

## **Title: Low Arctic Monitoring of Plant Community Composition and Dynamics**

### **Authors:**

**PI:** Eric Post  
Professor  
Department of Biology  
Penn State University  
208 Mueller Lab  
University Park, PA 16802 USA  
[esp10@psu.edu](mailto:esp10@psu.edu)

### **Researcher:**

Dr. Christian Pedersen  
Research Scientist  
Norsk Institutt for Skog og Landskap  
Postboks 115  
1431 Ås, Norway  
[christian.pedersen@skogoglandskap.no](mailto:christian.pedersen@skogoglandskap.no)

Address data questions to Eric Post or Christian Pedersen

### **Funding Sources & Grant Number:**

National Geographic Society Committee for Research and Exploration

NSF Division of Environmental Biology; and Office of Polar Programs, Arctic Sciences Division: Award # 0217259 and Award # 0732168

### **Dataset Overview:**

Estimates of annual peak aboveground biomass and diversity in a low-arctic plant community.

June 2003 – August 2011

Lat/Lon: 67.11, -50.33

Detailed overview and methods have been published in: Post E. & Pedersen C. 2008. Opposing plant community responses to warming with and without herbivores. PNAS 105:12353-12358. DOI 10.1073/pnas.0802421105.

### **Data Collection:**

Data were collected using a point-frame with 20 pin intercepts per frame, once per plot, once per year, by a trained field technician.  
Data were transferred directly from a standardized field sampling worksheet into an electronic spreadsheet and then reviewed for accuracy at a later date by comparing original datasheets with the electronic version.

**Data Format:**

Data are organized by columns. Year is self-explanatory. Columns B, C, and D indicate the month of sampling, day of sampling, and day of year (numbered from January 1 = day 1) of sampling. Column E, "site.name" identifies one of three sampling sites ("bashful", "dopey", "sneezy") within which are nested 0.5<sup>2</sup> meter vegetation plots. Columns F and G indicate whether plots are exclosed from grazing or exposed to grazing (code "E" or "G", respectively), and whether plots are warmed or ambient (code "W" or "A", respectively). Column H indicates the plot identity. Columns I through AE indicate the number of pin hits per plant species, functional group, or litter, encountered in each sampling frame each year, and column AF indicates the total number of pin hits summed across all species and/or functional groups plus litter. Column AG indicates the total number of forb species encountered with pin hits on each plot, and column AH indicates the total number of species or functional groups encountered with pin hits on each plot (i.e., the sum of forb species plus all other groups, excluding litter). Column AJ indicates the total number of days the warming treatment was applied on each warmed plot each year. The three sites are of comparable species composition, aspect and elevation.

Species/genus abbreviations are as follows:

Betula = *Betula nana*

Campanula = *Campanula gieseckeana*

Cerastium = *Cerastium alpinum*

Draba = *Draba sp.*

Equisetum = *Equisetum arvense*

Polygonum = *Polygonum viviparum*

Potentilla = *Potentilla hookeriana*

Pyrola = *Pyrola sp.*

Salix = *Salix glauca*

Stellaria = *Stellaria longipes*

Viola = *Viola labradorica*

Notes:

1. Forb diversity assessments began in 2005
2. The total number of plots increased from 26 (6 exclosed/ambient, 6 exclosed/warmed, 7 grazed/ambient, 7 grazed/warmed) in 2003-2005 to 50 (12 exclosed/ambient, 12 exclosed/warmed, 13 grazed/ambient, 13 grazed/warmed) in 2006. Any missing data in some years indicates a lack of sampling at that site in that year due to a need to avoid disturbing animals grazing at that site that year.

**Disclaimer:** Although the data have been checked for errors, we will update the data if we realize retrospectively that an error has been committed in identification of a species or in transcription from field data sheets.