

aava\_nome\_hhanson\_1953\_readme\_metadata.pdf

AAVA readme file for Nome Vegetation Plots (July 27, 2016)

Dataset Title: Alaska Arctic Vegetation Archive: Nome Vegetation Plots

Dataset Author: Herbert C. Hanson

Alaska Arctic Vegetation Archive Dataset Name: nome\_hhanson (NOME\_HH)

#### Dataset Description:

Sampling of tundra vegetation in the vicinity of Nome on the Seward Peninsula was undertaken as part of a classification of the major vegetation types during broader surveys for reindeer winter lichen range in northwestern Alaska. The primary source document for this dataset is Hanson (1953). The work was funded in part by the Arctic Institute of North America with funds provided by the Office of Naval Research.

In 1949, cover and frequency data were collected using the point-contact method. In July and August of 1951, plant species data were collected from 80 subjectively located plots (Braun-Banquet method) to better align with methods used for vegetation sampling in northern Europe. Within stands, ten 1-meter square plots were located at regular intervals on a line through each stand and species cover was recorded using a modified Hult-Sernander scale (Hanson, 1951). Plant communities were found to occur in 5 broad habitat types including: 1) Moist to wet acidic tussock and nontussock (*Eriophorum vaginatum*-*Carex bigelowii*-*Sphagnum*-*Hylocomium*) tundra (10 plots), 2) Dry acidic prostrate-shrub heaths (*Arctous alpina*, *Salix phlebophylla*, *Empetrum* heaths) (10 plots), 3) Shallow acidic snowbeds (*Cassiope*-*Carex microchaeta*-*Hylocomium* communities) (10 plots), 4) Moist and dry acidic dwarf-shrub heaths (*Vaccinium uliginosum*, *Empetrum nigrum*, *Ledum decumbens*, some *Betula nana*-lichen heaths) (30 plots), and 5) Dry acidic tundra (*Dryas octopetala*) (20 plots).

Descriptive information in the methods section of Hanson's 1953 paper indicates that all of the plots were located within roughly 13 miles of Nome. Stands were not permanently marked and little environmental data was recorded, however select soil descriptions are present.

#### Reference:

Hanson, H. C. 1953. Vegetation types in northwestern Alaska and comparisons with communities in other Arctic regions. *Ecology* 34:111-140.

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Primary Agency: Alaska Geobotany Center, University of Alaska Fairbanks

Direct Plot Archive Record Link: <http://geobotanical.portal.gina.alaska.edu/manager/catalogs/10681-alaska-arctic-vegetation-archive-nome-hanson>

Data prepared by: Lisa Druckenmiller ([ladruckenmiller@alaska.edu](mailto:ladruckenmiller@alaska.edu))

Link to VegBank Record: yet to be entered

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

Files Available for Download:

1) AAVA Nome Modified Source Data

1a) Nome Species Cover Data

[aava\\_nome\\_hhanson\\_1953\\_spp\\_modsrc.csv](#)

[aava\\_nome\\_hhanson\\_1953\\_spp\\_modsrc.xlsx](#)

These files contain species cover data from Hanson (1953:Tables I-VIII) for the Nome releves in both .csv and .xlsx format. Plot numbers are defined by their respective table Roman numerals and plot number within the tables. The dataset presents the species cover classes according to a modified Hult-Sernander scale: a modified Hult-Sernander scale where: + (trace, 0.5 percent), 1 (covers less than 1/6 of the area or 4 percent), 2 (covers 1/16 to 1/8 or 9 percent), 3 (covers 1/8 to 1/4 or 18 percent), 4 (covers 1/4-1/2 or 38 percent), 5 (covers 1/2 to 3/4 or 63 percent), 6 (covers 3/4 to 4/4 or 87 percent). Both the author's species 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. The 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 plot numbers are retained in the 'Field releve number' field in the Turboveg database.

