



# Pre-ABOVE: Vegetation Types and Physiographic Features, Imnavait Creek, Alaska

## Get Data

Documentation Revision Date: 2017-09-25

Data Set Version: 1

## Summary

This dataset provides the spatial distribution of vegetation types, soil carbon, and physiographic features in the Imnavait Creek area, Alaska. Specific attributes include vegetation, percent water, glacial geology, soil carbon, a digital elevation model (DEM), surficial geology and surficial geomorphology. Data are also provided on the research grids for georeferencing. The map data are from a variety of sources and encompass the period 1970-06-01 to 2015-08-31.

Imnavait Creek is situated in a shallow basin at the foothills of the central Brooks Range and the Imnavait Creek vegetation area is located near the center of the Upper Kuparuk River region. The study area provides a good representation of the southern foothills of the Brooks Range, a glaciated region characterized by rolling tundra plains interspersed with hills, knobs and low ridges.

There are 13 data files with this data set. This includes 12 shapefiles (provided in .zip files) and one file in GeoTIFF (.tif) format. The shapefile data are also provided as companion files in .kmz format for viewing in Google Earth.

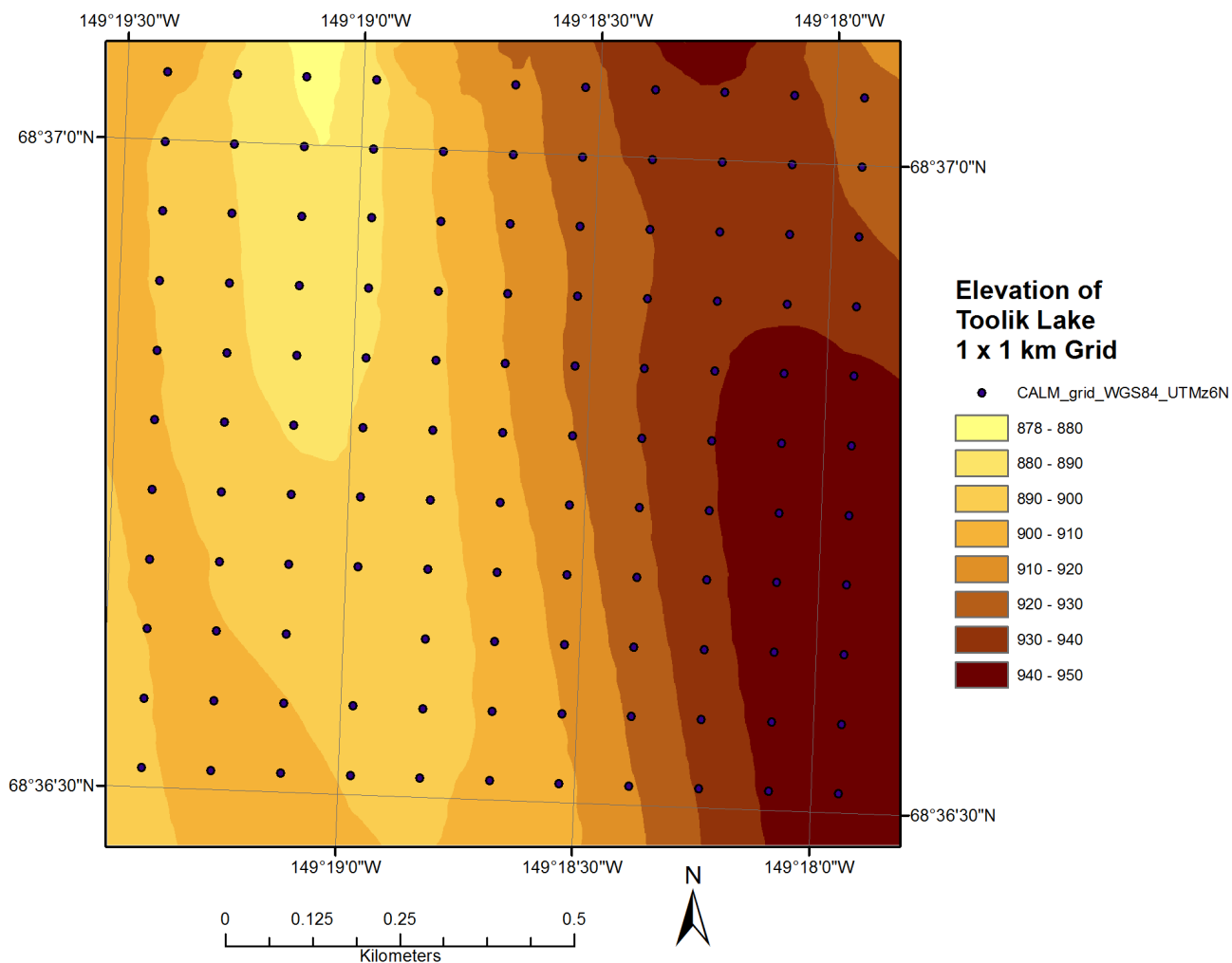


Figure 1. Elevation of Imnavait Creek 1 x 1 km grid near Toolik Lake, Alaska (from imnavait\_grid\_dem.tif).

## Citation

Walker, D.A. 2017. Pre-ABOVE: Vegetation Types and Physiographic Features, Imnavait Creek, Alaska. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1385>

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## 1. Data Set Overview

This data set provides the spatial distributions of vegetation types, soil carbon, and physiographic features in the Imnavait Creek area, Alaska. Specific attributes include vegetation, percent water, glacial geology, soil carbon, a digital elevation model (DEM), surficial geology and surficial geomorphology. The map data are from a variety of sources and encompass the period 1970-06-01 to 2015-08-31.

