FIELD SUMMARY REPORT

OREGON FARM BILL (07-3503)

## I. INTRODUCTION

The following information is a summary of NWI field reconnaisance for the Oregon Farm Bill project, conducted May 4 through May 9, 1987.

### A. Personnel:

| | |
|---|---|
| Ben Harrison | USFWS |
| Jim Bohn | Martel Laboratories, Inc. |
| Chip Messenkopf | Martel Laboratories, Inc. |

### B. Map Names:

| | |
|---|---|
| Grangeville SW | (Enterprise) |
| Pendleton NE | (Pendleton) |
| Pendleton SE | (La Grande) |
| Pendleton SW | (Heppner) |
| The Dalles SE | (Condon) |

### C. Quads with Checksites:

Grangeville SW

Enterprise (15')
Joseph (15')
Imbler
Conley
Cove

Pendleton NE

McKay Reservoir
Mission
Tablerock
Pendleton
Thorn Hollow
Milton-Freewater
Athena
Tollgate
Andy's Prairie

Pendleton SE

Sullivan Gulch
Owens Butte
Ukiah

Pendleton SW

Matlock Prairie
Arbuckle Mountain
Big Rock Flat
Eightmile
Goosebury

The Dalles SE

Devil's Gap
Esau Canyon
Grass Valley
Sinamox

### D. Available Photography:

| | | |
|---|---|---|
| 10% | June, 1981 | |
| 66% | July, 1981 | All photography C.I.R. 1:58,000 |
| 24% | August, 1981 | |

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24% August, 1981

All photography C.I.R. 1:58,000

E. Collateral Data:

1. USGS topographic maps (7-1/2' and 15')
2. USSCS soil surveys for the following counties: Union, Morrow, Gilliam, Sherman, and Wasco (Surveys unavailable for Umatilla, Wallowa, and Baker)
3. Bailey, Robert G., Description of the Ecoregions of the U.S., USFS, 1980.
4. Reed, Porter B. Jr., "1986 Wetland Plant List, Oregon", USFWS, 1986.
5. USFWS 1:250,000 Ecoregion and Land-Surface Form maps (Bailey and Hammond)
6. USSCS "Hydric Soils of the State of Oregon, 1985"
7. USGS 1:250,000 topographic maps

## II. ECOLOGICAL OVERVIEW

A. Geographical Location:

The project area, covering over 12,000 square miles in northeast Oregon, extends in basically an east-west linear shape from just west of the Snake River at the Idaho border westward towards The Dalles, Oregon, paralleling the Columbia River to the south (117° to 121° west longitude and 45° to 45°30' north latitude). The Pendleton NE 1:100,000 map extends north of this line to the Washington state border (46° N latitude). (See Figure 1)

B. Ecoregion/Vegetation:

The entire study area is defined ecologically by Bailey (1980) as the Semiarid Steppe Division of the Dry Domain. Approximately 50% of the mapping area is further categorized as the Grand Fir-Douglas Fir Forest Section of the Rocky Mountain Forest Province (3111 M), where vegetative dominance is primarily a function of altitude. In addition to grand fir and douglas fir which were most frequently observed in the sub-alpine zones during field reconnaisance, ponderosa pine was also prevalent, especially in the lower, montane zone.

Another 35% of the area falls into the Palouse Grassland Province (3120 L) where wheat and other less common cultivated crops now cover land once dominated by prairie grasses such as bluebunch wheatgrass, fesque, and bluegrass. Woody vegetative cover is short and sparse and generally limited to draws and north-facing slopes.

The final 15% of the region belongs to the Sagebrush-Wheatgrass Section of the Intermountain Sagebrush Province (3131 L). This province, also marked by an absence of larger woody vegetation, is dominated by sagebrush, particularly in lower elevations. Shadscale, saltbush, and rabbitbrush are some of the other more common plants that exist well in this area of alkaline and saline salt basins. Where salt concentrations are extreme, greasewood and saltgrass dominate.

C. Physiography and Landform:

The vast majority of the project area (70%), as defined by Hammond (1965), falls within the Blue Mountains Subdivision of the Rocky Mountain Division (IV-2). Approximately 90% of this physiographic region is further classified in terms of land-surface form as "open low mountains" with 50-75% of gentle slopes on upland (C5c). The other 10%, which correlates with the Wallowa Mountains region, is considered "open high mountains" with more than 75% of gentle slopes in lowland (C6a).

