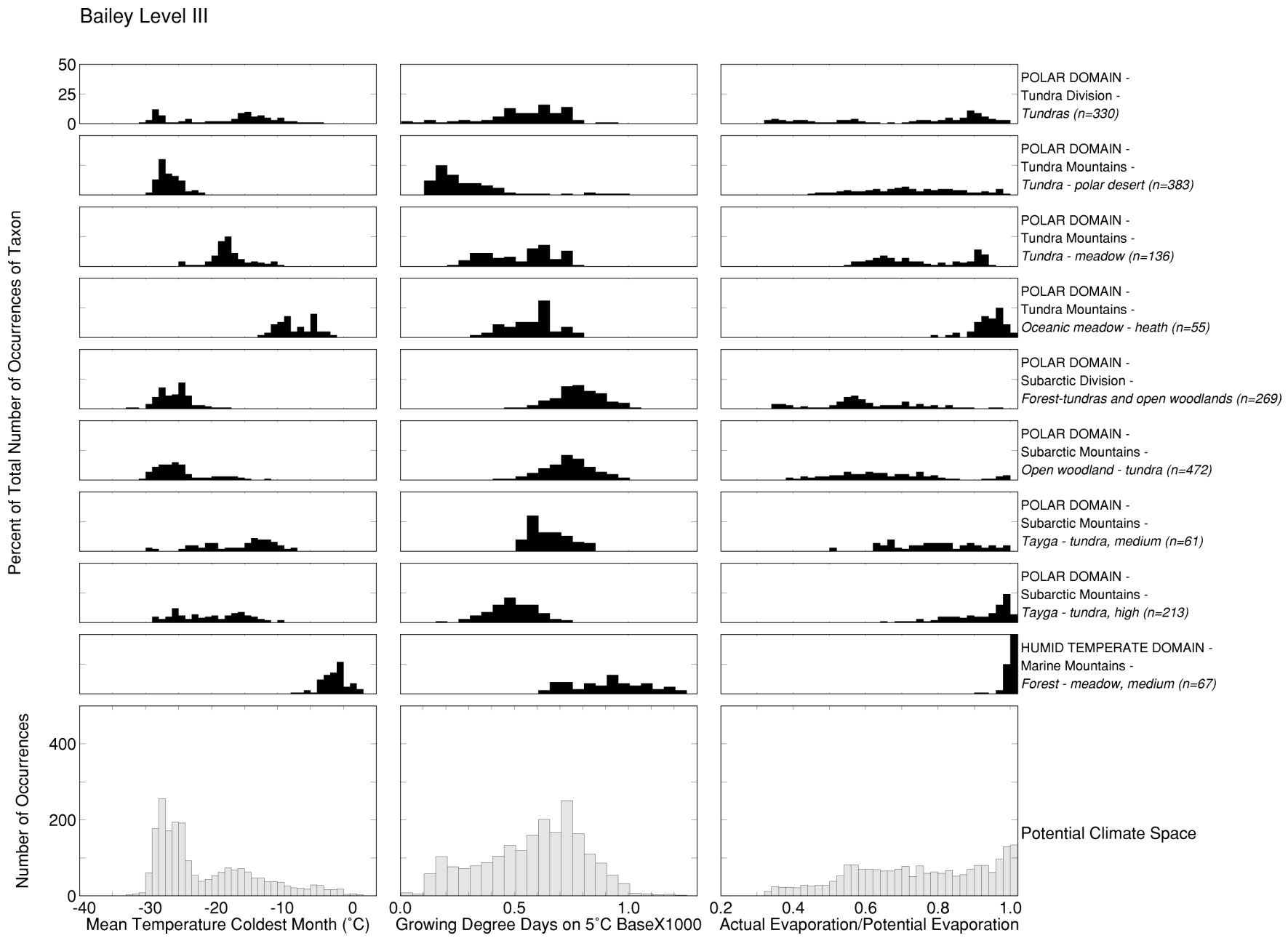

Bailey Level II
50
25
0
POLAR DOMAIN -
Tundra Division (n=330)
POLAR DOMAIN -
Tundra Mountains (n=574)
POLAR DOMAIN -
Subarctic Division (n=269)
POLAR DOMAIN -
Subarctic Mountains (n=746)
HUMID TEMPERATE DOMAIN -
Marine Mountains (n=184)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

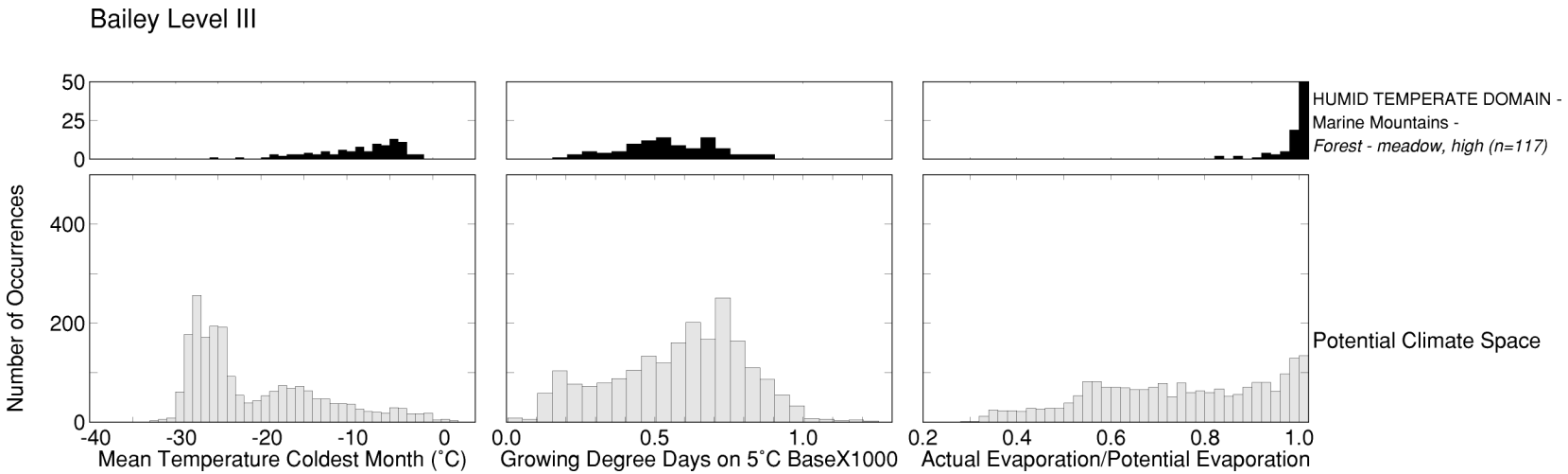

Bailey Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
POLAR DOMAIN -
Tundra Division -
Tundras (n=330)
POLAR DOMAIN -
Tundra Mountains -
Tundra - polar desert (n=383)
POLAR DOMAIN -
Tundra Mountains -
Tundra - meadow (n=136)
POLAR DOMAIN -
Tundra Mountains -
Oceanic meadow - heath (n=55)
POLAR DOMAIN -
Subarctic Division -
Forest-tundras and open woodlands (n=269)
POLAR DOMAIN -
Subarctic Mountains -
Open woodland - tundra (n=472)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, medium (n=61)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, high (n=213)
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, medium (n=67)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)


Bailey Level III
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, high (n=117)
Potential Climate Space
Number of Occurrences
50
25
0
400
200
0
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)


Bailey Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
POLAR DOMAIN -
Tundra Division -
Tundras (n=330)
POLAR DOMAIN -
Tundra Mountains -
Tundra - polar desert (n=383)
POLAR DOMAIN -
Tundra Mountains -
Tundra - meadow (n=136)
POLAR DOMAIN -
Tundra Mountains -
Oceanic meadow - heath (n=55)
POLAR DOMAIN -
Subarctic Division -
Forest-tundras and open woodlands (n=269)
POLAR DOMAIN -
Subarctic Mountains -
Open woodland - tundra (n=472)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, medium (n=61)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, high (n=213)
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, medium (n=67)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


Bailey Level III
50
25
0
400
200
0
Number of Occurrences
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, high (n=117)
Potential Climate Space


Bailey Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
POLAR DOMAIN -
Tundra Division -
Tundras (n=330)
POLAR DOMAIN -
Tundra Mountains -
Tundra - polar desert (n=383)
POLAR DOMAIN -
Tundra Mountains -
Tundra - meadow (n=136)
POLAR DOMAIN -
Tundra Mountains -
Oceanic meadow - heath (n=55)
POLAR DOMAIN -
Subarctic Division -
Forest-tundras and open woodlands (n=269)
POLAR DOMAIN -
Subarctic Mountains -
Open woodland - tundra (n=472)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, medium (n=61)
POLAR DOMAIN -
Subarctic Mountains -
Tayga - tundra, high (n=213)
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, medium (n=67)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation


Bailey Level III
50
25
0
400
200
0
Number of Occurrences
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation
HUMID TEMPERATE DOMAIN -
Marine Mountains -
Forest - meadow, high (n=117)
Potential Climate Space

Distributions of Bailey Level I ecoregions in relation to mean annual temperature in Alaska.

[N, number]

		Mean annual temperature (°C)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	-13.1	-10.3	-7.5	-5.0	-2.7	-0.8	3.5
HUMID TEMPERATE DOMAIN	184	-13.4	-4.0	-1.1	1.8	4.4	5.7	7.2

Distributions of Bailey Level I ecoregions in relation to mean January temperature in Alaska.

[N, number]

		Mean January temperature (°C)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	-30.8	-27.8	-25.9	-22.0	-17.1	-12.8	-0.5
HUMID TEMPERATE DOMAIN	184	-24.1	-14.4	-8.9	-4.6	-2.0	-0.4	2.1

Distributions of Bailey Level I ecoregions in relation to mean July temperature in Alaska.

[N, number]

		Mean July temperature (°C)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	3.1	8.4	10.4	12.2	13.8	15.0	16.3
HUMID TEMPERATE DOMAIN	184	8.2	10.1	10.9	11.7	12.6	13.2	14.3

Distributions of Bailey Level I ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

		Mean annual precipitation (mm)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	130	245	320	395	520	630	2225
HUMID TEMPERATE DOMAIN	184	610	1025	1610	2220	2725	3160	4685

Distributions of Bailey Level I ecoregions in relation to mean January precipitation in Alaska.

[N, number]

		Mean January precipitation (mm)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	7	11	15	22	28	39	130
HUMID TEMPERATE DOMAIN	184	32	82	125	178	241	284	667

Distributions of Bailey Level I ecoregions in relation to mean July precipitation in Alaska.

[N, number]

		Mean July precipitation (mm)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	18	35	48	56	69	81	223
HUMID TEMPERATE DOMAIN	184	55	76	97	121	156	192	452

Distributions of Bailey Level I ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

		Mean temperature of the coldest month (°C)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	-33.0	-28.3	-27.3	-24.8	-17.6	-12.9	-1.8
HUMID TEMPERATE DOMAIN	184	-25.7	-14.7	-9.1	-4.8	-2.0	-0.4	2.1

Distributions of Bailey Level I ecoregions in relation to growing degree days in Alaska.

[N, number]

		Growing degree days (on 5°C base x 1000)						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	0.00	0.21	0.40	0.60	0.73	0.83	1.00
HUMID TEMPERATE DOMAIN	184	0.17	0.38	0.49	0.66	0.84	1.02	1.23

Distributions of Bailey Level I ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

		Moisture index						
Level I ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN	1919	0.28	0.48	0.58	0.72	0.87	0.96	1.00
HUMID TEMPERATE DOMAIN	184	0.83	0.96	0.99	1.00	1.00	1.00	1.00

Distributions of Bailey Level II ecoregions in relation to mean annual temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	-13.1	-12.3	-6.4	-2.4	-0.6	1.0	3.4
POLAR DOMAIN - Tundra Mountains	574	-13.0	-11.1	-9.9	-8.1	-4.9	-0.4	3.5
POLAR DOMAIN - Subarctic Division	269	-8.7	-6.3	-5.7	-4.8	-3.2	-2.5	-1.4
POLAR DOMAIN - Subarctic Mountains	746	-12.2	-7.0	-5.5	-4.5	-3.0	-1.7	1.6
HUMID TEMPERATE DOMAIN - Marine Mountains	184	-13.4	-4.0	-1.1	1.8	4.4	5.7	7.2

Distributions of Bailey Level II ecoregions in relation to mean January temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	-30.8	-27.6	-23.5	-15.9	-12.7	-9.5	-1.5
POLAR DOMAIN - Tundra Mountains	574	-30.0	-28.0	-26.3	-24.0	-17.9	-10.2	-0.5
POLAR DOMAIN - Subarctic Division	269	-28.5	-27.9	-26.1	-22.8	-19.9	-18.1	-16.7
POLAR DOMAIN - Subarctic Mountains	746	-30.0	-27.7	-25.7	-21.4	-17.5	-14.7	-7.2
HUMID TEMPERATE DOMAIN - Marine Mountains	184	-24.1	-14.4	-8.9	-4.6	-2.0	-0.4	2.1

Distributions of Bailey Level II ecoregions in relation to mean July temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	3.1	6.0	9.1	11.3	12.3	12.8	13.7
POLAR DOMAIN - Tundra Mountains	574	4.5	7.7	8.8	9.9	11.2	12.1	13.5
POLAR DOMAIN - Subarctic Division	269	11.4	13.0	13.6	14.3	15.1	15.7	16.3
POLAR DOMAIN - Subarctic Mountains	746	8.4	11.4	12.1	13.2	14.4	15.2	16.0
HUMID TEMPERATE DOMAIN - Marine Mountains	184	8.2	10.1	10.9	11.7	12.6	13.2	14.3

Distributions of Bailey Level II ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

		Mean annual precipitation (mm)						
Level II ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	130	160	265	480	535	590	840
POLAR DOMAIN - Tundra Mountains	574	185	255	305	365	495	635	1540
POLAR DOMAIN - Subarctic Division	269	195	225	320	350	415	475	585
POLAR DOMAIN - Subarctic Mountains	746	210	280	355	435	575	685	2225
HUMID TEMPERATE DOMAIN - Marine Mountains	184	610	1025	1610	2220	2725	3160	4685

Distributions of Bailey Level II ecoregions in relation to mean January precipitation in Alaska.

[N, number]

		Mean January precipitation (mm)						
Level II ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	7	9	13	25	32	39	58
POLAR DOMAIN - Tundra Mountains	574	8	10	13	19	25	40	112
POLAR DOMAIN - Subarctic Division	269	7	12	17	19	22	24	36
POLAR DOMAIN - Subarctic Mountains	746	7	12	18	24	31	41	130
HUMID TEMPERATE DOMAIN - Marine Mountains	184	32	82	125	178	241	284	667

Distributions of Bailey Level II ecoregions in relation to mean July precipitation in Alaska.

[N, number]

		Mean July precipitation (mm)						
Level II ecoregion	N	0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	18	22	40	49	53	62	76
POLAR DOMAIN - Tundra Mountains	574	23	32	44	52	63	73	98
POLAR DOMAIN - Subarctic Division	269	25	34	47	56	64	75	84
POLAR DOMAIN - Subarctic Mountains	746	30	47	54	67	79	90	223
HUMID TEMPERATE DOMAIN - Marine Mountains	184	55	76	97	121	156	192	452

Distributions of Bailey Level II ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

Level II ecoregion	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	-30.8	-28.6	-25.5	-15.9	-12.8	-9.5	-2.4
POLAR DOMAIN - Tundra Mountains	574	-30.0	-28.2	-27.5	-25.5	-18.5	-11.1	-1.8
POLAR DOMAIN - Subarctic Division	269	-33.0	-28.5	-27.8	-25.9	-24.3	-23.1	-17.4
POLAR DOMAIN - Subarctic Mountains	746	-32.1	-28.5	-27.0	-24.8	-18.7	-14.7	-7.2
HUMID TEMPERATE DOMAIN - Marine Mountains	184	-25.7	-14.7	-9.1	-4.8	-2.0	-0.4	2.1

Distributions of Bailey Level II ecoregions in relation to growing degree days in Alaska.

[N, number]

Level II ecoregion	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	0.00	0.25	0.45	0.57	0.66	0.73	0.95
POLAR DOMAIN - Tundra Mountains	574	0.10	0.15	0.20	0.33	0.52	0.65	0.99
POLAR DOMAIN - Subarctic Division	269	0.49	0.63	0.71	0.77	0.85	0.92	1.00
POLAR DOMAIN - Subarctic Mountains	746	0.14	0.43	0.54	0.67	0.76	0.83	0.99
HUMID TEMPERATE DOMAIN - Marine Mountains	184	0.17	0.38	0.49	0.66	0.84	1.02	1.23

Distributions of Bailey Level II ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Level II ecoregion	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division	330	0.28	0.37	0.52	0.80	0.89	0.93	0.98
POLAR DOMAIN - Tundra Mountains	574	0.40	0.55	0.64	0.74	0.88	0.94	1.00
POLAR DOMAIN - Subarctic Division	269	0.33	0.38	0.53	0.58	0.70	0.80	0.98
POLAR DOMAIN - Subarctic Mountains	746	0.36	0.51	0.60	0.73	0.90	0.98	1.00
HUMID TEMPERATE DOMAIN - Marine Mountains	184	0.83	0.96	0.99	1.00	1.00	1.00	1.00

Distributions of Bailey Level III ecoregions in relation to mean annual temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	-13.1	-12.3	-6.4	-2.4	-0.6	1.0	3.4
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	-13.0	-11.3	-10.5	-9.4	-8.1	-7.3	-5.7
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	-6.0	-5.3	-5.1	-4.5	-1.8	-0.6	0.3
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	-2.7	-0.4	0.0	1.0	1.8	2.4	3.5
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	-8.7	-6.3	-5.7	-4.8	-3.2	-2.5	-1.4
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	-9.8	-7.0	-5.5	-4.8	-3.5	-2.6	-0.7
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	-5.9	-4.0	-2.9	-1.0	0.6	1.2	1.6
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	-12.2	-7.9	-5.9	-4.2	-3.0	-1.5	1.2
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	1.0	2.2	3.7	5.0	5.9	6.8	7.2
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	-13.4	-5.4	-2.5	0.3	1.8	3.1	5.0

Distributions of Bailey Level III ecoregions in relation to mean January temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	-30.8	-27.6	-23.5	-15.9	-12.7	-9.5	-1.5
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	-30.0	-28.3	-27.4	-25.4	-24.0	-22.9	-21.2
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	-21.2	-19.2	-18.3	-17.4	-16.4	-12.9	-8.2
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	-11.2	-9.5	-8.7	-7.5	-4.5	-2.6	-0.5
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	-28.5	-27.9	-26.1	-22.8	-19.9	-18.1	-16.7
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	-30.0	-27.8	-26.5	-23.4	-19.9	-17.1	-10.1
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	-29.6	-22.0	-18.8	-14.2	-11.8	-10.5	-7.2
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	-28.9	-27.0	-21.9	-18.4	-15.9	-13.4	-8.8
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	-6.1	-3.8	-2.8	-1.3	-0.4	1.1	2.1
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	-24.1	-15.4	-10.7	-7.1	-4.6	-3.4	-1.0

Distributions of Bailey Level III ecoregions in relation to mean July temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	3.1	6.0	9.1	11.3	12.3	12.8	13.7
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	4.5	7.4	8.3	9.2	10.2	11.0	12.4
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	8.3	9.7	10.6	11.8	12.5	13.1	13.5
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	8.7	9.5	10.7	11.4	11.7	12.0	12.7
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	11.4	13.0	13.6	14.3	15.1	15.7	16.3
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	10.0	12.3	13.1	14.1	14.9	15.4	16.0
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	11.3	11.7	12.2	12.6	12.8	13.3	14.2
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	8.4	10.5	11.1	11.7	12.4	13.0	13.9
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	10.3	11.4	12.0	12.7	13.2	13.6	14.3
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	8.2	9.8	10.3	11.3	12.0	12.4	13.1

Distributions of Bailey Level III ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	130	160	265	480	535	590	840
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	185	230	280	340	410	480	585
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	280	315	340	390	600	640	715
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	535	590	620	680	740	915	1540
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	195	225	320	350	415	475	585
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	210	260	320	375	435	495	750
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	270	430	475	540	615	660	840
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	355	465	525	630	720	960	2225
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	890	1495	1805	2380	2795	2940	3715
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	610	945	1315	2115	2710	3225	4685

Distributions of Bailey Level III ecoregions in relation to mean January precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	7	9	13	25	32	39	58
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	8	10	12	15	20	23	38
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	15	18	20	26	37	44	49
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	27	29	33	47	58	69	112
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	7	12	17	19	22	24	36
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	7	12	15	21	25	29	46
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	8	22	27	32	38	51	73
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	12	21	25	35	42	57	130
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	74	121	142	211	246	281	403
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	32	67	102	166	226	281	667

Distributions of Bailey Level III ecoregions in relation to mean July precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	18	22	40	49	53	62	76
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	23	29	39	50	61	72	94
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	42	46	48	52	61	65	74
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	43	53	57	64	74	82	98
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	25	34	47	56	64	75	84
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	30	41	51	58	68	74	96
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	48	51	56	63	75	85	100
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	58	72	77	85	95	106	223
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	57	91	103	121	138	170	217
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	55	74	88	121	164	203	452

Distributions of Bailey Level III ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

Level III ecoregion	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	-30.8	-28.6	-25.5	-15.9	-12.8	-9.5	-2.4
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	-30.0	-28.3	-27.9	-26.9	-25.5	-24.3	-21.2
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	-25.1	-20.4	-18.8	-17.8	-16.5	-13.2	-9.8
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	-12.5	-10.6	-9.7	-7.8	-4.6	-4.0	-1.8
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	-33.0	-28.5	-27.8	-25.9	-24.3	-23.1	-17.4
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	-32.1	-28.9	-27.7	-25.9	-23.8	-18.1	-10.8
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	-29.6	-23.7	-20.3	-14.2	-11.8	-10.5	-7.2
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	-28.9	-27.0	-25.2	-20.2	-15.9	-13.7	-9.3
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	-7.8	-3.8	-2.8	-1.3	-0.4	1.1	2.1
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	-25.7	-15.7	-12.2	-7.2	-4.8	-3.4	-1.5

Distributions of Bailey Level III ecoregions in relation to growing degree days in Alaska.

