USER REPORT: SALT RIVER DRAINAGE
CLIFTON NW & SW, MESA NE, NW & SW, and PHOENIX SE
NATIONAL WETLAND INVENTORY MAPS

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classifications system.

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species; and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

The beginning of the Salt River drainage system starts with the Black River, located in the Clifton NW 1:100,000 map (east central Arizona) and flows west. Approximately 80% of this system (Salt River) is located in the Upper Gila Mountains Forest Province (no sections). This ecoregion is characterized by steep foothills and mountains which may range from 1,000 feet to over 3,000 feet in local relief. The elevation above sea level (a.s.l.) is 6,000-11,000 feet. The progression through various zones have mixed grasses in the foothills along with chaparral brush oak, juniper woodland, and pinyon juniper woodland up to 7,000 feet. Open forest of ponderosa pine with pinyon-juniper. Above 8,000 feet Douglas fir and Aspen are found with some limber pine which inhabits drier and rockier places.

The North Fork White River and East Fork White River combine to create the southwest flowing White River which converges with the Black to form the Salt River. Approximately ten miles downstream from the beginning of the Salt River is the confluence of Carrizo Creek. Where the Salt River flows into Theodore Roosevelt Lake is the beginning of open high mountains with local relief exceeding 3,000 feet. Tonto Creek flows south into the north end of the lake but is not part of the study area. Theodore Roosevelt Lake is the first of four reservoirs situated in a series of one below the other on the Salt River. Apache Lake, Canyon Lake and Saguaro Lake complete this chain of reservoirs.

At Saguaro Lake there is an ecoregion break between the Semiarid Steppe (East) and Arid Desert (West) Divisions. The final 20% of the Salt River system flows through the American Desert Province, Creosote Bush-Bur Sage Section. This province is characterized by gently undulating plains. Occasional buttes and low mountains are also in evidence throughout these extensive plains. Elevation may range from 1,000 to 3,000 feet. Vegetation is thin with bare ground between plants. Cacti and other thorny shrubs appear as do thornless shrubs and herbs. The slopes

of the mountain may be inhabited by paloverde, saguaro and ocotillo. The Verde River flows into the Salt River eight miles west of Saguaro Lake. The Verde flows from the north out of Horseshoe Reservoir, south into Bartlett Reservoir, moving from the Upper Gila Mountain Forest Province to the American Desert Province.

Just below the confluence of the Verde and Salt Rivers is the Granite Reef Dam. This dam diverts water into two main canals (Arizona and Southern) for the Phoenix Metro area and surrounding farms. These canals then transport water to several other canals which dissect the valley floor.

From below the Granite Reef Dam, the Salt River bed remains generally dry until its confluence with the Gila River southeast of Phoenix. Water is often found in pits associated with the numerous quarries situated in and on the edge of the river channel. Occasional short streams within the channel may occur as a result of runoff from the city streets, irrigation canals and/or sewage treatment plants. These plants contribute the most water to the channel. Outfall from the plants may continue for miles or, as in some cases, be impounded by a road or some other structure. Flooding of the river bed below the dam occurs when deemed necessary by a water management board or flash flooding.

Climate:

The climates within the project boundary are all dry with low precipitation amounts during the year. The Upper Gila Mountains Forest Province has the most variable climate due to the rising elevation of the mountains. Average temperatures may range from 40° F in the upper mountains to 55° F in the lower foothills. Precipitation averages, however, increase with higher elevations. Thunderstorms may occur in the summer and rains also take place in early autumn and winter. The mountains receive their precipitation primarily in the form of snow. The Mexican Highlands Shrub Steppe Province climate is semiarid with most of the precipitation falling from convectional summer storms. Twelve inches is the average annual precipitation. Temperature averages for the year may range from 55° F to 70° F. The winter months may have extreme cold weather.

Finally, the American Desert Province, which is the driest of all the other provinces. Here the annual average temperature ranges between 60° F to 75° F. Winters are mild with an occasional chance of frost. Rain in the winter is widespread, although summer rains are from thunderstorms. It should be noted that rainfall is sporadic and does not occur regularly. Average precipitation may vary with two to ten inches per year, but can go upwards of 25 inches on the mountain slopes. Evaporation within the province is usually high during the summer months.