To the north and west of this division is the Columbia Basin Subdivision of the Intermontane Division (V-1) which accounts for the remaining 30% of the project area. The land-surface form associated with this physiographic region is referred to as "high relief tablelands" with more than 75% of gentle slopes on upland (B5d).

D. Hydrology:

The hydrologic nature of the study area varies drastically from predominantly intermittent streams in the north and west to numerous perennial rivers and alpine lakes to the south and east. Seeps and springs are relatively prevalent throughout, though they are more easily identifiable in western areas of sparse woody vegetation.

The primary rivers in the west are the Deschutes and the John Day which flow northward to the Columbia River. The Umatilla River and Walla Walla River to the north (Pendleton NE) are other major perennial waterways and these too flow into the Columbia.

On the eastern side of the Blue Mountains, a greater number of perennial rivers exist. The Minam and Lostine form as tributaries to the Wallowa River which in turn feeds the Grande Ronde River which flows northward into the Snake River.

Large Lakes and Reservoirs are uncommon throughout the area though Wallowa Lake, created in part by a natural impoundment, and McKay Creek Reservoir are notable exceptions. Numerous smaller lakes are relatively common in the alpine and subalpine regions (Grangeville SW especially).

E. Climate:

With the barriers of both the Coastal and Cascade Mountain Ranges to west coast sea breezes, the region is generally viewed as a continental climate. The Columbia River, however, provides a natural passageway for Pacific Ocean air which helps to moderate extreme temperatures in both summer and winter.

Though the study area exists wholly within Bailey's "Dry Domain" because of the effect these ranges have on rainfall to the east, there are significant climatic differences in the area due to elevation. In both the Blue Mountains, where elevations exceed 7,000 ft. above sea level, and the Wallowa Mountains, where elevations approach 10,000 ft., annual precipitation exceeds the 12" average for rainfall and the 20" average for snowfall in the lowlands to the north and west. In the Grande Ronde Valley which separates the two montain ranges in the east, annual rainfall and snowfall averages are slightly higher at 14" and 27" respectively.

The average growing season for the eastern counties of the mountains is less than 125 days per year while that of the western lowland counties approaches 180 days.

## III. BIOLOGICAL CHARACTERISTICS OF WETLAND HABITATS

Marine: None present.

Estuarine: None present.

Riverine:

Riverine wetlands are very common throughout the region with a greater number of intermittent streams appearing north and west of the Blue Mountains. Of these intermittent wetlands, R4SBA units were observed more often than seasonal, especially in areas furthest west (The Dalles SE). Perennial rivers appeared with much greter frequency the further east into the mountains field review progressed.

Of these wetlands, upper perennial (R3UBH) was much more common, though the Grande Ronde River in the Grande Ronde Valley was determined to be lower perennial (R2UBH). USGS-designated rivers of low flow were classified as R4SBF, as were some intermittent streams of very high flow at the time of photography.

Lacustrine:

Very few bodies of water over twenty acres were encountered during field work. Wallowa Lake, McKay Creek Reservoir, and Thief Valley Reservoir (L1UBHh) are the major Lacustrine systems and each was checksited. Numerous alpine lakes exist within the Wallowa Mountains though none were inspected. Some of these lakes, though less than twenty acres in size, may be deep enough to be considered Lacustrine as well. There were no aquatic bed wetlands associated with any of the Lacustrine systems which were observed.

Palustrine:

As is often the case, a wide variety of Palustrine wetlands was encountered during field work. The vast majority of the

non-vegetated units were small, man-made excavations and impoundments for livestock and irrigation. These ranged in classification from PUSA (h,x) to PUBH (h,x) throughout the study area, though the drier units were more common in the west and the wetter units in the east. Overall, PUSC (h,x) and PUBF (h,x) wetlands seemed most prevalent and correlated well with USGS designations of intermittent and permanent ponds, respectively.

Of the vegetated units, wooded riparian zones of scrub/shrub (SS) and forest (FO) were very common and found to be both temporarily (A) and seasonally (C) flooded, depending primarily on the gradient of the associated stream. Common species dominating such units included willow (Salix spp), alder (Alnus spp.), cottonwood (Populus spp.) and ash (Fraxinus spp.). Russian olive (Elaeagnus angustifolia), rose (Rosa spp.), and sumac (Rhus spp.) were also common with the scrub/shrub wetlands.