[N, number]

Level III ecoregion	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	0.00	0.25	0.45	0.57	0.66	0.73	0.95
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	0.10	0.14	0.17	0.23	0.36	0.49	0.99
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	0.20	0.31	0.36	0.56	0.62	0.71	0.76
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	0.31	0.42	0.48	0.59	0.62	0.70	0.77
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	0.49	0.63	0.71	0.77	0.85	0.92	1.00
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	0.32	0.57	0.65	0.73	0.80	0.87	0.99
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	0.51	0.54	0.58	0.64	0.70	0.76	0.83
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	0.14	0.33	0.41	0.48	0.55	0.62	0.81
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	0.60	0.67	0.77	0.92	1.02	1.11	1.23
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	0.17	0.33	0.43	0.54	0.66	0.72	0.88

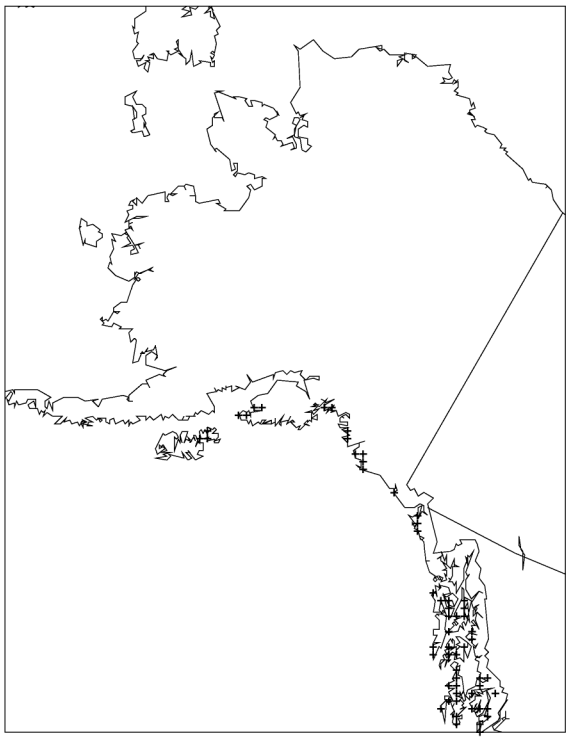
Distributions of Bailey Level III ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

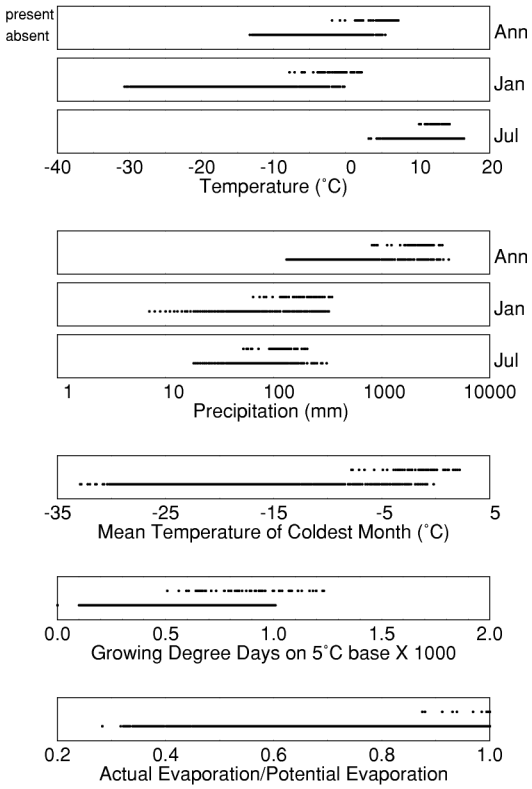
[N, number]

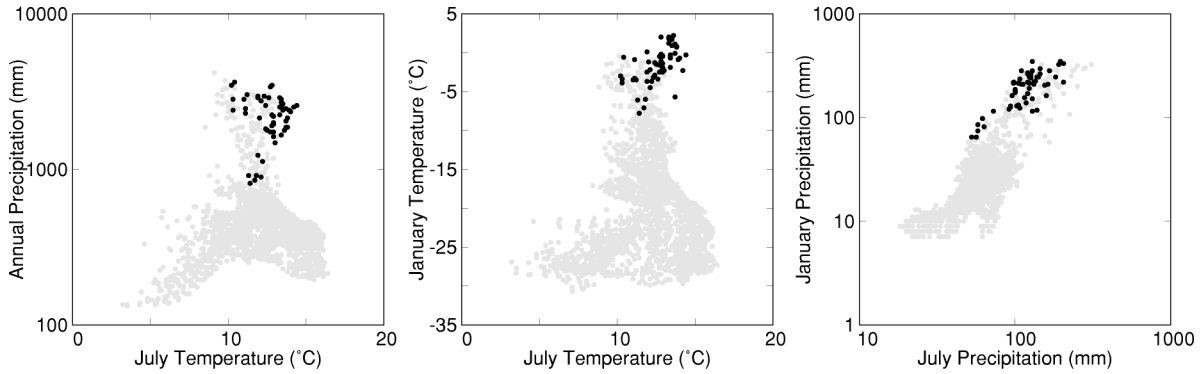
Level III ecoregion	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
POLAR DOMAIN - Tundra Division - *Tundras*	330	0.28	0.37	0.52	0.80	0.89	0.93	0.98
POLAR DOMAIN - Tundra Mountains - *Tundra - polar desert*	383	0.40	0.52	0.62	0.72	0.82	0.92	0.98
POLAR DOMAIN - Tundra Mountains - *Tundra - meadow*	136	0.54	0.60	0.65	0.73	0.89	0.92	0.95
POLAR DOMAIN - Tundra Mountains - *Oceanic meadow - heath*	55	0.79	0.89	0.91	0.94	0.96	0.98	1.00
POLAR DOMAIN - Subarctic Division - *Forest-tundras and open woodlands*	269	0.33	0.38	0.53	0.58	0.70	0.80	0.98
POLAR DOMAIN - Subarctic Mountains - *Open woodland - tundra*	472	0.36	0.47	0.54	0.63	0.74	0.82	0.99
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, medium*	61	0.50	0.63	0.67	0.79	0.88	0.94	0.98
POLAR DOMAIN - Subarctic Mountains - *Tayga - tundra, high*	213	0.58	0.76	0.85	0.94	0.98	0.99	1.00
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, medium*	67	0.91	0.99	0.99	1.00	1.00	1.00	1.00
HUMID TEMPERATE DOMAIN - Marine Mountains - *Forest - meadow, high*	117	0.83	0.94	0.99	1.00	1.00	1.00	1.00

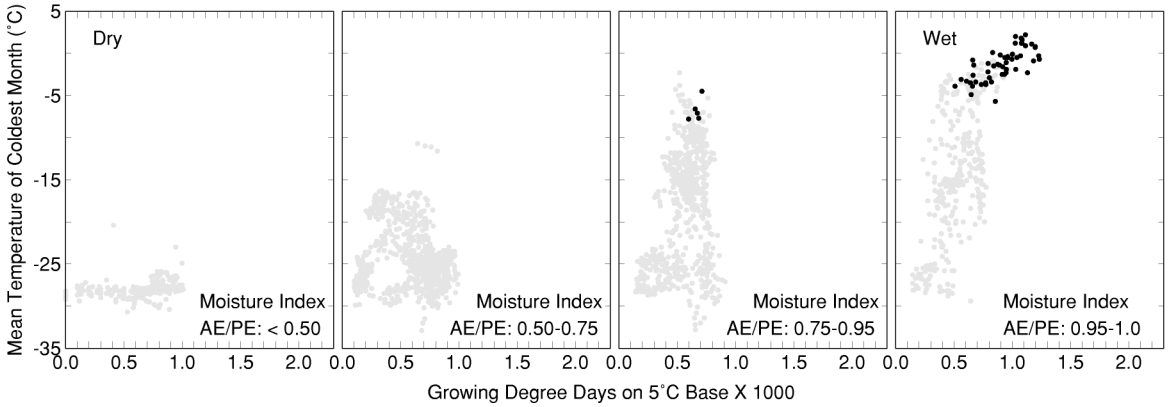
Alaska Ecoregions—
World Wildlife Fund Ecoregions

TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS

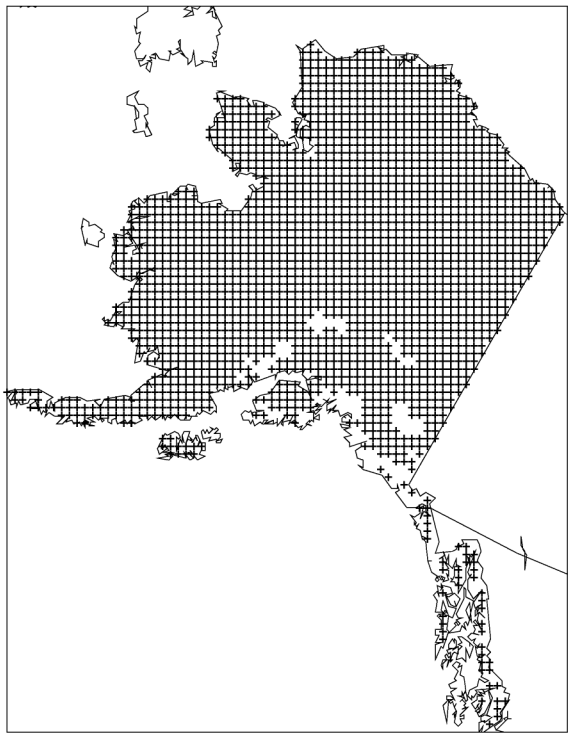


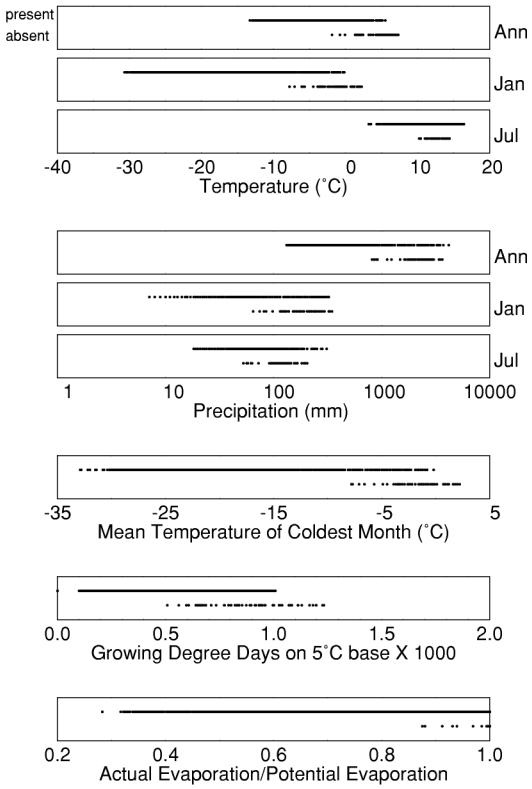


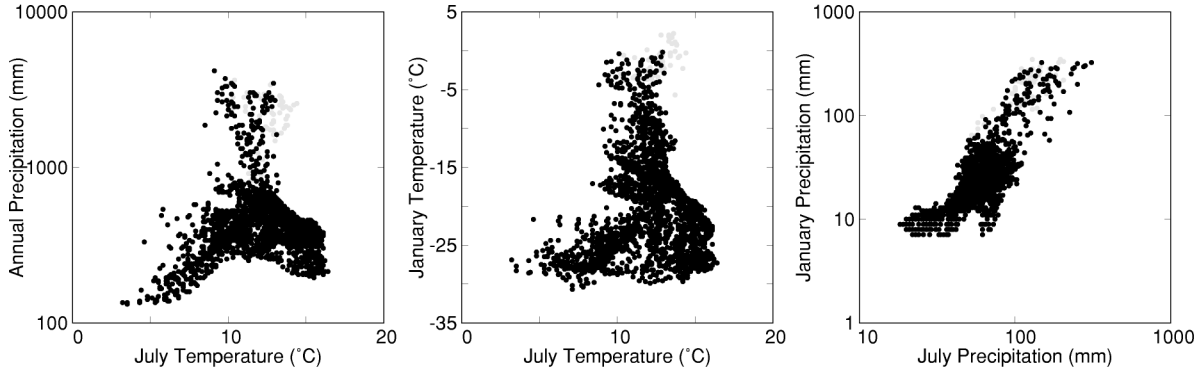


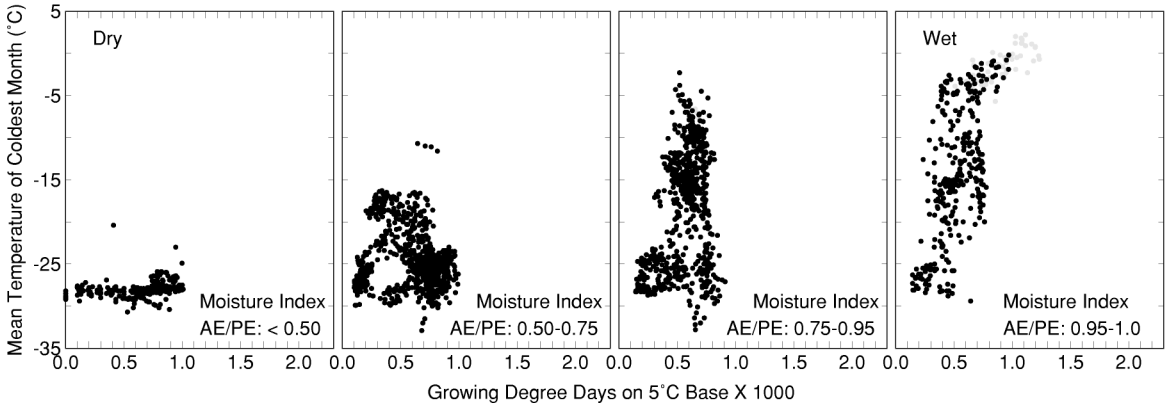


BOREAL FORESTS, TAIGA AND TUNDRA

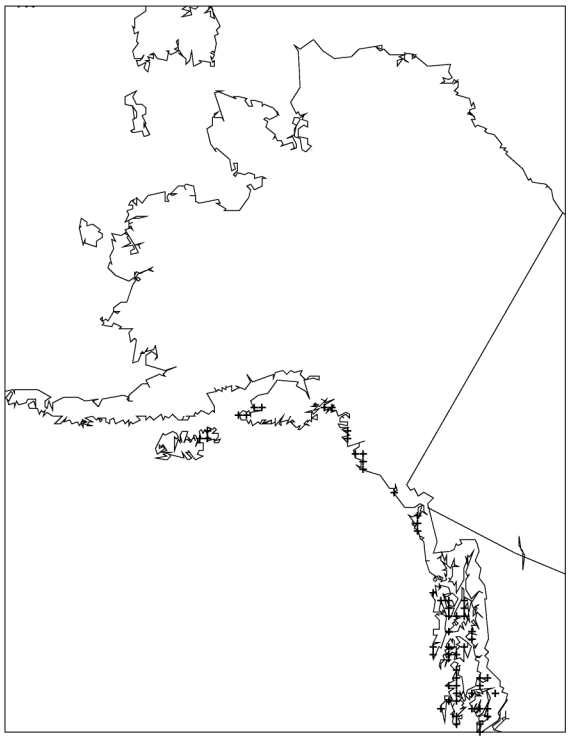


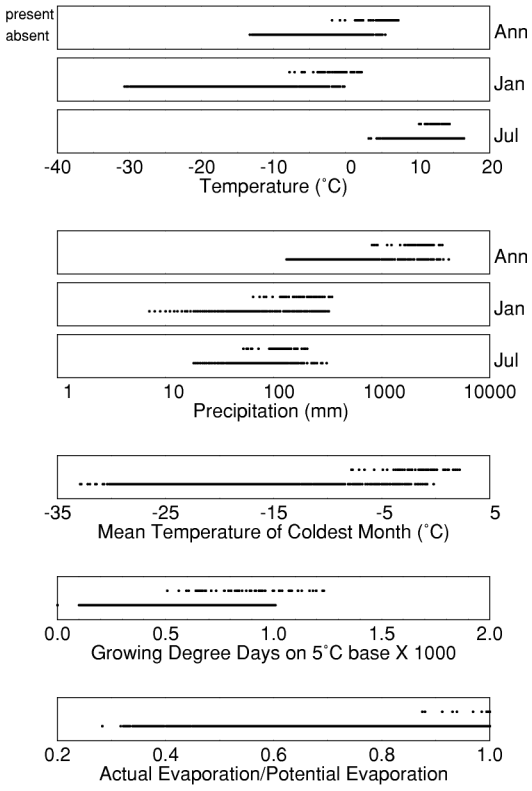


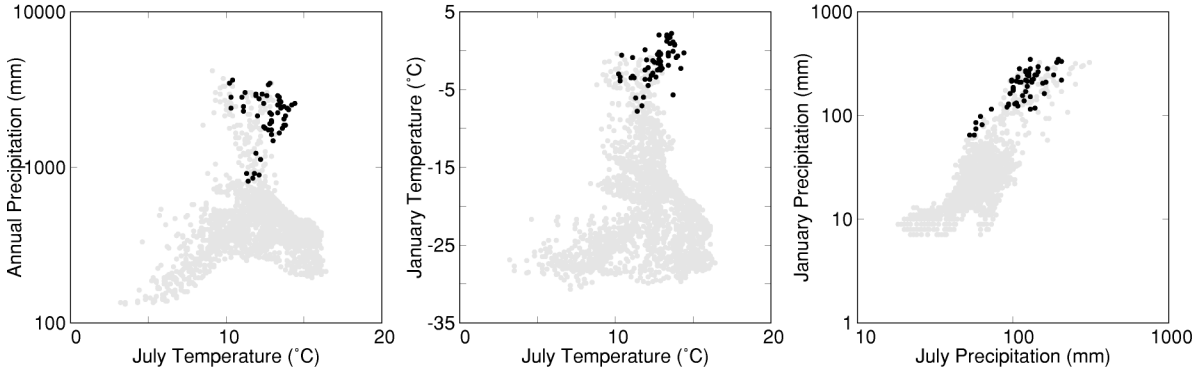


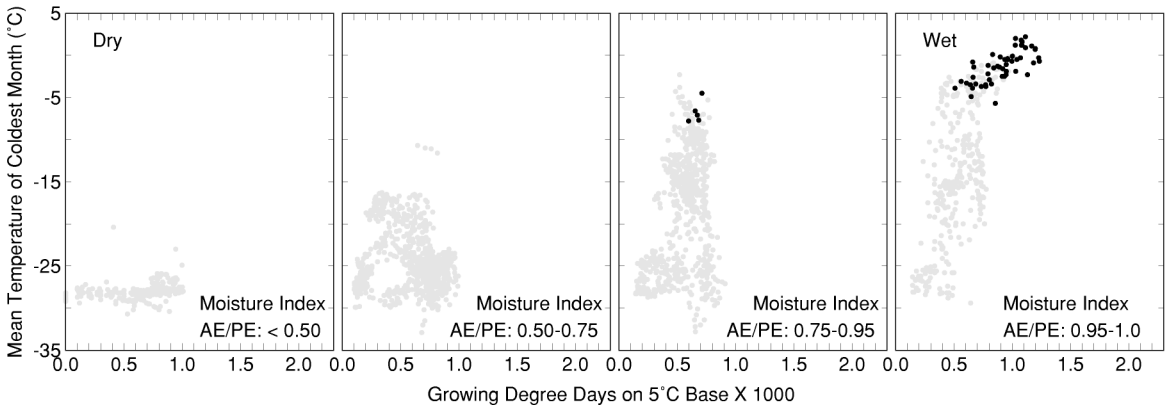


TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests

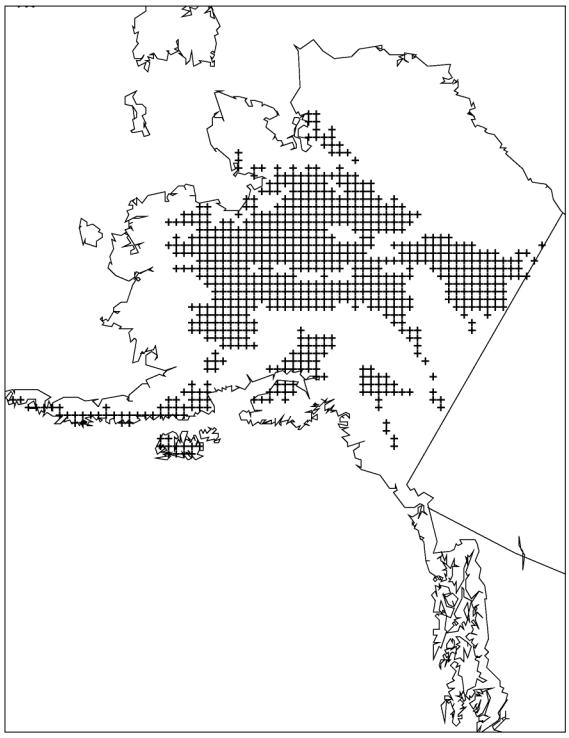


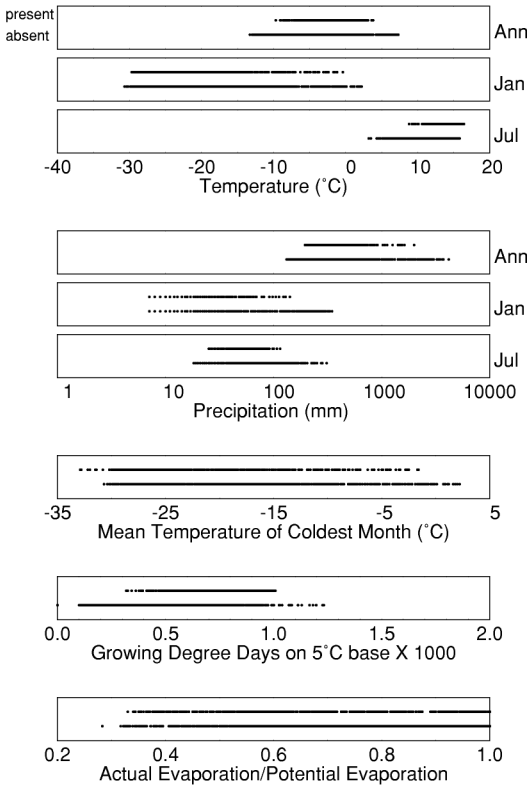


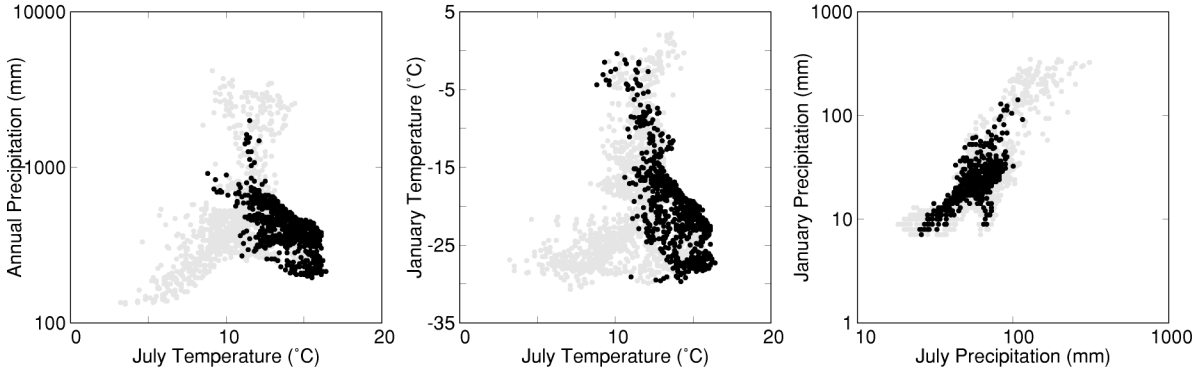


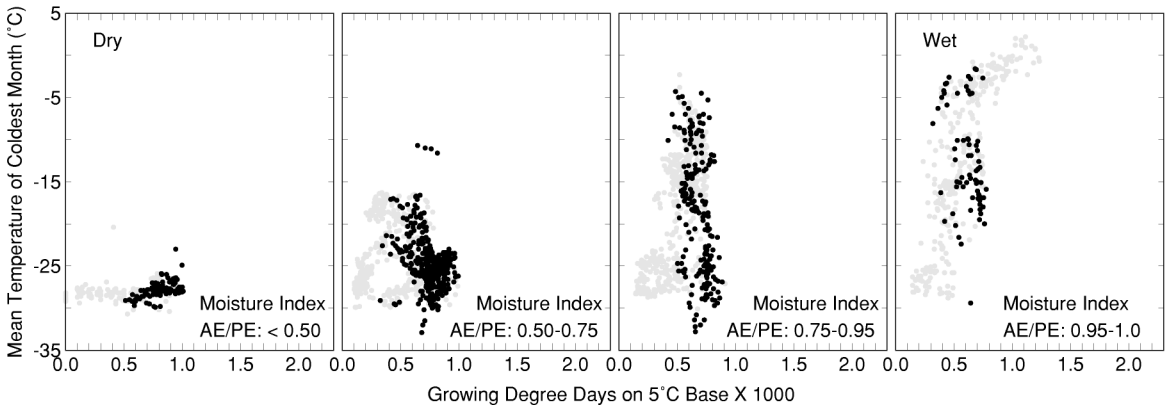


BOREAL FOREST, TAIGA AND TUNDRA-
Boreal Forest/Taiga

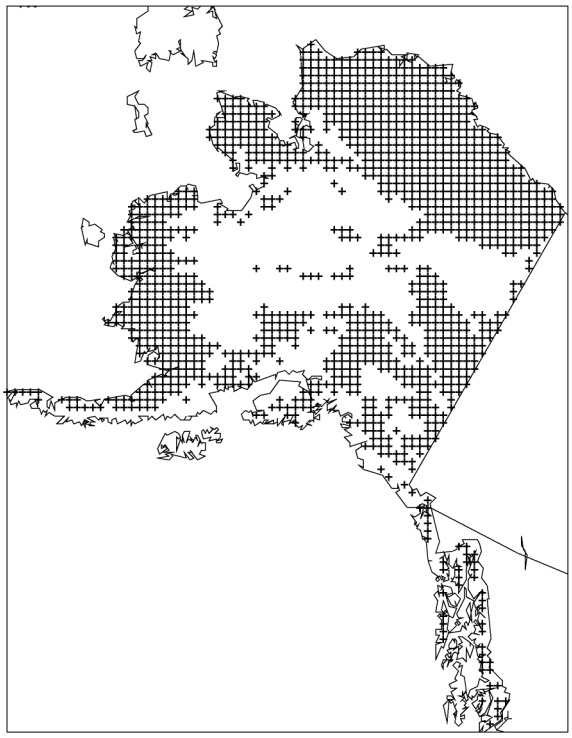


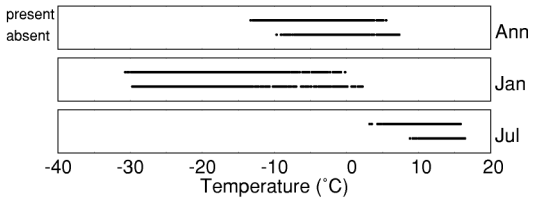


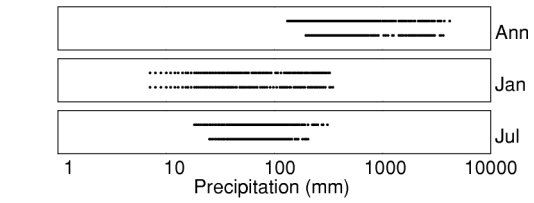


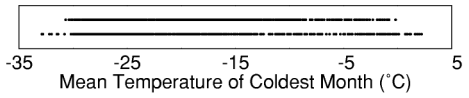


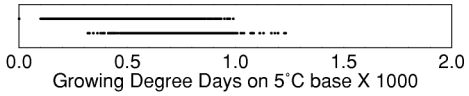
BOREAL FOREST, TAIGA AND TUNDRA-
Tundra

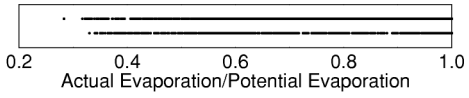


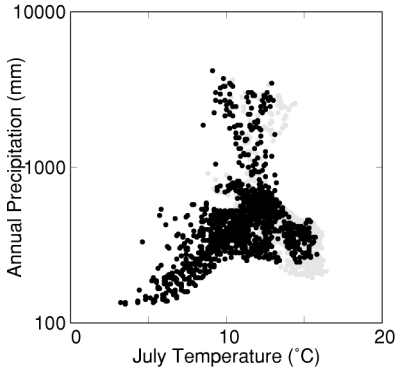


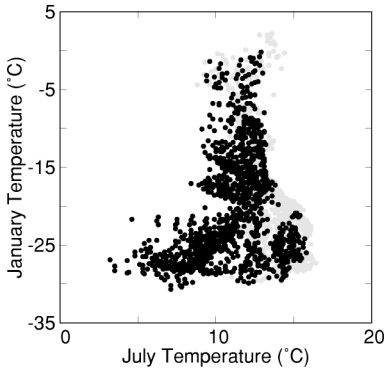


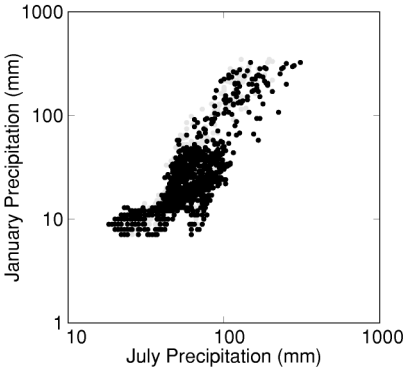


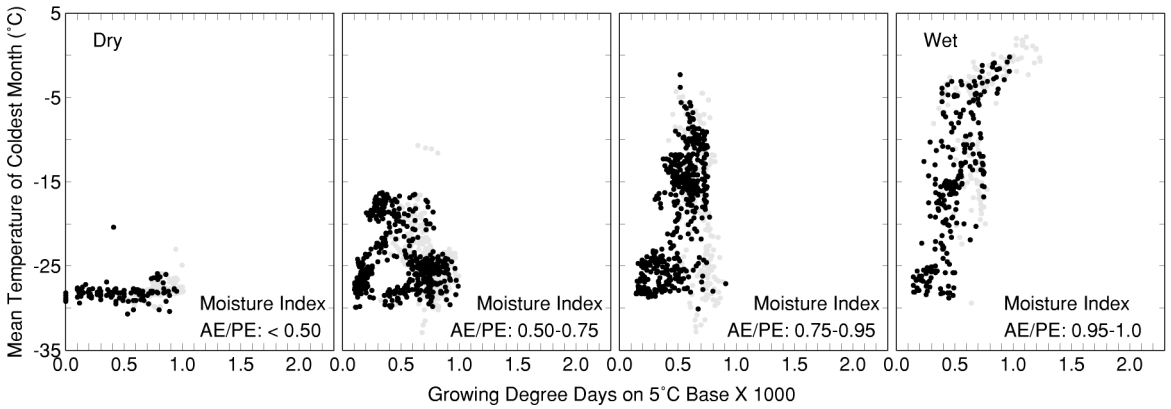




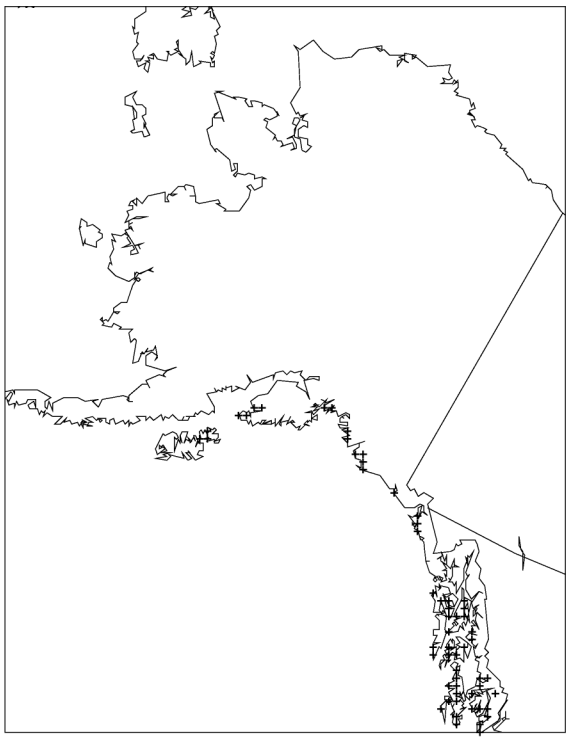


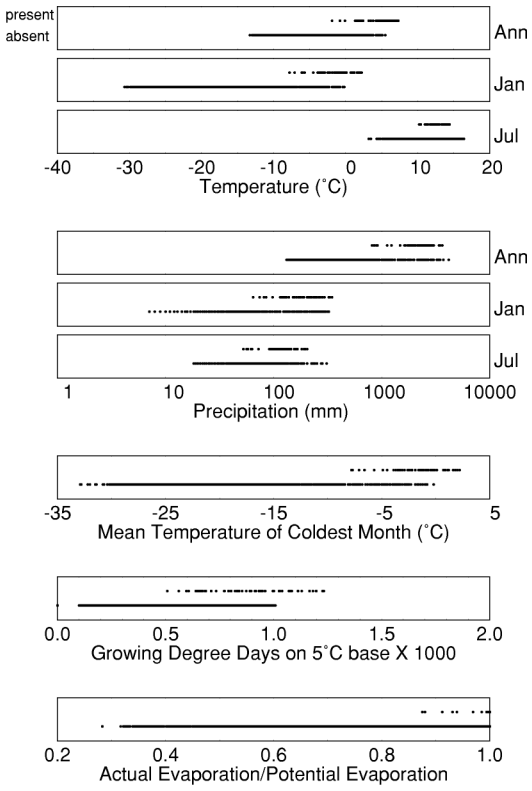


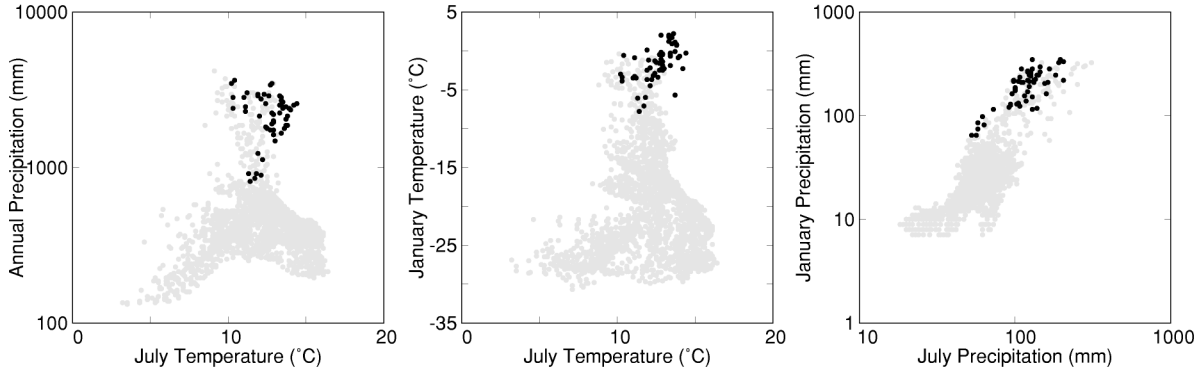


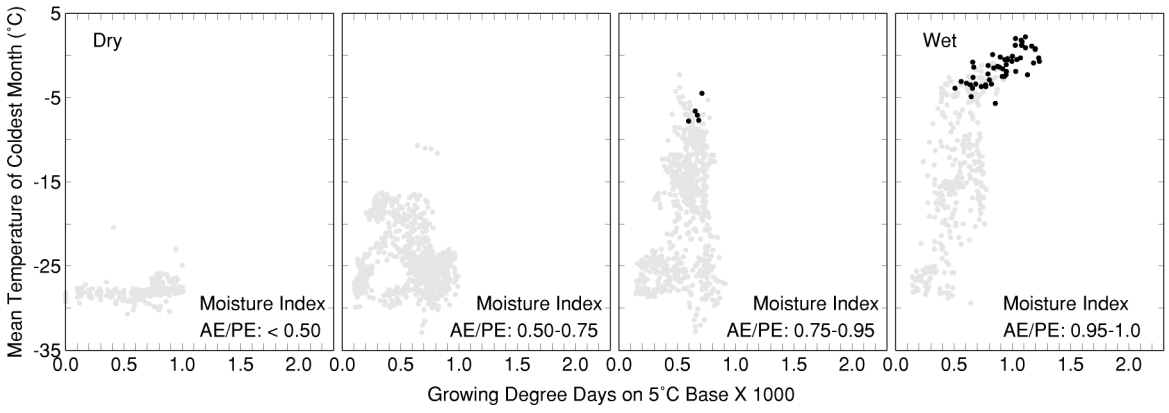


TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*

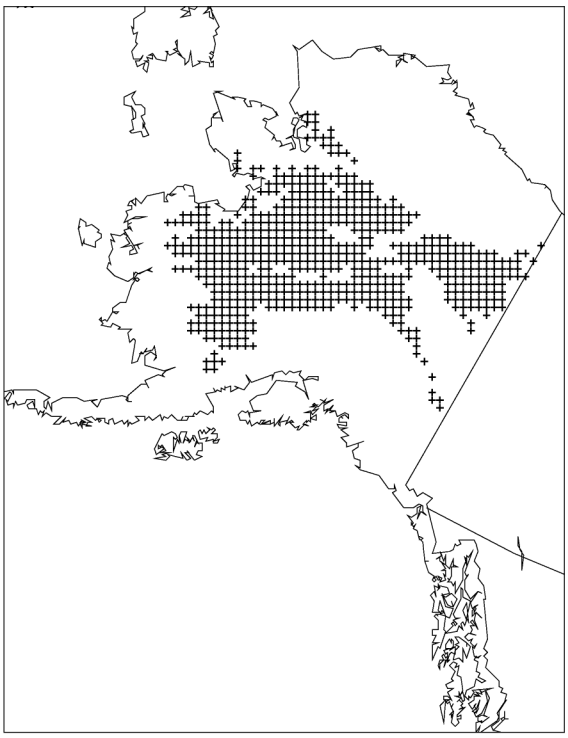


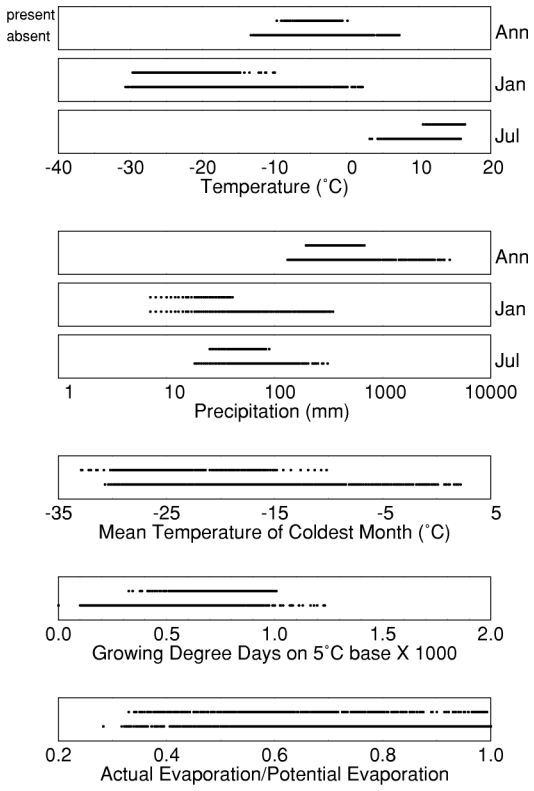


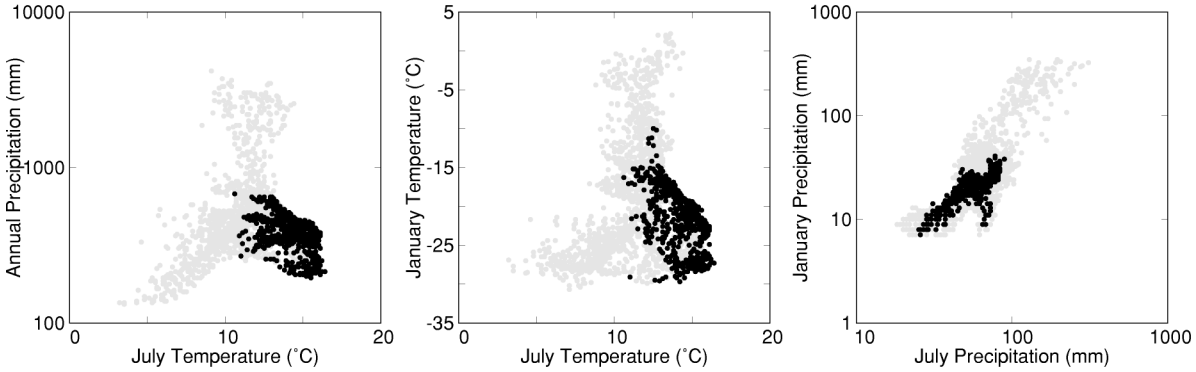


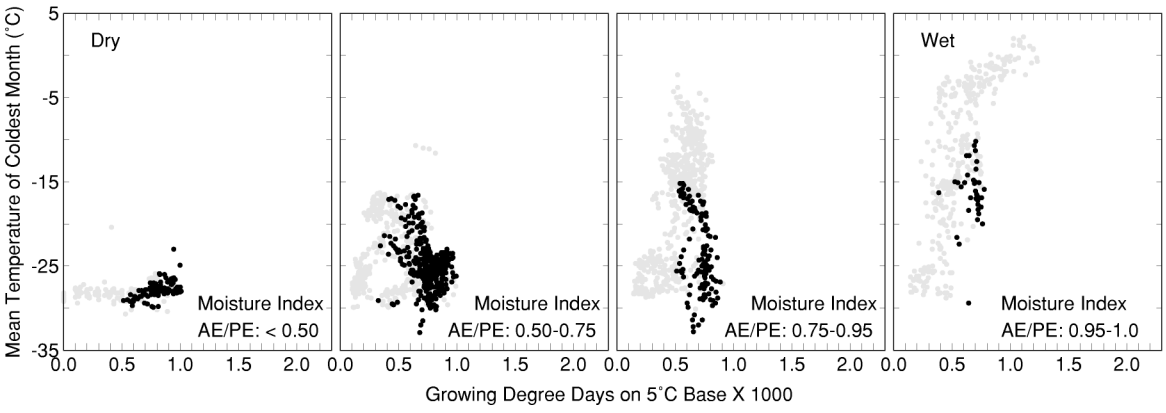


BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Interior Alaska/Yukon Lowland Taiga

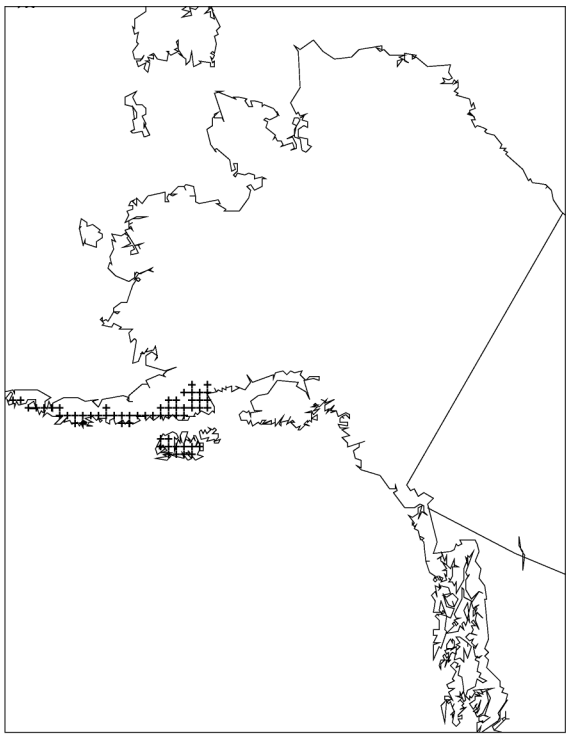


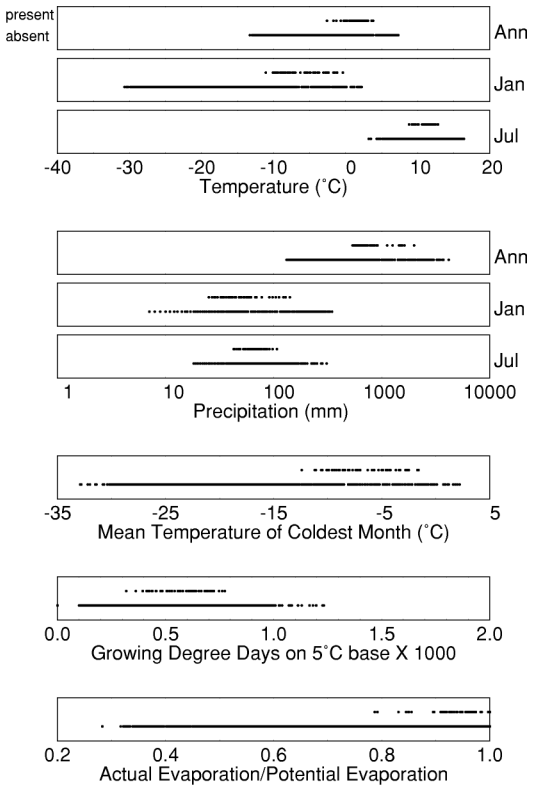


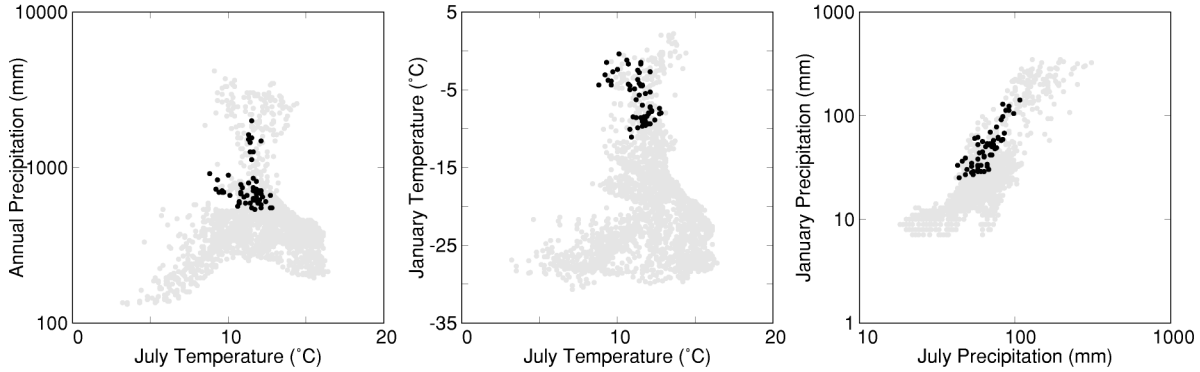


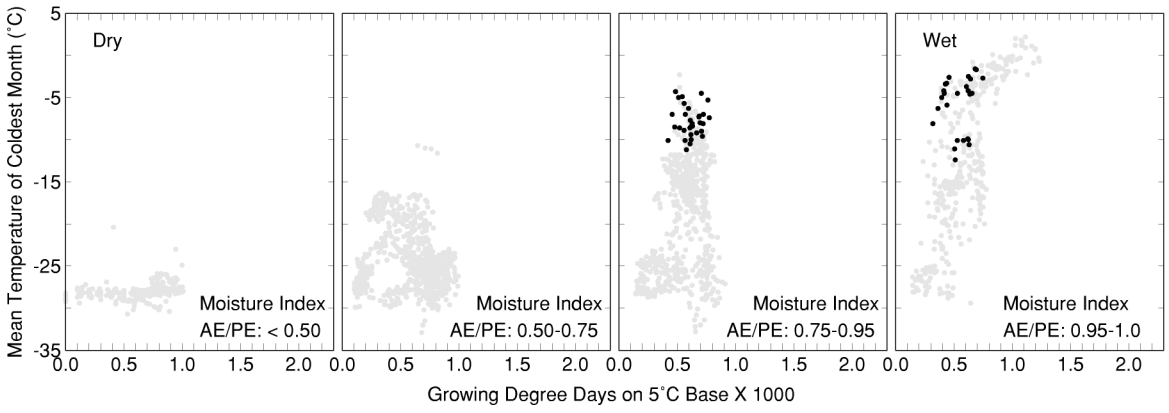


BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Alaska Peninsula Montane Taiga

