National Wetlands Inventory Map Report
for
Walker Lake NW, SW and SE

Project ID: Walker Lake NW, SW and SE

Project Title or Area: Walker Lake NW, SW and SE

Project area covers the following 31 USGS 7.5 minute maps contained within the Walker Lake NW, SW and SE 1:100,000 quadrangles:

Carson Pass	Walker Lake NW
Carters Station	Walker Lake NW
Desert Creek Peak	Walker Lake NW
Desert Creek Peak NW	Walker Lake NW
Desert Creek Peak SW	Walker Lake NW
Ebbetts Pass	Walker Lake NW
Freel Peak	Walker Lake NW
Heenan Lake	Walker Lake NW
Markleeville	Walker Lake NW
Minden	Walker Lake NW
Pacific Valley	Walker Lake NW
South Lake Tahoe	Walker Lake NW
Topaz Lake NE	Walker Lake NW
Topaz Lake SE	Walker Lake NW
Wolf Creek	Walker Lake NW
Woodfords	Walker Lake NW
Sulphur Pond	Walker Lake SE
Bodie	Walker Lake SW
Bodie NW	Walker Lake SW
Bridgeport SW	Walker Lake SW
Buckeye Ridge	Walker Lake SW
Cherry Lake North	Walker Lake SW
Chris Flat	Walker Lake SW
Cooper Peak	Walker Lake SW
Dardanelle	Walker Lake SW
Dardanelles Cone	Walker Lake SW
Disaster Peak	Walker Lake SW
Dome Hill	Walker Lake SW
Donnell Lake	Walker Lake SW
Dunderberg Peak	Walker Lake SW
Emigrant Lake	Walker Lake SW
Fales Hot Springs	Walker Lake SW

Fales Hot Springs SE	Walker Lake SW
Kibbie Lake	Walker Lake SW
Lost Cannon Peak	Walker Lake SW
Lundy	Walker Lake SW
Matterhorn Peak	Walker Lake SW
Matterhorn Peak NE	Walker Lake SW
Mount Patterson	Walker Lake SW
Negit Island	Walker Lake SW
Pickel Meadow	Walker Lake SW
Pinecrest	Walker Lake SW
Piute Mountain	Walker Lake SW
Sonora Pass	Walker Lake SW
Spicer Meadow Reserv.	Walker Lake SW
Sweetwater Creek	Walker Lake SW
Tiltill Mountain	Walker Lake SW
Tower Peak	Walker Lake SW

Source Imagery:

Type: CIR for all quadrangles
Scale: 1:58,000 for all quadrangles
Date: See table below:

USGS Quadrangle	1:100,000 Map	Photo Date	Final Map Publication Date
Carson Pass	Walker Lake NW	9/80	2004
Carters Station	Walker Lake NW	8/80	1988
Desert Creek Peak	Walker Lake NW	8/80	2004
Desert Creek Peak NW	Walker Lake NW	8/80	1988
Desert Creek Peak SW	Walker Lake NW	8/80	1988
Ebbetts Pass	Walker Lake NW	8/80	2004
Freel Peak	Walker Lake NW	9/80	1988
Heenan Lake	Walker Lake NW	8/80	1988
Markleeville	Walker Lake NW	8/80	1987
Minden	Walker Lake NW	8/80	1988
Pacific Valley	Walker Lake NW	9/80	2004
South Lake Tahoe	Walker Lake NW	9/80	1988
Topaz Lake NE	Walker Lake NW	8/80	1988
Topaz Lake SE	Walker Lake NW	8/80	1989
Wolf Creek	Walker Lake NW	8/80	1987
Woodfords	Walker Lake NW	8/80	1988
Sulphur Pond	Walker Lake SE	6/80	1988
Bodie	Walker Lake SW	7/80	2004
Bodie NW	Walker Lake SW	9/80	1988

