Field Summary Report

Thermopolis SE and Lander NE (northern half only)
Wyoming

I. Introduction

The purpose of this field trip was to ground truth aerial photography in order to obtain information on hydrologic systems, wetland plant communities, and specific wetland signatures within the study area to facilitate accurate photo interpretation.

A- Map Names: Thermopolis SE
Lander NE (northern half only)

B- Personnel: Donley Kisner - Martel, Inc.
Les Vilchek - Martel, Inc.
Chuck Elliott - USFWS
Ken Huntington - USFWS

C- Dates of Field Trip: July 22-26, 1985

D- Photography: All of the photography is color infrared and was flown by the National High Altitude Program on the following dates: 7/15/81, 8/25/81, 8/26/81, 8/14/82, 9/1/82, 9/3/84.

E- Collateral Data include:

USGS 7.5' quadrangle maps
-32 from Thermopolis Se
-16 from Lander Ne
USGS 1:250,000 maps for Themopolis and Lander.
USDA-SCS Soil Survey for Riverton Area, Wyo. 1974
USGS-Water Resourse Data, Wyoming

II. Overview

The study area is included within 42°45'00" to 43°30'00" N. latitude and 108°00'00" to 109°00'00" W. longitude. Elevations range from around 4,500 feet in Wind River Canyon to 11,078 feet at the peak of Mt. Anter in the SW corner of the work area.

Robert Bailey, in his Description of Ecoregions of the United States, classifies the area as being in the Wheatgrass-Needlegrass-Sagebrush and Sagebrush-Wheatgrass Sections of the Wyoming Basin Province. Geographically, this mapping unit is bounded on the north and north east by the Owl Creek and Bridgen mountain ranges. The Wind river range protrudes slightly into the southwest corner and contains the highest peaks in the study area. The major drainages include the Wind, Little Wind, and Popo Agie Rivers plus smaller streams such as Fivemile and Muddy Creek. The major non-riverine water bodies are Boysen Reservoir, Ocean Lake, and Pilot Butte Reservoir.

Annual precipitation is relatively low in this area due to the effect of the mountains. It ranges from approximately 14" in the mountains of the west to 8" or less in the east. Most rainfall occurs during April, May, and June in the form of showers and thunderstorms. Temperature extremes can range from -40°F to over 100°F. The overage growing season lasts an average of 150 days from May to September.

III. Biological Characteristics of Wetland Habitats

Marine: not present
Estuarine: not present
Riverine:

The three major river systems, the Wind, Little Wind and Popo Agie are perennial, having flow all year round in all years of record within the study area. Lacking the necessary conclusive data Beaver Creek will also be considered perennial. Fivemile Creek will be intermittent in the upper reaches of its drainage system then turning perennial on its way to Boysen Reservoir. Muddy Creek will be classified as intermittently exposed. All other streams will be considered intermittent unless adequate flow data can be obtained showing otherwise.

Most of the lower perennial river systems are characterized by short meanders with an unconsolidated bottom classification. Any upper perennial streams found will also be called unconsolidated bottom in lieu of any other information on substrate composition. Temporary to seasonally flooded flats (US) are present along most of these waterways.

Excavated waterways are common. These canals are essential in the diversion and draining off of irrigation water and are used only part of the year. They will fall into the intermittent stream bed category. The Wyoming and LeClair canals are of major significants.

Lucustrine:

The major lacustrine areas are as follows:

Boysen Reservoir - This is the largest open water body in the study area and was formed by damming of the Wind River in 1951. The water is used for irrigation, flood control, electricity, and recreation. Both littoral and limnetic zones will be mapped using contour data.

Ocean Lake - This lake was formed as a result of seep water from irrigation. The lake level is controlled by a drainage ditch to Five mile Creek. Water level data will aid in determination of subsystem boundaries.

Pilot Butte Reservoir - Pilot Butte acts as a storage reservoir for irrigation water drawn from the Wind River at the diversion dam via the Wyoming Canal. It supplies the needs of the Riverton Reclamation Project. The drawdown zone will be included in the littoral subsystem. Also present in the study area are smaller lacustrine systems such as Ray Lake and Lake Cameahwait.

Palustrine:

The most common palustrine wetlands found were seasonally flooded cattail and sedge communities. Temporarily flooded areas mainly dominated by foxtail barley are also present but were not met with as much frequency. Many of the wetlands found were directly related to irrigation and/or irrigation runoff. Not uncommon were large marsh areas with cattail and sedges as prevalent species. Wetlands on slopes were encountered and will be given a saturated water regime.

Isolated depressions were found in the sage country that supported wetland species such as dwarf spike rush. These are flooded very infrequently and often appear as intermittent lake beds on the USGS topos.

Linear ditch related wetlands were common due to the extensive irrigation network. Most are flooded seasonally. Common species are sedges, cattails, and reed canary.

Riparian wetlands sometimes covered huge areas. These are dominated by willow shrubs and sedges. Wet forested areas were also found along streams but were not as common as the scrub-shrub/emergent communities. The most common species was cottonwood.

The following is a list of the most commonly found species and their classification:

PEMA

foxtail barley	-	Hordeum jubatum
dwarf spike rush	-	Eleocharis sp.

PEMC

sedges	-	Carex sp.
cattail	-	Typha latifolia
spikerush	-	Eleocharis sp.
hardstem bulrush	-	Scirpus
rush	-	Juncus sp.

PEMF

hardstem bulrush	-	Scirpus
cattail	-	Typha latifolia

PFO

cottonwood	-	Populus sp.
willow	-	Salix sp.

PSS

willow	-	Salix sp.

IV Imagery

All of the photography is of acceptable quality and will facilitate accurate photointerpretation. The different dates of the imagery and the amount of coverage follows:

7/15/81	-	23%
8/25/81	-	25%
8/26/81	-	19%
8/14/82	-	12%
9/01/82	-	17%
9/03/84	-	04%

Two exceptions do stand out. The first involves temporarily flooded areas of Hordeum which portray a bright white signature which can be confused with other white upland returns. The Hordeom though is normally found along stream floodplains or bordering other wetter areas.

The other exception to this is the 8/26/81 imagery which characteristically showed darker and more pronounced returns. This photography will be interpreted differently than the rest and should not prove to be an obstacle to accurate delineation.

The imagery exhibited normal water conditions for the season while the field trip was conducted during an unusually dry period. This fact was taken into account during the field review and will have a bearing on the photointerpretation.