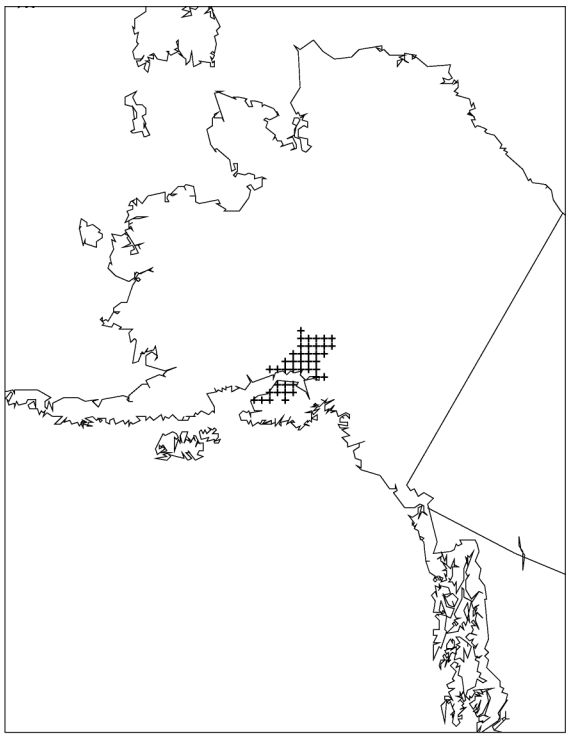


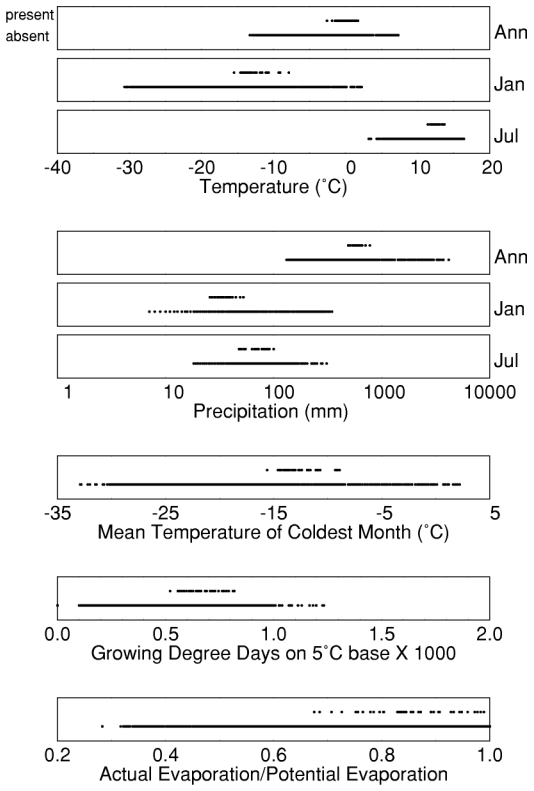


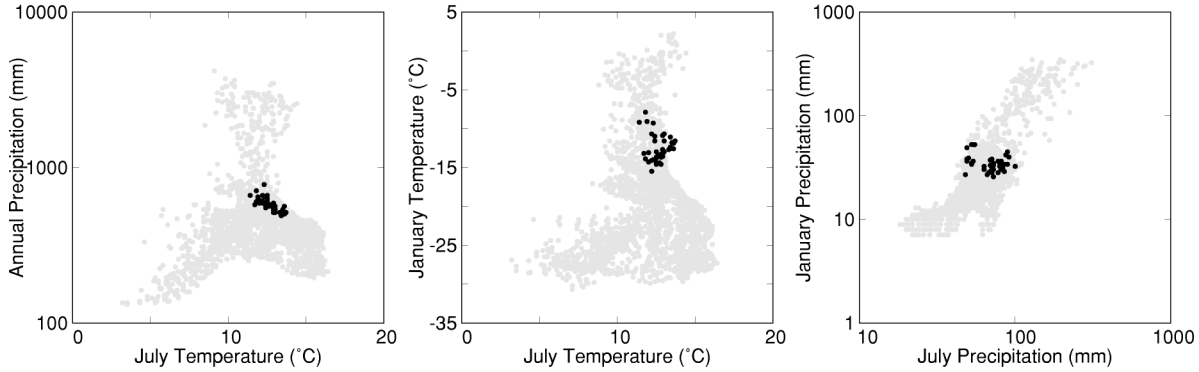


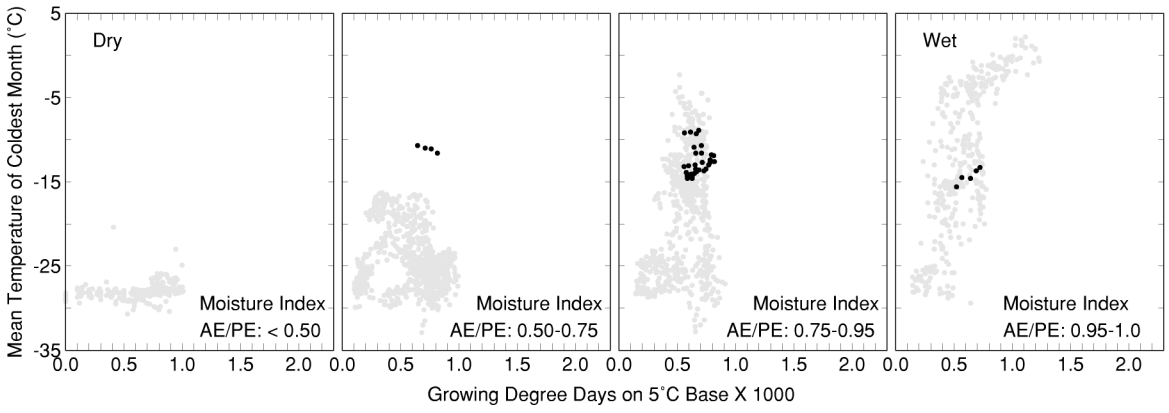


BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Cook Inlet Taiga

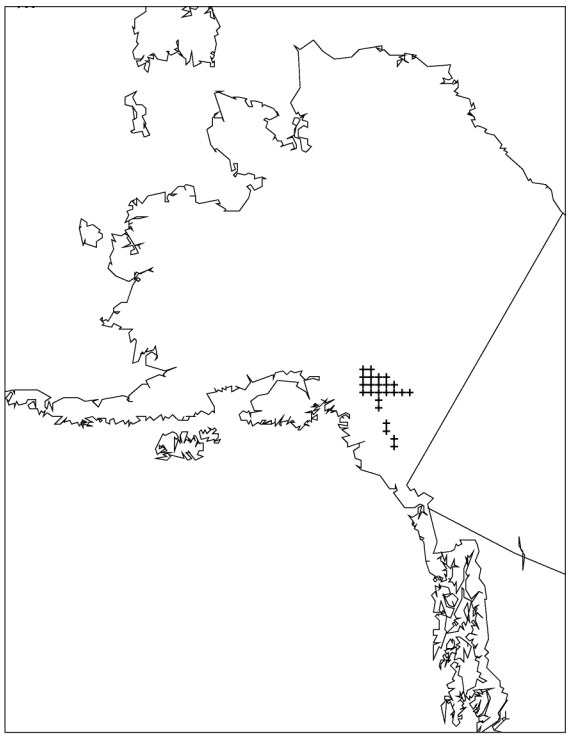


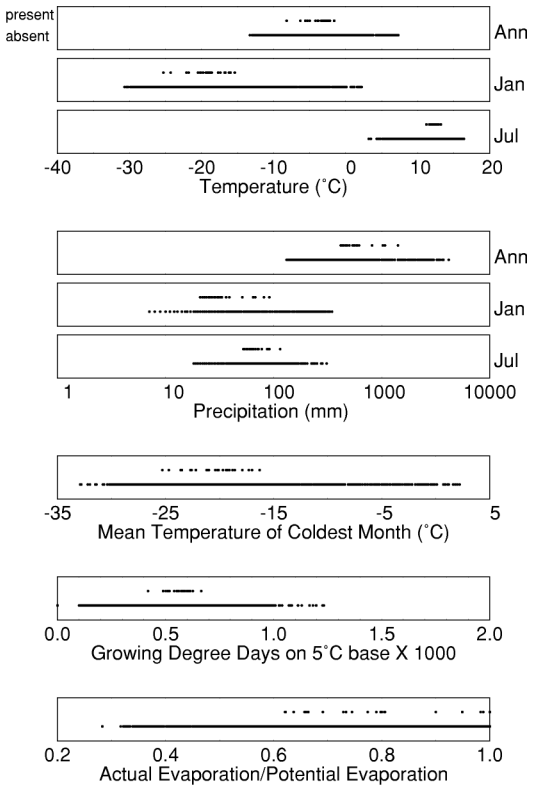


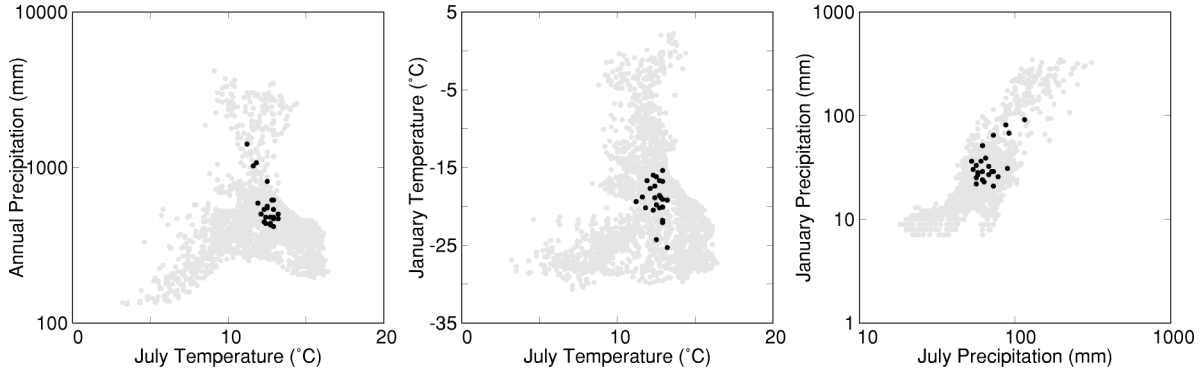


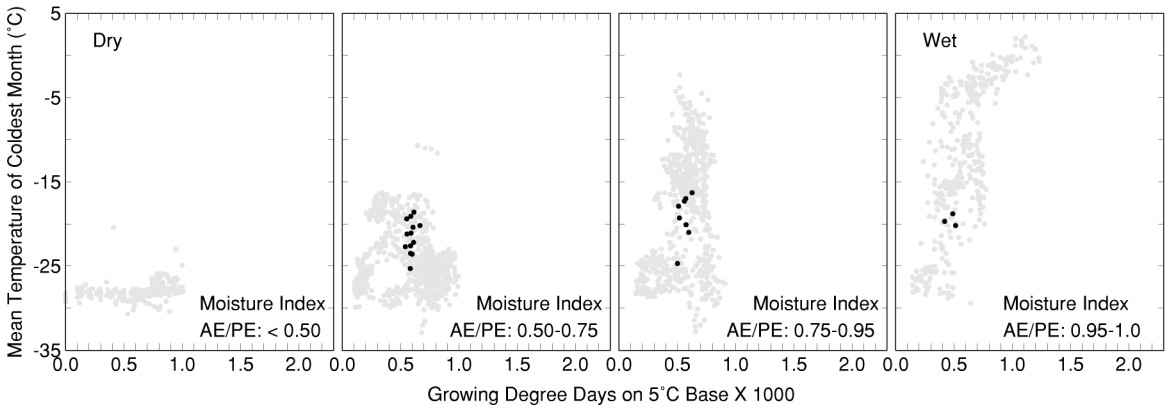


BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Copper Plateau Taiga

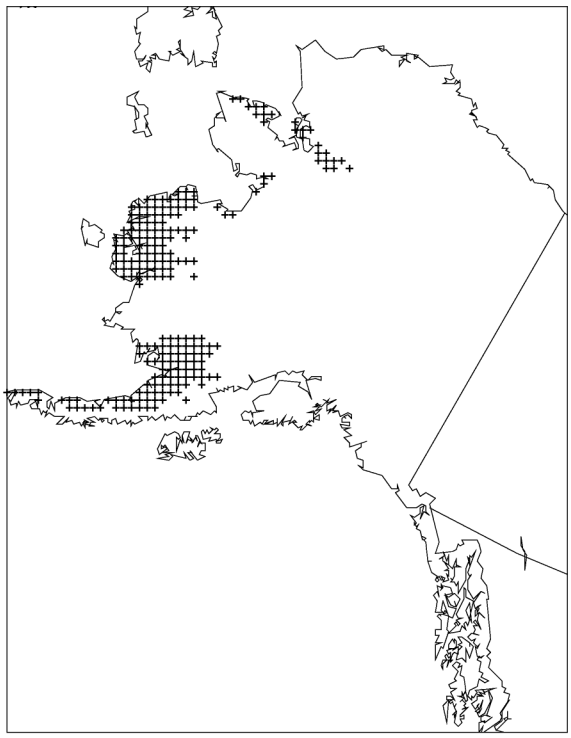


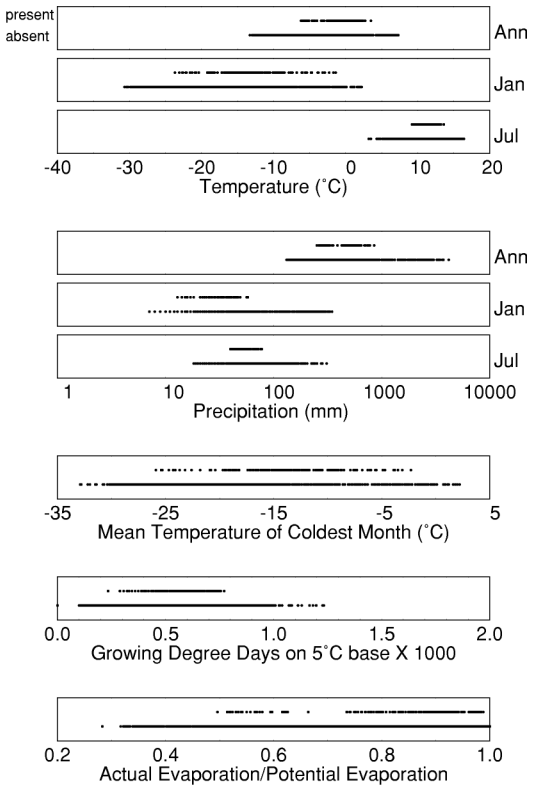


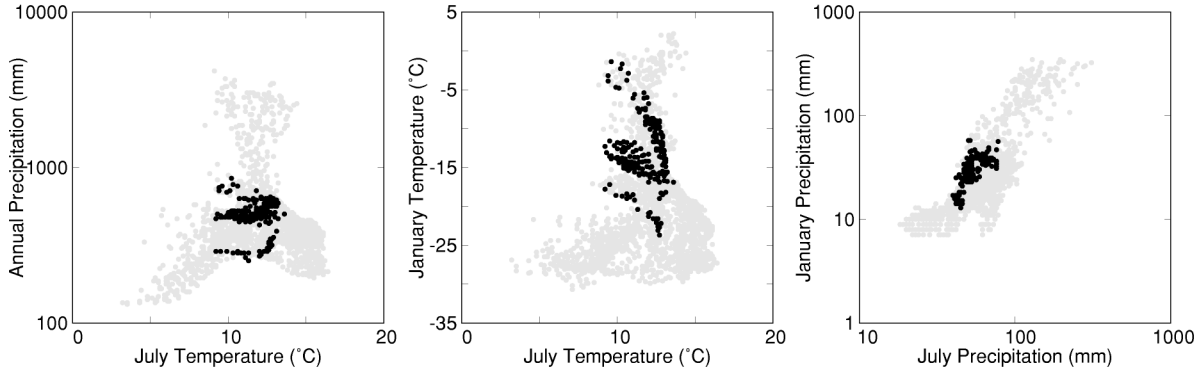


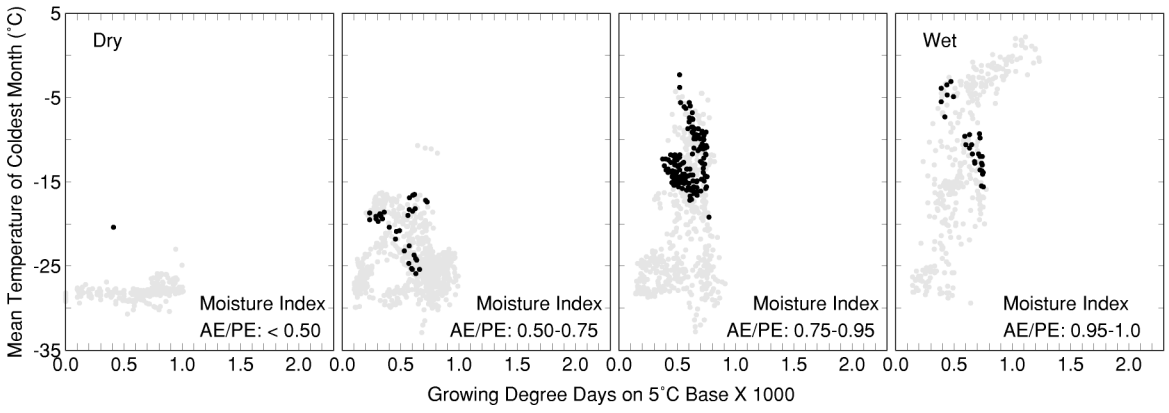


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Lowland Tundra

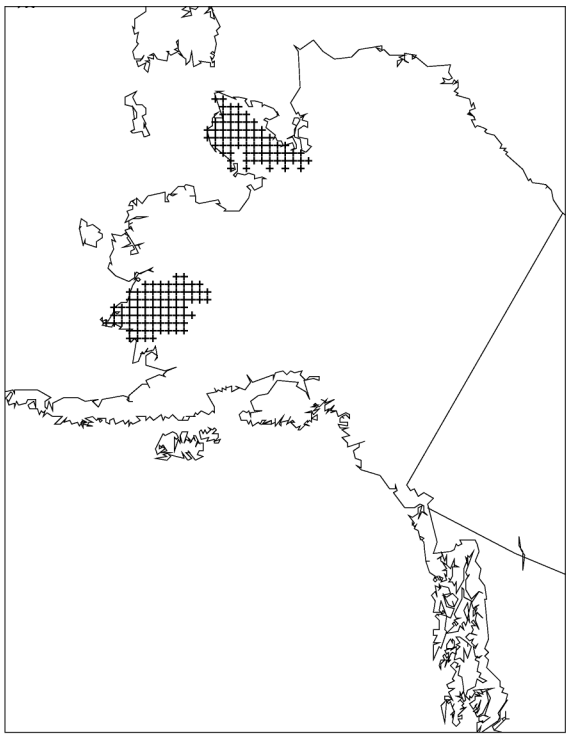


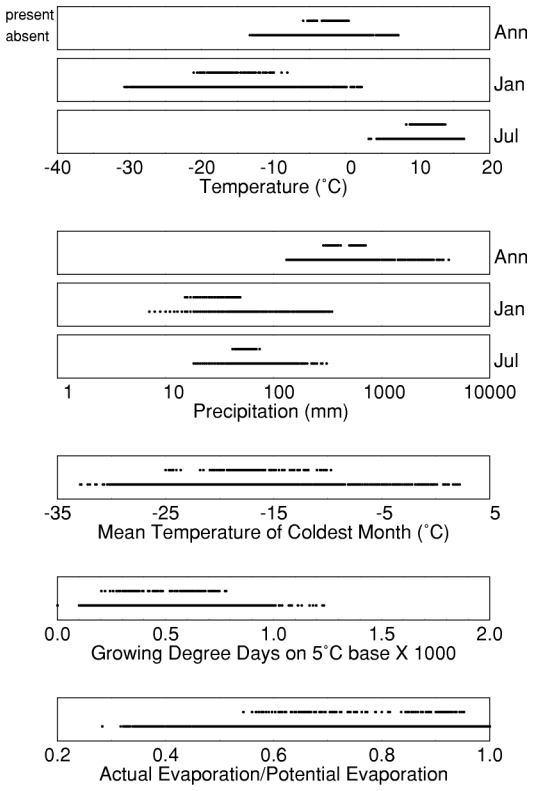


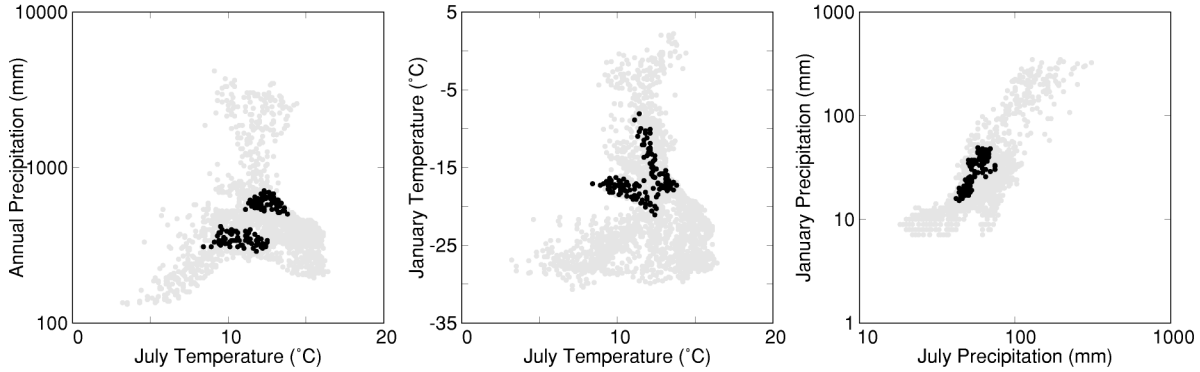


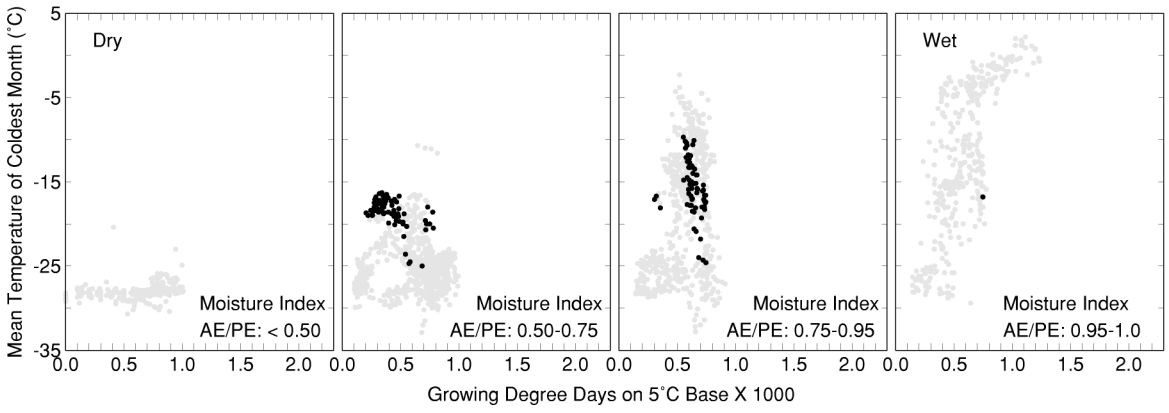


BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*

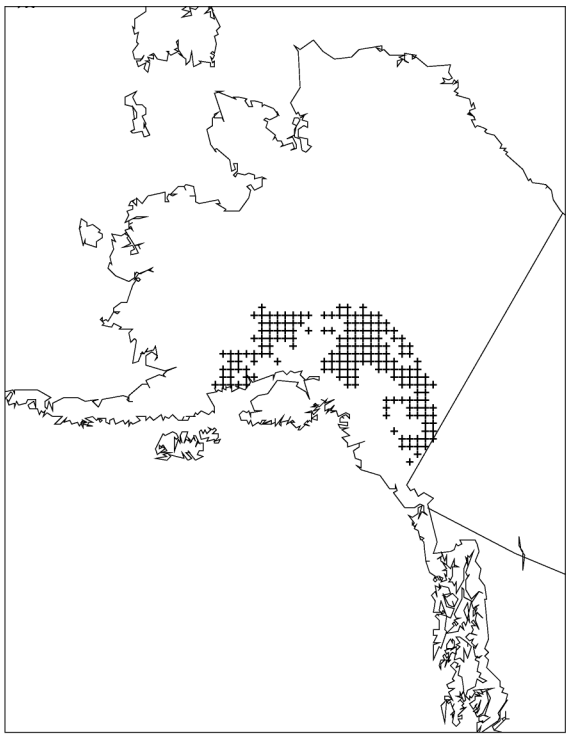


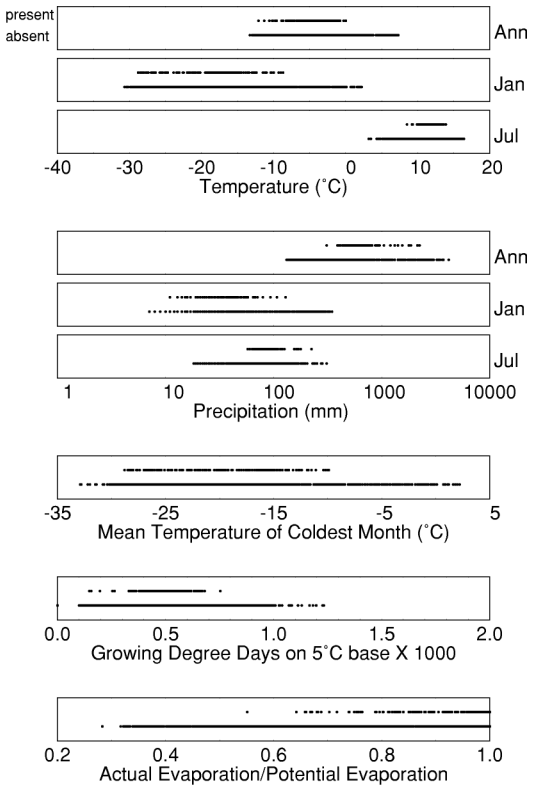


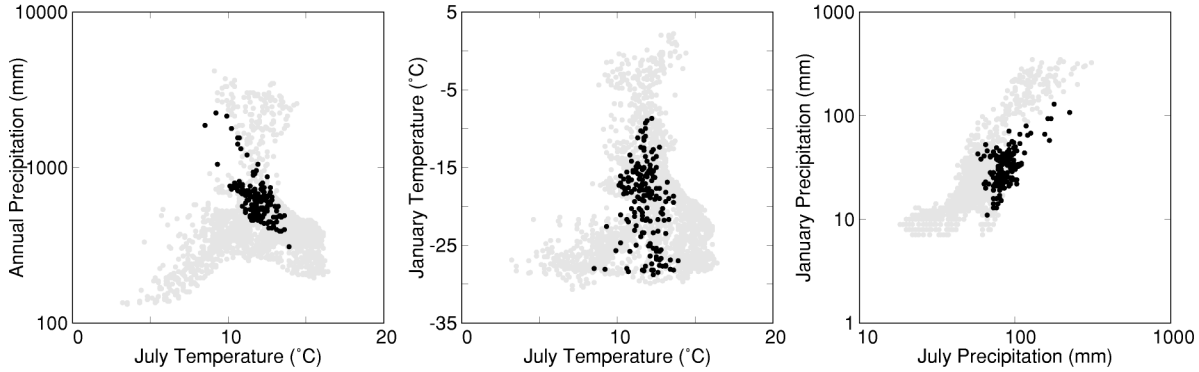


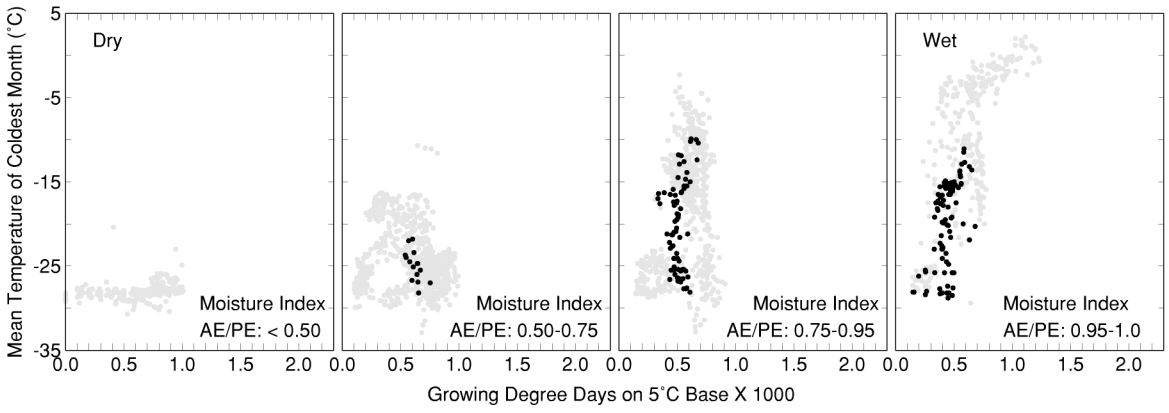


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Alaska/St. Elias Range Tundra

