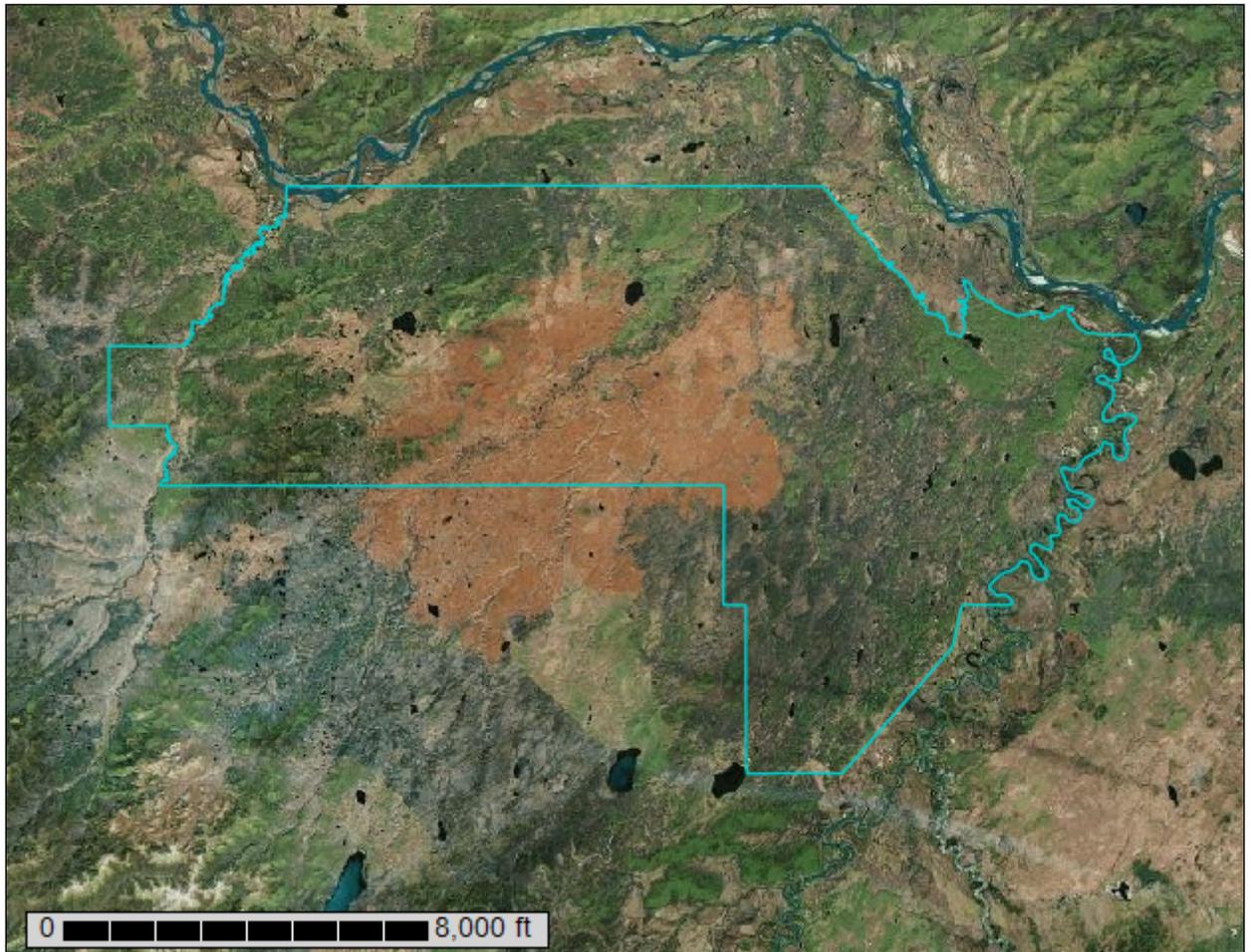


# Custom Soil Resource Report for **Kantishna Area, Alaska**



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# **Soil Information for All Uses**

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## **Soil Reports**

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

## **Land Classifications**

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## **Hydric Soil List - All Components**

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part

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(Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
  - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
  - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
  - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
  - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
  - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
  - B. Show evidence that the soil meets the definition of a hydric soil;

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Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

### References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

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**Report—Hydric Soil List - All Components**

