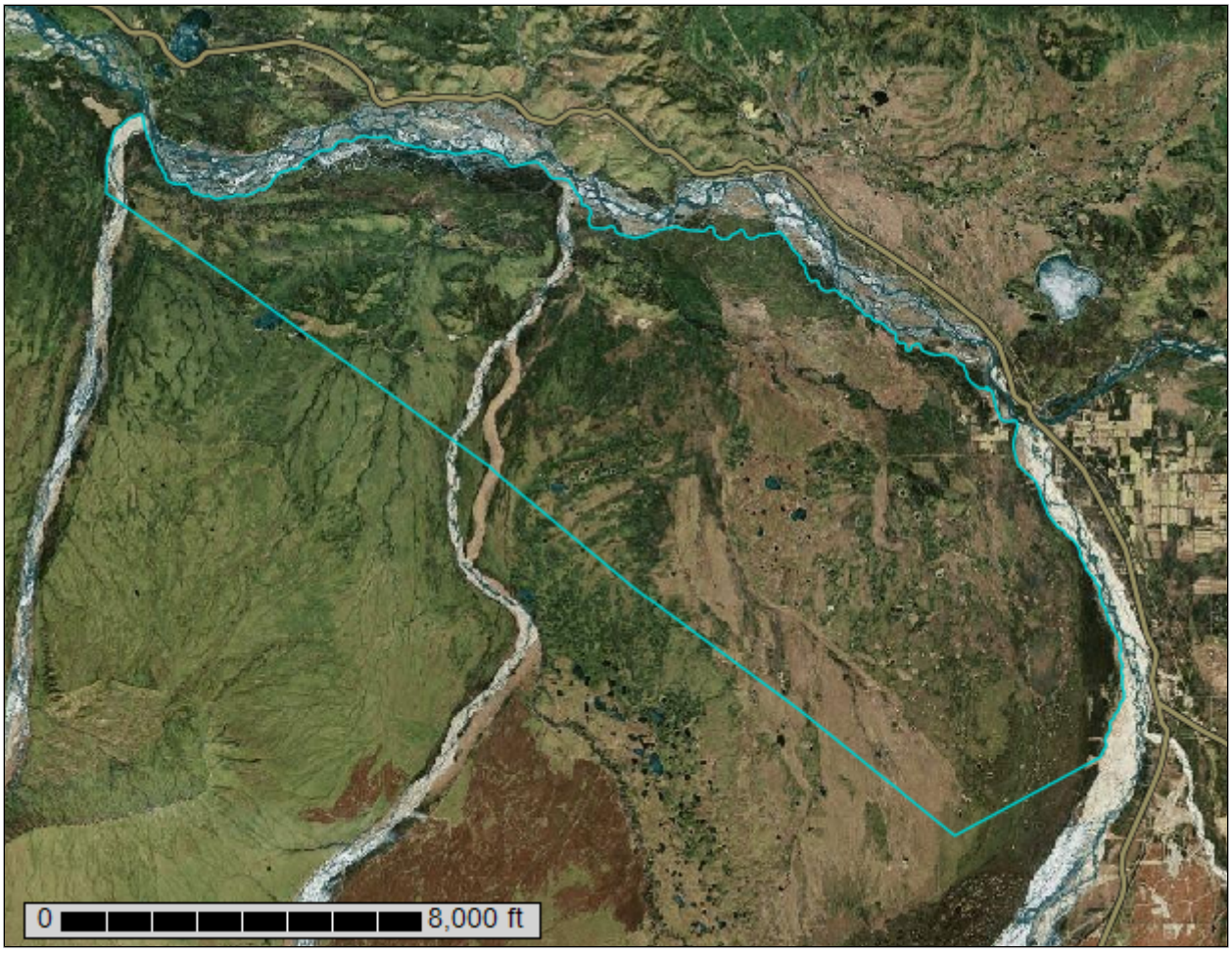
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Upper Tanana Area, Alaska



October 27, 2014

Preface

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).

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Information for All Uses

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

(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;

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.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–AK640-Upper Tanana Area, Alaska					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
301: Cryorthents, flooded	Cryorthents-Flooded	85	Terraces	No	—
	Gravelly soils	5	Terraces	No	—
	Deeper soils	5	Terraces	No	—
	Cryaquents	5	Terraces	Yes	2
302: Ester-Steese association, 7 to 12 percent slopes	Ester	60	Hills	Yes	2
	Steese	30	Hills	No	—
	Steeper slopes	5	Hills	No	—
	Shallower soils	5	Hills	No	—
303: Fubar and Riverwash, 0 to 3 percent slopes	Fubar	50	Alluvial flats	No	—
	Riverwash	40	Flood plains	Unranked	—
	Steeper slopes	10	Alluvial flats	No	—
304: Goldstream peat, 0 to 3 percent slopes	Goldstream	85	Alluvial flats	Yes	2,3
	Steeper slopes	8	Moraines,alluvial flats	Yes	2,3
	Histosols	7	Depressions	Yes	1,3
305: Goldstream peat, 3 to 7 percent slopes	Goldstream	85	Alluvial flats	Yes	2
	Steeper slopes	8	Alluvial flats	Yes	2,3
	Histosols	7	Depressions	Yes	1,3
306: Goldstream peat, 7 to 12 percent slopes	Goldstream	85	Moraines	Yes	2
	Steeper slopes	8	Alluvial flats	Yes	2,3
	Histosols	7	Depressions	Yes	1,3
307: Goldstream-Tanana complex, 0 to 3 percent slopes	Goldstream	60	Alluvial flats	Yes	2
	Tanana	25	Alluvial flats	Yes	2
	Histosols	15	Depressions	Yes	1,3
308: Goldstream and Histosols, 0 to 3 percent slopes	Goldstream	50	Alluvial flats	Yes	2,3
	Histosols	45	Depressions	Yes	1,3
	Cryaquepts	5	Alluvial flats	Yes	2
309: Goodpaster variant-Goldstream complex, 0 to 3 percent slopes	Goodpaster variant	70	Alluvial flats	Yes	2
	Goldstream	20	Depressions	Yes	2
	Shallower soils	5	Alluvial flats	No	—
	Steeper slopes	5	Alluvial flats	Yes	2,3