The Imnavait Creek vegetation area is located near the center of the Upper Kuparuk River region, east of Toolik Lake. It encloses a 20-km<sup>2</sup> area south of the Dalton Highway that includes both Imnavait Creek and the Toolik River in the center and stretches from the Kuparuk River on the west to the headwaters of Oksrukuyik Creek on the east. It includes the experimental areas around Imnavait Creek and the ridges that run north to south between the

drainages. The area contains surfaces with irregular topography that were glaciated during the mid-Pleistocene.

The vegetation map portrays the physiognomy of the dominant plant communities in each mapped polygon. Fifty-one landcover types were recognized in the field (minimum mapping unit approximately 250 m<sup>2</sup>). These were later grouped into the 14 physiognomic vegetation units on the map.

The geobotanical map is a vector map (shp) with fields for vegetation, surficial geomorphology, surficial geology, glacial geology, and percent water.

The Imnavait 1-km grid is mapped in more detail and is the area that has been investigated and been the subject of experimentation by numerous researchers based at the Toolik Research Station.

**Project:** [Arctic-Boreal Vulnerability Experiment \(ABOVE\)](#)

The Arctic-Boreal Vulnerability Experiment is a NASA Terrestrial Ecology Program field campaign that will take place in Alaska and western Canada between 2016 and 2021. Climate change in the Arctic and Boreal region is unfolding faster than anywhere else on Earth. ABOVE seeks a better understanding of the vulnerability and resilience of ecosystems and society to this changing environment.

#### Related data set:

During August 1984 and August-September 1985, environmental, soil, and vegetation data were collected from 84 study plots at the Imnavait Creek research site.

Walker, D.A. 2016. Pre-ABOVE: Arctic Vegetation Plots at Imnavait Creek, Alaska, 1984-1985. ORNL DAAC, Oak Ridge, Tennessee, USA. <http://dx.doi.org/10.3334/ORNLDAAC/1356>

#### Acknowledgements:

These data were obtained from the Alaska Arctic Geoecological Atlas (<http://agc.portal.gina.alaska.edu>), which provides access to existing Arctic vegetation plot and map data in support of the ABOVE campaign.