Hydric Soil List - All Components—AK643-Kantishna Area, Alaska					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
1: Beales very fine sandy loam, 1 to 35 percent slopes	Beales	90	Dunes on alluvial fans	No	—
	Beales-Steeper slopes	5	Dunes on alluvial fans	No	—
	Kindanina	5	Depressions on outwash plains	Yes	2
2: Beales very fine sandy loam, 35 to 70 percent slopes	Beales	85	Dunes on alluvial fans	No	—
	Beales-Shallower slopes	10	Dunes on alluvial fans	No	—
	Zitziana	5	Dunes	No	—
3: Beales-Zitziana complex, 1 to 35 percent slopes	Beales	50	Dunes on alluvial fans	No	—
	Zitziana	40	Dunes	No	—
	Beales-Steeper slopes	5	Dunes on alluvial fans	No	—
	Kindanina	5	Depressions on outwash plains	Yes	2
4: Typic Histoturbels, Terric Hemistels, and Bradway soils, 0 to 2 percent slopes	Typic Histoturbels-Occasional ponded	30	Flood plains	Yes	2
	Bradway-Occasional ponding	30	Depressions on flood plains	Yes	2,3
	Terric Hemistels-Occasional flooded	30	Depressions on flood plains	Yes	1,2
	Ponds and sloughs	5	Depressions	Unranked	—
	Soils that are frequently flooded	5	Depressions on flood plains	Yes	2
5: Iksgiza peat, 0 to 3 percent slopes	Iksgiza-Occasional ponding	90	Depressions on outwash plains	Yes	2
	Hemistels	5	Depressions	Yes	1
	Nenana-Sandy substratum	5	Stream terraces	No	—
6: Iksgiza peat, 3 to 6 percent slopes	Iksgiza-Occasional ponding	85	Depressions on outwash plains	Yes	2
	Hemistels	10	Depressions	Yes	1
	Nenana-Sandy substratum	5	Stream terraces	No	—
7: Iksgiza peat, 6 to 12 percent slopes	Iksgiza-Occasional ponding	90	Dunes on outwash plains	Yes	2
	Iksgiza-Occasional ponding lower slopes	5	Depressions on dunes	Yes	2
	Nenana-Sandy substratum	5	Stream terraces	No	—

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Hydric Soil List - All Components--AK643-Kantishna Area, Alaska					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
8: Iksgiza-Beales-Zitziana complex, pitted, 1 to 50 percent slopes	Iksgiza	40	Depressions on outwash plains	Yes	2
	Beales	25	Dunes on alluvial fans	No	—
	Zitziana	20	Dunes	No	—
	Ponds and lakes	15	Depressions	Unranked	—
9: Iksgiza-Nenana complex, 1 to 35 percent slopes	Iksgiza	60	Depressions on dunes	Yes	2
	Nenana-Sandy substratum	25	Stream terraces	No	—
	Small ponds	5	Depressions	Unranked	—
	Hemistels	5	Depressions	Yes	1
10: Iksgiza-Terric Hemistels complex, 0 to 3 percent slopes	Nenana-Sandy substratum, lesser slopes	5	Stream terraces	No	—
	Iksgiza	65	Depressions on outwash plains	Yes	2
	Terric Hemistels-Occasional flooded	30	Depressions on outwash plains	Yes	1,2
	Nenana-Sandy substratum	5	Stream terraces	No	—
11: Iksgiza-Zitziana-Nenana complex, 1 to 35 percent slopes	Iksgiza	50	Depressions on dunes	Yes	2
	Zitziana	25	Dunes	No	—
	Nenana-Sandy substratum	20	Stream terraces	No	—
	Zitziana-Steeper slopes	5	Dunes	No	—
12: Kindanina mucky silt loam, 0 to 6 percent slopes	Kindanina	90	Depressions on outwash plains	Yes	2
	Nenana-Sandy substratum	5	Stream terraces	No	—
	Typic Histoturbels-Occasional ponded	5	Flood plains	Yes	2
13: Kindanina mucky silt loam, 6 to 12 percent slopes	Kindanina	90	Depressions on outwash plains	Yes	2
	Kindanina-Lesser slopes	5	Outwash plains	Yes	2
	Soil that have an organic mat more than 8 inches thick	5	Depressions on outwash plains	Yes	2
	Kindanina	85	Depressions on outwash plains	Yes	2
14: Kindanina mucky silt loam, 12 to 20 percent slopes	Kindanina-Steeper slopes	5	Depressions on outwash plains	Yes	2

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Hydric Soil List - All Components--AK643-Kantishna Area, Alaska					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
	Soil that have an organic mat more than 8 inches thick	5	Depressions on outwash plains	Yes	2
	Kindanina-Lesser slopes	5	Depressions on outwash plains	Yes	2
15: Kindanina-Beales-Zitziana complex, dunes, 1 to 50 percent slopes	Kindanina	40	Depressions on dunes	Yes	2
	Beales	25	Dunes on alluvial fans	No	—
	Zitziana	20	Dunes	No	—
	Saulich-Non ponded	15	Depressions, valley sides	Yes	2
16: Koyukuk silt loam, 1 to 35 percent slopes	Koyukuk	90	Alluvial fans	No	—
	Typic Aquiturbels-Mat substratum	5	Depressions on dunes	Yes	2
	Koyukuk-Steeper slopes	5	Alluvial fans	No	—
17: Koyukuk-Typic Aquiturbels complex, dunes, 1 to 35 percent slopes	Koyukuk	45	Alluvial fans	No	—
	Typic Aquiturbels-Mat substratum	40	Depressions on dunes	Yes	2
	Iksgiza	10	Depressions on outwash plains	Yes	2
	Nenana-Sandy substratum	5	Stream terraces	No	—
18: Koyukuk-Typic Aquiturbels complex, pitted, 1 to 35 percent slopes	Koyukuk	70	Hills on outwash plains	No	—
	Typic Aquiturbels-Mat substratum	15	Depressions on dunes	Yes	2
	Ponds and lakes	5	Depressions	Unranked	—
	Hemistels	5	Depressions	Yes	1
	Koyukuk-Less sloping	5	Depressions on outwash plains	No	—
19: Nenana silt loam, 3 to 6 percent slopes	Nenana-Sandy substratum	90	Stream terraces	No	—
	Iksgiza	10	Depressions	Yes	2
20: Nenana silt loam, 6 to 12 percent slopes	Nenana-Sandy substratum	90	Stream terraces	No	—
	Iksgiza	5	Depressions	Yes	2
	Nenana-Sandy substratum, steeper slopes	5	Stream terraces	No	—

