

FIELD SUMMARY REPORT
YUKON FLATS PHOTOINTERPRETATION

I. INTRODUCTION

The purpose of this field trip was to ground truth aerial photography of the study area so that photointerpretation could be facilitated with a high degree of accuracy.

A. MAP NAMES (52 15' QUADS)

Beaver A1-6, B1-5 (11)
Black River A5-6, B5-6, C5-6, D5-6 (8)
Circle D1-6 (6)
Colleen A5-6 (2)
Fort Yukon A1-6, B1-6, C1-6, D1-6 (24)
Livengood D5 (1)

B. FIELD MEMBERS

Jonathan Hall	-	U.S. Fish and Wildlife Service
Dave Dall	-	U.S. Fish and Wildlife Service
Norm Mangrum	-	U.S. Fish and Wildlife Service
Frank J. Sargent	-	Geonex Martel, Inc.
Sheila Ricardi	-	Geonex Martel, Inc.

C. FIELD DATES

August 9 - 29, 1989

D. AERIAL PHOTOGRAPHY

The color infrared (CIR) photography for this task order has a variety of scales: 1:59,000, 1:60,000, 1:61,000, 1:62,000, 1:63,000, 1:64,000, 1:65,000, 1:66,000, and 1:67,000. Black and white photography of 1:120,000 is used to fill in holidays.

Photography dates are during the months of June, July, and August although the years range from 1971-72 and 1978-86. The majority of the photos are in this latter group.

The resolution and emulsion of the photography is good with few exceptions. Some of these exceptions are cloud cover, smoke, and the outside edges of work photos where images tend to be blurred.

E. COLLATERAL DATA

USGS Topographic Quadrangle Maps
(1:63,360 and 1:250,000)

Soil Surveys where available

Bailey, Robert G., Descriptions of the Ecoregions of the United States, U.S. Department of Agriculture Forest Service. Miscellaneous Publications.

II. OVERVIEW

A. GEOGRAPHICAL LOCATION

The study area for the Yukon Flats photointerpretation task order is located in the east central portion of the state. Included within the study area perimeter is the Yukon Flats National Wildlife Refuge. The primary coordinates are: Latitude 65 45' North - 67 15' North, Longitude 143 00'.

B. ECOREGION

According to Descriptions of the Ecoregions of the United States, Bailey, the project area lies within the Yukon Forest Province. The province is situated between the Brooks and Alaska Ranges. It consists of large broad valleys, dissected uplands and lowland basins. Five major rivers flow through the province: The Upper Yukon, Porcupine, Tanana, Koyukuk, and Upper Kuskokwim. Associated with these rivers are braiding and wide floodplains. These areas also contain numerous sloughs, marshes, and ponds.

Elevation throughout the province is usually under 3,000 feet, although hills and small mountain groups may exceed this. Areas of higher elevation are found east, south, and west along the edge of the Yukon Flats study area.

C. CLIMATE

The continental subarctic climate of this region has long cold winters and short moderate summers. Temperatures range from a low of 75 degrees F to an occasional high of 90 degrees F. Precipitation averages 12 - 17 inches annually. The Yukon Flats has isolated thundershowers in the summer. Wind velocity can be high and dangerous at the mouth of valleys in bordering mountains.

All major rivers are susceptible to spring flooding. After exceptionally heavy rainfall during the summer, flooding may also occur.

D. SOIL

Generally speaking, the soils of the Yukon Flats have four major associations:

1. Floodplains with terraces and levees are predominately well drained alluvium. In areas of sloughs, abandoned meanders and depressions, these soils may be flooded periodically and permafrost lies just below the surface.
2. Low terraces interspersed with wetland depressions, bogs, and ponds are more common as one moves away from the floodplains. These low terraces are well drained with loess over alluvial sediment. The wetland areas are typified by a silt loam, poorly drained soil with permafrost near the surface.
3. Increasing elevation brings more terraces and low hills. These also consist of well drained soils. The poorly drained soils appear in drainage ways and/or depressions. North facing slopes may have poorly drained soil too. Permafrost is usually found near the surface in poorly drained sites.
4. The rounded hills with rolling to steep topography consist of loess and colluvium. These well drained locations are found on north facing slopes and/or on the tops of such hills and mountains. The occurrence of permafrost is just below the surface.