## 2. Data Characteristics

**Spatial Coverage:** Imnavait Creek, North Slope, Alaska

ABOVE Grid Location:

Domain: Core ABOVE

State/territory: Alaska

Grid cells: Ahh1Avv0

Region: Northern Alaska

**Spatial Resolution:** 1 meter (GeoTIFF)

**Temporal Coverage:** 1970-06-01 to 2015-08-31

**Temporal Resolution:** Annual

**Study Area** (All latitude and longitude given in decimal degrees)

Site	Westernmost Longitude	Easternmost Longitude	Northernmost Latitude	Southernmost Latitude
Imnavait Creek, North Slope, Alaska	-149.375888	-149.258261	68.632095	68.61

#### Data file information

There are 13 data files with this data set. This includes 12 shapefiles (provided in .zip files) and one file in GeoTIFF (.tif) format. The \*.zip files contain the .shp, .shx, .dbf, .prj, .sbn, .sbx and a .lyr file. The shapefile data are also provided as companion files in .kmz format for viewing in Google Earth.

The data files with "area" in the file name provide mapped data for the Imnavait Creek study area. The files with "grid" in the name provide data on the Imnavait Creek 1-km<sup>2</sup> research grid within the study area.

**Table 1.** Data file names and descriptions

Data File	Description
imnavait_grid_dem.tif	Digital Elevation Model (DEM) of the Imnavait Creek research grid in GeoTIFF (.tif) format.
imnavait_area_veg.zip	Vegetation types surrounding the Imnavait Creek area, provided as a shapefile (.shp) in compressed (*.zip) format
	Vegetation types on the experimental research grid provided as a shapefile (.shp) in compressed (*.zip) format.

imnavait_grid_veg.zip	Includes a layer file
imnavait_area_surfgeomorphology.zip	Spatial distributions of the surficial geomorphology surrounding the Imnavait Creek area, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_grid_surfgeomorphology.zip	Surficial geomorphology on the experimental research grid provided as a shapefile (.shp) in compressed (*.zip) format Includes a layer file
imnavait_area_surfgeology.zip	Spatial distributions of the surficial geology in the area surrounding Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_grid_surfgeology.zip	Surficial geology on the experimental research grid provided as a shapefile (.shp) in compressed (*.zip) format. Includes a layer file
imnavait_grid_contours.zip	Grid contours on the research grid at Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_area_geobotany.zip	Geobotanical features of the area surrounding Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_grid_geobotanical.zip	Geobotanical features on the experimental research grid, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_area_glacgeol.zip	Glacial geologic features of the area surrounding Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_area_landform.zip	Landforms of the area surrounding Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format
imnavait_area_pctwtr.zip	Percent water of the area surrounding Imnavait Creek, provided as a shapefile (.shp) in compressed (*.zip) format

#### **Properties of the GeoTIFF file: imnavait\_grid\_dem.tif**

**Table 2.** Attributes of the GeoTIFF file

File Name	Map units	Fill Value	Data Type	Number of Bands
imnavait_grid_dem.tif	meters	-9999	Float32	1

**Table 3.** Extent of the GeoTIFF

File Name	West	East	North	South
imnavait_grid_dem.tif	-149.322	-149.288	68.62694	68.61

#### **Properties of the shapefiles**

The shapefile attributes in each data file are provided below. The codes and descriptions of the attributes are described in Section Five, Materials and Methods, of this document.

**Table 4.** Attributes of the shapefile **imnavait\_grid\_veg.shp**

Attributes
<b>veg_code:</b> vegetation numerical code <b>name_long:</b> long description of code <b>descry:</b> short description of code

**Table 5.** Attribute in the shapefile **imnavait\_area\_veg.shp**

Attribute
<b>PRI_VEG:</b> short description of code

**Table 6.** Attributes of the shapefiles **imnavait\_grid\_surfgeomorphology.shp** and **imnavait\_area\_surfgeom.shp**

Attributes
ic5c_surf: Surficial geomorphology FIRST_ic5c: Surficial geomorphology