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Hydric Soil List - All Components--AK643-Kantishna Area, Alaska					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
21: Nenana silt loam, 12 to 20 percent slopes	Nenana-Sandy substratum	90	Stream terraces	No	—
	Nenana-Sandy substratum. lesser slopes	5	Stream terraces	No	—
	Iksgiza	5	Depressions	Yes	2
22: Nenana-Zitziana complex, 1 to 35 percent slopes	Nenana-Sandy substratum	50	Stream terraces	No	—
	Zitziana	40	Dunes	No	—
	Iksgiza	5	Depressions	Yes	2
	Nenana-Sandy substratum, steeper slopes	5	Stream terraces	No	—
23: Terric Hemistels, 0 to 2 percent slopes	Terric Hemistels-Occasional flooded	85	Depressions on alluvial flats	Yes	1,2
	Beales	15	Dunes on alluvial fans	No	—
24: Riverwash	Riverwash	95	Flood plains	Unranked	—
	Salchaket	3	Flood plains	No	—
	River	2	Rivers	Unranked	—
25: Salchaket-Bradway complex, 0 to 3 percent slopes	Salchaket	65	Flood plains	No	—
	Bradway-Occasional ponding	20	Depressions on outwash plains	Yes	2,3
	Riverwash	5	Flood plains	Unranked	—
	Ponds and sloughs	5	Depressions	Unranked	—
	Hemistels	5	Depressions	Yes	1
26: Saulich peat, 0 to 6 percent slopes	Saulich	85	Outwash plains	Yes	2
	Tetlin	15	Hills	Yes	2
	Saulich	85	Valley sides	Yes	2
27: Saulich peat, 6 to 30 percent slopes	Saulich-Lesser slopes	10	Valley sides	Yes	2
	Tetlin	5	Hills	Yes	2
	Typic Cryaquepts-Deep water table, not hydric	85	Depressions on alluvial flats	No	—
	Small ponds and lakes	5	Depressions	Unranked	—
28: Typic Cryaquepts, 0 to 2 percent slopes	Hemistels	5	Depressions	Yes	1
	Nenana-Sandy substratum	5	Stream terraces	No	—
	Typic Dystrocryepts	65	Hillsides	No	—
29: Typic Dystrocryepts-Lithic Dystrocryepts association, 15 to 70 percent slopes	Lithic Dystrocryepts	30	Hills	No	—

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Hydric Soil List - All Components--AK643-Kantishna Area, Alaska					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
	Saulich	5	Valley sides	Yes	2
30: Typic Dystrocryepts-Saulich complex, 3 to 15 percent slopes	Typic Dystrocryepts	60	Hillsides	No	—
	Saulich	25	Valley sides	Yes	2
	Beales	5	Dunes on alluvial fans	No	—
	Typic Dystrocryepts-Steeper slopes	5	Hillsides	No	—
	Typic Histoturbels-Occasional ponded	5	Flood plains	Yes	2
31: Typic Dystrocryepts-Tetlin-Saulich association, 15 to 70 percent slopes	Typic Dystrocryepts	40	Hillsides	No	—
	Tetlin	25	Hills	Yes	2
	Saulich	20	Valley sides	Yes	2
	Saulich-Shallow slopes	10	Valley sides	Yes	2
	Lithic Dystrocryepts	5	Hills	No	—
32: Typic Cryopsamments, Typic Cryaquepts, flooded, and Bradway soils, 0 to 5 percent slopes	Typic Cryaquepts-Flooded	30	Depressions on flood plains	Yes	2
	Typic Cryopsamments-Flooded-brief	30	Levees on flood plains	No	—
	Bradway-Occasional ponding	30	Depressions on flood plains	Yes	2,3
	Salchaket	5	Flood plains	No	—
	Ponds	3	Depressions	Unranked	—
	Riverwash	2	Flood plains	Unranked	—
33: Zitziana silt loam, 1 to 35 percent slopes	Zitziana	90	Dunes	No	—
	Iksgiza	5	Depressions	Yes	2
	Zitziana-Steeper slopes	5	Dunes	No	—
34: Zitziana-Kindanina complex, 1 to 35 percent slopes	Zitziana	45	Dunes	No	—
	Kindanina	45	Depressions on dunes	Yes	2
	Zitziana-Steeper slopes	5	Dunes	No	—
	Typic Histoturbels-Occasional ponded	5	Flood plains	Yes	2
35: Water	Water	100	Lakes,rivers	Unranked	—