Vegetation:

The wetland vegetation within the study area is primarily associated with riparian habitat. The higher elevations will have alder (Alnus sp.), seepwillow (Baccharis glutinosa) willow (Salix sp.), water birch (Betula nigra) and arizonia sycamore (Platanus wrightii) dominating for shrubs and trees. The meadows of the higher elevation (9,000 - 10,000 feet) contain Juncus sp., Carex sp. and several grasses. Typha sp. and Scirpus sp. are common along streams and ponds. Cottonwood (Populus sp.) appears more commonly as elevations decrease. Water birch and alder begin to thin out below 4,000 feet.

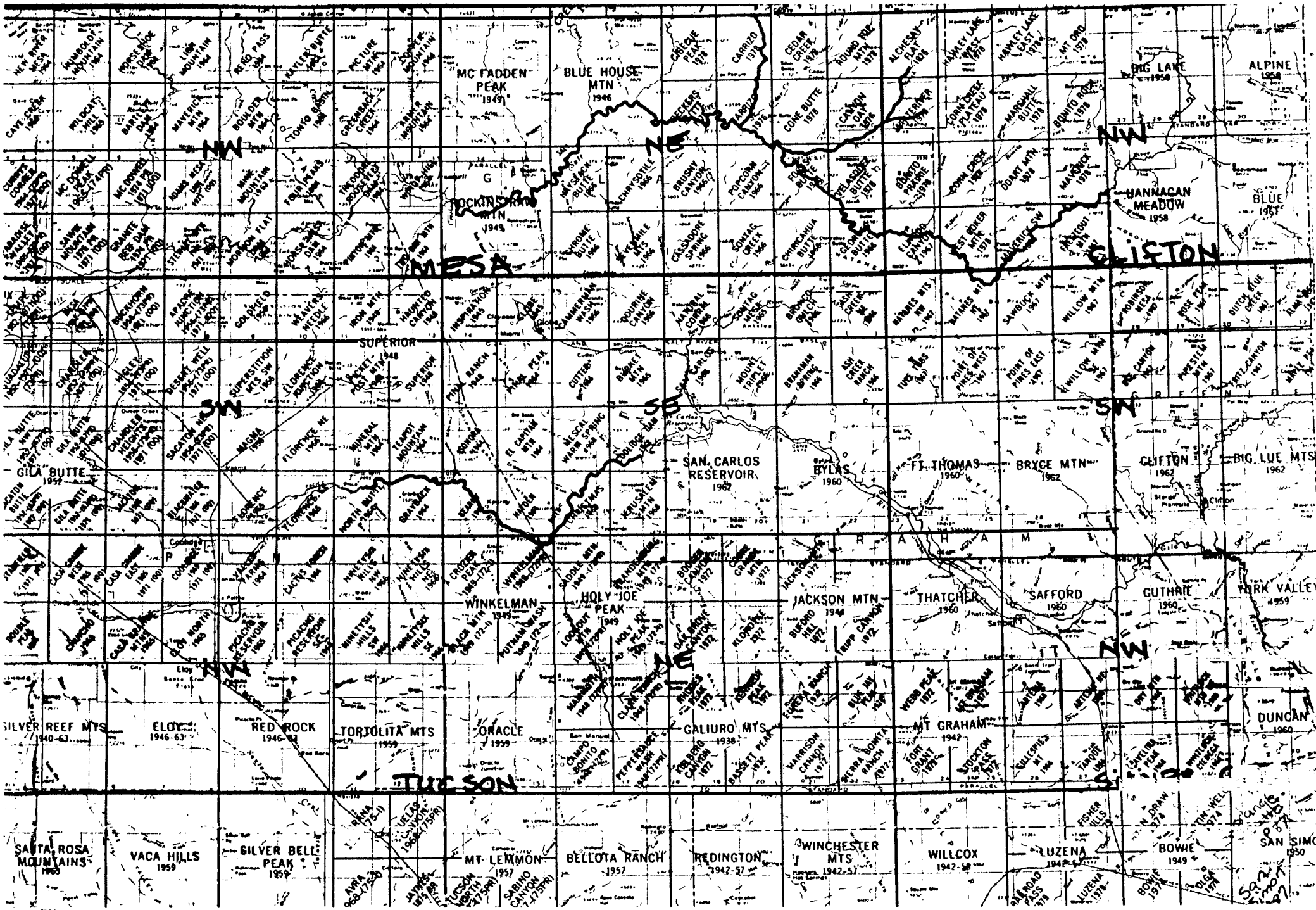
In the lower elevations, salt cedar (Tamarix sp.) and mesquite (Prosopis sp.) dominate along the streams and rivers. Salt cedar will inhabit the area adjacent to the river while mesquite is found behind the salt cedar, in an upland situation.

