COOS BAY UPDATE

Field Trip Summary Report

Study Area: Coos Bay 1 & 2

Field check sites:

1:00K Map	7.5 Minute Quads
Coos Bay 1	Siltcoos Lake NE
	Siltcoos Lake NW
	Siltcoos Lake SW
	Siltcoos Lake SE
	Reedsport NE
Coos Bay 2	Charleston
	Riverton
	Brandon
	Coquille
	Coos Bay
	Cape Arago
	North Bend
	Empire

Dates: November 17 - 19, 1986

Personnel: Thomas Gunter - Martel Laboratories, Inc.
Benjamin Harrison - U.S. Fish & Wildlife Service
Les Vilchek - U.S. Fish & Wildlife Service

Available Photography:

All photography is NHAP color infrared, 1:58,000 scale flown on four dates of 7/12/82, 8/6/82, 8/17/82, and 9/8/82. The 7/12/82 photography covers 4% of the project area, the 8/6/82 photography covers 44%, the 8/17/82 photography covers 17% and the 9/8/82 photography covers 35%.

Collateral Data:

U.S.G.S. 1:24,000 (7.5 minute) topographic maps.
U.S.G.S. 1:62,500 (15 minute) topographic maps.
Weinmann, Fred, et. al. 1984. Wetland Plants of the Pacific Northwest. U.S. Army Corps of Engineers, Seattle District.
Weidemann, Alfred A., LaRea J. Dennis and Frank H. Smith. 1974. Plants of the Oregon Coastal Dunes. Oregon State University Book Stores, Inc., Corvallis, Oregon.
Hoffnagle, John and Robert Olson. 1974. The Salt Marshes of the Coos Bay Estuary. Port Commision of Coos Bay and Oregon Institute of Marine Biology.
Hoffnagle, John, et. al. 1976. A Comparative Study of Salt Marshes in the Coos Bay Estuary. National Science Foundation.
Pinto, Carlos, et. al. 1972. Resource Inventory Report for the Oregon Dunes National Recreation Area, Siuslaw National Forrest.

Overview:

Baily lumps most of the study area into the Humid Temperate Domain, Marine Division, Pacific Forest Province, Sitka Spruce - Cedar - Hemlock Forest Section. There is also a small sliver of the Cedar - Hemlock - Douglas-fir Forest Section along the eastern border of the area.

The Pacific Forest covers an area of steep, rugged mountains which are fronted in places by a narrow coastal plain. Elevations range from sea level to about 2,000 feet (600 m.) in the study area.

Climate is mild due to the Pacific Ocean. Temperatures average 40° to 70° F. throughout the year. Rainfall is heavy, 30 to 150 inches (750 to 3,800 mm.) with the maximum occurring in the winter.

Vegetation is primarily a dense coniferous forest with Douglas-fir (*Pseudotsuga menziesii*), western redcedar (*Thuja plicata*), and Sitka spruce (*Picea sitchensis*) being most common. Douglas-fir is the most common, but it is not a member of the climax community. Numerous species of shrubs grow very well in this climate and quite often form an impenetrable understory in and around the forests.

Biological Characteristics of Wetland Habitats:

Riverine System:

Four classes of rivers exist within the study area. They fall in the Tidal, Lower Perennial, Upper Perennial and Intermittent subsystems. Areas of tidally influenced rivers occurred along very large rivers for long distances and also along smaller creeks for short distances. Tahkenitch Creek is an example of the smaller (and shorter distances of influence) tidal rivers and the Umpqua River is an example of the larger type. These rivers are "backed" up by tidal action each day. During this time flow slows and water levels along the banks and within wetlands adjacent to these rivers rise. Freshwater is found above and the "saline" water or "salt wedge" is below. This "salt wedge" is what causes the freshwater to overflow the banks into the wetlands.

Lower perennial rivers are sluggish and of low gradient. They occur within the broader agricultural valleys. The Coquille is a good example of a larger lower perennial river within the study area.

Upper perennial rivers are fast flowing, have a high dissolved oxygen content and occur on a steep gradient. Substrates are generally rocky and the rivers are usually well entrenched. The West Fork of the Millicoma River is a good example of this type of river.

Intermittent streams or rivers carry water for only part of the year. They exist within steep areas of the mountains and have unvegetated streambeds. Most of those indentifiable on the photography within the study area will be seasonally flooded.

Most river systems within the study area contain more than one, and usually all four, of the subsystems.

Lacustrine System

Lakes in the study area range from very large named lakes such as Siltcoos Lake to unnamed ones just large enough (greater than 20 acres) to qualify by definition. Most are deep, cold and have an unconsolidated bottom. Shallow areas can be vegetated by aquatics such as spatterdock (*Nuphar polysepalum*), water lily (*Nymphaea* sp.) or pondweed (*Potamogeton* spp.). These areas were classified as Lacustrine, littoral, aquatic bed, permanently flooded (L2ABH).

Palustrine System

Ponds exist within the study area as natural bodies of water as well as dammed river channels. Natural occurrences were classified as Palustrine, unconsolidated bottom, permanently or semi-permanently flooded (PUBH or PUBF respectively). Those occurring within dammed river channels have the impounded modifier added (ie, PUBHh).

Palustrine aquatic bed communities occur infrequently. Species here include spatterdock, water lily, milfoil (*Myriophyllum* sp.), pondweed and *Proserpinaca* sp.