Changes to the source data include dropping the pluses and minuses associated with the Hult-Sernander species cover code numbers. These pluses and minuses were not defined by Hanson (1953) except by reference, and the reference also provided no values for these symbols even though it is likely that these symbols indicate just more (+) or just less (-) than the code value. However, the cover code (+) when presented alone indicates a trace or 0.5 percent was retained. Lichens and mosses were not identified to species and the cover for these

groups are included in the Turboveg environmental header data columns.

#### 1b) Nome Environmental Data

aava\_nome\_hhanson\_1953\_allenv\_modsrc.csv

aava\_nome\_hhanson\_1953\_allenv\_modsrc.xlsx

These files contain modified environmental data for Nome in .csv and .xlsx format. The source of these data is Hanson (1953) Tables I–VIII and the text. Plot numbers are defined by their respective table Roman numerals and plot number within the tables. The 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 plot numbers are retained in the 'Field releve number' field in the Turboveg database. Information on the specific locations of individual study plots was not available.

Lichen, moss, rock and bare ground cover included here also follow the modified Hult–Serenader scale although as with other data, pluses and minuses associated with the data were removed as their values are not defined.

#### 2) AAVA Nome Turboveg Database

aava\_nome\_hhanson\_1953\_tv.zip

This file is the Nome 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 source data to the Turboveg database, we made the following changes: for the species data 1) All the minus and plus symbols associated with the data were dropped as they were not defined in the references given in the paper.

The following changes were made to the environmental data: 1) Stand sizes were given in various systems of measure and these were all converted to square meters, 2) Descriptive aspects were crosswalked to the Turboveg categorical values, 3) Elevations in feet were converted to meters, 4) pH values which were given as a range were converted to a single mid–point value, 5) Cover of mosses, lichens, rock and bare

ground were converted from the modified Hult-Sernander scale codes (pluses and minuses were dropped due to lack of assigned value) to fractional ranges given in the text (Churchill 1955). The midpoint in the fractional range was taken and converted to a cover percentage as indicated here: + (trace or 0.5 percent), 1 (covers less than 1/6 of the area or 4 percent), 2 (covers 1/6 to 1/8 or 9 percent), 3 (covers 1/8 to 1/4 or 18 percent), 4 (covers 1/4 to 1/2 or 38 percent), 5 (covers 1/2 to 3/4 or 63 percent), 6 (covers 3/4 to 4/4 or 87 percent), and 6) Habitat types and site moisture were assigned by D. A. 'Skip' Walker after review of these data in January 2016.

### 3) AAVA Nome Ancillary Data

#### 3a) Nome Plot Photos

aava\_nome\_hhanson\_1953\_photos\_anc.pdf

This file contains digitized photographs from Hanson (1953). Images of many of the plant associations described in the data set are included.

#### 3b) Nome Plot Location Map

aava\_nome\_hhanson\_1953\_plotmap\_anc.pdf

This file contains a general map of the area around Nome. Although no specific plot locations are available, verbal descriptions indicate all plots were located within 13 miles of Nome.

#### 3c) Nome Publications

churchillandhanson\_1958\_botrev\_concept\_climax\_arctic\_alpine.pdf  
hansonh\_1953\_ecology\_vegtypes\_nwalaska.pdf

These are the pdf files that contain or describe data for the Nome dataset.

#### 3d) Nome Soils data

aava\_nome\_hhanson\_1953\_soildesc\_anc.xlsx  
aava\_nome\_hhanson\_1953\_soildesc\_anc.csv

These files contain modified soils description data for select plots from the text of Hanson (1953) in .csv and .xlsx format.

### 4) AAVA Nome Metadata

aava\_nome\_hhanson\_1953\_readme\_metadata.pdf  
aava\_nome\_hhanson\_1953\_readme\_metadata.txt

These readme files are metadata for the Nome vegetation study.

Modifications to environmental source data:

The table below in comma-separated value format indicates the modifications made to source data in the preparation of the AAVA Nome

vegetation study modified source environmental data files (aava\_nome\_hhanson\_1953\_allenv\_modsrc.csv and aava\_nome\_hhanson\_1953\_allenv\_modsrc.xlsx) and fields that were used to crosswalk these data to the Turboveg database (aava\_nome\_hhanson\_1953\_tv.zip).