**Table 7.** Attribute of the shapefiles **imnavait\_grid\_surfgeology.shp** and **imnavait\_area\_surfgeol.shp**

Attribute
PRI_SGEOL: Primary Surficial Geology

**Table 8.** Attribute of the shapefile **imnavait\_grid\_contours.shp**

Attribute
CONTOUR: Elevation in meters

**Table 9.** Attributes of the shapefile **imnavait\_grid\_geobotanical.shp**

Attributes
PRI_VEG, SEC_VEG, TER_VEG: primary, secondary, and tertiary vegetation
PRI_SGEOL: Primary Surficial Geology
PRI_SGEOM, SEC_SGEOM: Primary Surficial Geomorphology and Secondary Surficial Geomorphology
GLAC_GEOL: Glacial Geology

**Table 10.** Attributes of the shapefile **imnavait\_area\_geobotany.shp**

Attributes
PRI_VEG, SEC_VEG, TER_VEG: Primary Vegetation, Secondary Vegetation, and Tertiary Vegetation
LANDFORM: Landforms
PRI_SGEOL, SEC_SGEOL: Primary Vegetation, Secondary Vegetation, and Tertiary Vegetation
GLAC_GEOL: Glacial Geology
SOIL_COMPL: Soil complex
SOIL_CARBO: Soil carbon
PERCENT_WA: Percent water
PRI_SGEOM, SEC_SGEOM: Glacial Geology

**Table 11.** Attribute of the shapefile **imnavait\_area\_glacgeol.shp**

Attribute
GLAC_GEOL: Glacial geology

**Table 12.** Attribute of the shapefile **imnavait\_area\_landform.shp**

Attribute
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LANDFORM: Landforms

**Table 13.** Attribute of the shapefile `imnavait_area_pctwtr.shp`

Attribute
PERCENT_WA: Percent water

**Table 14.** Extents of the shapefiles

Filename	North	South	East	West
<code>imnavait_grid_contours.shp</code>	68.618311	68.607575	-149.296518	-149.325649
<code>imnavait_grid_geobotanical.shp</code>	68.617251	68.608711	-149.300906	-149.318705
<code>imnavait_grid_surfgeology.shp</code>	68.617251	68.608711	-149.300906	-149.318705
<code>imnavait_grid_surfgeomorphology.shp</code>	68.617251	68.608711	-149.300906	-149.318705
<code>imnavait_grid_veg.shp</code>	68.617251	68.608711	-149.300906	-149.318705
<code>imnavait_area_pctwtr.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_landform.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_surfgeom.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_glacgeol.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_surfgeol.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_geobotany.shp</code>	68.632095	68.589011	-149.258261	-149.375888
<code>imnavait_area_veg.shp</code>	68.632095	68.589011	-149.258261	-149.375888

### 3. Application and Derivation

These data provide a historical baseline for studies of climate change impacts in Alaskan ecosystems.

### 4. Quality Assessment

The maps were devised from several data sources. Refer to Walker et al. (2008) for additional information.

### 5. Data Acquisition, Materials, and Methods

#### Site description

The Imnavait Creek vegetation area is located near the center of the Upper Kuparuk River region, east of Toolik Lake. It encloses a 20-km<sup>2</sup> area south of the Dalton Highway that includes both Imnavait Creek and the Toolik River in the center and stretches from the Kuparuk River on the west to the headwaters of Oksrukuyik Creek on the east. It includes the experimental areas around Imnavait Creek and the ridges that run north to south between the drainages. The area contains surfaces with irregular topography that were glaciated during the mid-Pleistocene.

During August 1984 and August-September 1985, environmental, soil, and vegetation data were collected from 84 study plots at the Imnavait Creek research site. These data are provided in a related data set archived at the ORNL DAAC.

The Imnavait 1-km grid is mapped in more detail and is the area that has been investigated and been the subject of experimentation by numerous researchers based at the Toolik Research Station.

#### Data Attribute Descriptions and Codes

The data provided in the shapefiles with this data set include attributes from individual maps, including gridded maps, of the Imnavait Creek area. These attributes are described below and include vegetation, percent water, glacial geology, soil carbon, DEM, and surficial geology and geomorphology. Unless

otherwise noted, the attributes are in both the area and grid files.