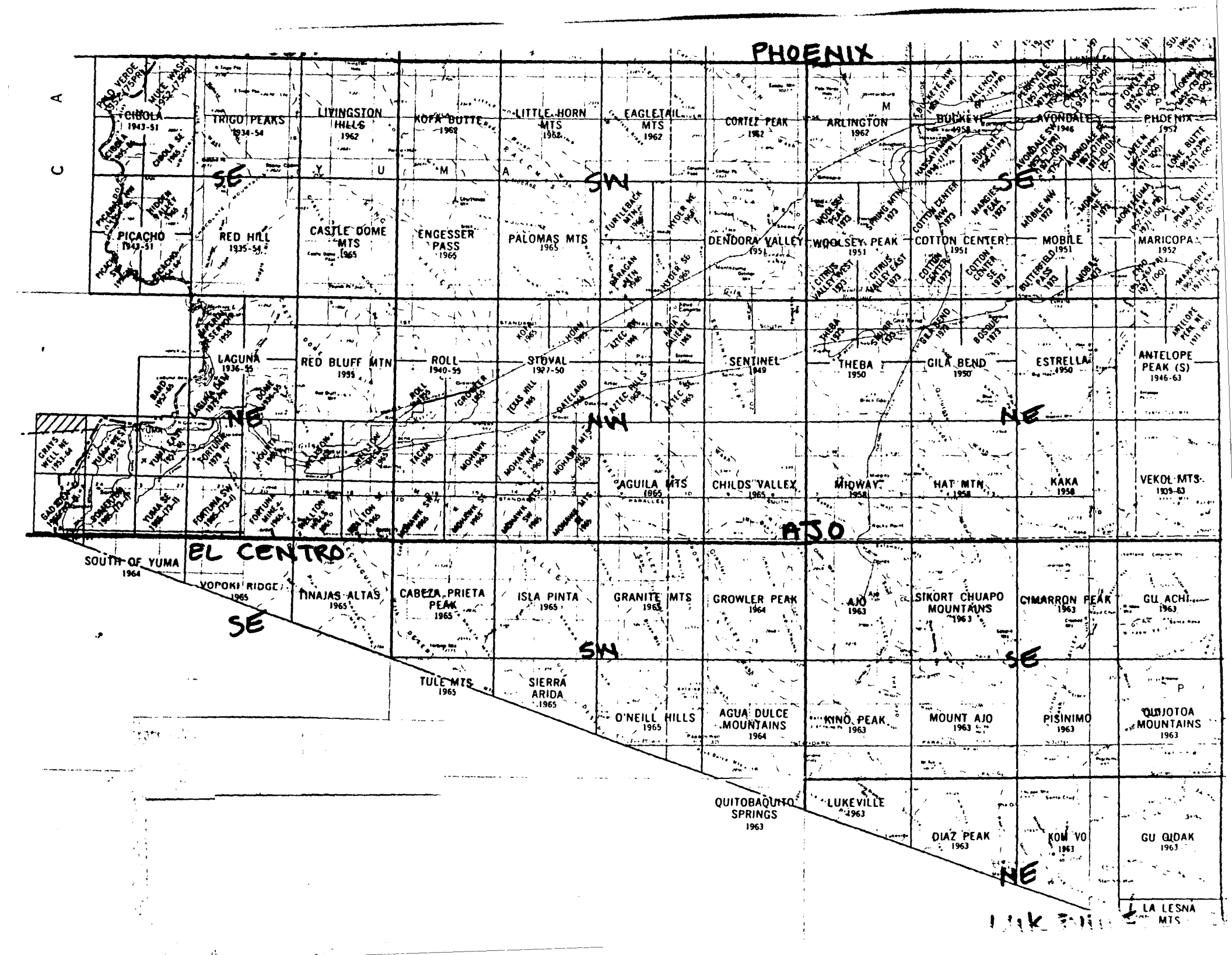
Emergents include those mentioned previously, along with cocklebur (Xanthium strumarium), cane, and Polygonum sp. Aquatic beds consists of Duckweed (Lemna sp.) and Pondweed (Potomogeton sp.).

