aava_unalaska_stalbot_2010_readme_metadata.pdf

AAVA readme file for Unalaska Vegetation Plots (November 24, 2016)

Dataset Title: Alaska Arctic Vegetation Archive: Unalaska Vegetation Plots

Dataset Author: Stephen S. Talbot

Alaska Arctic Vegetation Archive Dataset Name: unalaska_stalbot (UNAK_ST)

Dataset Description:

In 2007, one of the first quantitative studies of vegetation from sea level to alpine on Unalaska Island in the Aleutian Islands was completed (Talbot et al. 2010). The focus of the study was to 1) describe the major plant communities along environmental gradients, 2) identify the main vegetation types and communities and determine their relationship to select site factors, and 3) compare these communities to other studies completed in southern Alaska. A combined Braun–Blanquet and multivariate analysis approach was applied to the data for the 70 plots and showed a complex gradient primarily influenced by soil moisture, elevation and pH. Funding for this project came from the U.S. Fish and Wildlife Service.

Cover–abundance was estimated for all vascular plants, bryophyte, and macrolichens using the nine–point original scale of Westhoff and van der Maarel (1973) in sixty–nine subjectively chosen plots on Unalaska Island and one plot on Amaknak Island. Eleven plant communities in six broad ecological groups were identified in this study. These plant communities occur in 6 broad habitat types including: 1) Dry coastal beach and sand dune vegetation (9 plots), 2) Willow, grass, fern, forb thickets (4 plots), 3) Wet acidic sedge, forb mire (9 plots), 4) Late snowbed communities (3 plots), 5) Moist and dry acidic dwarf–shrub and lichen heaths (Vaccinium uliginosum, Empetrum nigrum, Ledum decumbens, Spiraea beauverdiana, and Betula nana–lichen heaths (22 plots), and 6) Alder communities (23 plots).

Plots were 25 square meters (5 by 5 m) in area and environmental data collected include elevation, litter cover, slope inclination, ecological moisture regime, and mesotopography. Plots were not permanently marked but GPS locations in degrees, minutes, seconds were recorded. A single soil sample was collected from each plot and brought back to the lab for chemical assessment.

A summary of these data is presented in the publication listed below.

References:

Talbot, S. S., W. B. Schofield, S. L. Talbot, and F. J. A. Daniels. 2010. Vegetation of eastern Unalaska Island, Aleutian Islands, Alaska. Botany 88:366–388.

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Other contacts: Donald A. (Skip) Walker, dawalker@alaska.edu, 907–474–2460; Amy Breen, albreen@alaska.edu, 907–474–6927

Primary Agency: Alaska Geobotany Center, University of Alaska Fairbanks

Direct Plot Archive Record Link: http://geobotanical.portal.gina.alaska.edu/catalogs/11613–alaska–arctic–vegetation–archive–unalaska–tal

Data prepared by: Lisa Druckenmiller (ladruckenmiller@alaska.edu)
Link to VegBank Record: Will add when available

Missing data: Indicated by '–9999' for numerical data and 'n/a' for categorical or text data

Files Available for Download:

1) AAVA Unalaska Vegetation Plots Modified Source Data

1a) Unalaska Vegetation Plots Species Cover
aava_unalaska_stalbot_2010_spp_modsrc.csv
aava_unalaska_stalbot_2010_spp_modsrc.xlsx

These files contain species cover data for the Unalaska plots in both .csv and .xlsx format. The source species data is from Talbot et al. (2010; Supplementary Tables 1a and 1b). Species cover classes follow a nine–point ordinal scale of Westhoff and van der Maarel (1973) and plant nomenclature follows the USDA–NRCS (2009). Both the author's determination and the current taxonomy according to the Panarctic Species List (PASL) are listed. Taxa are listed in alphabetical order according to the accepted PASL name. In one instance, taxa were lumped into a single taxon in the PASL: In 3 instances, taxa were lumped into a single taxon in the PASL: Cetraria islandica (Cetraria islandica s. crispiformis and Cetraria islandica s. islandica), Cladonia gracilis s. lat. (Cladonia gracilis s. elongata and Cladonia gracilis s. vulnerata), and Limnorchis hyperborea (Platanthera convallariaefolia and Platanthera stricta). The field and publication plot numbers in the source data are the author's. The main plot numbers in the Turboveg database are accession numbers and will differ. The author's field plot numbers are retained in the 'Field releve number' field while the published plot numbers

are retained in the 'Nr releve in species table' field in the Turboveg database.