### Vegetation

The vegetation map portrays the physiognomy of the dominant plant communities in each mapped polygon. Fifty-one landcover types were recognized in the field (minimum mapping unit approximately 250 m<sup>2</sup>). These were later grouped into the 14 physiognomic vegetation units on the map, which correspond to the same units on the 1:63,360-scale map of the upper Kuparuk River region (Walker & Maier 2008).

**Table 15.** Codes and descriptions in the files **imnavait\_area\_veg.shp** and **imnavait\_grid\_veg.shp**

	<b>Attribute: Primary Vegetation</b>
<b>Codes</b>	<b>Description</b>
10	Water
21	Forb or graminoid marsh
31	Wet sedge moss tundra(fen) - Caraqu/Eriang aquatic
32	Wet sedge moss tundra (poor fen)- Carrot-Erisch
33	Wet sedge moss tundra (poor fen – Carcho)
41	Forb or graminoid marsh - Spahyp-Hipvul
211	Wet sedge moss tundra (fen- Caraqu/Eriang/Drerev)
212	Wet sedge moss tundra (fen- Carrot/Carrar)
213	Wet sedge moss tundra (fen– Eriang)
241	Wet sedge moss tundra (poor fen - Erisch/Carrar)
242	Wet sedge moss tundra (fen- Caraqu-Salfus)
243	Wet sedge moss tundra (fen- Caraqu-Salcha)
251	Low to tall shrublands - Salpul-Eriang
411	Non-tussock sedge dwarf-shrub moss tundra - Carbig-Dryint
412	Non-tussock sedge dwarf-shrub moss tundra -Carbig-Leddec
421	Tussock sedge dwarf-shrub moss -Erivag-Leddec
431	Tussock sedge dwarf-shrub moss - Erivag-Leddec/Salpul and Betnan
441	Non-tussock sedge dwarf-shrub moss tundra - Carbig-Leddec/Salpul and Betnan
451	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Hylspl
452	Hemi-prostrate dwarf-shrub fruticose-lichen tundra -Salrot-Saxriv
453	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Vaculi
461	Dwarf- to low-shrub sedge moss tundra - Betnan-Rubcha
471	Dwarf- to low-shrub sedge moss tundra - Betnan-Vaculi
472	Low to tall shrublands - Salpul (closed low shrub)
481	Low to tall shrublands - Salpul (closed canopy riparian shrubland)
482	Low to tall shrublands - Salpul-Calcan (open canopy low shrub)
611	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Geugla
612	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (nonacidic) - Vaculi-Arcalp
613	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (acidic) - Salphi-Dialap
671	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (nonacidic) - Dryoct-Smecal
672	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (acidic) - Dryoct-Vacvit

681	Non-tussock sedge dwarf-shrub moss tundra - Fesalt-Carmic
821	Lichens on rocks - Rhigeo-Umbisp
831	Partially vegetated barrens - Fesrub-Poagla
991	Barren

### Surficial Geomorphology

The surfaces of the landscapes in the Imnavait Creek area have been modified by a variety of geomorphological processes including alluviation (movement of material by water), colluviation (movement of material by gravity), and periglacial processes (freezing and permafrost-related phenomena). Common surficial geomorphological features within the mapped area include frost scars, turf hummocks, gelifluction lobes and terraces, water tracks, high- and low-centered ice-wedge polygons, wetland features and thermokarst features.

**Table 16.** Codes and descriptions used for the attributes of the shapefiles **imnavait\_grid\_surfgeomorphology.shp** and **imnavait\_area\_surfgeom.shp**

	<b>Attributes:</b> Surficial geomorphology-numerical surficial geomorphology code
<b>Codes</b>	<b>Description</b>
<b>ic5c_surf and FIRST_ic5c</b>	Surficial geomorphology-numerical surficial geomorphology code. Includes a layer file
1	High-centered polygons
6	Frost scars
7	Strangmoor or aligned hummocks in bogs
8	Hummocky terrain
10	Featureless
13	Active floodplain alluvium
14	Thermokarst pits
15	Well defined hill-slope water tracks greater than 1-m relief
16	Weakly defined hill-slope water tracks less than 1-m relief
17	Incised stream drainage
18	Nonsorted stone stripes
21	Rocky terrain (till and bedrock)
22	Palsas and elevated terrain in basin colluvium (excluding high-centered polygons)
23	Pond complex
24	Blockfields and sorted stone stripes
25	Irregular relief associated with stream drainage
26	Gelifluction features
98	Disturbed
99	Water

### Surficial Geology

Surficial geology affects vegetation patterns and disturbance recovery rates. The attributes below are for the Imnavait Creek area and grid.