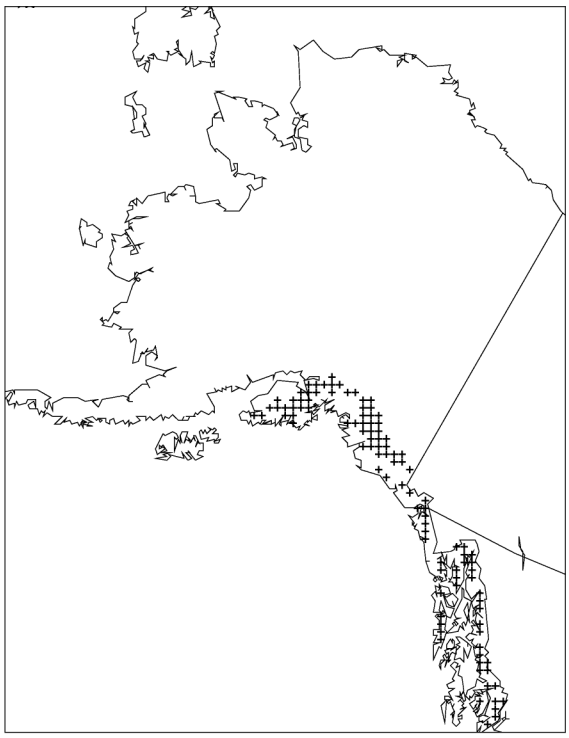


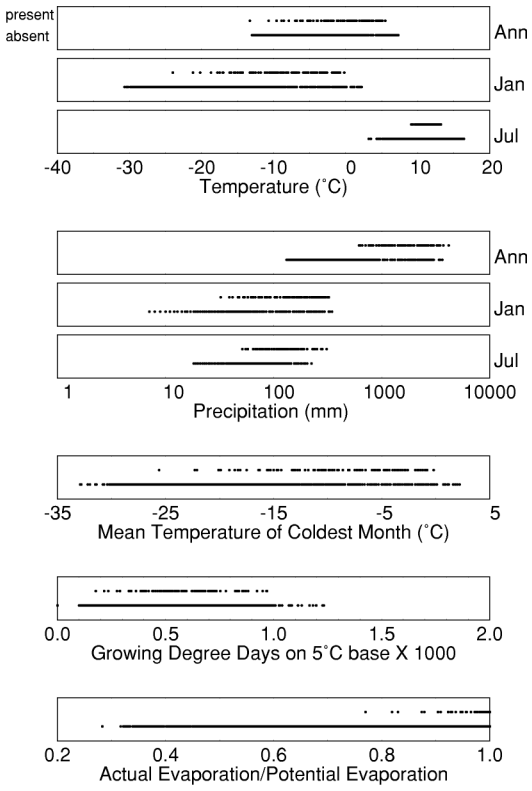


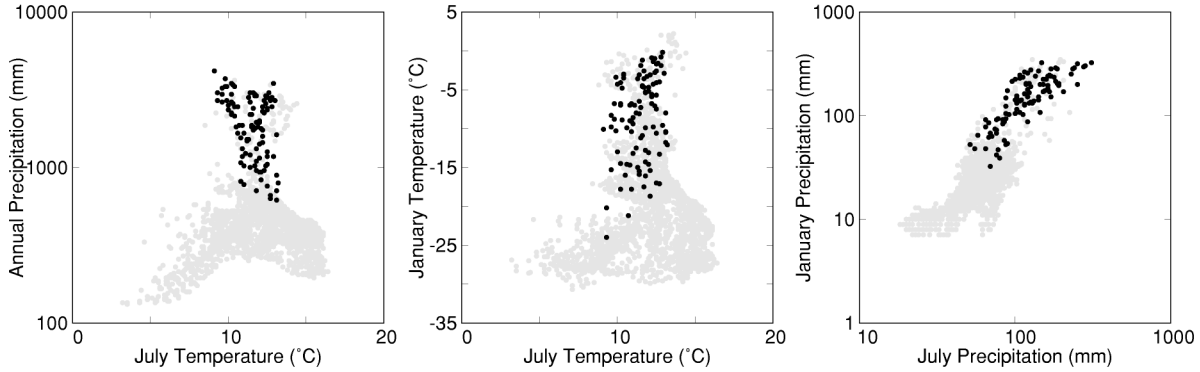


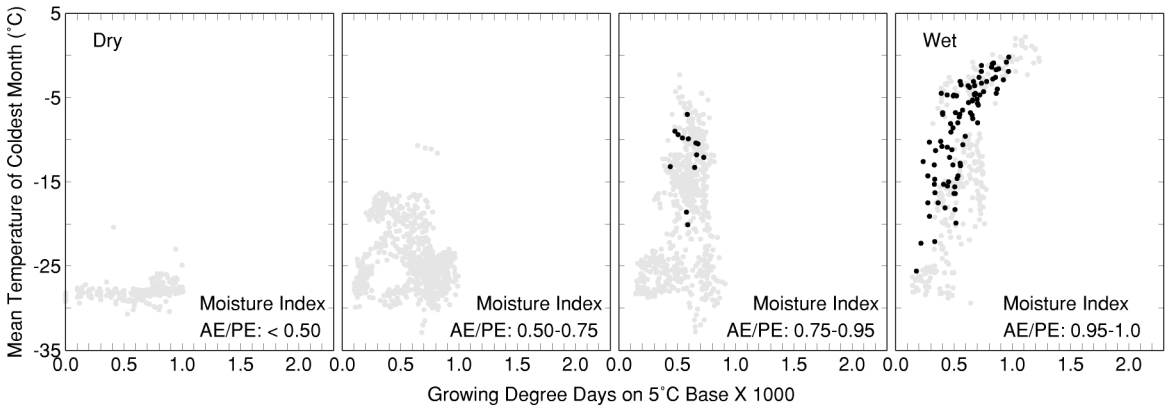


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Pacific Coastal Mountain Tundra and Ice Fields

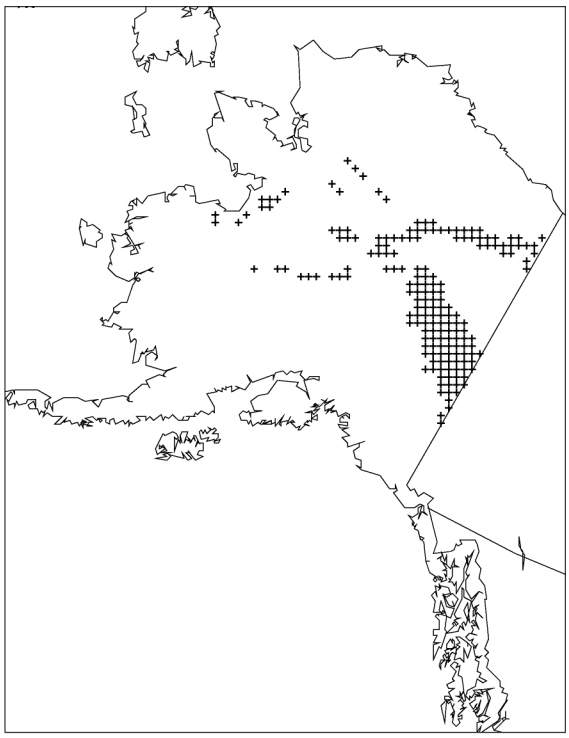


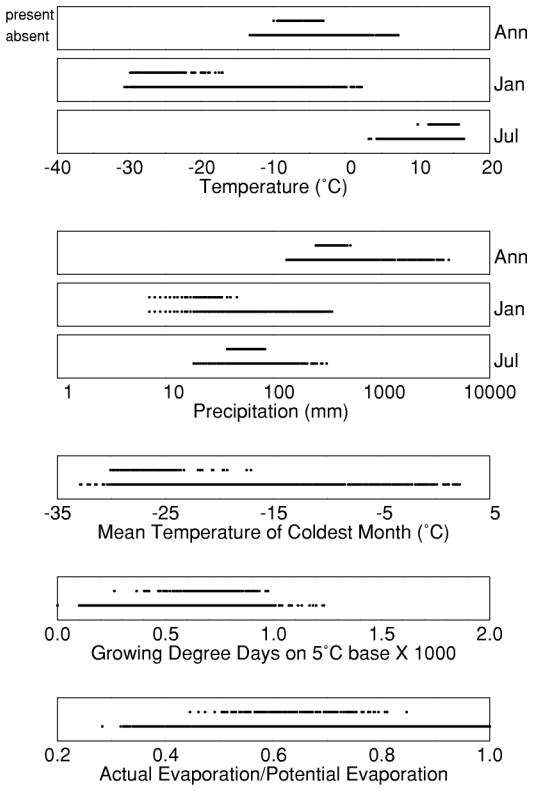


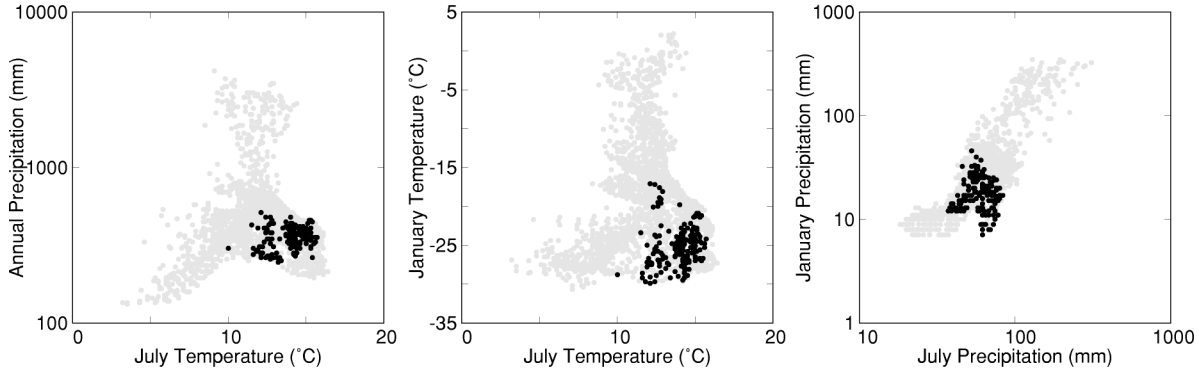


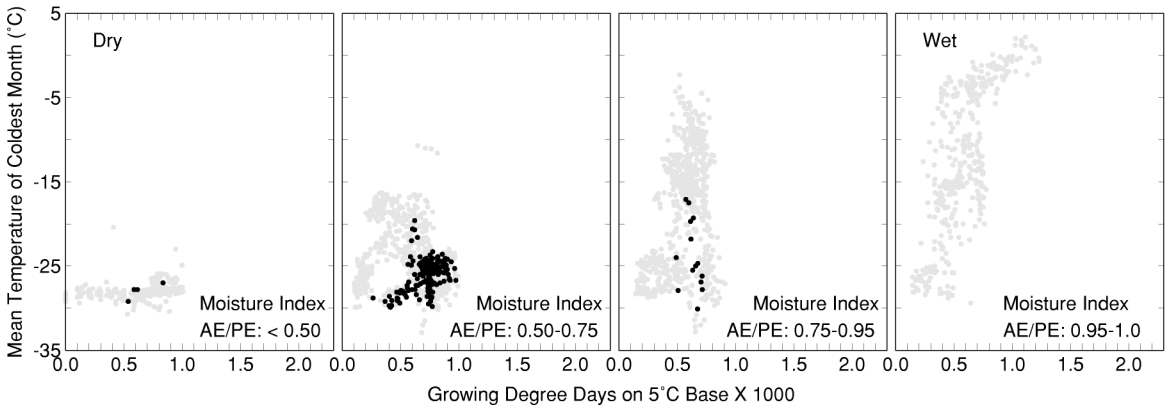


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Interior Yukon/Alaska Alpine Tundra

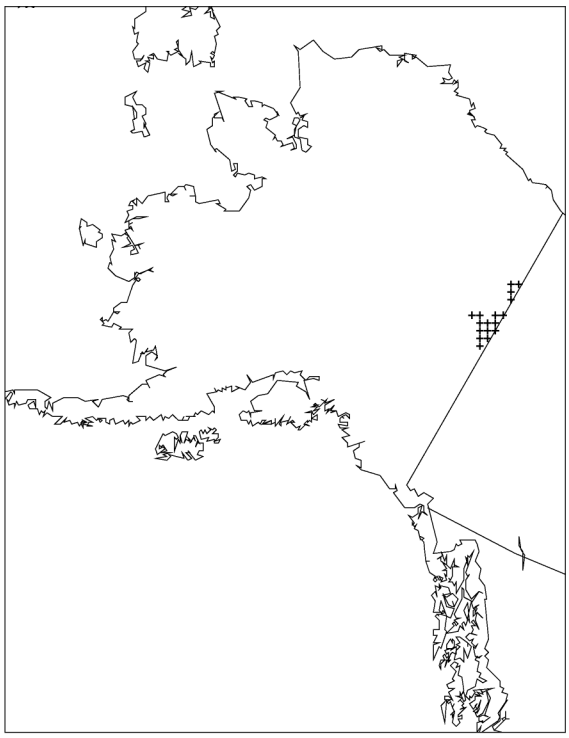


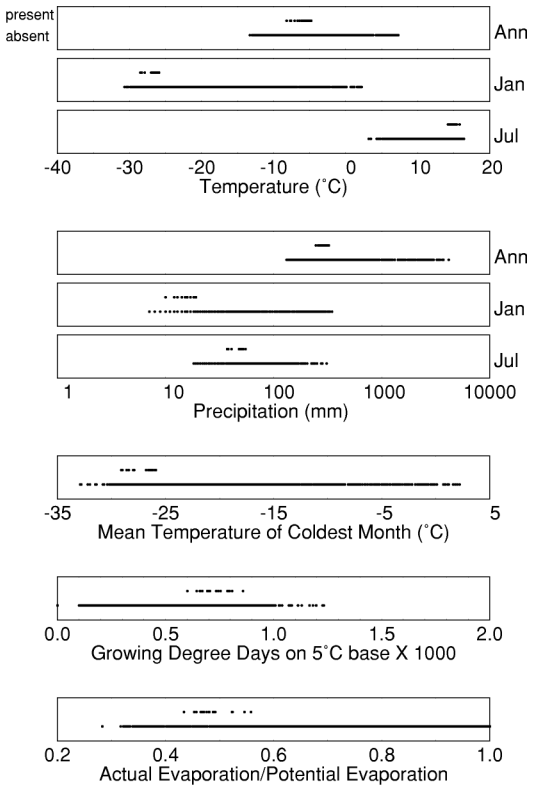


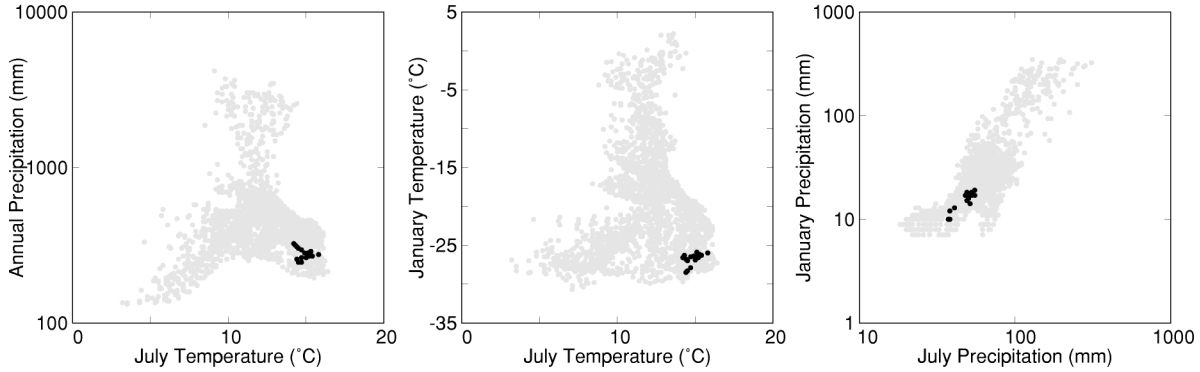


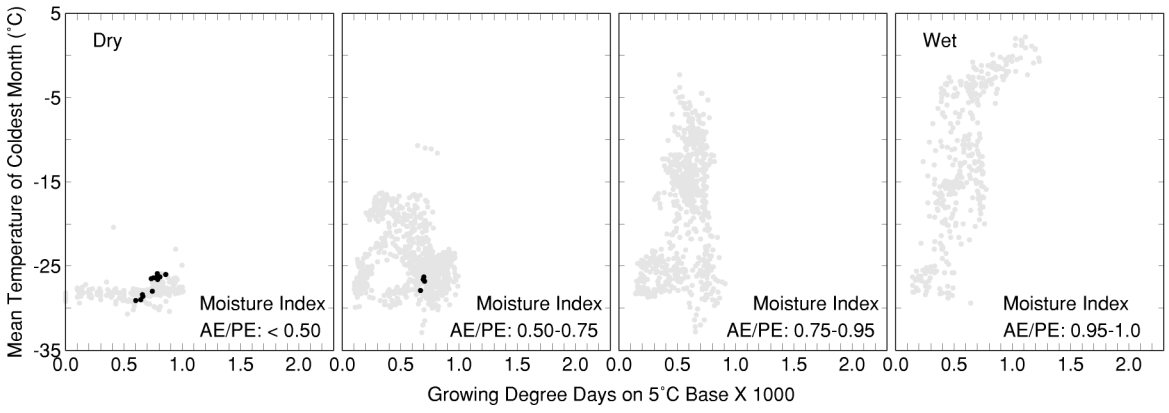


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Ogilvie/MacKenzie Alpine Tundra

