



Continuous Foliar Cover of Plant Species and Aggregates in North American Beringia

Vegetation (https://accscatalog.uaa.alaska.edu/search/field_topic/vegetation-32).



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OPEN DATA

Other Access

The information on this page (the dataset metadata) is also available in these formats.

[JSON](#)

[RDF](#)

via the [DKAN API](#)
<https://dkan.readthedocs.io/en/latest/apis/index.html>

The Continuous Foliar Cover of Plant Species and Aggregates in North American Beringia constitutes version 1.0 of the Alaska Vegetation (AKVEG) Map. More current versions of the AKVEG Map, including a derived map of categorical types corresponding to the U.S. National Vegetation Classification, are available through the [Alaska Vegetation \(AKVEG\) Map website](#) (<https://akveg.org/>).

Research, conservation, and effective natural resource management often depend on maps that characterize patterns of vegetation composition. Quantitative and ecologically specific representations of plant proportional abundance have several advantages: they are theoretically consistent with plant community ecology, avoid arbitrary and subjective thresholds or categorizations, and minimize information loss relative to field observations and covariates. They also avoid a human interpretational bias not necessarily shared by or important to plants or wildlife. We developed quantitative continuous foliar cover maps for 15 plant species or ecologically narrow aggregates in Arctic and boreal Alaska and adjacent Yukon (North American Beringia). We integrated new and existing ground and aerial vegetation observations for Arctic and boreal Alaska from three vegetation plots databases. To map patterns of foliar cover, we statistically associated observations of vegetation foliar cover with environmental, multi-season spectral, and surface texture covariates using hierarchical statistical learning models. To provide context to the performance of our continuous foliar cover maps, we compared our results to the performances of three categorical vegetation maps that cover Arctic and boreal Alaska: the National Land Cover Database and the coarse and fine classes of the Alaska Vegetation and Wetland Composite. Our maps predicted 40% to 62% of the observed variation in foliar cover per species or aggregate at the site scale. A multi-scale accuracy assessment showed that the maps generally captured patterns of plant abundance accurately at landscape and regional scales. All continuous foliar cover maps performed substantially better than the existing categorical vegetation maps. The vegetation database and scripted workflow that we developed to create the continuous foliar cover maps will allow consistent future updates to include new observations of

plant abundance patterns and new or updated covariates. Our scripted workflow also allows the application of our methods to areas beyond North American Beringia. The continuous foliar cover maps that we developed improve representation of vegetation composition patterns relevant to plant communities and wildlife habitats in North American Beringia.

About the Data

Geospatial data are provided as TIF single band rasters with a 10 x 10 m resolution along with an optional lyrx file for visualization of the data in ArcGIS Pro. In addition to the raster data, we also provide the trained statistical models, supplementary plots, and predicted input data.

Acknowledgements

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Data and Resources



Continuous Foliar Cover of Vegetation for North American Beringia

The data for this record are hosted on the Zenodo. Users can download the...

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User Guide for Continuous Foliar Cover of Plant Species and Aggregates in North American Beringia

The user guide is a PDF document that provides an overview of methods and...

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Git repository Beringian vegetation foliar cover modeling

The code repository contains a suite of tools and instructions based in...

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Field	Value
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License	Creative Commons Attribution Share-Alike (https://creativecommons.org/licenses/by-sa/4.0/).
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