III. BIOLOGICAL CHARACTERISTICS OF WETLAND HABITATS

There are three system associated with this study area: Palustrine, Lacustrine, and Riverine. The palustrine system dominates throughout the entire area. The majority of the wetlands (forest, shrub, and emergent) occur in a saturated condition.

Forested wetlands are primarily needle-leaf evergreen with Picea mariana dominant and occasional Picea glauca. This is also true of the needle-leaf evergreen shrub community. Both types of communities associated with saturated soils.

There are few deciduous wetland forest and they are associated primarily with riparian habitats and occasionally saturated. They consist of Salix sp., Populus balsamifera, and Populus trichocarpa. These are found primarily in temporary flooded conditions, although Salix sp. may also be in seasonally flooded situations. Betula papyrifera, found generally in upland locations may be situated in saturated wetlands.

Shrub wetlands exhibit a greater variety than fore wetlands. In addition to the needle-leaf species already mentioned, there are numerous broad-leaf deciduous and broad leaf evergreen shrubs. Usually there is a mix of all the type occurring within the wetland. Most of these also occur in a saturated soil condition. However, there are so species of Salix which occur in temporary and seasonal flooded riparian habitat. These shrubs may range from one inch long to twenty feet tall.

Emergents of the study area are associated with all water regimes. Emergents which are temporary may include: Calamagrostis sp., Petasites sp., Hordeum sp., Agropyron sp., and Juncus sp. Saturated and seasonal communities have Carex sp., Equisetum sp., Eriophorum sp., Eleocharis sp., and Juncus sp. Semipermanent and permanent species may include Typha sp., Carex sp., Calla palustris, Hippuris sp., and Equisetum sp.

Tussocks are either Eriophorum sp. or Carex sp. Growing with them on top of the tussocks are a variety of shrub species.

Moss and lichen are found throughout the project area. Sphagnum moss is the most common while lichen is not specifically identified.

Aquatic vegetation is present in all three systems. Besides Potamogeton sp., there is Nuphar luteum, and Nymphaea tetragona. All of these are classified as rooted vascular.

Two major classes of rivers are in this region; lower perennial and upper perennial. The lower perennial stream is usually braided with an established floodplain (Yukon River). The upper perennial streams are primarily characterized by little or no floodplains and swift water (Porcupine River). Riverine bars and flats are numerous with the slower moving river and less frequent with upper perennials. Most bars and flats are temporarily flooded and to a lesser extent seasonally flooded.

Throughout this region there are numerous ponds and lakes. These basins exhibit a variety of water regimes and fluctuation. Some of the basins are seasonal in nature, while others appear to have had long periods without water. Size is not a factor. In basins which show some fluctuations, emergents and shrubs are found growing in concentric rings. Water regimes within the basin may range from temporary to permanently flooded conditions.

Alkali beds are also common in the study area. These were primarily located in the Beaver and Fort Yukon map.

SHRUB PLANT LIST

Broad-leaf Deciduous

Alnus sinuata

Alnus crispa

Alnus tenuifolia

Rosa acicularis

Vaccinium uliginosum

Salix sp.

Betula glandulosa

Betula occidentalis

Rubus sp.

Potentilla palustris

Broad-leaf Evergreen

Andromeda polifolia

Cassiope lycopodioides

Chamaedaphne calyculata

Arctostaphylos

Vaccinium vitis idaea

Vaccinium oxycoccos

Empetrum nigrum

Pyrola sp.

Ledum sp.

Dryas sp.

Myrica gale

This list contains many of the species found in the study area, but is by no means a complete list.

VI. FIELD CHECKING

A. Expectation vs. Ground verification

1. The Fort Yukon, Beaver, and Black River mapping areas exhibit a dryer condition than seen on the photography. Some of these basins have water levels which fluctuate yearly. However, it is difficult to discern which basins do or do not. Shrub vegetation which grows in concentric rings around the basins show the fluctuation of water level.
2. Throughout the entire project area, forest fires have made their mark. Thus the photography exhibits numerous stages of regrowth. The fire destroys not only the vegetation, but also create a change in the depth to permafrost. This allows species which are indicative of upland areas to grow in a now dryer soil situation.