

aava_willows_uschickhoff_2002_readme_metadata.pdf

AAVA readme file for Willows (February 17, 2020)

Dataset Title: Alaska Arctic Vegetation Archive: Willows Vegetation Plots

Dataset Author: Udo Schickhoff

Alaska Arctic Vegetation Archive Dataset Name: willows_schickhoff (WLLW_US)

Dataset Description:

The riparian vegetation in arctic Alaska often consists of willow shrub communities that are functionally important components of arctic landscape ecosystems. Willow communities along a south-north transect from the Brooks Range to Prudhoe Bay were described by Schickhoff et al. (2002). Support for the project was provided by the Max Kade Foundation grant KADE-OCG 3088 to U. Schickhoff, by the U. S. National Science Foundation grant OPP-9400083 to M. D. Walker, and by the U. S. National Science Foundation grant 9908829 to D. A. Walker. Plots are primarily in the watersheds of Sagavanirktok River and Kuparuk River accessible from the Dalton Highway.

Eighty-five relevés were subjectively located in three broad habitat types including: 1) tall willow shrub communities on floodplains, gravel bars and lower terraces as well as on upland montane stream banks (27 plots) (*Epilobio-Salicetum alaxensis* association, including two subassociations *parnassietosum kotzebuei* and *polemonietosum acutiflori*), 2) more or less open low willow shrub communities on the banks of upland tundra streams as well as upper terraces from about 950 m in elevation down to the coastal plain (35 plots) (*Anemono-Salicetum richardsonii* association, including two subassociations, *lupinetosum arctici* and *salicetosum pulchrae*), and 3) low willow shrub communities restricted to the most humid and acid banks of upland tundra streams in the Arctic foothills roughly between 400 and 800 m in elevation (23 plots) (*Valeriano-Salicetum pulchrae* with several variants).

Plots were not permanently marked. Relevé sizes were assessed according to the minimal area approach and varied between 60 square meters (low shrublands) and 100 square meters (tall shrublands). Species and environmental data (including soil physical variables and subjective site assessments) were collected in the field and soil samples were brought back to the lab for chemical and physical analysis. Vegetation was classified according to the Braun-Blanquet approach, which resulted in the description of three associations and four subassociations published in Schickhoff et al. (2002). DCA ordinations were used to analyze vegetation-environment relationships.

Reference:

Schickhoff, U., M. D. Walker and D. A. Walker. 2002. Riparian willow communities on the Arctic Slope of Alaska and their environmental relationships: A classification and ordination analysis. *Phytocoenologia* 32:145–204.

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Other contacts: 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/manager/catalogs/9667-alaska-arctic-vegetation-archive-willows-veget>

Data prepared by: Lisa Druckenmiller (ladruckenmiller@alaska.edu) and Amy Breen (albreen@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 Willows Modified Source Data

1a) Willows Species Cover

aava_willows_uschickhoff_2002_spp_modsrc.csv

aava_willows_uschickhoff_2002_spp_modsrc.xlsx

These files contain species cover data for the willow vegetation plots in both .csv and .xlsx format. The source of these data are the *Phytocoenologia* paper, Schickhoff et al. (2002), Tables 5, 6 and 8. The dataset author and Panarctic Species List (PASL) species determinations are listed. Taxa are listed in alphabetical order according to the accepted PASL name. The plot numbers in the source data are the author's. Species cover classes are the old Braun-Blanquet cover-abundance scale: r (rare), + (common, but less than 1 percent), 1 (1 to 5 percent), 2 (6 to 25 percent), 3 (25 to 50 percent), 4 (51 to 75 percent), and 5 (76 to 100 percent). 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 publication plot numbers may be found in the field 'Number of releve in Table' in the Turboveg database.

1b) Willows Environmental Data

aava_willows_uschickhoff_2002_allenv_modsrc.csv
aava_willows_uschickhoff_2002_allenv_modsrc.xlsx

These files contain modified environmental data for the willow vegetation plots in both .csv and .xlsx format. The majority of the data were provided by the author with additional data from Tables 5, 6, 8 and 10 (Schickhoff et al. 2002), and calculations made by L. Druckenmiller. For the source of the fields within the file, see Section 4 below. The header data in the Turboveg database only includes a subset of these data. The plot numbers in the source data are the author's field and publication numbers. 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 in the Turboveg database, while the publication plot numbers may be found in the field 'Table number for environmental data.' The codes used in this file are in the Legend for Environmental Variables file in the project metadata folder (aava_willows_uschickhoff_2002_envlegend_metadata.pdf).