**Table 17.** Codes and descriptions of the attributes in the shapefiles **imnavait\_grid\_surfgeology.shp** and **imnavait\_area\_surfgeol.shp**.

	<b>Attribute: Primary Surficial Geology</b>
<b>Code</b>	<b>Description</b>
240	Sandstone and shale



330	Hillslope deposits (undifferentiated retransported deposits)
340	Basin colluvium
400	Nonmeander floodplain
420	Alluvial fan
440	Nonmeander floodplain
450	Meander floodplain
500	Hillslope deposits (undifferentiated retransported deposits)
650	Till sheet
711	Glaciofluvial outwash
810	Emergent lake bottom
890	Basin colluvium
980	Road or excavation
991	Stream/river
992	Pond/lake

### **Contours**

Elevation of the research area grid.

**Table 18.** Attributes of the shapefile **imnavait\_grid\_contours.shp**

	<b>Attribute: Contour</b>
<b>Code</b>	<b>Description</b>
Not Applicable	Elevation in meters

### **Geobotanical**

The geobotanical map is a vector map (shp) with fields for vegetation, surficial geomorphology, surficial geology, and glacial geology.

There are seven attributes in this data file described below.

**Table 19.** Codes and descriptions of the seven attributes in the **imnavait\_grid\_geobotanical.shp**.

	<b>Attributes: Primary, Secondary and Tertiary Vegetation</b>
<b>Code</b>	<b>Description</b>
0	Primary vegetation. No secondary or tertiary type (SEC_SGEOM and TER_SGEOM only)
1	Arctous alpina-Hierochloe alpina
2	Salix phlebophylls-Vaccinium vitis-idaea
3	Vaccinium vitis-idaea-Cetraria richardsonii
4	Calamagrostis inexpansa-Vaccinium vitis-idaea
5	Cassiope tetragona-Calamagrostis inexpansa
6	Betula nana-Hierochloe alpinum
7	Dry lichen barren. Lichen communities on rocks, including Cetraria nigricans-Rhizocarpon geographicum.
8	Dry rush, forb lichen barren, usually on frost scars. Juncus biglumis-Luzula arctica.
9	Cassiope tetragona-Carex macrochaeta

10	Eriophorum vaginatum-Sphagnum rubellum
11	Carex bigelowii-Sphagnum rubellum
12	Betula nana-Eriophorum vaginatum
13	Salix pulchra-Carex bigelowii
14	Cassiope tetragona-Carex bigelowii
15	Betula nana-Rubus chamaemorus. Dwarf-shrub variant
16	Salix pulchra (low shrub)-Sphagnum rubellum
17	Salix pulchra (dwarf shrub)-Sphagnum rubellum
18	Arctagrostis latifolia-Bistorta plumose
19	Arctagrostis latifolia-Salix chamissonis
20	Carex rotundata-Sphagnum lindbergii
21	Eriophorum angustifolium
22	Eriophorum angustifolium
23	Salix fuscescens-Sphagnum lenense
24	Carex aquatilis-Sphagnum lenense.
25	Carex aquatilis-Salix chamissonis
26	Eriophorum angustifolium-Salix pulchra
27	Carex aquatilis-Eriophorum angustifolium
28	Eriophorum scheuchzeri-Sphagnum orientale
29	Sparganium hyperboreum-Hippuris vulgaris
30	Calliergon giganteum-Drepanocladus revolvens
31	Water
32	Barren roads and pads; unvegetated.
33	Partially vegetated disturbed barrens on gravel pads, bulldozed areas.
34	Experimental structure (boardwalk, etc.)
	<b>Attribute: Primary Surficial Geology-</b> refer to the code descriptions under Surficial Geology in the attribute descriptions table for the file <b>imnavait_grid_surfgeology.shp</b>
	<b>Attributes: Primary Surficial Geomorphology and Secondary Surficial Geomorphology-</b> refer to Surficial Geomorphology and the codes and descriptions for the attribute in the file <b>imnavait_grid_surfgeomorphology</b>
	<b>Attribute: Glacial Geology-</b> refer to the code description under Glacial Geology for the file <b>imnavait_area_glacgeol.shp</b>

### **Geobotany**

Geobotanical features of the Imnavait Creek area.

