Attachment B

Criteria for different levels of mapping intensity

Overview

Land use patterns and issues facilitate the use of multiple orders of mapping detail within the project area. Each order of mapping intensity has inherent constraints in terms of the cost, field time, or product use. Detailed descriptions of each mapping level, legitimate uses and gross annual acreages that can be expected are outline below.

Order 2

Scale. 1:25,000 (2.5 inches/mile with minimum legible delineation size of about 4 acres)

Estimated Yearly Acreage-approximately 80,000

Where Applicable. This level of mapping is suited to road or water accessible lands with a high potential for development or with priority resource concerns.

Field Documentation-A minimum of three transects per map unit with at least 60 percent of polygons visited in the field.

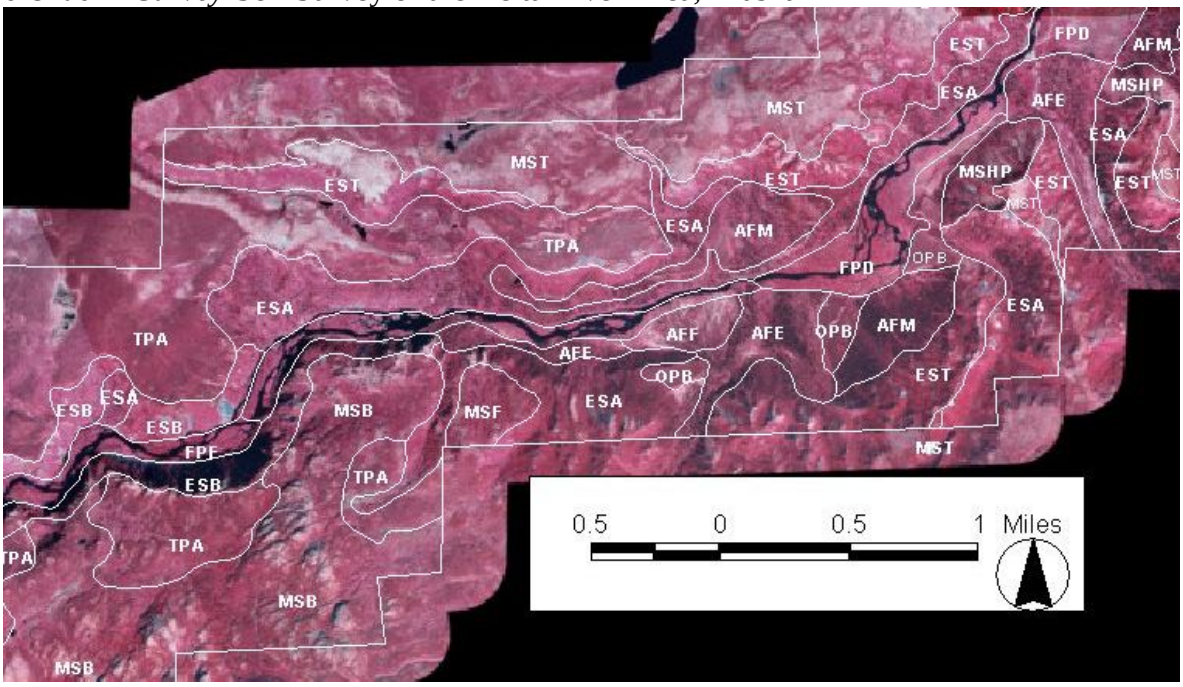
Required Access –Areas are accessible by reasonably navigable waterway, road, or well established trail. This order of mapping is less contingent on weather since access is by road and not fixed wing or helicopter.

Mapping Base-1:25,000 CIR stereo photography and associated ortho-photography

Products-Map unit, soil component, and general vegetation descriptions are provided. Physical and chemical properties of soil components, and soil and water features are provided, as well as basic land use interpretations. Tabular and spatial data will not be provided for private lands where access has been denied by land owners. These areas will be illustrated as "No Data-Access Denied" in the spatial data products.

Limitations-Though this mapping level has a very intensive field verification component, it is not a substitute for onsite evaluation of soil and site properties. This level is expensive and time consuming in terms of field documentation.

Example Order 2 Survey-Soil Survey of the Delta River Area, Alaska



Order 3-4

Scale 1:63,360 (1 inch/mile with minimum legible delineation size of about 40 acres)

Estimated Yearly Acreage-approximately: 500,000

Where Applicable-Suited for large areas where baseline resource information is necessary to understand the basic distribution of resources such as soils, landforms, plant communities, landscape disturbance regimes, permafrost and geology. Information is suited to answer a wide range of questions regarding land resources and provides a mechanism for extrapolating research to similar landscapes elsewhere in the region.

Field Documentation-A minimum of three transects per map unit and at least 20 percent of polygons are visited in the field.

