

WETLAND USER NOTES -- Nogales NW QUADRANGLE

1. Map Preparation

Wetland classification for the National Wetlands Inventory (NWI) wetland map overlay to the Nogales NW 1:100,000 scale map are in accordance with L. M. Cowardin et al (1979). Wetland delineations and classifications were produced through the interpretation of black and white aerial photographs at a scale of 1:120,000 taken during June 1973. The photo-graphs were viewed stereoscopically at a 6X magnification. Delineations were enlarged using a zoom-transferscope to overlays of 1:24,000 and 1:62,500. Overlays were then transferred to 1:100,000 scale base maps. Limited field checks were performed during February 1979.

The Project Officer for production of the wetland map was Warren Hagenbuck, Regional Wetlands Coordinator, (U.S. Fish and Wildlife Service, Region 2, P.O. Box 1306, Albuquerque, New Mexico 87103, (505) 766-2914). Aerial photo interpretations were completed by the School of Renewable Natural Resources, University of Arizona, Tucson 85721, Project Director: Dr. Jon Rodiek (602) 626-2313.

The user of the map is cautioned that due to mapping, primarily through photo interpretation, a small percentage of wetlands may have gone unidentified. Landscape changes could have taken place since the time of photo acquisition; therefore, discrepancies or land use changes should be provided to the Regional Wetlands Coordinator, Region 2, U.S. Fish and Wildlife Service.

2. Collateral Data

A. General Location

The area is within Santa Cruz and Pima Counties, Arizona.

Northern boundary	32° N Latitude
Southern boundary	31° 30' N Latitude
Eastern boundary	111° W Longitude
Western boundary	112° W Longitude

B. Land Ownership

There are three (3) major land holdings within the Nogales NW quadrangle. These are:

BLM Lands
Coronado National Forest
Papago Indian Reservation

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C. Soils

There are ten (10) major soil associations found on the Nogales NW according to J. E. Jay et al (1975). These are:

Thermic semi-arid soils -- mean annual soil temperatures of 59° to 72° F (15-22° C) and 10-16 in (25-41 cm) mean annual precipitation.

- TS 6 Lithic Torriorthents-Lithic Haplustolls-Rock Outcrop Association
- TS 3 Tubac-Sonoita-Grabe Association
- TS 5 Caralampi-Hathaway Association
- TS 4 White House-Bernardino-Hathaway Association
- TS 9 Latene-Nickel-Pinaleno Association
- TS 2 Torrifluvents Association
- TS 19 Anthony-Sonoita Association

Hyperthermic arid soils (HA) -- mean annual soil temperatures of more than 72°F and less than 10 inches mean annual precipitation.

- HA 6 Lithic Cambrid-Rock Outcrop-Lithic Haplargids Association
- HA 8 Tremant-Coolidge-Mohall Association
- HA 4 Gunsight-Rillito-Pinal Association

Detailed soil information may be found in USDA Soil Conservation Service (1977) and M. L. Richardson and M L Miller (1974).

D. Biotic Communities

The descriptions of the biotic communities are summarized from C. H. Lowe (1977) and Brown, Lowe and Pase (1977). The community types are listed here in descending order of their relative dominance in the Nogales NW quadrangle.

The Semidesert Grassland, accounting for 8.0% of Arizona's total land area, is a transitional type of grass dominated landscape positioned between desert below and evergreen woodland or chaparral above. Its lower limit is about 3,500 feet in elevation and its best development is between 4,000 and 5,000 feet. In Arizona it occurs largely in the southeastern quarter of the state. A small area also occurs in the northwestern quarter near Kingman. The grasses are often bunch-growth perennials in which the bases of clumps are separated by bare ground. Where the soil is deep black gramma, blue gramma, slender gramma and others may be the dominant cover over large areas. A wider variety of shrubs, trees and cacti life forms occur on shallow-soiled rocky and gravelly hills and slopes. Mesquite trees have invaded large areas of former grassland. Mean annual precipitation ranges between 10 and 15 inches.