Also found along streams and rivers were various species of emergents. Associated with seasonal intermittents and perennials, cattails (Typha lattifolia) were the dominant species, though sedges (Carex spp.) and rushes (Juncus spp.) existed as well (PEMC). In higher gradient streams of temporary intermittents, various unidentified grasses dominated (PEMA).

Both saturated emergents (PEMB) and woody species (PSSB, PFOB) were found in a variety of situations associated with seeps and springs. Common rush (Juncus effuses) along with various grasses and wildflowers such as camas (Camassia spp.), iris (Iris spp.) and buttercup (Ranunculus spp.) were common during checksiting. Where woody vegetation dominated, willow and alder were most often observed.

## IV. IMAGERY/FIELD VERIFICATION

### A. Considerations of Imagery:

Generally speaking, the quality of the photography is good in terms of emulsion and resolution and the seasonal variations are minimal due to the fact that all photogrphy was flown within 58 days in the summer of 1981.

One concern, however, includes a red "summer blush" to the June 26 photography (western half of Pendleton SW) which creates particular problems in the accurate identification of PEMA wetlands (especially linears). Another concern is the forested areas within the Blue Mountains and especially the Wallows Mountains where high contrast with non-vegetated areas seem to "under expose" the forests, impeding detection of stream courses and smaller wetland units.

The year of photography, 1981, is considered a "normal wetland year" and no problems of flooding or extreme drawdown exist. Many of the stock ponds, however, show a surprising amount of water present in later summer, even in the driest areas. Some snow cover, as expected, is present in the Wallowa Mountains, especially around the Eagle Cap

B. Ground Verification vs. Expectations:

Field reconnaisance basically supported pre-field review of photography in terms of expected wetland/upland breaks, vegetational extent and scale, and water regime designations. The greatest revelations were found in the dominance of seasonally flooded emergents over semi-permanent units and the degree to which hydric soils in the Grande Ronde Valley had been effectively drained, thus limiting the extent of floodplain wetlands.

The greatest unresolved problems lie in the determination of the upland/wetland break for forested riparian zones of various waterways, especially the Umatilla River (Pendleton NE) and in the extent of various wet meadows in the Umatilla National Forest (Pendleton SW and SE). Of equal concern are numerous saturated wetlands on the Alder Slope and discrete PEMA and PEMC units in the adjacent Wallowa Valley around Jeseph and Enterprise (Grangeville SW) for which only 15' topographic maps exist for assistance.

## V. SOLUTIONS

Careful and generally conservative considerations of wetland delineation on the June photography will be given, including comparison of adjacent July and August photography along ties to the east and west.

Close inspection of the dark forested areas will be aided by use of the topographic maps to pick out stream courses and smaller wetland units. The limitations of photography, however, is probably the greatest here.

Though often full at the time of summer photography, stock ponds (especially those in the west and disassociated with natural drainages) will generally not be considered permanently flooded due to the scarce rainfall and high summer temperatures of the area.

The snow-covered areas of the Wallowa Mountains were not field checked and it is assumed that they are usually covered. If there are instances where the topo can verify the presence of an alpine lake or other wetland, every attempt will be made to locate such units on the photography.

Though photo signature may suggest a more semi-permanent situation, careful evaluation of hydrology will be given in the classification of emergent wetlands due to the abundance of PEMC checksites.

Riparian wetlands along the Grande Ronde River in the Grande Ronde Valley will be limited primarily to shoreline units. Historic floodplains that have been ditched, drained, and farmed are to be considered upland and no Palustrine-farmed designations will be made.

Since reliable distinctions by signature are very difficult for forested riparian zones, the upland/wetland break for the Umatilla River area and others will be based primarily on topographic information.