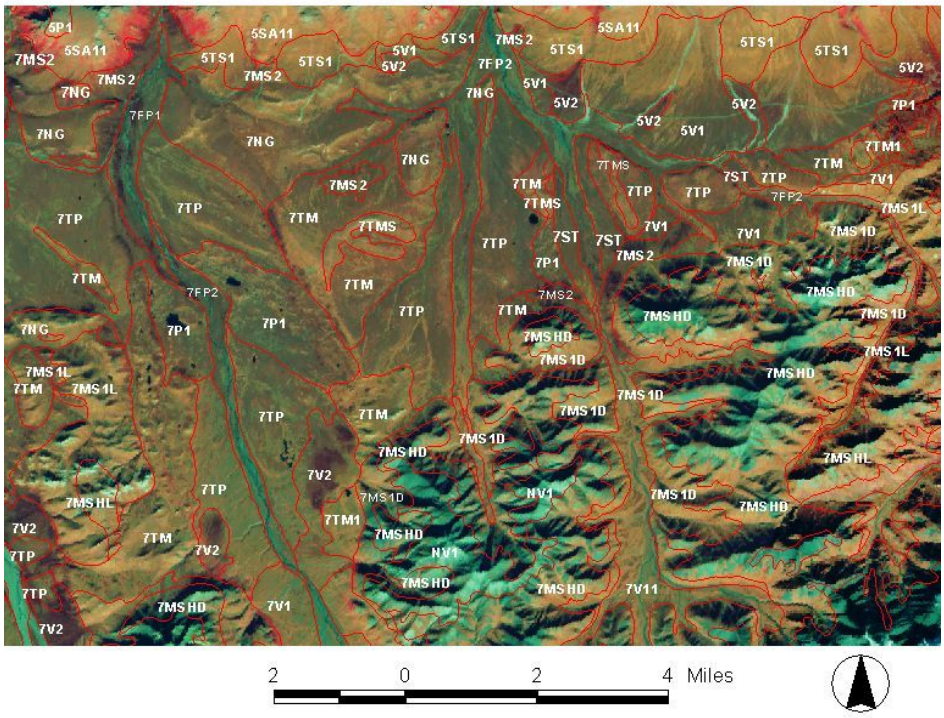
Required Access –Areas are generally accessible helicopter, fixed wing or boat. Road access may be available for mapping those lands adjacent to roads but not designated for detailed mapping coverage. GIS image analysis tools may be used in the mapping process at this level.

Mapping Base-Suitable photography that is readily available for most areas of Alaska is the 1:60,000 color infrared (CIR) Alaska High Altitude Photography (AHAP) with stereoscopic coverage.

Products-These include map unit, soil component, and general vegetation descriptions as well as physical and chemical properties of soil components, and soil and water features. At this level, interpretations are not provided for building site development, roads, trails, and engineering soil classifications. Tabular and spatial data will not be provided for private lands where access has been denied by land owners.

Limitations-A vast majority of map units are landform-soil associations consisting of as many as three major soil components. Since multiple components are frequently present within a map unit, the user must have a higher degree of familiarity with the landform-soil relations in order to use the map effectively than with order 2 mapping. Field access is often contingent on weather since access is primarily by helicopter.

Example Order 3-4 Survey-Soil Survey of Denali National Park Area, Alaska



Order 5

Scale 1:500,000 (minimum legible delineation size of about 400 acres)

Estimated Yearly Acreage-approximately 2 million

Where Applicable-Suited for large areas where general information about area resources is desired and spatial orientation of specific resources is not important. Landform-soil-ecological relations are not established and geographic distribution of resources is either not possible or is provided at a resolution that is only practical for regional planning applications. Order 5 mapping is best suited to large areas of non-vegetated terrain, rock, and ice that support little or no vegetation and other vegetated areas where landform specific soil or ecological information is not currently needed and is not anticipated as necessary in the future. A list of soil and non-soil areas and associated plant communities is provided as part of the map unit descriptions and associated data. Ranges in the composition are provided, however, specific composition estimates of soil components vary significantly between polygons and so consistent representative composition is not possible at this mapping level.

Field Documentation-A minimum of three transects per map unit and a minimum of 5 percent of polygons are visited in the field.

Required Access –Applicable areas are remote in nature and generally require accessed by helicopter, fixed wing, or boat. GIS image analysis tools will be used to assist in the mapping process at this level.

Mapping Base- Photography such as AHAP or imagery such as IKONOS, SPOT, and LANDSAT is suited for field mapping and as a compilation base. Stereo coverage may be useful but is not necessary.

Products- These include map unit descriptions as well as ranges of composition of soil and non-soil components. However, representative values of composition are not provided since they are highly variable between polygons. Ranges in physical and chemical properties of commonly occurring soils will be reported, but representative values will not. Land use interpretations are not provided. Tabular and spatial data will not be provided for private lands where access has been denied by land owners.

Limitations-Providing consistent and predictable landform-soil-plant community relations are not possible at this level of mapping. Compared to Order 3-4 mapping, the mapping products at Order 5 provide a relatively low level of reliability in terms of predicting the occurrence and location of soil components within a map unit. The ability to extrapolate research results to similar landscapes within the region is very difficult and unreliable at this mapping scale. Field access is often contingent on weather since access is primarily by helicopter.

Example Order 5 Survey-Western Interior Rivers Area, Alaska