Improvements to the source data include: 1) All soil data came from a 10 cm depth and L. Druckenmiller used percent sand/silt/clay data and the Natural Resources Conservation Service Texture online converter to obtain soil textures in 2014, and 2) in 2014 L. Druckenmiller used written descriptions provided by the author and Google Earth to obtain latitude and longitude data. As such the latitudes and longitudes are estimates and in some cases may be a kilometer or more off.

2) AAVA Willows Turboveg Database

aava_willows_uschickhoff_2002_tv.zip

This file is the Willows 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 and are available in the download section.

For the crosswalk from the modified source data to the Turboveg database, we made the following changes to the environmental data: 1) pH was reduced to a single digit after the decimal, and 2) latitude and longitude accuracy estimates were made by Lisa Druckenmiller.

Habitat types were assigned by D. A. 'Skip' Walker in 2013, modified by Jozef Sibik and D. A. 'Skip' Walker in 2016, and modified again by Sibik and Walker in November 2019. All habitat type code changes are documented in the modified source environmental data file for the project. A history of habitat type code changes is detailed in a metadata folder titled 'Habitat_type_history_metadata_2013-2019.'

3a) Willows Plot Location Map

aava_willows_uschickhoff_2002_plotmap_anc.pdf

This file is an aerial photograph map of the willow vegetation plots created by L. Wirth (GINA, UAF). Source: L. Druckenmiller used written descriptions provided by the author and Google Earth to obtain latitude and longitude data. As such the latitudes and longitudes are estimates and in some cases may be a kilometer or more off.

3b) Willows Plot Photos

aava_willows_uschickhoff_2002_plotphotos_anc.pdf

This file contains generalized plant community photos from Schickhoff et al. (2002).

3c) Willows Soil Data

aava_willows_uschickhoff_2002_soildata_anc.csv

aava_willows_uschickhoff_2002_soildata_anc.xlsx

These are the soil physical and chemical data for the willow vegetation plots from the author. Soils were obtained from 10 cm. Soil terminology is according to Soil Survey Staff (1974).

3d) Willows Publication

schickhoffu_2002_phytocoenologia_arcticwillow_classif_ordinat.pdf

This is a pdf file of the reference cited in the dataset description for the willow vegetation plots.

4) AAVA Willows Metadata

aava_willows_uschickhoff_2002_readme_metadata.txt

aava_willows_uschickhoff_2002_envlegend_metadata.pdf

Folder: Habitat_type_history_metadata_2013-2019

These files are metadata for the willow vegetation plots and include a readme file and metadata legend for the modified environmental data that are specific to this dataset. Habitat types changed during the course of the project through review and analysis. A history of these changes is included in the metadata folder titled 'Habitat_type_history_metadata_2013-2019.'

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 Willow Modified Source Environmental Data files (aava_willows_uschickhoff_2002_allenv_modsrc.csv and aava_willows_uschickhoff_2002_allenv_modsrc.xlsx) and fields that were used to crosswalk these data to the Turboveg database (aava_willows_uschickhoff_2002_tv.zip).