Soils:

The Upper Gila Mountain Forest Province is lacking in details about the soils within its boundaries. However, mollisols and aridsols are found commonly in upland areas. Stony land and rocks are on the mountains and foothills.

The American Desert Province will have gravel or bare rock on the surface near the base of some mountains. Entisols are located on old alluvial fans and terraces. Aridisols are predominate throughout the remaining areas of the province.


MESA
GLISTON
TUCSON
NW
NE
SW
SE
MC FADDEN PEAK 1949
BLUE HOUSE MTN 1946
ROCKINSON MTN 1949
SUPERIOR 1948
SAN CARLOS RESERVOIR 1962
BYLAS 1960
FT THOMAS 1960
BRYCE MTN 1962
CLIFTON 1962
BIG LUE MTS 1962
GILA BUTTE 1959
WINKELMAN 1949
HOLY JOE PEAK 1949
JACKSON MTN 1944
THATCHER 1960
SAFFORD 1960
GUTHRIE 1960
YORK VALLEY 1959
DUNCAN 1960
SILVER REEF MTS 1940-63
ELOY 1946-63
RED ROCK 1946-63
TORTOLITA MTS 1959
ORACLE 1959
GALIURO MTS 1938
MT GRAHAM 1942
SANTA ROSA MOUNTAINS 1963
VACA HILLS 1959
SILVER BELL PEAK 1959
MT LEMMON 1957
BELLOTA RANCH 1957
REDINGTON 1942-57
WINCHESTER MTS 1942-57
WILLCOX 1942-58
LUZENA 1942
BOWIE 1949
SAN SIMO 1950
HANNAGAN MEADOW 1958
BIG LAKE 1958
ALPINE 1958
BLUE 1957


PHOENIX
EL CENTRO
AJO
C A
SE
SW
SE
NE
NW
SW
SE
NE
SE
SW
NE
TRIGO PEAKS 1934-54
LIVINGSTON HILLS 1962
KOFA BUTTE 1962
LITTLE HORN MTS 1962
EAGLETAIL MTS 1962
CORTEZ PEAK 1962
ARLINGTON 1962
BUCKEYE 1958
AVONDALE 1946
PHOENIX 1952
CIBOLA 1943-51
PICACHO 1943-51
RED HILL 1935-54
CASTLE DOME MTS 1965
ENGESSER PASS 1966
PALOMAS MTS 1965
DENDORA VALLEY 1951
WOOLSEY PEAK 1951
COTTON CENTER 1951
MOBILE 1951
MARICOPA 1952
LAGUNA 1936-55
RED BLUFF MTN 1955
ROLL 1940-55
STOVAL 1927-50
SENTINEL 1949
THEBA 1950
GILA BEND 1950
ESTRELLA 1950
ANTELOPE PEAK (S) 1946-63
AGUILA MTS 1965
CHILDS VALLEY 1965
MIDWAY 1958
HAT MTN 1958
KAKA 1958
VEKOL MTS 1909-63
SOUTH OF YUMA 1964
VOPOKI RIDGE 1965
TINAJAS ALTAS 1965
CABEZA PRIETA PEAK 1965
ISLA PINTA 1965
GRANITE MTS 1965
GROWLER PEAK 1964
AJO 1963
SIKORT CHUAPO MOUNTAINS 1963
CIMARRON PEAK 1963
GU ACHI 1963
TULE MTS 1965
SIERRA ARIDA 1965
O'NEILL HILLS 1965
AGUA DULCE MOUNTAINS 1964
KINO PEAK 1963
MOUNT AJO 1963
PISINIMO 1963
QUITOTOA MOUNTAINS 1963
QUITOBAQUITO SPRINGS 1963
LUKEVILLE 1963
DIAZ PEAK 1963
KOM VO 1963
GU GIDAK 1963
LA LESNA MTS

Water Regime Description

(J) Intermittently Flooded--Substrate is usually exposed, but surface water present for variable periods without detectable seasonal periodicity. Weeks or months or even years may intervene between periods of inundation. The dominant plant communities under this regime may change as soil moisture conditions change. Some areas exhibiting this regime do not fall within our definition of wetland because they do not have hydric soils or support hydrophytes.

(A) Temporarily Flooded--Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.