VARIABLE, IN ENVIRONMENTAL MODIFIED SOURCE DATA FILE, IN TURBOVEG FILE AS THE SAME NAMED FIELD, DATA SOURCE AND CHANGES MADE TO DATA TABLE—PLOT NUMBER, Y, Y, Hanson 1953. Entered plot numbers as Table Roman Numeral and plot number.

DATE, Y, Y, "Hanson 1953.

LOCATION, Y, Y, Hanson 1953.

STAND SIZE (ACRES), Y, Y, "Hanson 1953. Original stand sizes were given in various measurement systems, all were converted to square meters for entry into Turboveg. "

SLOPE (DEGREES), Y, Y, Hanson 1953.

ASPECT, Y, Y, Hanson 1953. Descriptive aspects were converted to degrees to crosswalk to Turboveg.

ELEVATION (FEET), Y, Y, Hanson 1953. Elevations in feet were converted to meters to crosswalk to Turboveg.

SOIL MOISTURE (SINGLE SOIL PIT IN STAND), Y, Y, Hanson 1953.

PH (SINGLE SOIL PIT IN STAND), Y, Y, Hanson 1953. The data included a range of pH values for select plots. For the crosswalk to Turboveg a mean was used.

"COMMUNITY TYPE, SUBTYPE", Y, Y, Hanson 1953.

COMMUNITY DESCRIPTION, Y, Y, Hanson 1953.

HABITAT TYPE, Y, Y, Hanson 1953. Habitat type was assigned by Donald A. Walker in January 2016 after reviewing the species and environmental data.

SITE MOISTURE, Y, Y, Hanson 1953. Site moisture was assigned by Donald A. Walker in January 2016 after reviewing the species and environmental data.

MOSS COVER (CODE) HULT–SERNANDER SCALE (BRAUN–BLANQUET 1932), Y, Y, Hanson 1953. To crosswalk Moss Cover to Turboveg the pluses and minuses were eliminated and the Hult–Sernander codes were crosswalked to the fractional ranges per Hanson (1953) and then fractional ranges were converted to percentage ranges and a single midpoint was chosen for a cover value.

LICHEN COVER (CODE) HULT–SERNANDER SCALE (BRAUN–BLANQUET 1932), Y, Y, Hanson 1953. To crosswalk Lichen Cover to Turboveg the pluses and minuses were eliminated and the Hult–Sernander codes were crosswalked to the fractional ranges per Hanson (1953) and then fractional ranges were converted to percentage ranges and a single midpoint was chosen for a cover value.

ROCK COVER (WITH CRUSTOSE LICHENS) (CODE) HULT–SERNANDER SCALE (BRAUN–BLANQUET 1932), Y, Y, Hanson 1953. To crosswalk Rock Cover (we do not consider lichens on rocks) to Turboveg the pluses and minuses were eliminated and the Hult–Sernander codes were crosswalked to the fractional ranges per Hanson (1953) and then fractional ranges were converted to percentage ranges and a single midpoint was chosen for a

cover value.

BARE GROUND (CODE) HULT-SERNANDER SCALE (BRAUN-BLANQUET 1932),Y,Y,Hanson 1953. To crosswalk Bare Ground Cover to Turboveg the pluses and minuses were eliminated and the Hult-Sernander codes were crosswalked to the fractional ranges per Hanson (1953) and then fractional ranges were converted to percentage ranges and a single midpoint was chosen for a cover value.

SOIL DESCRIPTION (FROM A SINGLE PIT IN COMMUNITY),Y,N,Hanson 1953. Select soil descriptions are included in the files for download but not in Turboveg except for pH.

SPECIES NAME CHANGES DURING ENTRY INTO TURBOVEG,Y,Y,"Hanson 1953. Species names that were changed from the original are included in the ""Remarks"" column of Turboveg."