Palustrine emergent wetlands occurred in depressions, deflation plains and along rivers. Most emergent wetlands are seasonally flooded and contain reed canary grass (*Phalaris arundinacea*), rushes (*Juncus* spp.), sedges (*Carex* spp.) and water-tolerant grasses. The most common of these wetlands occur within agricultural valleys as meadows for livestock.

Lake marshes and deep marshes are infrequent. A good example of this semi-permanently flooded type of marsh occurs along Mallard Arm of Tahkenitch Lake. This area also contains an example of permanently flooded emergents. Species occurring here are hardstem bulrush (*Scirpus acutus*), cattail (*Typha latifolia*) and in the drier edges, reed canary grass.

A unique type of emergent wetland occurs along the coast in the dune areas. These deflation plain wetlands are formed when sand is removed by the action of the wind until the layers just above or at the water table are reached. These sands are too heavy for the wind to move inland and are therefor stable enough for plants to become established. Species occurring here are slough sedge (*Carex obnupta*), large-headed sedge (*Carex macrocephala*), Pacific silverweed (*Potentilla pacifica*), spring-bank clover (*Trifolium wormskjoldii*), creeping spike-rush (*Eleocharis macrostachya*), salt rush (*Juncus lesueurii*), sickle-leaved rush (*Juncus falcatus*) and golden-eyed grass (*Sisyrinchium californicum*).

Palustrine scrub-shrub wetlands occur in the same situations as emergent wetlands. As with emergent wetlands the most commonly encountered are seasonally flooded. Species here include Douglas spiraea (Spiraea douglasii), willow (Salix spp.), red alder (Alnus rubra) and western wax myrtle (Myrica californica).

Deflation plain scrub-shrub wetlands are again rather unique. The shrub species stay relatively low due to effects of wind. Species here include Hooker's willow (Salix hookeriana), western wax myrtle and shore pine (Pinus contorta subsp. contorta). The shore pine will grow to tree size in time.

Palustrine forested communities generally occur along rivers or in depressions. Typical species here include red alder, Sitka spruce (Picea sitchensis), western redcedar (Thuja plicata) and Oregon ash (Fraxinus latifolia). Shore pine also reaches tree size, as previously mentioned, on the deflation plains. Forested communities are seasonally flooded or temporarily flooded, but these species grow equally well in upland. Because of this location relative to topography and hydrology is very important to the classification of these communities.

Estuarine System

Estuarine influence extends inland from the ocean along rivers. These rivers are termed "drowned" as the ocean has risen over thousands of years to claim areas which were once fresh water systems.

Emergent wetlands of both regular and irregular flooding occur. Species present in the regularly flooded (daily) communities include Lyngby's sedge (Carex lyngbyei), saltmarsh bulrush (Scirpus maritimus), salt grass (Distichlis spicata) and pickle-weed (Salicornia virginica). High marshes (irregularly flooded, less often than daily) contain tufted hair grass (Deschampsia caespitosa), pacific silverweed, creeping bent grass (Agrostis alba), dock (Rumex occidentalis) and fleabane (Erigeron sp.)

Regularly flooded salt marshes had a very mottled signature which was a mixture of pinks, whites, yellow oranges and pink oranges. Irregularly flooded marshes are more even signatures of pink or pink orange and slight elevation change is usually detectable.

Regularly and irregularly flooded unconsolidated shore areas also occurred. Tidal ranges average approximately five feet within the study area. Due to this large areas of tidal flats occur. These tidal flats are essential to the shell fish industry as these fauna only exist here. Estuarine areas of the larger rivers all have these large tidal flats. Many of these areas are covered by water at the time of photography requiring interpretation to be based mainly on collateral data for corroboration of photo signatures which are not always reliable.

Marine Systems

The Marine systems are confined to the coastal beaches and the Pacific Ocean. There are tow zones along the beaches, regularly and irregularly flooded. These areas are classified as Marine, intertidal, unconsolidated shore, regularly or irregularly flooded (M2USN, M2USP respectively).

Rocky shore areas also exist. Where these occur along the coast they will be classified as marine, intertidal, rocky shore, regularly flooded (M2RSN). If space permits an irregularly flooded ("splash" zone) may also be delineated. Delineations of this zone will mainly be linears and where delineation is not possible at the photographic scale, these areas may be added at draft map stage.

Imagery

The photography consisted of NHAP color infrared at a scale of 1:58,000. It was flown over four dates of 7-12-82, 8-6-82, 8-17-82 and 9-8-82. Quality is very good and resolution is good. Edge distortion is minimal. There are no known problems from water levels or abnormal precipitation on any of these dates or for the year in general.

The trip went as expected with no major problems arising. Interpretation will be straight-forward.

Summary

Photo quality was good and interpretation should be accomplished with minimal difficulty. There seem to be no major problem areas.

The deflation plains could get quite complex. Because of this, to avoid maps which are very congested, lumping will be employed in these areas. When mapping these deflation plains the wetland/upland break will be most important with wetland class and water regime breaks being less important. By necessity, however (due to scale), small wetlands may be lumpted with upland and small uplands may be lumped with wetlands. Lumping should be made in favor of wetlands when necessary.

Marine rocky shore areas may be too small to be mapped at this scale. Where this is the case, these areas will be added at the draft map stage by Regional personnel or a photo interpreter.

Estuarine tidal flats will be mapped using photo signature corroborated by collateral data when available due to apparent high tide at time of photography. These areas will be mapped conservatively as collateral data is ten years old or older and these communities are subject to large change in relatively short time. There will be large amounts, however, of these wetlands because tide range averages five feet and many areas of shallow water exist within Estuarine sloughs and bays.