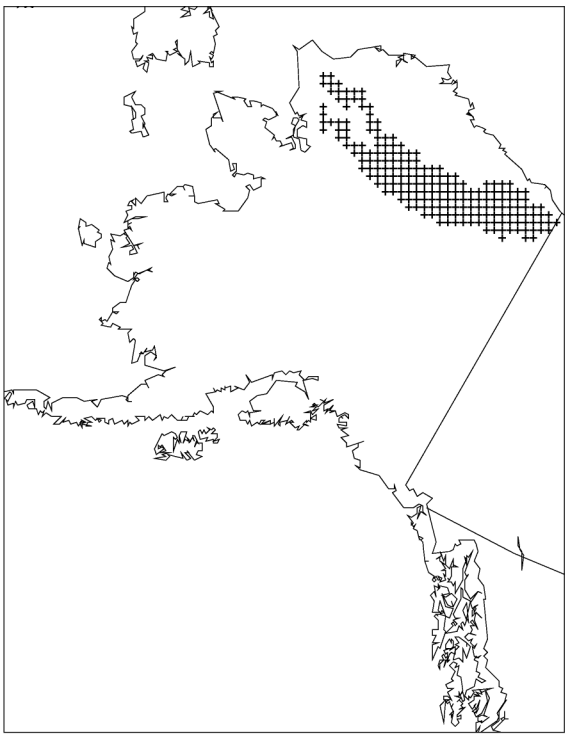


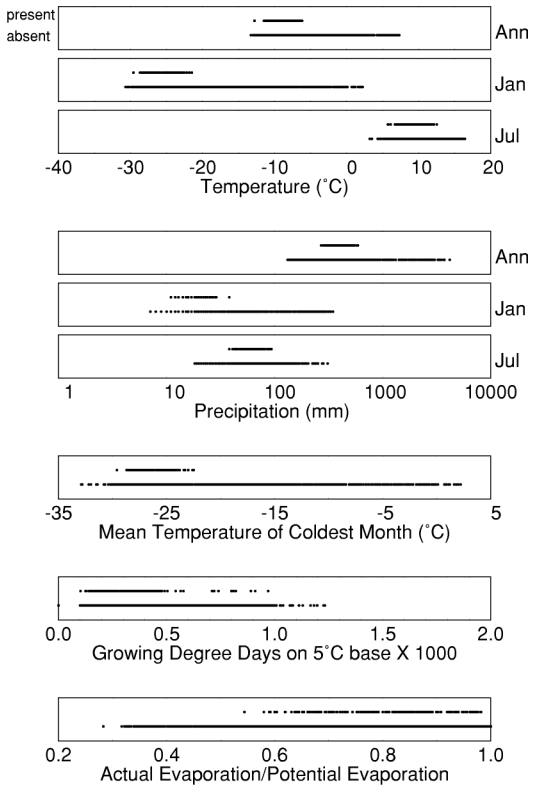


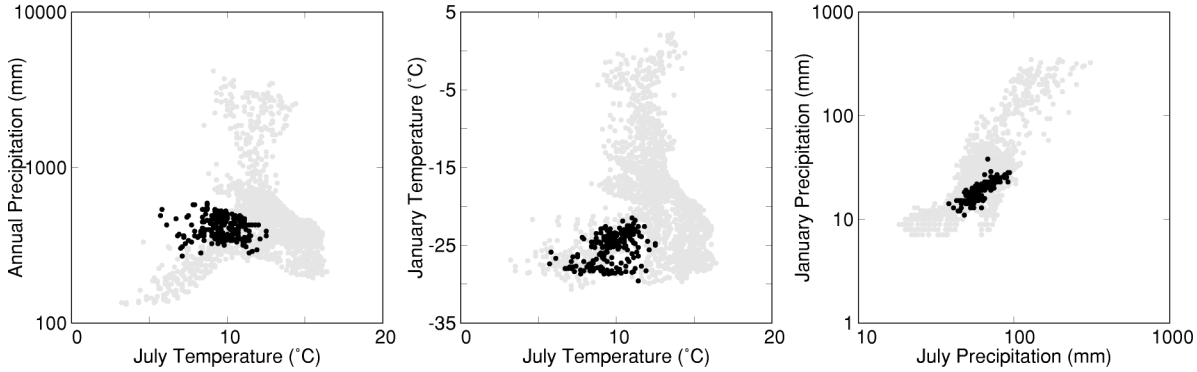


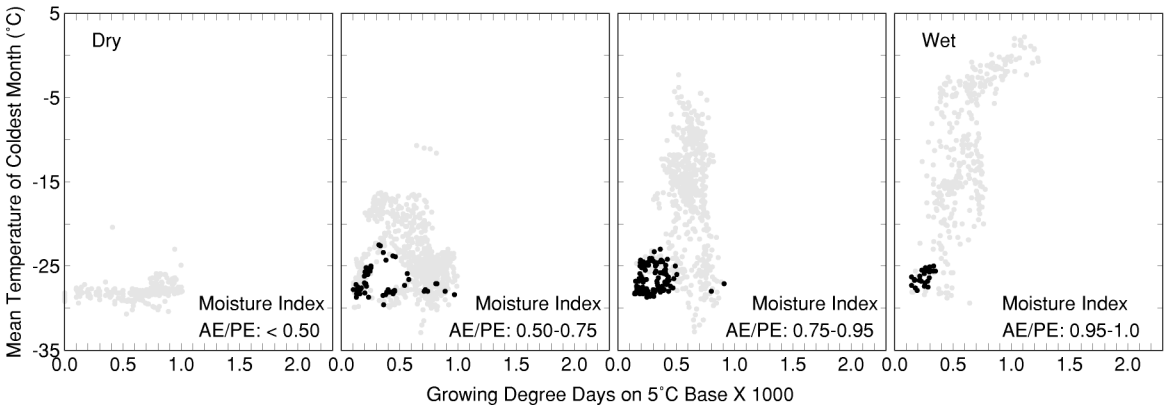


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Brooks/British Range Tundra

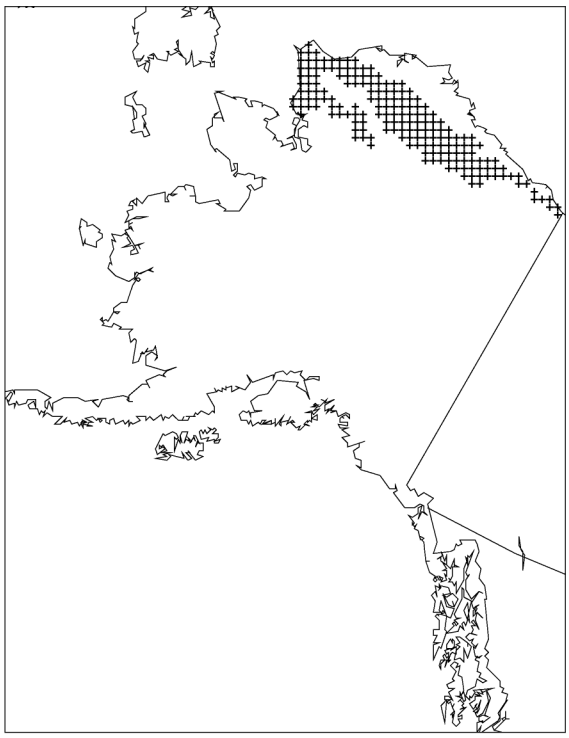


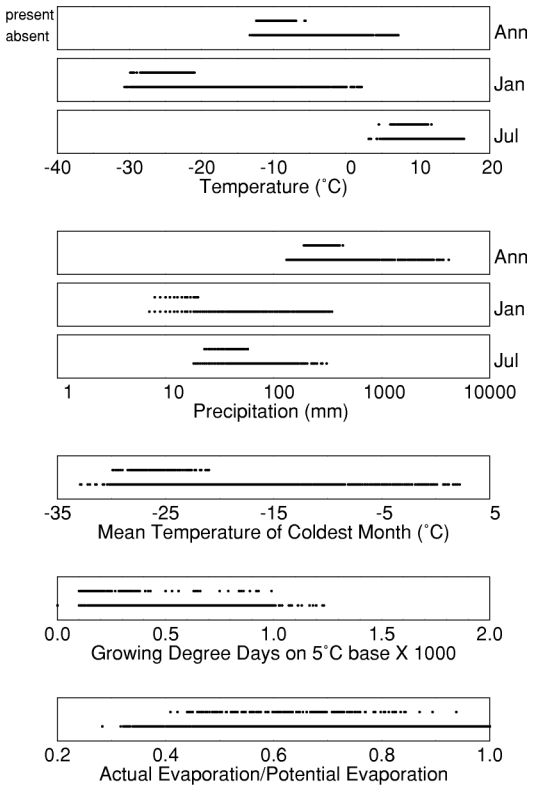


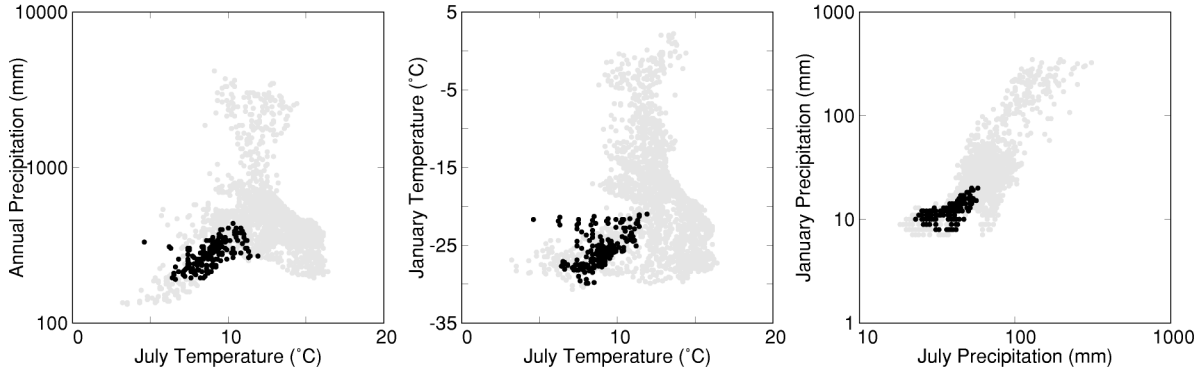


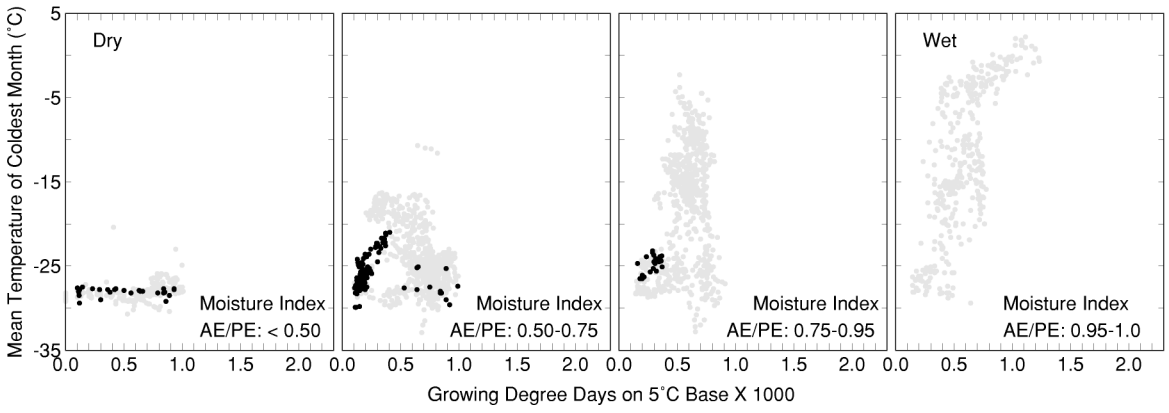


BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Arctic Foothills Tundra

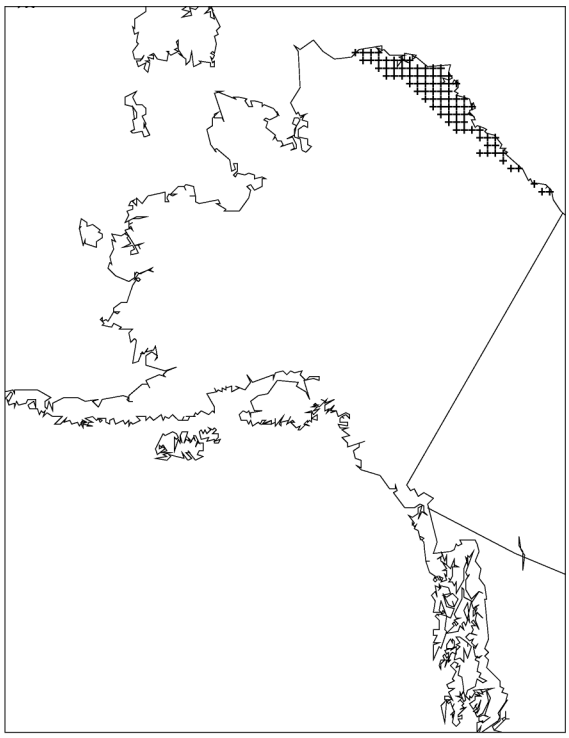


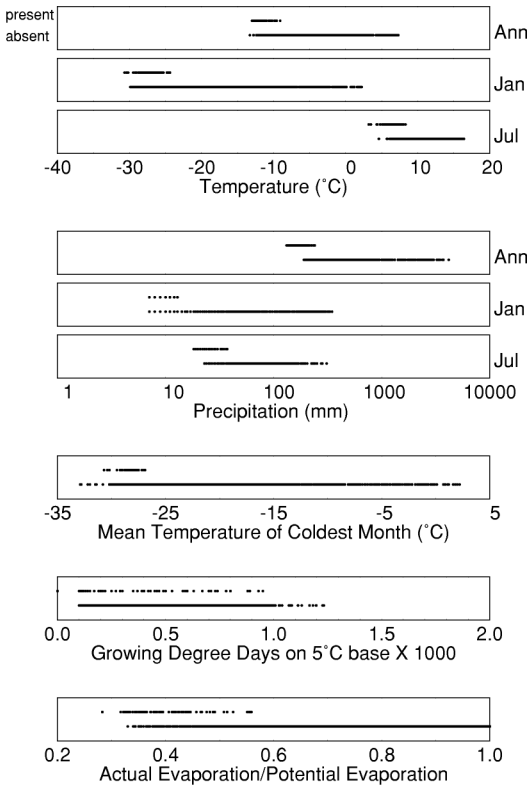


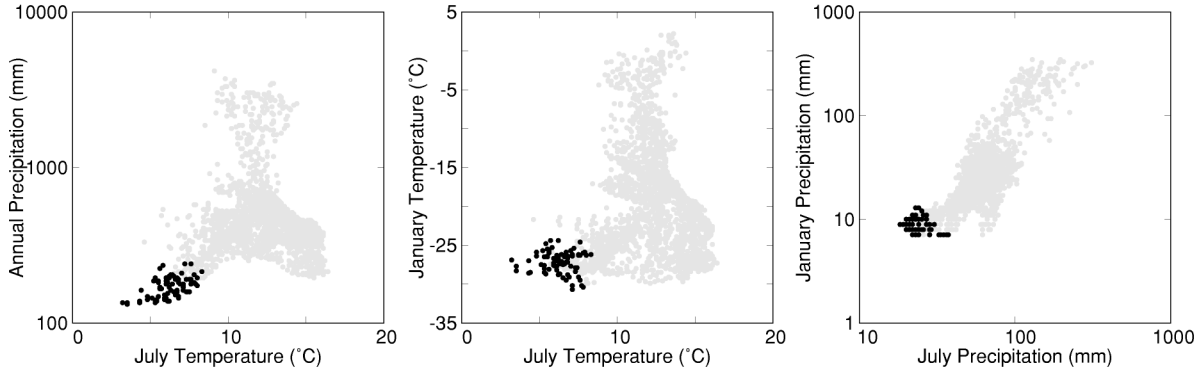


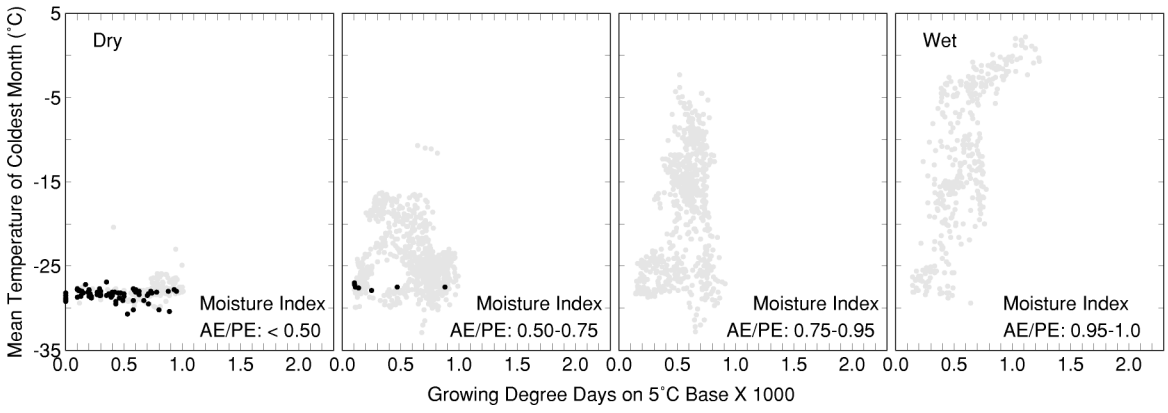


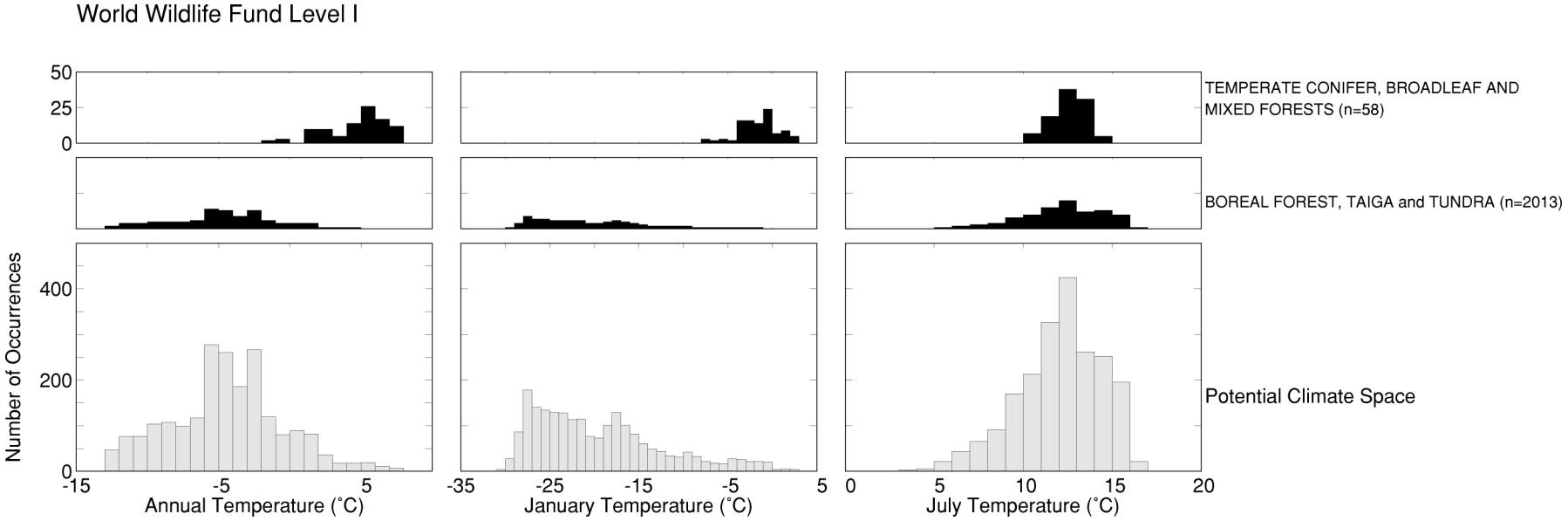
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Arctic Coastal Tundra



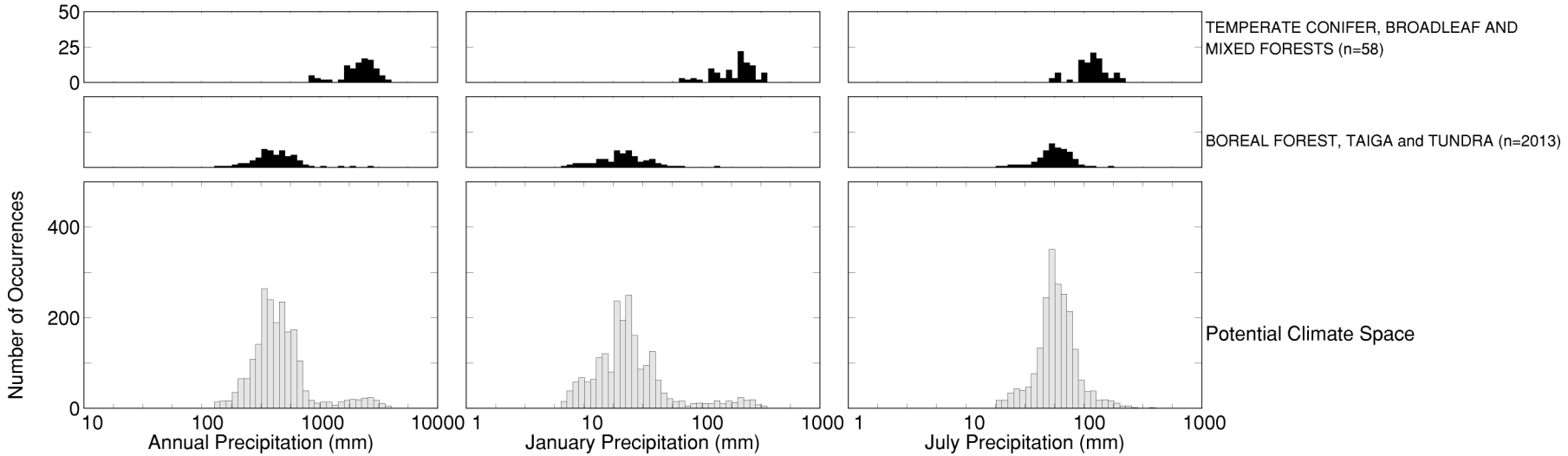


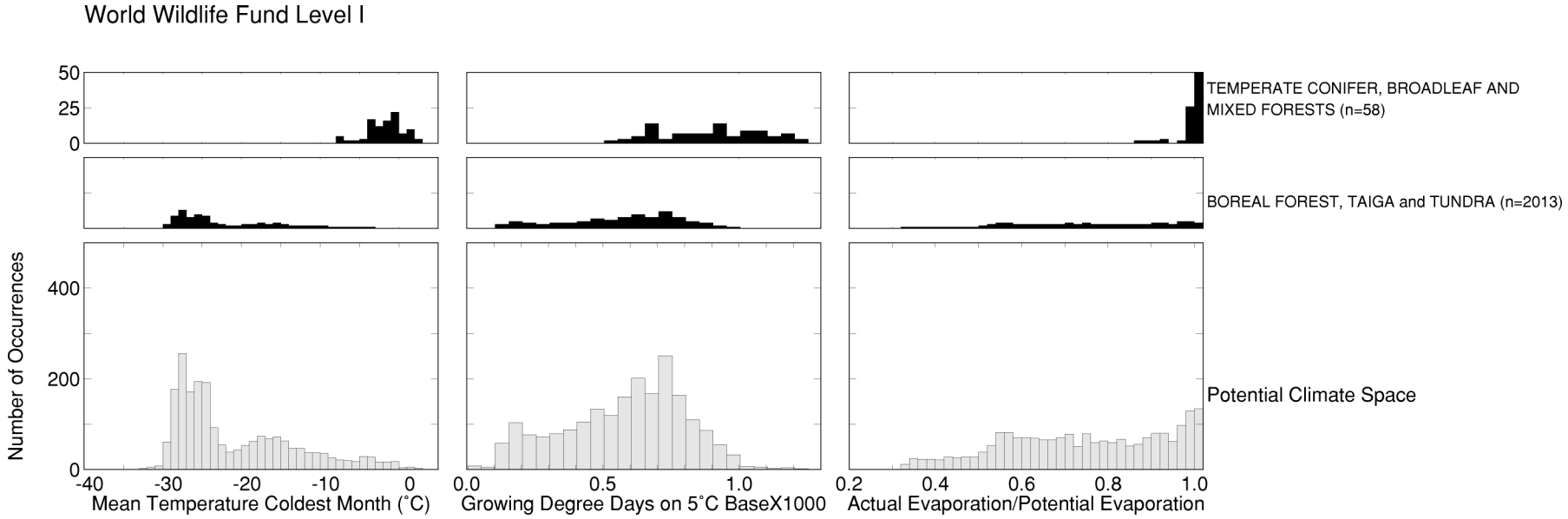


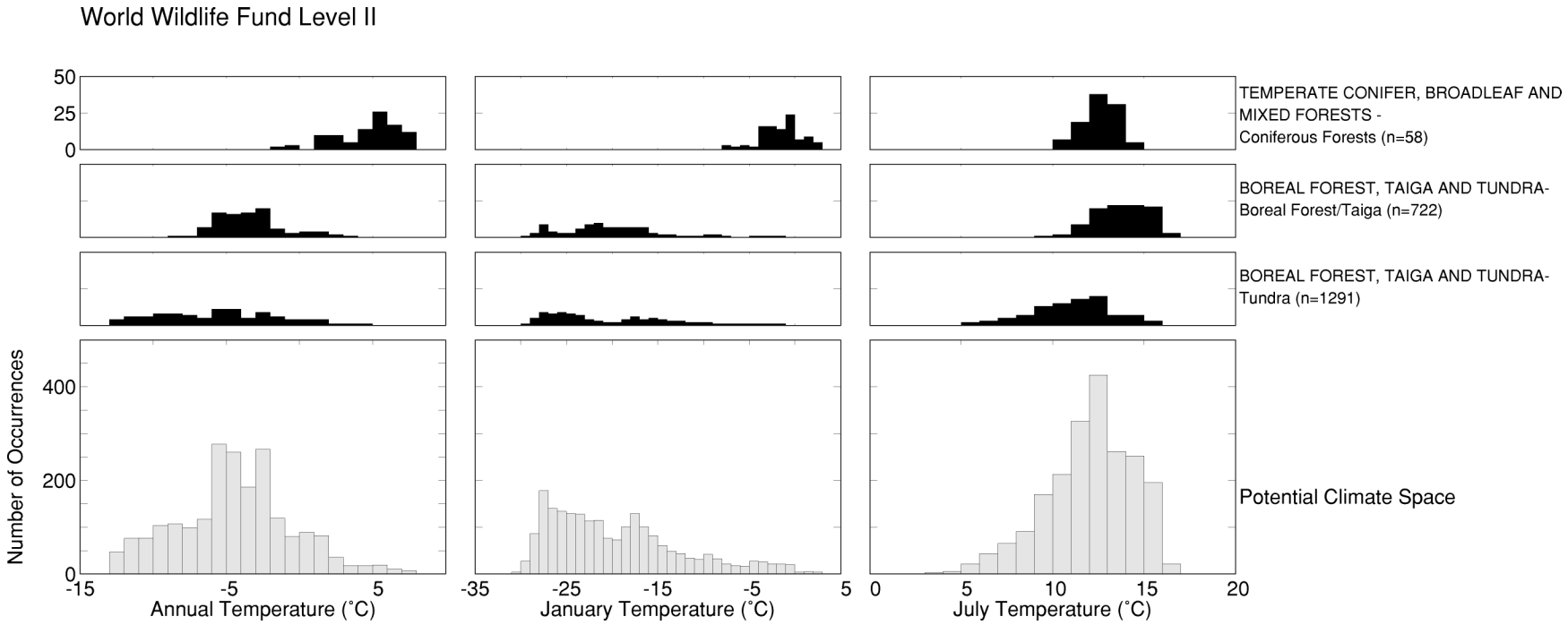


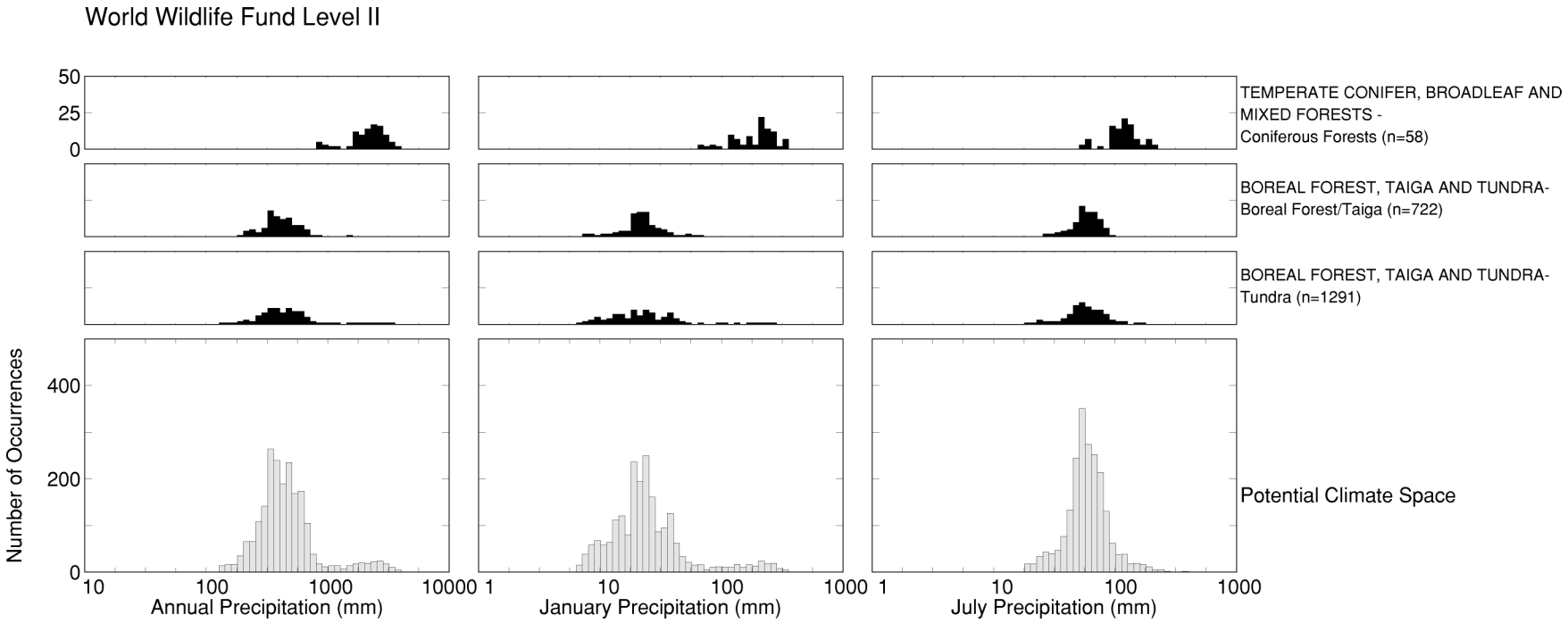

World Wildlife Fund Level I
50
25
0
400
200
0
Number of Occurrences
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS (n=58)
BOREAL FOREST, TAIGA and TUNDRA (n=2013)
Potential Climate Space