1b) Unalaska Vegetation Plots Environmental Data
aava_unalaska_stalbot_2010_allenv_modsrc.csv
aava_unalaska_stalbot_2010_allenv_modsrc.xlsx

Stephen Talbot provided environmental data by plot for the Unalaska dataset as only summary data are included in Talbot et al. (2010; Tables 3 and 5). These data are available in both .csv and .xlsx format. The soil data are also provided below as a separate ancillary file (described below). The plot numbers in the source data include both the author's field plot numbers and those in the tables in the resulting publication. The main plot numbers in the Turboveg database are accession numbers and will differ. The author's published plot numbers are retained in the 'Field releve number' field in the Turboveg database.

2) AAVA Unalaska Vegetation Plots Turboveg Database
aava_unalaska_stalbot_2010_tv.zip

This file is the Unalaska Turboveg Database (.dbf). Turboveg is a software program for managing vegetation-plot data (see http://www.synbiosys.alterra.nl/turboveg/). The database includes both species cover and environmental header data. The header data for the database are consistent across all datasets in the AAVA. There are both required and recommended fields for inclusion in the AAVA. Consequently, only a subset of the modified source environmental data are included in the database and these may be cross-walked to the AAVA data dictionary. The species nomenclature used in the database is according to the Panarctic Species List created for the Arctic Vegetation Archive. The current data dictionary and PASL files are required for the correct use of these data in Turboveg. These files are updated periodically and available for download via 'Data and Resources' section of the data record.

For the cross-walk from the modified source environmental data to the Turboveg database, we made the following changes to the environmental data: 1) Total vegetation cover is summed, and 2) Habitat types were assigned by D. A."Skip" Walker (2015), 3) Latitude and longitude measurements were converted to decimal degrees, and 4) In two instances, taxa were lumped into a single taxon in the PASL: Cetraria islandica (Cetraria islandica s. crispiformis and Cetraria islandica s. islandica) and Cladonia gracilis s. lat. (Cladonia gracilis s. elongata and Cladonia gracilis s. vulnerata).

3) AAVA Unalaska Vegetation Plots Ancillary Data

3a) Unalaska Plot Location Map
aava_unalaska_stalbot_2010_plotmap_anc.pdf

This file is a plot location map from Talbot et al. 2010.

3b) Unalaska Vegetation Plots Publication
talbots_2010_botany_veg_unalaska_aleutian.pdf

Data are summarized in this journal article. Journal names are abbreviated using the standards for the abbreviation of titles of periodicals and serial titles.

3c) Unalaska Vegetation Plots Soils Data
aava_unalaska_stalbot_2010_soildata_anc.csv
aava_unalaska_stalbot_2010_soildata_anc.xlsx

These are the soil chemical data for Unalaska. One soil sample from the rooting zone was collected in the center of each plot at a depth of 15–20 cm. Soils were analyzed by the Kuo Testing Labs, Inc. (KTL), Othello, Washington. Methods followed Soil Survey Laboratory Staff (1996). KTL employed an autoanalyzer, which simultaneously analyzed the soil pH and soluble salts of the soil sample. Organic matter content was determined by the Walkley–Black method. The orthophosphate analyte was determined after the soil was extracted with 0.5 N sodium bicarbonate solution buffered at pH 8.5 (Olsen's extraction method). The cations, K, Ca, Mg, and Na, were extracted with 1 N ammonium acetate solution buffered at pH 8.5 and assayed with a high precision ICP (inductively coupled plasma) spectrophotometric instrument. These bases were summed to obtain the total bases in cmol x kg–1 soil. Both soil nitrate–N and ammonium–N were extracted with 1 N KCL solution; this procedure was followed by flow injection colorimetric analysis using the cadmium reduction method for nitrate–N and phenolic blue method for ammonium–N determination. The So4–S, Boron, ZN, MN, CU, and Fe were extracted by DPTA–sorbitol solution with an equilibration time of 2 hours. Absence of effervescence using the method described in Soil Survey Laboratory Staff (1996) suggested a lack of free lime in the soil.