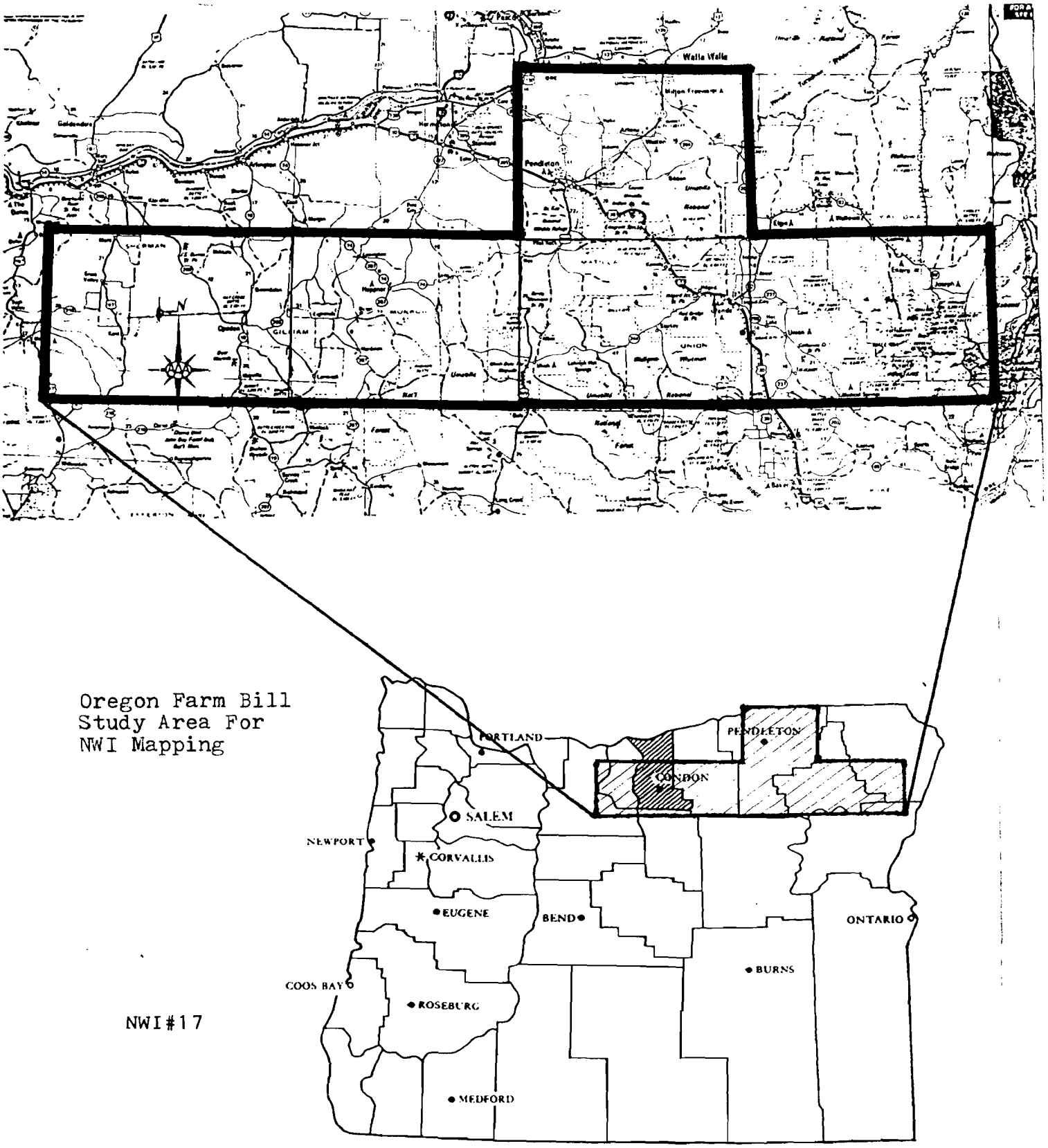
To a lesser degree, reliance on the topo will also be necessary for the wet meadow areas in the Umatilla National Forest, where pink and red emergent signatures often extend up hillsides. Most of these meadows will be classified as temporarily flooded with only sloughs and pockets of seasonal emergents.

In addition to the limitation of 15' topos for the Alder Slope/Wallowa Valley area, dark photography will make photointerpretation in this region difficult. Close adherence will be paid to field notes which are relatively extensive for the area.

## VI. SUMMARY

Generally speaking, the limitations of the photography are relatively minor and few consistency problems should arise due to seasonal variations on the photography. Weather conditions and accessability during field reconnaisance were very favorable and a thorough sampling of the area, with the exception of the Eagle Cap Wilderness area of the Wallowa Mountains, was achieved.

Figure 1:


Walla Walla
Pendleton
Oregon Farm Bill
Study Area For
NWI Mapping
PORTLAND
PENDLETON
CONDON
SALEM
NEWPORT
CORVALLIS
EUGENE
BEND
ONTARIO
BURNS
COOS BAY
ROSEBURG
MEDFORD
NWI#17