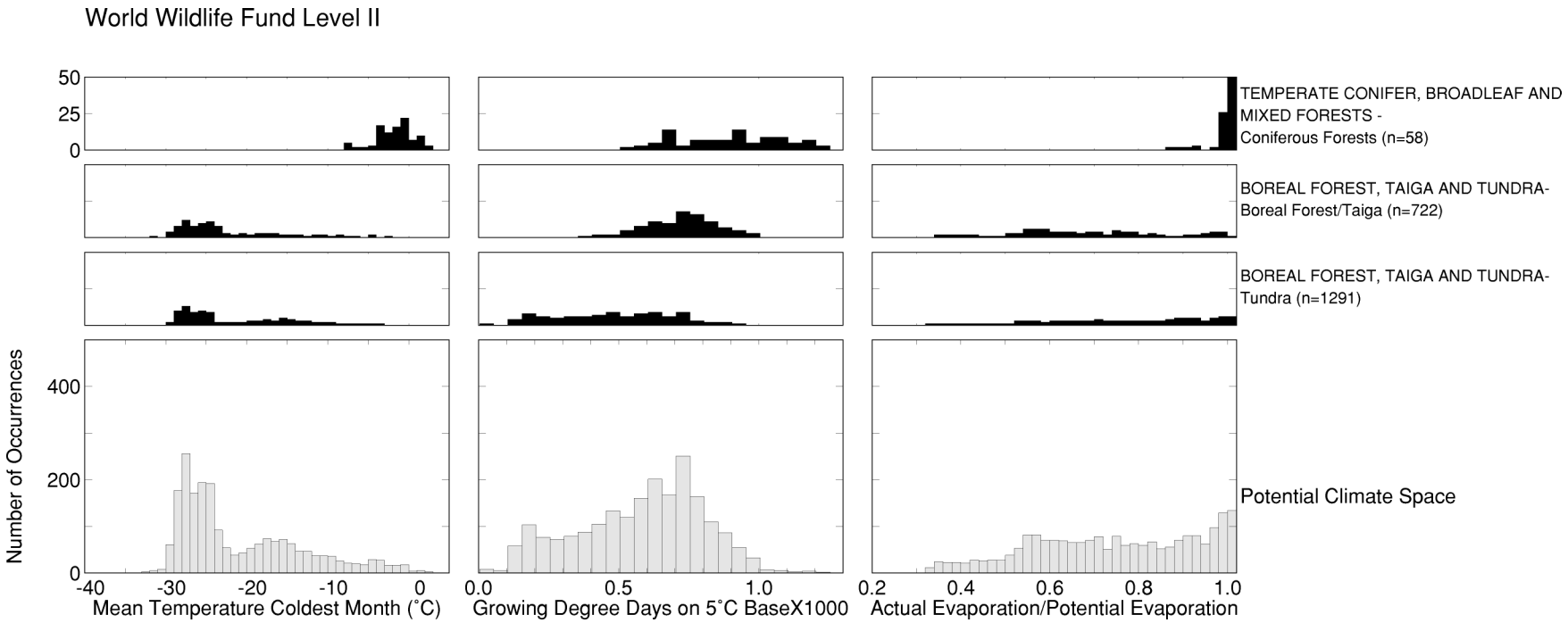
World Wildlife Fund Level I

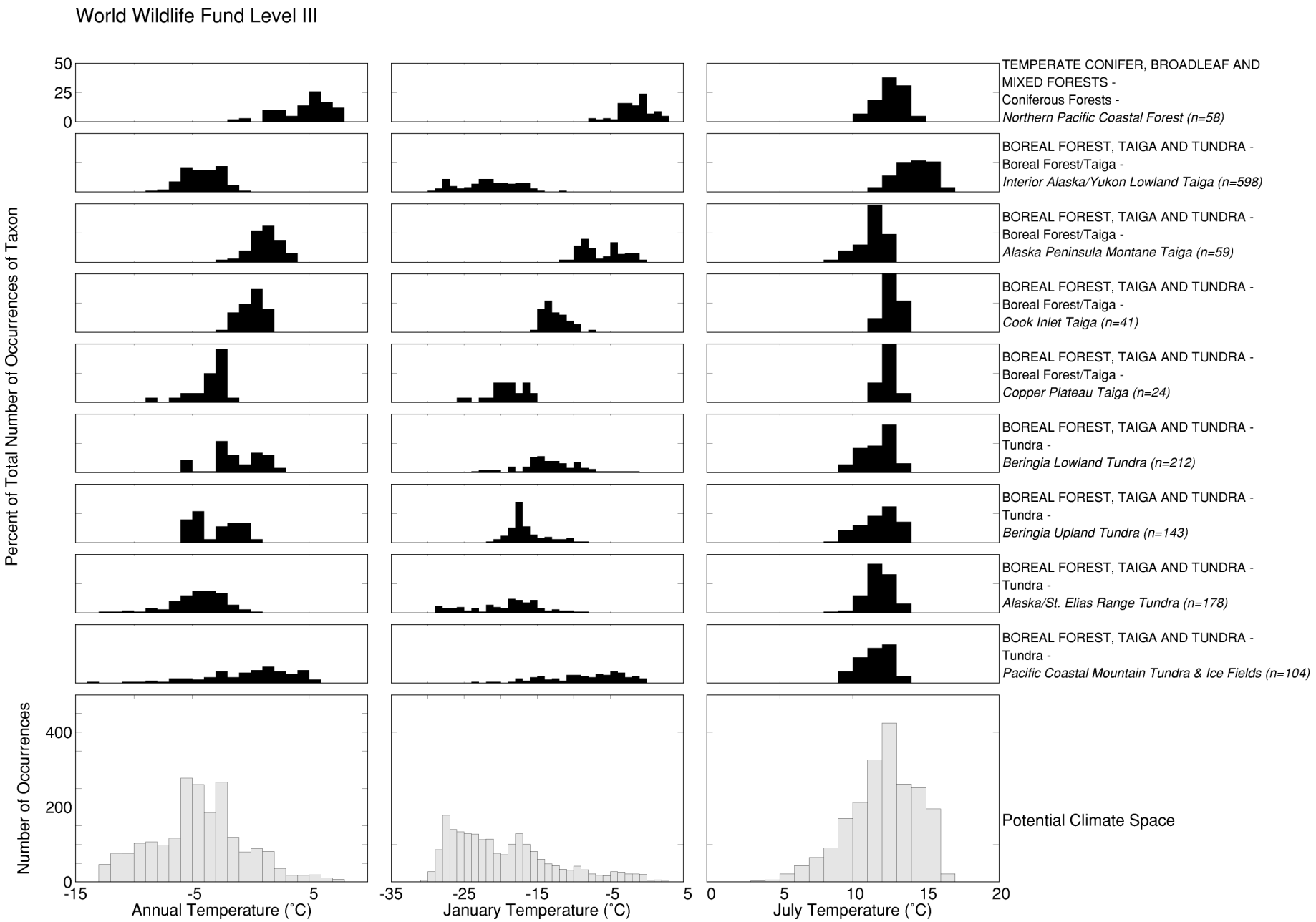



World Wildlife Fund Level I
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS (n=58)
BOREAL FOREST, TAIGA and TUNDRA (n=2013)
400
200
0
Number of Occurrences
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation

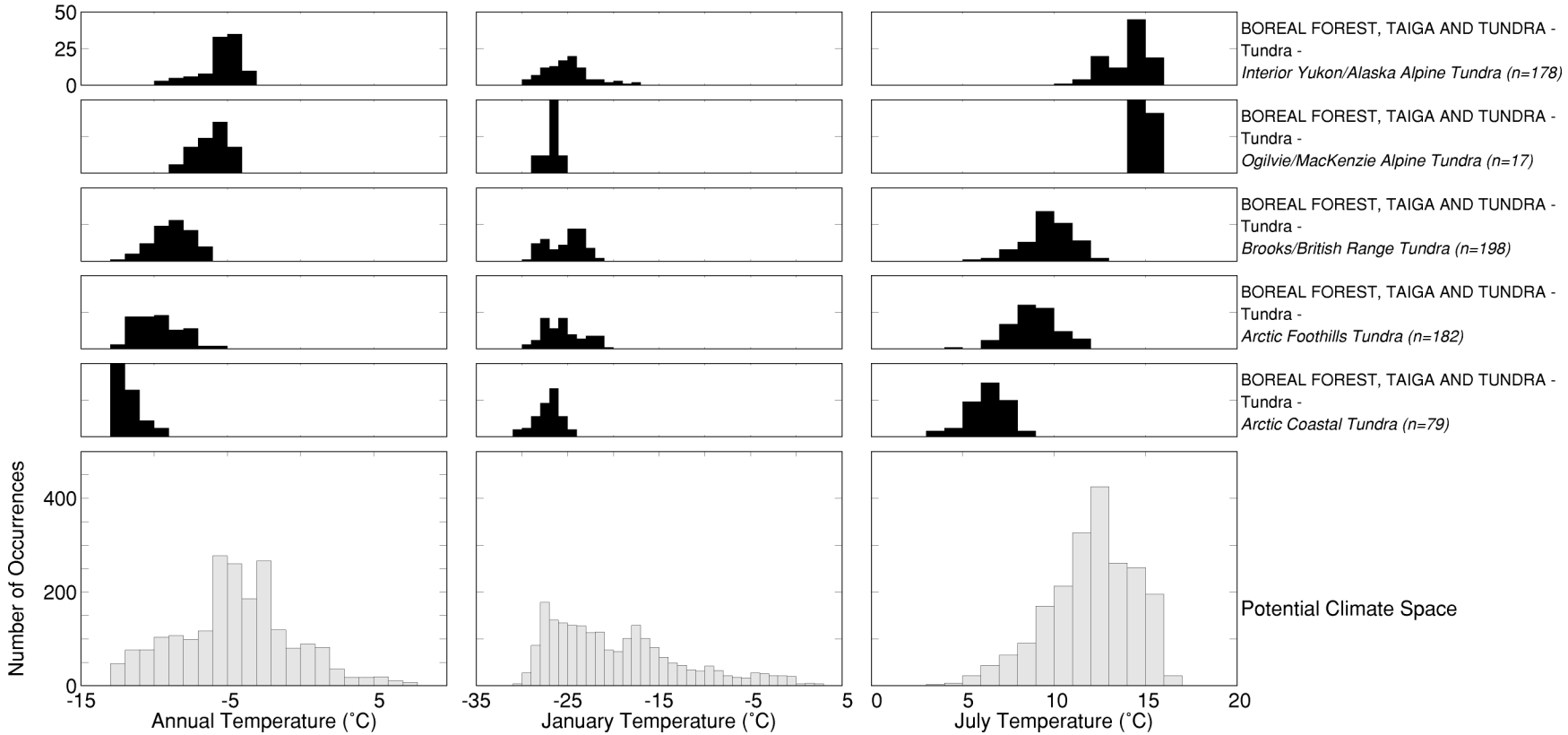

World Wildlife Fund Level II
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests (n=58)
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga (n=722)
BOREAL FOREST, TAIGA AND TUNDRA- Tundra (n=1291)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

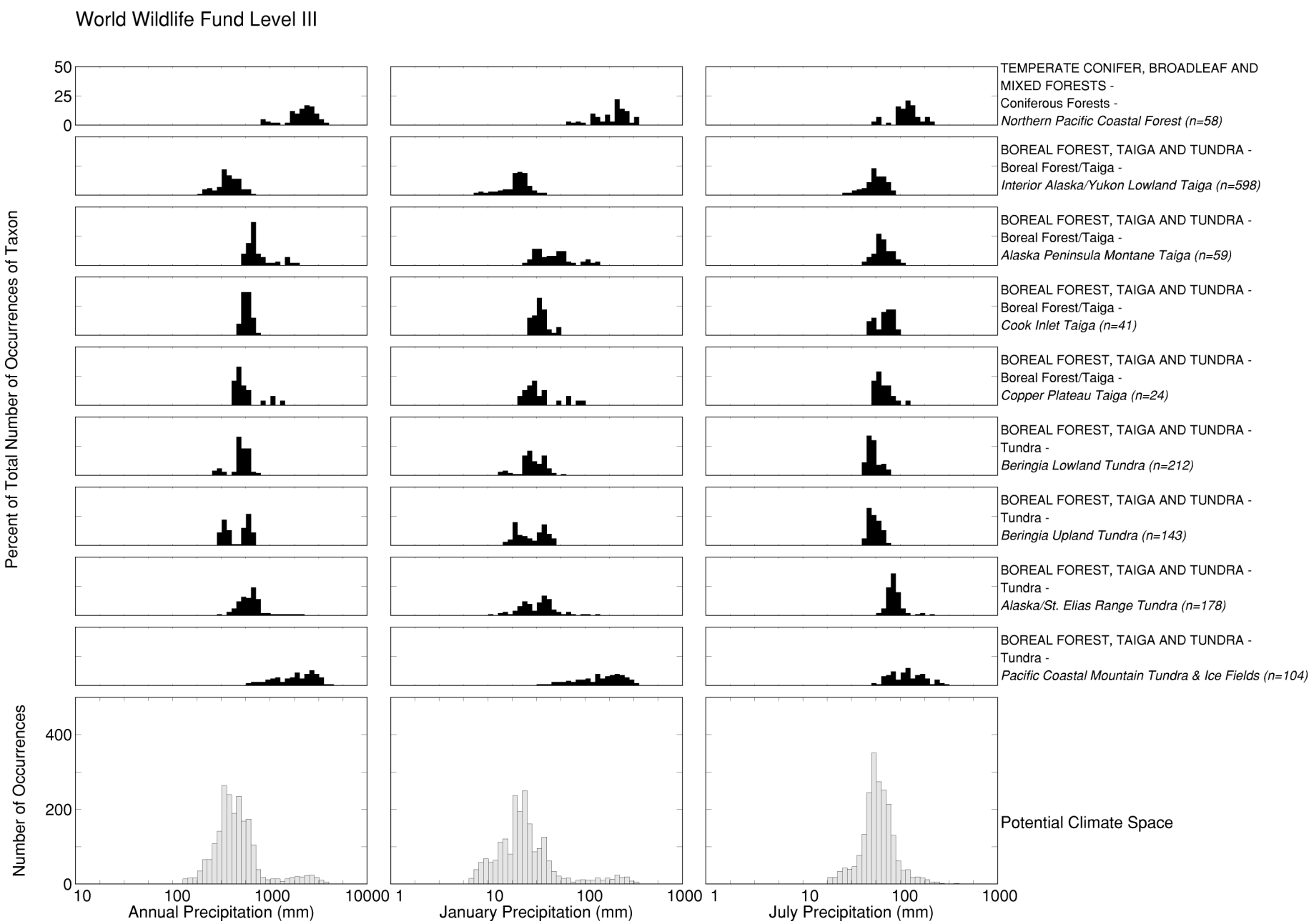

World Wildlife Fund Level II
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests (n=58)
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga (n=722)
BOREAL FOREST, TAIGA AND TUNDRA- Tundra (n=1291)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)


World Wildlife Fund Level II
50
25
0
400
200
0
Number of Occurrences
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests (n=58)
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga (n=722)
BOREAL FOREST, TAIGA AND TUNDRA- Tundra (n=1291)
Potential Climate Space

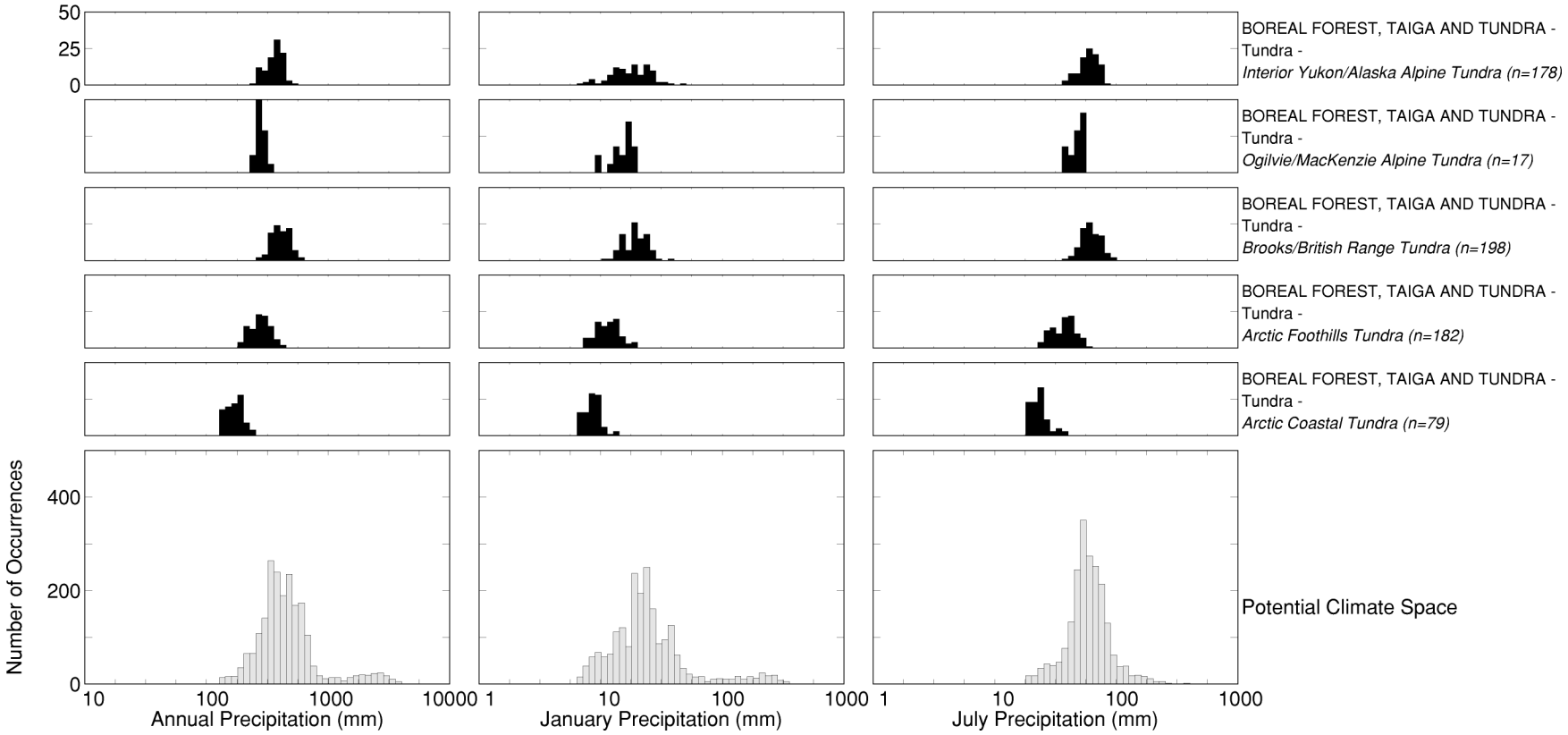

World Wildlife Fund Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS -
Coniferous Forests -
Northern Pacific Coastal Forest (n=58)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Interior Alaska/Yukon Lowland Taiga (n=598)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Alaska Peninsula Montane Taiga (n=59)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Cook Inlet Taiga (n=41)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Copper Plateau Taiga (n=24)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Lowland Tundra (n=212)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Upland Tundra (n=143)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Alaska/St. Elias Range Tundra (n=178)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Pacific Coastal Mountain Tundra & Ice Fields (n=104)
Number of Occurrences
400
200
0
Potential Climate Space
-15
-5
5
Annual Temperature (˚C)
-35
-25
-15
-5
5
January Temperature (˚C)
0
5
10
15
20
July Temperature (˚C)