4) AAVA Unalaska Vegetation Plots Metadata
aava_unalaska_stalbot_2010_readme_metadata.txt

This is the readme for the Unalaska dataset.

Modifications to environmental source data:

The table below in comma separated values format indicates the modifications made to source data in the preparation of the AAVA Unalaska Modified Source Environmental Data files (aava_unalaska_stalbot_2010_allenv_modsrc.csv and aava_unalaska_stalbot_2010_allenv_modsrc.xlsx) and fields that were used to crosswalk these data to the Turboveg database (aava_unalaska_stalbot_2010_tv.zip).

VARIABLE,IN ENVIRONMENTAL MODIFIED SOURCE DATA FILE,IN TURBOVEG FILE AS THE SAME NAMED FIELD,DATA SOURCE AND CHANGES MADE TO DATA
FIELD RELEVE NUMBER,Y,Y,Stephen Talbot personal communication.
PUBLISHED RELEVE NUMBER,Y,Y,"Talbot et al. 2010, Table 1 and Figure 4. In Turboveg field ""number in species table."""
SITE VISIT DATE,Y,Y,Stephen Talbot personal communication.
SPECIFIC LOCATION,Y,Y,"Talbot et al. 2010, Table 1. In Turboveg column 'Location.'"
LATITUDE,Y,Y,Stephen Talbot personal communication. Converted to decimal degrees for Turboveg.
LONGITUDE,Y,Y,Stephen Talbot personal communication. Converted to decimal degrees for Turboveg.
PLANT COMMUNITY NAME,Y,Y,"Talbot et al. 2010, Figure 4."
TOPOGRAPHIC LOCATION,Y,N,Stephen Talbot personal communication.
SHRUB 0.5-2 M (PERCENT),Y,Y,Stephen Talbot personal communication.
DWARF SHRUB LESS THAN 0.5 M (PERCENT),Y,N,Stephen Talbot personal communication. Dwarf shrub and prostrate dwarf shrub cover are not distinguished.
GRAMINOID (PERCENT),Y,Y,Stephen Talbot personal communication.
FORB (PERCENT),Y,Y,Stephen Talbot personal communication.
BRYOPHYTE (PERCENT),Y,Y,Stephen Talbot personal communication.
LICHEN (PERCENT),Y,Y,Stephen Talbot personal communication.
LITTER (PERCENT),Y,Y,Stephen Talbot personal communication.
Elevation (M),Y,Y,Stephen Talbot personal communication.
SLOPE (DEGREES),Y,Y,Stephen Talbot personal communication.
ORGANIC MATTER (G/KG),Y,N,Stephen Talbot personal communication.
PH (PASTE),Y,Y,Stephen Talbot personal communication.
ELECTRICAL CONDUCTIVITY (DS/M),Y,N,Stephen Talbot personal communication.
NO3 (PPM),Y,N,Stephen Talbot personal communication.
NH4 (PPM),Y,N,Stephen Talbot personal communication.
P (PPM),Y,N,Stephen Talbot personal communication.
SO2 (PPM),Y,N,Stephen Talbot personal communication.
B (PPM),Y,N,Stephen Talbot personal communication.
Zn (PPM),Y,N,Stephen Talbot personal communication.
Mn (PPM),Y,N,Stephen Talbot personal communication.
Cu (PPM),Y,N,Stephen Talbot personal communication.
Fe (PPM),Y,N,Stephen Talbot personal communication.
K (PPM),Y,N,Stephen Talbot personal communication.
Ca (CMOL/KG),Y,N,Stephen Talbot personal communication.
Mg(CMOL/KG),Y,N,Stephen Talbot personal communication.
Na (CMOL/KG),Y,N,Stephen Talbot personal communication.
TOTAL BASES (CMOL/KG),Y,N,Stephen Talbot personal communication.
ECOLOGICAL MOISTURE REGIME (SCALAR),Y,N,Stephen Talbot personal communication.
ECOLOGICAL MOISTURE REGIME DESCRIPTION,Y,Y,Stephen Talbot personal communication.
PLOT SIZE AND SHAPE,Y,Y,"Talbot et al. 2010, text."