**Table 20.** Codes and descriptions in the data file **imnavait\_area\_geobotany.shp**. There are 12 attributes in this data file described in the tables below.

<b>Attributes: Primary Vegetation, Secondary Vegetation, and Tertiary Vegetation</b>	
Code	Description
10	Water

21	Forb or graminoid marsh
31	Wet sedge moss tundra (fen) - Caraqu/Eriang aquatic
32	Wet sedge moss tundra, poor fen - Carrot-Erisch
33	Wet sedge moss tundra, poor fen – Carcho
41	Forb or graminoid marsh - Spahyp-Hipvul
211	Wet sedge moss tundra (fen - Caraqu/Eriang/Drerev)
212	Wet sedge moss tundra (fen - Carrot/Carrar)
213	Wet sedge moss tundra (fen – Eriang)
241	Wet sedge moss tundra (poor fen - Erisch/Carrar)
242	Wet sedge moss tundra (fen - Caraqu-Salfus)
243	Wet sedge moss tundra (fen) - Caraqu-Salcha
251	Low to tall shrublands - Salpul-Eriang
411	Non-tussock sedge dwarf-shrub moss tundra - Carbig-Dryint
412	Non-tussock sedge dwarf-shrub moss tundra -Carbig-Leddec
421	Tussock sedge dwarf-shrub moss -Erivag-Leddec
431	Tussock sedge dwarf-shrub moss - Erivag-Leddec/Salpul and Betnan
441	Non-tussock sedge dwarf-shrub moss tundra - Carbig-Leddec/Salpul and Betnan
451	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Hylspl
452	Hemi-prostrate dwarf-shrub fruticose-lichen tundra -Salrot-Saxriv
453	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Vaculi
461	Dwarf- to low-shrub sedge moss tundra - Betnan-Rubcha
471	Dwarf- to low-shrub sedge moss tundra - Betnan-Vaculi
472	Low to tall shrublands - Salpul closed low shrub
481	Low to tall shrublands - Salpul closed canopy riparian shrubland
482	Low to tall shrublands - Salpul-Calcan open canopy low shrub
611	Hemi-prostrate dwarf-shrub fruticose-lichen tundra - Castet-Geugla
612	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (nonacidic - Vaculi-Arcalp)
613	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (acidic - Salphi-Dialap)
671	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (nonacidic - Dryoct-Smecal)
672	Prostrate dwarf-shrub sedge forb fruticose-lichen tundra (acidic - Dryoct-Vacvit)
681	Non-tussock sedge dwarf-shrub moss tundra - Fesalt-Carmic
821	Lichens on rocks - Rhigeo-Umbisp
831	Partially vegetated barrens - Fesrub-Poagla
991	Barren
	<b>Attribute: Landforms</b> -refer to the code descriptions in the file <b>imnavait_area_landforms.shp</b>
	<b>Attribute: Primary Surficial Geology</b> - refer to the code descriptions under Surficial Geology in the attribute descriptions table for the file <b>imnavait_grid_surfgeology.shp</b>