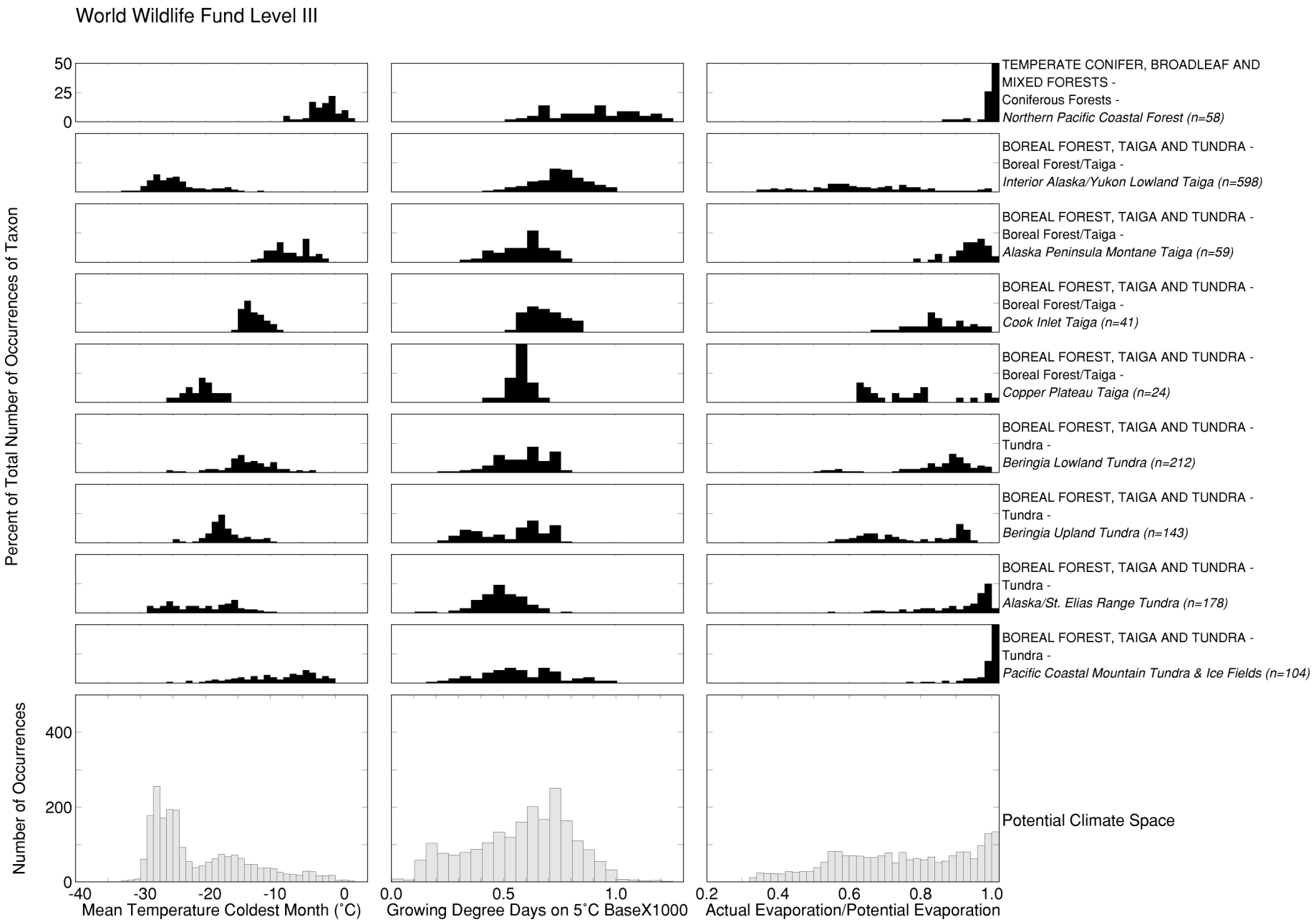
World Wildlife Fund Level III

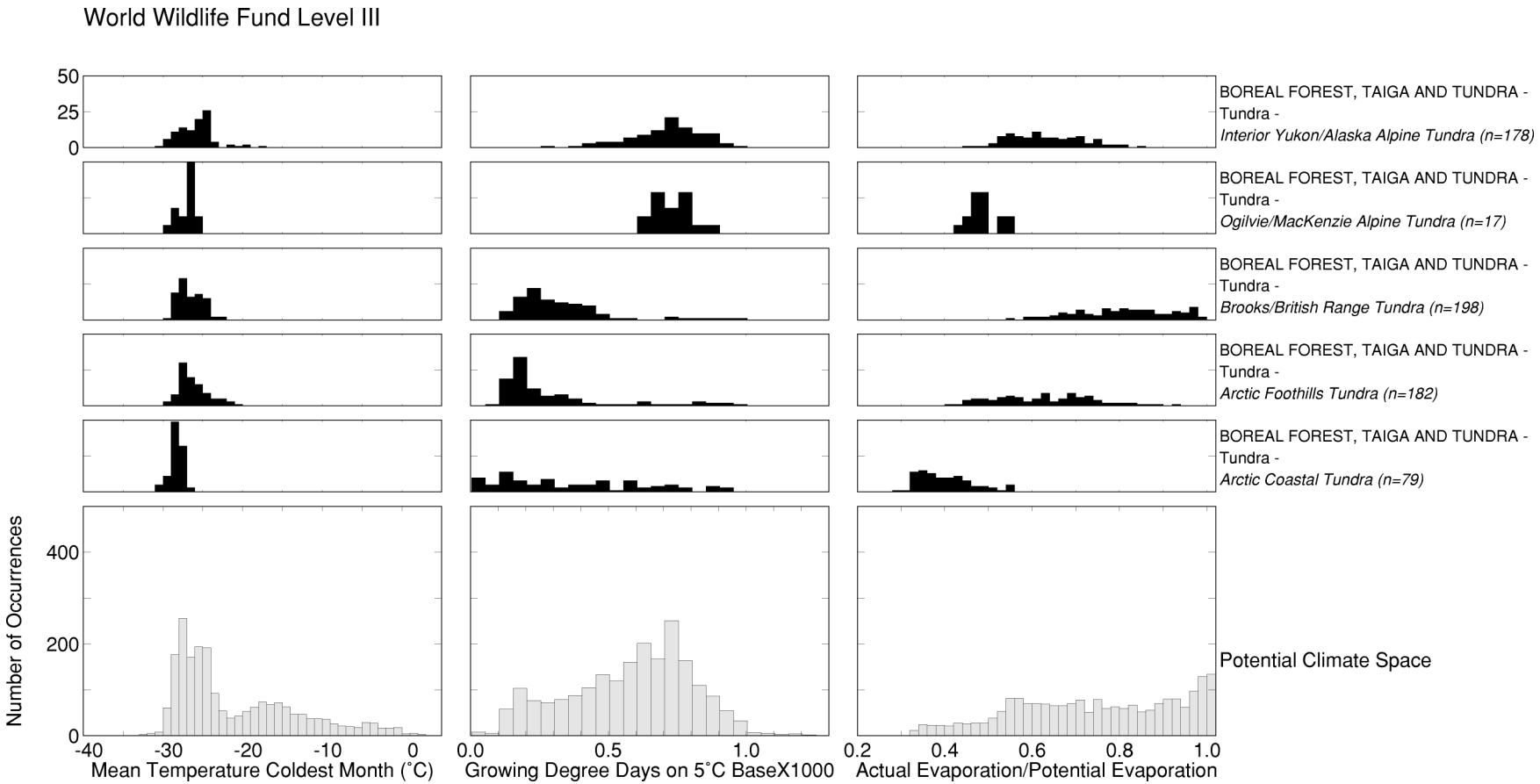



World Wildlife Fund Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS -
Coniferous Forests -
Northern Pacific Coastal Forest (n=58)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Interior Alaska/Yukon Lowland Taiga (n=598)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Alaska Peninsula Montane Taiga (n=59)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Cook Inlet Taiga (n=41)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Copper Plateau Taiga (n=24)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Lowland Tundra (n=212)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Upland Tundra (n=143)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Alaska/St. Elias Range Tundra (n=178)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Pacific Coastal Mountain Tundra & Ice Fields (n=104)
Number of Occurrences
400
200
0
Potential Climate Space
10
100
1000
10000
Annual Precipitation (mm)
1
10
100
1000
January Precipitation (mm)
1
10
100
1000
July Precipitation (mm)

World Wildlife Fund Level III




World Wildlife Fund Level III
Percent of Total Number of Occurrences of Taxon
50
25
0
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS -
Coniferous Forests -
Northern Pacific Coastal Forest (n=58)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Interior Alaska/Yukon Lowland Taiga (n=598)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Alaska Peninsula Montane Taiga (n=59)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Cook Inlet Taiga (n=41)
BOREAL FOREST, TAIGA AND TUNDRA -
Boreal Forest/Taiga -
Copper Plateau Taiga (n=24)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Lowland Tundra (n=212)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Beringia Upland Tundra (n=143)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Alaska/St. Elias Range Tundra (n=178)
BOREAL FOREST, TAIGA AND TUNDRA -
Tundra -
Pacific Coastal Mountain Tundra & Ice Fields (n=104)
Number of Occurrences
400
200
0
Potential Climate Space
-40
-30
-20
-10
0
Mean Temperature Coldest Month (˚C)
0.0
0.5
1.0
Growing Degree Days on 5˚C BaseX1000
0.2
0.4
0.6
0.8
1.0
Actual Evaporation/Potential Evaporation


World Wildlife Fund Level III
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - Interior Yukon/Alaska Alpine Tundra (n=178)
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - Ogilvie/MacKenzie Alpine Tundra (n=17)
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - Brooks/British Range Tundra (n=198)
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - Arctic Foothills Tundra (n=182)
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - Arctic Coastal Tundra (n=79)
Potential Climate Space
Number of Occurrences
Mean Temperature Coldest Month (˚C)
Growing Degree Days on 5˚C BaseX1000
Actual Evaporation/Potential Evaporation

Distributions of World Wildlife Fund Level I ecoregions in relation to mean annual temperature in Alaska.

[N, number]

Level I ecoregion	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	-2.0	1.5	2.3	5.0	6.2	7.0	7.2
BOREAL FOREST, TAIGA AND TUNDRA	2013	-13.4	-10.1	-7.2	-4.9	-2.5	0.0	5.4

Distributions of World Wildlife Fund Level I ecoregions in relation to mean January temperature in Alaska.

[N, number]

Level I ecoregion	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	-7.9	-4.6	-3.3	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA	2013	-30.8	-27.8	-25.7	-21.6	-16.3	-10.7	-0.3

Distributions of World Wildlife Fund Level I ecoregions in relation to mean July temperature in Alaska.

[N, number]

Level I ecoregion	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	10.1	11.0	11.8	12.7	13.3	13.6	14.3
BOREAL FOREST, TAIGA AND TUNDRA	2013	3.1	8.6	10.4	12.1	13.7	14.9	16.3

Distributions of World Wildlife Fund Level I ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

Level I ecoregion	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	810	1120	1780	2260	2725	2920	3615
BOREAL FOREST, TAIGA AND TUNDRA	2013	130	250	325	410	545	685	4130

Distributions of World Wildlife Fund Level I ecoregions in relation to mean January precipitation in Alaska.

[N, number]

Level I ecoregion	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	64	97	133	210	246	284	349
BOREAL FOREST, TAIGA AND TUNDRA	2013	7	11	16	22	30	43	321

Distributions of World Wildlife Fund Level I ecoregions in relation to mean July precipitation in Alaska.

[N, number]

Level I ecoregion	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	53	63	100	121	138	167	202
BOREAL FOREST, TAIGA AND TUNDRA	2013	18	36	48	56	71	85	307

Distributions of World Wildlife Fund Level I ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

Level I ecoregion	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	-7.9	-5.0	-3.5	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA	2013	-33.0	-28.3	-27.2	-24.5	-16.7	-11.1	-0.3

Distributions of World Wildlife Fund Level I ecoregions in relation to growing degree days in Alaska.

[N, number]

Level I ecoregion	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	0.50	0.64	0.71	0.91	1.03	1.13	1.23
BOREAL FOREST, TAIGA AND TUNDRA	2013	0.00	0.21	0.41	0.60	0.73	0.83	1.00

Distributions of World Wildlife Fund Level I ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Level I ecoregion	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS	58	0.87	0.96	0.99	1.00	1.00	1.00	1.00
BOREAL FOREST, TAIGA AND TUNDRA	2013	0.28	0.48	0.58	0.73	0.89	0.97	1.00

Distributions of World Wildlife Fund Level II ecoregions in relation to mean annual temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	-2.0	1.5	2.3	5.0	6.2	7.0	7.2
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	-9.8	-6.2	-5.3	-3.8	-2.5	-0.1	3.7
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	-13.4	-11.1	-8.9	-5.4	-2.5	0.1	5.4

Distributions of World Wildlife Fund Level II ecoregions in relation to mean January temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	-7.9	-4.6	-3.3	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	-29.8	-27.6	-23.8	-20.6	-17.1	-11.7	-0.5
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	-30.8	-27.8	-26.1	-22.7	-15.7	-10.5	-0.3

Distributions of World Wildlife Fund Level II ecoregions in relation to mean July temperature in Alaska.

[N, number]

Level II ecoregion	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	10.1	11.0	11.8	12.7	13.3	13.6	14.3
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	8.7	11.7	12.6	13.7	14.8	15.5	16.3
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	3.1	7.7	9.4	11.2	12.4	13.9	15.7

Distributions of World Wildlife Fund Level II ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

Level II ecoregion	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	810	1120	1780	2260	2725	2920	3615
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	195	255	335	395	500	615	2000
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	130	240	315	420	575	750	4130

Distributions of World Wildlife Fund Level II ecoregions in relation to mean January precipitation in Alaska.

[N, number]

Level II ecoregion	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	64	97	133	210	246	284	349
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	7	13	18	22	27	35	140
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	7	10	15	22	34	47	321

Distributions of World Wildlife Fund Level II ecoregions in relation to mean July precipitation in Alaska.

[N, number]

Level II ecoregion	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	53	63	100	121	138	167	202
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	25	39	50	57	69	77	116
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	18	32	47	56	72	91	307

Distributions of World Wildlife Fund Level II ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

Level II ecoregion	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	-7.9	-5.0	-3.5	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	-33.0	-28.5	-27.3	-24.6	-18.8	-11.7	-1.7
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	-30.8	-28.3	-27.2	-24.5	-15.7	-10.9	-0.3

Distributions of World Wildlife Fund Level II ecoregions in relation to growing degree days in Alaska.

[N, number]

Level II ecoregion	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	0.50	0.64	0.71	0.91	1.03	1.13	1.23
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	0.31	0.55	0.63	0.73	0.80	0.88	1.00
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	0.00	0.18	0.30	0.49	0.65	0.74	0.99

Distributions of World Wildlife Fund Level II ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Level II ecoregion	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests	58	0.87	0.96	0.99	1.00	1.00	1.00	1.00
BOREAL FOREST, TAIGA AND TUNDRA- Boreal Forest/Taiga	722	0.33	0.45	0.56	0.67	0.80	0.94	1.00
BOREAL FOREST, TAIGA AND TUNDRA- Tundra	1291	0.28	0.51	0.62	0.78	0.91	0.98	1.00

Distributions of World Wildlife Fund Level III ecoregions in relation to mean annual temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean annual temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	-2.0	1.5	2.3	5.0	6.2	7.0	7.2
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	-9.8	-6.3	-5.4	-4.3	-3.0	-2.4	0.0
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	-2.7	-0.3	0.1	1.3	2.0	2.7	3.7
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	-2.7	-1.5	-1.0	0.1	0.8	1.2	1.6
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	-8.3	-6.4	-4.3	-3.2	-2.9	-2.3	-1.7
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	-6.3	-5.3	-2.5	-1.8	0.5	1.3	3.4
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	-6.0	-5.3	-5.1	-2.8	-1.5	-0.6	0.3
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	-12.2	-7.6	-5.9	-4.2	-3.1	-2.2	-0.1
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	-13.4	-6.4	-2.9	0.5	2.5	4.2	5.4
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	-10.1	-7.9	-5.9	-5.2	-4.7	-4.2	-3.2
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	-8.3	-7.8	-7.2	-6.0	-5.4	-5.1	-4.9
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	-12.9	-10.7	-9.7	-8.8	-7.8	-7.2	-6.3
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	-12.5	-11.6	-11.1	-10.1	-8.6	-7.7	-5.7
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	-13.1	-12.8	-12.5	-12.2	-11.5	-10.5	-9.2

Distributions of World Wildlife Fund Level III ecoregions in relation to mean January temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean January temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	-7.9	-4.6	-3.3	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	-29.8	-27.8	-24.8	-21.7	-18.7	-17.0	-10.1
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	-11.2	-9.5	-8.7	-7.1	-4.3	-2.5	-0.5
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	-15.6	-14.7	-14.1	-13.1	-11.7	-10.8	-8.0
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	-25.4	-24.4	-20.3	-19.2	-17.5	-16.3	-15.5
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	-23.8	-18.7	-15.7	-13.8	-10.9	-8.6	-1.5
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	-21.2	-19.2	-18.0	-17.3	-15.9	-12.2	-8.2
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	-28.9	-27.5	-22.7	-18.4	-16.0	-13.7	-8.8
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	-24.1	-16.2	-12.9	-8.1	-4.4	-2.7	-0.3
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	-30.0	-28.2	-27.0	-25.3	-24.0	-21.5	-17.2
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	-28.6	-28.4	-28.0	-26.7	-26.4	-26.3	-26.0
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	-29.7	-28.3	-27.4	-24.9	-23.9	-23.2	-21.6
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	-30.0	-28.0	-27.5	-25.9	-24.2	-22.3	-21.1
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	-30.8	-29.2	-28.2	-27.0	-26.4	-25.8	-24.5

Distributions of World Wildlife Fund Level III ecoregions in relation to mean July temperature in Alaska.

[N, number]

Level III ecoregion	N	Mean July temperature (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	10.1	11.0	11.8	12.7	13.3	13.6	14.3
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	10.5	12.3	13.2	14.1	15.0	15.6	16.3
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	8.7	9.5	10.7	11.4	11.7	12.0	12.7
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	11.3	11.7	12.1	12.4	12.9	13.3	13.6
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	11.1	11.5	12.2	12.4	12.8	12.8	13.1
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	9.1	10.0	10.6	11.8	12.5	12.8	13.5
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	8.3	9.5	10.5	11.8	12.5	13.1	13.7
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	8.4	10.5	11.2	11.7	12.2	12.7	13.8
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	9.0	9.8	10.6	11.5	12.2	12.6	13.1
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	9.9	12.2	13.0	14.1	14.6	15.0	15.6
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	14.1	14.2	14.3	14.6	15.1	15.2	15.7
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	5.6	7.8	8.9	9.6	10.5	11.0	12.4
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	4.5	7.1	7.9	8.8	9.5	10.5	11.8
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	3.1	4.7	5.5	6.2	7.0	7.5	8.2

Distributions of World Wildlife Fund Level III ecoregions in relation to mean annual precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean annual precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	810	1120	1780	2260	2725	2920	3615
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	195	245	325	370	450	510	675
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	535	560	615	680	770	1260	2000
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	485	500	530	570	610	655	765
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	415	430	460	495	585	1030	1410
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	250	310	475	510	575	620	840
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	285	315	340	520	595	640	715
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	310	455	520	630	700	795	2225
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	610	825	1185	1850	2665	3015	4130
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	240	275	320	365	400	430	505
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	245	245	260	275	290	305	320
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	265	330	360	400	465	500	585
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	185	210	240	280	310	355	435
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	130	135	145	170	190	200	240

Distributions of World Wildlife Fund Level III ecoregions in relation to mean January precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean January precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	64	97	133	210	246	284	349
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	7	12	17	21	24	27	41
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	25	29	32	48	59	98	140
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	26	28	30	34	37	45	53
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	21	22	26	29	36	68	91
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	13	17	25	28	37	40	58
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	15	18	20	28	37	44	49
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	11	20	24	34	42	49	130
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	32	58	92	151	222	277	321
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	7	11	13	18	24	27	46
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	10	10	13	17	17	18	19
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	11	15	16	20	23	25	38
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	8	9	10	12	13	15	20
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	7	7	8	9	10	10	13

Distributions of World Wildlife Fund Level III ecoregions in relation to mean July precipitation in Alaska.

[N, number]

Level III ecoregion	N	Mean July precipitation (mm)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	53	63	100	121	138	167	202
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	25	37	48	56	67	74	89
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	43	49	57	66	74	84	106
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	48	49	54	71	81	88	100
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	52	54	58	63	72	89	116
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	40	45	49	51	56	66	77
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	42	47	49	53	61	65	74
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	58	72	78	85	93	103	223
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	51	69	87	116	156	189	307
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	37	45	53	60	68	74	83
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	37	38	41	50	51	53	55
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	38	49	55	60	71	77	94
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	23	27	31	38	43	49	58
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	18	20	21	23	25	28	37

Distributions of World Wildlife Fund Level III ecoregions in relation to mean temperature of the coldest month in Alaska.

[N, number]

Level III ecoregion	N	Mean temperature of the coldest month (°C)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	-7.9	-5.0	-3.5	-1.5	-0.4	1.1	2.1
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	-33.0	-28.8	-27.6	-25.5	-23.2	-18.1	-10.3
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	-12.5	-10.2	-9.3	-7.3	-4.6	-3.4	-1.7
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	-15.7	-14.7	-14.1	-13.1	-11.7	-10.8	-9.0
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	-25.4	-24.8	-22.7	-20.3	-19.2	-17.4	-16.4
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	-26.0	-19.2	-15.7	-13.8	-11.0	-8.6	-2.4
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	-25.1	-20.4	-18.8	-17.5	-16.0	-12.8	-9.8
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	-28.9	-27.5	-25.5	-20.3	-16.0	-14.3	-10.0
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	-25.7	-17.6	-13.2	-8.1	-4.6	-2.7	-0.3
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	-30.2	-28.8	-27.8	-25.9	-24.8	-24.2	-17.2
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	-29.2	-29.1	-28.5	-26.7	-26.4	-26.3	-26.0
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	-29.7	-28.4	-28.0	-27.0	-25.6	-24.7	-22.6
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	-30.0	-28.2	-27.7	-26.8	-25.2	-23.5	-21.1
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	-30.8	-29.3	-28.8	-28.3	-28.0	-27.8	-27.0

Distributions of World Wildlife Fund Level III ecoregions in relation to growing degree days in Alaska.

[N, number]

Level III ecoregion	N	Growing degree days (on 5°C base x 1000)						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	0.50	0.64	0.71	0.91	1.03	1.13	1.23
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	0.32	0.57	0.67	0.74	0.82	0.89	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	0.31	0.42	0.50	0.60	0.64	0.70	0.77
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	0.52	0.56	0.61	0.66	0.72	0.79	0.81
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	0.41	0.48	0.51	0.57	0.59	0.61	0.66
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	0.23	0.42	0.49	0.60	0.66	0.72	0.77
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	0.20	0.30	0.36	0.57	0.64	0.72	0.78
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	0.14	0.36	0.42	0.48	0.55	0.60	0.75
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	0.17	0.33	0.44	0.55	0.68	0.83	0.96
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	0.26	0.51	0.63	0.72	0.79	0.87	0.97
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	0.60	0.64	0.66	0.73	0.78	0.79	0.85
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	0.10	0.16	0.20	0.26	0.37	0.44	0.97
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	0.10	0.12	0.15	0.19	0.32	0.64	0.99
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	0.00	0.00	0.13	0.30	0.58	0.73	0.95

Distributions of World Wildlife Fund Level III ecoregions in relation to moisture index (actual evaporation/potential evaporation) in Alaska.

[N, number]

Level III ecoregion	N	Moisture index						
		0%	10%	25%	50%	75%	90%	100%
TEMPERATE CONIFER, BROADLEAF AND MIXED FORESTS - Coniferous Forests - *Northern Pacific Coastal Forest*	58	0.87	0.96	0.99	1.00	1.00	1.00	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Interior Alaska/Yukon Lowland Taiga*	598	0.33	0.42	0.54	0.62	0.75	0.85	0.99
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Alaska Peninsula Montane Taiga*	59	0.78	0.85	0.91	0.94	0.96	0.99	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Cook Inlet Taiga*	41	0.67	0.72	0.79	0.84	0.90	0.95	0.98
BOREAL FOREST, TAIGA AND TUNDRA - Boreal Forest/Taiga - *Copper Plateau Taiga*	24	0.62	0.62	0.65	0.73	0.80	0.98	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Lowland Tundra*	212	0.49	0.59	0.80	0.88	0.91	0.96	0.98
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Beringia Upland Tundra*	143	0.54	0.61	0.65	0.74	0.90	0.92	0.95
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Alaska/St. Elias Range Tundra*	178	0.55	0.75	0.85	0.95	0.98	0.99	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Pacific Coastal Mountain Tundra and Ice Fields*	104	0.77	0.93	0.98	1.00	1.00	1.00	1.00
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Interior Yukon/Alaska Alpine Tundra*	178	0.44	0.52	0.56	0.61	0.69	0.74	0.84
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Ogilvie/MacKenzie Alpine Tundra*	17	0.43	0.45	0.46	0.48	0.49	0.52	0.55
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Brooks/British Range Tundra*	198	0.54	0.66	0.72	0.81	0.89	0.96	0.98
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Foothills Tundra*	182	0.40	0.47	0.54	0.62	0.71	0.76	0.93
BOREAL FOREST, TAIGA AND TUNDRA - Tundra - *Arctic Coastal Tundra*	79	0.28	0.32	0.35	0.39	0.43	0.48	0.55

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