The Sonoran Desertscrub - Arizona Upland subdivision represents 14.0% of Arizona's land area and is comprised of the paloverde - sahuaro commun-

ity, consisting of small desert trees, shrubs and numerous cacti. The best development of these is best attained on rocky hills, bajadas, and other coarse soiled slopes. It is a rich community of desert plants and animals, exhibiting highly varied and often spinose life-forms. The foothill understory is often comprised of a mixture of 5 to 15 or more shrub and dwarf shrub species in the form of a three, four or five layered understory. The primary desert trees are foothill paloverde, sahuaro, ironwood, elephant tree and a few others including some riparian species. Mean annual precipitation is approximately 10 inches.

The Madrean Evergreen Woodland type covers 3% of Arizona's total land area. It is dominated by species of evergreen oak including silverleaf oak, Arizona oak, and Emory oak which occur primarily in the southeastern quarter of the state. They occur in hills and mountain slopes between 4,000 and 6,500 feet, reaching their greatest development in the foothills of the larger mountain ranges. The shrubs which center their distribution in these oakwoodland types, range upward into the pine forests or downward into the desert grasslands. Characteristic species include mountain yucca, agave, and woodland sumac. Other dry-tropic shrubs and succulents occur in varying degrees in these interior southwestern woodlands. A few cacti and grasses such as bullgrass, little blue stem and woody bunchgrass are found with blue gramma being the most common. Mean annual precipitation ranges between 12 and 22 inches.

3. SUPPLEMENTAL DATA (N.W.I.)

A. Hydrologic Units

Major hydrologic units found within the Nogales NW quadrangle are defined by the U.S. Geologic Survey (1974). For example, the coding designates region (15) Lower Colorado, subregion (01), accounting unit (00), and cataloging unit (05).

15050301
15050304
15080101
15080200
15050305

There are four (4) groundwater areas designated within the quadrangle by the U.S. Geological Survey (1979). These are:

Upper Santa Cruz Basin
Altar Valley
San Simon Wash
Lower Santa Cruz Basin

B. Geography

Landforms

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Physical subdivisions and land surface forms are classified according to E. H. Hammond (1965). There are two (2) major types:

(V-4) B5a -- Intermontane; Basin and Range Area; Plains with low mountains.

(V-4) B6a -- Intermontane Basin and range Area; Plains with high mountains.

Bailey's Ecoregions

Bailey's Ecoregion Classification, R. G. Bailey (1975), identifies the area as within the following province(s):

3222L Dry Domain; Arid Desert Division; Creosote Bush-Bur Sage Section.

3140L Dry Domain; Semiarid Steppe Division; Mexican Highland Shrub Steppe Province.

4. Wetland Communities

The wetland and deepwater habitats displayed on the Nogales NW map are dominated by those types occurring along the only live stream in the area -- Arivaca Wash. There are palustrine types found in association with this stream. Stock tanks, while small in size, are the most prominent man made water bodies found in the area. They are created by ground water pumping or surface dams placed in the arroyos. Lakes are created in a similar fashion. Mining activities have created the only other lacustrine types found here.

R₄SB Riverine, Intermittent, Streambed

R₂OW Riverine, Lower Perennial, Open Water/Unknown Bottom (Arivaca Wash)

POW Palustrine, Open Water/Unknown Bottom

PSS Palustrine, Scrub Shrub

PFL Palustrine, Flat

PEM Palustrine, Emergent (nonpersistent)

L₁OW Lacustrine, Limnetic, Open Water/Unknown Bottom(Aguirre Lake)

L₂FL Lacustrine, Littoral, Flat (mining related)

L₂OW Lacustrine, Littoral, Open Water/Unknown Bottom (mining related)

5. Field Checks

A. Plants Observed

Common Name

Scientific Name

Fremont cottonwood
Mesquite

Populus fremontii
Prosopis juliflora

6. Wetland Loss and Vulnerability

High evapotranspiration rates and low annual supplies to the surface mean few wetland types scattered across a large area. Part of the Santa Cruz River and Arivaca Wash run intermittently here. Some palustrine types manage to survive the year round. They are normally located in the stream channel and are created by some natural impoundment feature.