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UTAH - SALT LAKE STUDY II
FIELD RECONNAISSANCE REPORT

I.

A. Purpose:

The purpose of the study was to ground truth the various wetland habitats that were not previously mapped during the first Salt Lake area study which was conducted during the summer and fall of 1982. The following 1:100,000 maps were reviewed:

Brigham City NE
Brigham City SE
Ogden NW
Odgen SW
Salt Lake City NW
Salt Lake City SW
Tooele NE

B. 7.5" Quadrangle Maps with Check Sites:

Toole
Grantsville
Mt. Dell
Kamas
Slader Basin
Timpanogos Cave
Aspen Grove
Coop Creek
Murphy Ridge
Neponset Resevoir NE
Woodruff
Locomotive Springs
Mills Junction
Puddle Valley Knolls
Burmester
Smithfield
Wellsville
Newton
Cutler Dam

C. Personnel in Attendance:

Ken Huntington - USFWS
Susan Schaugaard - Martel Labs, Inc.
Donley Kisner - Martel Labs, Inc.
Les Vilchek - Martel Labs, Inc.
Chuck Elliot - USFWS (one day)

D. Dates of Field Trip:

August 7 to August 17, 1984.

E. Available Photography:

NHAP (1:58,000)	8/04/81
	8/17/81
	9/01/81
	9/11/82
	9/22/82
	9/23/82
	9/05/83

NASA (1:65,000) 6/24/81
6/29/81
6/30/81
9/01/81

NHAP photography was used to fill gaps where NASA coverage was incomplete. September NASA photography was used in areas where cloud cover was present on the June NASA photography.

F. Collateral Data:

USGS 7.5" quadrangle maps.

Great Salt Lake Wetland Inventory Narrative Report, August 1983, USFWS, Denver, CO

Classification of Wetlands and Deepwater Habitats of the United States, Cowardin et al., 1977.

A Manual of Aquatic Plants, N.C. Fassett, 1957.

II. Biological Characteristics of Wetland Habitats

A. Community Types:

In Robert G. Bailey's Description of the Ecoregions of the United States, the study area falls within three categories: the sagebrush - wheatgrass and the Bonneville saltbrush - Greasewood sections of the Intermountain Sagebrush Province and the Douglas Fir Forest section of the Rocky Mountain Forest Province. Descriptions of these can be found on pages 48 through 52 of Bailey's manual.

- Marine System - none
- Estuarine System - none
- Riverine System - this system is represented by the following subsystems and classes:

Lower Perennial
- Unconsolidated Bottom

Upper Perennial
- Unconsolidated Bottom
- Rock Bottom

Intermittent
- Streambed

Excluding a few major mountain river systems, only the Bear, Jordan, and Weber Rivers will be classified as permanent in respect to water regime (R2UBH). The majority of streams will be categorized as intermittently exposed (R2UBG or R2RBG) or semipermanently flooded (R4SBF). The remainder will be seasonally (R4SBC) or temporarily (R4SBA) flooded. Since irrigation plays such a major role in the local agriculture, many excavated water courses exist which will be classified with an "x" modifier, most of which will be intermittently flooded.

- Lacustrine System - this system is represented by the following subsystems and classes:

  Lymnetic
  - Unconsolidated Bottom

  Littoral
  - Aquatic Bed
  - Unconsolidated Bottom
  - Unconsolidated Shore

The three major natural lacustrine systems are the Great Salt Lake, Bear Lake, and Utah Lake. In addition, there are numerous manmade reservoirs, some quite large in size created for irrigation, drinking water, and flood control purposes. Strawberry, Deer Creek, Rockport, and Cutler reservoirs are some examples. Water regimes range from permanent to temporary.

- Palustrine System - this system is represented by the following classes:

  - Unconsolidated Shore
  - Unconsolidated Bottom
  - Aquatic Bed
  - Forested
  - Scrub-Shrub
  - Emergents

Palustrine wetlands were the most numerous and complex of the 3 systems represented in the study area. The more common class, by far, was emergents ranging from temporarily to semipermanently flooded. Seasonally flooded emergents were prevalent in the montane valleys and in the Great Salt Lake Basin. These emergents were often times interspersed in agricultural areas. Semi-permanently flooded palustrine emergents were also present in agricultural areas but were more common along the eastern shore of Utah Lake and in the mountain river

valleys, especially the Bear. Temporarily flooded emergents were encountered with less frequency and were most commonly found in the Tooele and Skull Valleys. Some association with unconsolidated shore was noted and a mixed class of PEM/USA or PUS/EMA is appropriate. Two other notable wetland types encountered were beaver ponds (PABFb or PABGb) and saturated seep areas (PEMB), the former being quite common in the mountains. Many of the rivers, both montane and in the basin, were bordered by forested or scrub-shrub wetlands to various extents.

B. Species Found - below is a list of the more commonly found species assoicated with the particular community type.

PEMA -	Saltgrass	Distichlis spicata
	Foxtail barley	Hordeum jubatum
	Mediterranean barley	Hordeum marinum
	Greasewood	Sarcobatus vermiculatus
	Glasswort	Salicornia spp.
	Pickleweed	
	Iodine bush	Allenrolfea occidentalis
PEMC -	Juncus spp.	
	Olney threesquare	Scirpus olneyi
	Eleocharis spp.	
	Carex spp.	
	Sedges	
PEMF -	Cattail	Typha latifolia
	Dock	Rumex spp.
	Hardstem bullrush	Scirpus acutus
	Alkali bullrush	Scirpus plaudosus
PEMB -	California corn lily	Veratrum californicum
	Juncus spp.	
	Sedges	
PSSC -	Willow	Salix sp.
PFOA -	Narrow leaf cottonwood	Populus angustafolia
	Box elder	Acer negundo
PAB -	Sago pondweed	Potomogeton sp.
	Duckweed	Lemna
Up-land -	Cheatgrass	Bromus tectorum
	Western wheatgrass	Agropyron smithii
	Sage	Artemsia sp.

Imagery (see section IE for dates and types)

A. Description, Problems, and Solutions:

The general overall quality of the imagery is good. The June NASA photography is the most common and has the greatest potential for accurate photointerpretation. Although many of the same wetland types exhibited different tones at different locations and under different conditions, this was not an unresolvable problem since other correlations were made to connect dissimilar signatures. Cloud cover is the major problem with the June series of photographs. Where the cloud cover was deemed to be too much of a hindrance, September NASA photography was substituted.

The quality of the September imagery is acceptable but some problems were encountered due to the season. In most areas, the signatures were comparable but not as deep in tone due to the dryer conditions during that part of the year as compared to June. In other areas, especially the Bear River Valley in Ogden NW, it was found that the imagery was unacceptable for accurate photointerpretation. After intensive field reconnaisance, it was determined that many, if not most, of the wetland areas were not distinguishable on the September photos of this area.

The HAP imagery used to fill holidays presented a similar condition though not as severe. Since the HAP coverage is limited in area it was determined that it would be useful for this purpose.

The imagery was flown during a year of normal climatic conditions but the field work was conducted while extraordinary conditions were prevalent. This posed some problems, though not insurmountable. In general, except for the Bear River Valley of Ogden NW, the general confidence level of imagery vs accuract photointerpretation is high. For a discussion of the various wetland communities and their photographic signatures, see the separate report, Utah Field Conventions - Communities vs Signature - Trip 2.