VARIABLE, IN MODIFIED SOURCE ENVIRONMENTAL DATA FILE, IN TURBOVEG FILE AS A NAMED FIELD, SOURCE AND CHANGES MADE TO DATA
PUBLICATION RELEVÉ NUMBER, Y, Y, "Tables 5, 6, and 8, Schickhoff et al. 2002. The plot numbers in the modified source data are the author's. The main plot numbers in the Turboveg database are accession numbers and will differ. The author's plot numbers are retained in the "Field releve number" field in the Turboveg database."
PLANT COMMUNITY NAME, Y, Y, "Tables 5, 6, and 8 and text in Schickhoff et al. 2002. Turboveg field 'Plant community name.'"
RELEVÉ SIZE (SQUARE METERS), Y, Y, "Tables 5, 6, and 8, Schickhoff et al. 2002."
ELEVATION (M), Y, Y, "Tables 5, 6, and 8, Schickhoff et al. 2002."
SHRUB COVER (PERCENT), Y, Y, "Tables 5, 6, and 8, Schickhoff et al. 2002."
HERB COVER (GRASSES & FORBS) (PERCENT), Y, N, "Tables 5, 6, and 8, Schickhoff et al. 2002."
MOSS & LICHEN COVER (PERCENT), Y, N, "Tables 5, 6, and 8, Schickhoff et al. 2002."
CHARACTER SPECIES, Y, N, "Table 10, Schickhoff et al. 2002. Turboveg field 'Remarks.'"
PLANT COMMUNITY DESCRIPTION, Y, N, "From the text, Schickhoff et al. 2002, pages 165, 177, 181. Turboveg field 'Remarks.' "
FIELD RELEVÉ NUMBER, Y, Y, "From the authors original datasheets. In Turboveg field 'Field releve number.'"
AUTHOR'S DESCRIPTION OF RELEVÉ LOCATION (REVISED BY L. DRUCKENMILLER), Y, N, "From the authors original datasheets. L. Druckenmiller revised the authors releve locations to indicate that these were in relation to field releve numbers, and changed Ox Creek to Oksrukuyik Creek. Included in Turboveg field 'Remarks.'"
MOSS LAYER HEIGHT (CM), Y, Y, "From the authors original datasheets."
SNOW COVER (SCALAR 1-4), Y, N, "From the authors original datasheets."
DISTANCE TO WATER TABLE (M), Y, N, "From the authors original datasheets."
FLOW SPEED/DISCHARGE REGIME OF RUNNING WATER (SCALAR 1-4), Y, N, "From the authors original datasheets."
FLOOD FREQUENCY (SCALAR) (CATEGORIES BASED ON DRIFT RESIDUE), Y, N, "From the authors original datasheets."
SITE MOISTURE (CODE), Y, Y, "From the authors original datasheets."
SOIL WATER CONTENT (G), Y, N, "From the authors original datasheets."
BULK DENSITY (G/CUBIC CENTIMETER), Y, N, "From the authors original datasheets."
PH (PASTE), Y, Y, "From the authors original datasheets. Rounded pH to one digit after the decimal to meet Turboveg standards."

ELECTRICAL CONDUCTIVITY (UMHOS/CM),Y,N,From the authors original datasheets.

LIME ESTIMATE (SCALAR 1-3),Y,N,From the authors original datasheets.

SOIL ORGANIC MATTER (PERCENT),Y,N,From the authors original datasheets.

NO3-N (PPM),Y,N,From the authors original datasheets.

P (PPM),Y,N,From the authors original datasheets.

K (PPM),Y,N,From the authors original datasheets.

ZN (PPM),Y,N,From the authors original datasheets.

FE (PPM),Y,N,From the authors original datasheets.

MN (PPM),Y,N,From the authors original datasheets.

CU (PPM),Y,N,From the authors original datasheets.

ROOT PENETRATION INDEX (SCALAR 1-3),Y,N,From the authors original datasheets.

SOIL COLOR (AT 10 CM),Y,N,From the authors original datasheets.

Gravel AT 10 CM (G/100 CUBIC CENTIMETERS),Y,N,From the authors original datasheets.

SAND AT 10 CM (PERCENT),Y,N,From the authors original datasheets. Aided in calculation for Turboveg field 'Soil texture.'

SILT AT 10 CM (PERCENT),Y,N,From the authors original datasheets. Aided in calculation for Turboveg field 'Soil texture.'

CLAY AT 10 CM (PERCENT),Y,N,From the authors original datasheets. Aided in calculation for Turboveg field 'Soil texture.'

SOIL TEXTURE (CALCULATED),Y,Y,"L. Druckenmiller used sand, silt, and clay data and the U.S.D.A. Natural Resources Conservation Service Texture Calculator (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_054167). Turboveg field 'Soil texture.'"

LATITUDE DD (ESTIMATED),Y,Y,"L. Druckenmiller used the descriptions of the location of releves provided by the author with Google Earth to pin locations and obtain latitude and longitude. As such the latitudes and longitudes are estimates and in some cases may be a kilometer or more off.

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LONGITUDE DD (ESTIMATED),Y,Y,L. Druckenmiller used the descriptions of the location of releves provided by the author with Google Earth to pin locations and obtain latitude and longitude. As such the latitudes and longitudes are estimates and in some cases may be a kilometer or more off.

HABITAT TYPE 2013-2016 (CODE),Y,N,Habitat types assigned for Turboveg by D.A. 'Skip' Walker.

HABITAT TYPE 2016-2018 (Code),Y,N,Turboveg habitat types modified by Jozef Sibik and D. A. 'Skip' Skip Walker.

HABITAT TYPE 20191113 (CODE),Y,Y,Turboveg habitat types modified by Jozef Sibik and D. A. 'Skip' Skip Walker.