	<b>Attribute: Glacial Geology-</b> Refer to the attribute code description for the file <b>imnavait_area_glacgeol.shp</b>
Not Applicable	<b>Attribute: Soil Carbon-</b> Soil Carbon: kg carbon / m <sup>2</sup>
	<b>Attribute: Soil Complex</b>
<b>Code</b>	<b>Description</b>
1	Water
2	Disturbed
3	River alluvium
4	Blockfield
11	Dry acidic soil complex
12	Dry non acidic soil complex
13	Acidic snowbed soil complex
14	Nonacidic snowbed soil complex
15	Dry acidic frost-scar soil complex
16	Dry nonacidic frost--scar soil complex
17	Dry high-centered polygon soil complex
18	Zoogenic soil complex
21	Active alluvium
22	Stabilized floodplain soil complex
23	Acidic water-track soil complex
24	Nonacidic water-track soil complex
31	Bog and poor-fen soil complex
32	Rich-fen soil complex
33	Palsas and high-centered polygon soil complex
34	Marsh and pond soil complex
41	Acidic nonsorted -stripe soil complex
42	Nonacidic nonsorted-stripe soil complex
43	Moist acidic frost-scar soil complex
44	Moist nonacidic frost-scar soil complex
45	Acidic hillslope soil complex
46	Nonacidic hillslope soil complex
	<b>Attribute: Percent Water-</b> refer to the codes and description in the file <b>imnavait_area_pctwtr.shp</b>
	<b>Attributes: Primary Surficial Geomorphology and Secondary Surficial Geomorphology-</b> refer to the attribute code descriptions in the file <b>imnavait_grid_geobotanical.shp</b>

### **Glacial Geology**

The glacial geology of the region affects a wide variety of landscape and ecosystem properties including topography, abundance of lakes, plant production, soil carbon, spectral reflectance, biodiversity, trace-gas fluxes and heat flux of the landscape. Glacial deposits are assigned to Itkillik I (late Pleistocene, about 120-150 kya) and Itkillik II (late Pleistocene, about 25-11.5 kya) glaciations of the central Brooks Range glacial succession.

**Table 21.** Codes and descriptions of the attribute found in the file **imnavait\_area\_glacgeol.shp**

<b>Attribute: Glacial Geology</b> (also pertains to the same attributes in the file <b>imnavait_area_glacgeol.shp</b> )	
<b>Code</b>	<b>Description</b>
1	Drift of Sagavanirktok River, undifferentiated
2	Ice-rich silt deposits and colluvial basins
3	Drift of Itkillik Phase I
4	Hummocky terrain
5	Drift of Sagavanirktok River, late advance
6	Outwash of Sagavanirktok River, late advance
7	Bedrock
8	Undifferentiated alluvium

### **Landforms**

Landforms surrounding the Imnavait Creek study area.

**Table 22.** Codes and descriptions for the attribute in the file **imnavait\_area\_landform.shp**

<b>Attribute: Landforms</b>	
<b>Code</b>	<b>Description</b>
1	Distinct drained lake basin
2	Colluvial basin
5	Hill slope
6	Hill crest
12	Active floodplain
14	Stabilized floodplain
15	Small stream drainage including water tracks
20	Bluff
21	Alluvial fan
26	Glaciofluvial outwash plain
51	Lake or pond
52	River or stream
98	Disturbed

### **Percent Water**

The amount of water (lakes, ponds, streams, wetlands), strongly affects the reflectance of the land surface over large areas of Alaska. The percent water was based on the number of AVHRR water pixels in each polygon divided by the number of pixels in each polygon.

**Table 23.** Codes and descriptions for the attributes in the file **imnavait\_area\_pctwtr.shp**

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Attribute: Percent Water	
Code	Description
1	0 –5 %
2	6 –30 %
3	31 –60 %,
4	61 –90 %
5	91 –100 %

## 6. Data Access

These data are available through the Oak Ridge National Laboratory (ORNL) Distributed Active Archive Center (DAAC).

[Pre-ABOVE: Vegetation Types and Physiographic Features, Imnavait Creek, Alaska](#)

Contact for Data Center Access Information:

- E-mail: [uso@daac.ornl.gov](mailto:uso@daac.ornl.gov)
- Telephone: +1 (865) 241-3952

## 7. References

Walker, D.A. and H.A. Maier. 2008. Vegetation in the vicinity of the Toolik Field Station, Alaska. Institute of Arctic Biology, University of Alaska Fairbanks, Biological Papers of the University of Alaska #28.



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