Hydric Soil List - All Components–AK640-Upper Tanana Area, Alaska					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
310: Gravel pits	Gravel pits	100	Alluvial flats	Unranked	—
311: Jarvis-Fubar complex, 0 to 7 percent slopes	Jarvis	60	Flood plains	No	—
	Fubar	25	Flood plains	No	—
	Fluvents	15	Flood plains	Yes	4
312: Koyukuk silt loam, 0 to 3 percent slopes	Koyukuk	85	Terraces,moraines	No	—
	Steeper slopes	5	Moraines,terraces	No	—
	Poorly drained soils	5	Depressions	Yes	2
	Permafrost soils	5	Moraines	Yes	2
313: Koyukuk silt loam, 3 to 7 percent slopes	Koyukuk	85	Moraines,terraces	No	—
	Steeper slopes	5	Moraines	No	—
	Poorly drained soils	5	Depressions	Yes	2
	Permafrost soils	5	Moraines	Yes	2
314: Koyukuk silt loam, 7 to 12 percent slopes	Koyukuk	85	Moraines	No	—
	Permafrost soils	8	Moraines	Yes	2
	Steeper slopes	7	Moraines	No	—
315: Koyukuk silt loam, 12 to 45 percent slopes	Koyukuk	85	Moraines	No	—
	Steeper slopes	8	Moraines	No	—
	Shallower soils	7	Moraines	No	—
316: Minchumina peat, 0 to 3 percent slopes	Minchumina	85	Moraines	No	—
	Steeper slopes	8	Moraines	No	—
	Histosols	7	Depressions	Yes	1,3
317: Minchumina peat, 3 to 7 percent slopes	Minchumina	85	Moraines	No	—
	Steeper slopes	8	Moraines	No	—
	Histosols	7	Depressions	Yes	1,3
318: Nenana silt loam, 0 to 3 percent slopes	Nenana	85	Moraines,outwash plains	No	—
	Permafrost soils	8	Depressions	Yes	2
	Steeper slopes	7	Outwash plains,moraines	No	—
319: Nenana silt loam, 3 to 7 percent slopes	Nenana	85	Moraines,outwash plains	No	—
	Permafrost soils	8	Depressions	Yes	2
	Steeper slopes	7	Moraines	No	—
320: Nenana silt loam, 7 to 12 percent slopes	Nenana	85	Moraines,outwash plains	No	—
	Permafrost soils	8	Depressions	Yes	2

Hydric Soil List - All Components–AK640-Upper Tanana Area, Alaska					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
	Steeper slopes	7	Moraines	No	—
321: Nenana silt loam, 12 to 45 percent slopes	Nenana	85	Moraines,outwash plains	No	—
	Shallower soils	8	Moraines,outwash plains	No	—
	Steeper slopes	7	Moraines	No	—
322: Riverwash	Riverwash	100	Flood plains	Unranked	—
323: Salchaket-Riverwash association, 0 to 3 percent slopes	Salchaket	70	Flood plains	No	—
	Riverwash	20	Flood plains	Unranked	—
	Permafrost soils	4	Flood plains	Yes	2
	Gravelly soils	3	Flood plains	No	—
	Steeper slopes	3	Flood plains	No	—
324: Steese-Ester association, 12 to 45 percent slopes	Steese	55	Hills	No	—
	Ester	35	Hills	Yes	2
	Steeper slopes	5	Hills	No	—
	Shallower soils	5	Hills	No	—
325: Tanana silt loam, 0 to 3 percent slopes	Tanana	85	Alluvial flats	Yes	2
	Steeper slopes	8	Alluvial fans,outwash plains	Yes	2
	Fluvents	7	Flood plains	Yes	4
326: Tanana, moderately wet-Goldstream complex, 0 to 3 percent slopes	Tanana-Moderately wet	70	Alluvial flats	No	—
	Goldstream	20	Depressions	Yes	2,3
	Histosols	5	Depressions	Yes	1,3
	Steeper slopes	5	Alluvial fans	No	—
327: Tanana, moderately wet-Goldstream complex, 3 to 7 percent slopes	Tanana-Moderately wet	70	Alluvial flats	No	—
	Goldstream	20	Alluvial flats	Yes	2
	Steeper slopes	5	Alluvial fans	No	—
	Histosols	5	Depressions	Yes	1,3
328: Water	Water	100	Depressions	Unranked	—