(B) Saturated--The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.

(C) Seasonally Flooded--Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is extremely variable, extending from saturated to a water table well below the ground surface.

(F) Semipermanently Flooded--Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.

(G) Intermittently Exposed--Surface water is present throughout the year except in years of extreme drought.

(H) Permanently Flooded--Water covers land surface throughout the year in all years.

(K) Artificially Flooded--The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

(U) Unknown--The water regime is not known.

F. MAP PREPARATION

The wetland classification that appears on the Clifton NW & SW, Mesa NE, NW & SW and Phoenix SE National Wetlands Inventory (NWI) Base Maps (Table 1) is in accordance with Cowardin et al (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken during the early summers of 1980, 1981, 1983 and 1984.

Field checks of areas found within Silver City NW, Mesa NE & NW and Phoenix SE were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, climate, vegetation, and ecoregion information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photointerpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

G. SPECIAL MAPPING PROBLEMS

None.

H. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

Regional Wetland Coordinator (ARD-E)
U.S. Fish and Wildlife Service - Region II
P.O. Box 1306
Albuquerque, NM 87103

To order maps only, contact:

National Cartographic Information Center
U.S. Geological Survey
National Center
Reston, VA 22092

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
L1UB (F,H)	Lacustrine limnetic unconsolidated bottom	Open water, lake	Unvegetated mud, sand, gravel
L2UB (F,H)	Lacustrine littoral unconsolidated shore	Shallow, open water lake, lake bottom	Unvegetated mud, sand, gravel
L2US (A,C)	Lacustrine littoral unconsolidated shore	Lake bed, lake shore	Unvegetated mud, sand, gravel
L1AB1 (F,H)	Lacustrine limnetic aquatic bed	Algal mat	Algae
L1AB3 (F,H)	Lacustrine limnetic rooted vascular	Pond weeds, water weeds	Potomogeton sp.
L2AB3 (F,H)	Lacustrine limnetic	Pond weeds, water weeds	Potomogeton sp.
L1AB4 (F,H)	Lacustrine limnetic floating aquatic bed	Pond weeds, water weeds	Duckweed (Lemna sp.)
L2AB4 (F,H)	Lacustrine littoral floating aquatic bed	Pond weeds, water weeds	Duckweed (Lemna sp.)
R2UB (H)	Riverine lower perennial unconsolidated bottom	Open water river, stream	Unvegetated mud, sand, gravel
R2US (A,J,C)	Riverine lower perennial un-	River flat, bar	Unvegetated mud, sand, gravel
R4SB (J,A,C,F)	Riverine intermittent streambed	Intermittent stream	Unvegetated mud sand, gravel
PUB (F,H)	Palustrine unconsolidated bottom	Open water, pond bottom	Unvegetated mud sand, gravel
PUS (J,A,C)	Palustrine unconsolidated shore	Pond shore, pond bottom	Unvegetated mud sand, gravel
PAB1 (F,H)	Palustrine aquatic bed	Algal mat	Algae
PAB3 (F,H)	Palustrine rooted vascular aquatic bed	Pond weeds, water weeds	Potomogeton sp.
PAB4 (F,H)	Palustrine floating aquatic bed	Pond weeds, water weeds	Duckweed (Lemna sp.)

NWI CODE WATER REGIME	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM1 (J,A,C,F)	Palustrine persistent emergents	Marsh, wet meadow	Bulrush (Scirpus sp.) Cattail (Typha latifolia) Cocklebur (Xanthium sp.) Rush (Juncus sp.) Sedge (Carex sp.) Smartweed (Polygonum sp.)
PSS1 (J,A,B,C,F)	Palustrine scrub shrub, broad leaved deciduous	Shrub wetland	Arrowweed (Pluchea sericea) Seepwillow (Baccharis glotinosa) Mesquite (Prosopis sp.) Cottonwood (Populus deltoides) Willow (Salix nigra)
PSS2 (J,A,C)	Palustrine scrub-shrub, needle leaved deciduous	Shrub wetland	Salt Cedar (Tamarix sp.)
PFO1 (J,A,B, C,F)	Palustrine forested, broad-leaved deciduous	Forested wetland	Cottonwood (Populus deltoides) Willow (Salix nigra) Water birch (Betula occidentalis) Arizona sycamore (Platanus wrightii) Arizona Alder (Alnus oblongifolia)