Bridgeport SW	Walker Lake SW	9/80	1988
Buckeye Ridge	Walker Lake SW	9/80	2001
Cherry Lake North	Walker Lake SW	9/80	2001
Chris Flat	Walker Lake SW	8/80	2004
Cooper Peak	Walker Lake SW	8/80	2004
Dardanelle	Walker Lake SW	8/80	2004
Dardanelles Cone	Walker Lake SW	8/80	2004
Disaster Peak	Walker Lake SW	8/80	2004
Dome Hill	Walker Lake SW	7/80	2004
Donnell Lake	Walker Lake SW	9/80	2004
Dunderberg Peak	Walker Lake SW	8/80	2001
Emigrant Lake	Walker Lake SW	9/80	2001
Fales Hot Springs	Walker Lake SW	9/80	2004
Fales Hot Springs SE	Walker Lake SW	8/80	1988
Kibbie Lake	Walker Lake SW	8/80	2001
Lost Cannon Peak	Walker Lake SW	8/80	2004
Lundy	Walker Lake SW	9/80	1988
Matterhorn Peak	Walker Lake SW	9/80	2001
Matterhorn Peak NE	Walker Lake SW	8/80	1988
Mount Patterson	Walker Lake SW	8/80	2004
Negit Island	Walker Lake SW	7/80	1988
Pickel Meadow	Walker Lake SW	8/80	2004
Pinecrest	Walker Lake SW	9/80	2004
Piute Mountain	Walker Lake SW	8/80	2001
Sonora Pass	Walker Lake SW	9/80	2004
Spicer Meadow Reserv.	Walker Lake SW	9/80	2004
Sweetwater Creek	Walker Lake SW	7/80	2004
Tiltill Mountain	Walker Lake SW	9/80	2001
Tower Peak	Walker Lake SW	8/80	2001

Collateral Data:

- USGS 1:24,000 topographic quadrangles
- USDA Soil Surveys of the Tahoe Basin Area, Toiyabe National Forest Area, and Stanislaus National Forest Areas
- Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979)
- Bailey's Description of the Ecoregions of the United States
- Ecological Subregions of California
- Hydric Soils of the United States

- National List of Plant Species That Occur in Wetlands: California (Region 0)

Inventory Method: The delineations were done by manual interpretation of 1980 aerial photographs. The interpretation was supplemented with field investigations in order to correlate varying signatures found on the photography to actual ground conditions. Vegetation, soils, and hydrologic conditions were examined at field sites. The delineations were transferred to 1:24,000 scale USGS quadrangle base maps using a Zoom Transfer Scope. The final maps were published in 1987, 1988, 1989, 2001 or 2004 (see table above) and converted to a digital format in 2005.

Data Limitations: The user of the maps is cautioned that, due to the limitation of mapping primarily through aerial photo interpretation, 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 also result in discrepancies.

Classification: The wetland and deepwater habitat classifications that appear on the Walker Lake NW, SW and SE quadrangles are in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). All other areas are classified as upland.

General Description of the Project Area:

The project area covers forty-eight 1:24,000 USGS quadrangles in northeastern California. Portions of Mono Lake, the largest natural lake entirely within California, are in the southeast part of the area. The northern tip of the project area includes a part of Lake Tahoe. Most of Alpine County is within the project area. The area also includes portions of Tuolumne, Mono, and El Dorado counties.

Most of the project area is within the **Sierra Nevada Ecological Section** (USDA 1997). However, the eastern part along the Nevada border is in the much drier **Mono Ecological Section.** The **Sierra Nevada Ecological Section** is the temperate to very cold parts of the Sierra Nevada, which is a north-northwest aligned mountain range that is much steeper on the east than on the west side. General descriptions of the soils, vegetation, fauna, and climate follow:

> **Soil Taxa**. Alfisols, Andisols, Aridisols, Entisols, Inceptisols, Mollisols and Ultisols in combination with mesic, frigid or cryic soil temperature regimes and xeric, udic, aridic or aquic soil moisture regimes.
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> **Vegetation**. Predominant potential natural communities include the Mixed conifer series, Ponderosa pine series, Jeffrey pine series, White fir series, Red fir series, Lodgepole pine series, Huckleberry oak series, Western Juniper series, Aspen series, Big sagebrush series, Mixed subalpine forest series, Mountain hemlock series, Whitebark pine series and Giant sequoia series.

The following series are found throughout the section and are not restricted to or extensive in any subsection. Series dominated by exotic plants are not listed under subsections unless they are extensive and stable.

Series dominated by exotic plants:
Broom series, California annual grassland series, Cheatgrass series, Introduced perennial grassland series, Kentucky bluegrass series and Tamarisk series.

Series that can occur in all subsections, but are not extensive:
Bulrush series, Bulrush - cattail series, Bur-reed series, Common reed series, Cattail series, Creeping ryegrass series, Ditch-grass series, Duckweed series, Holodiscus series, Mosquito fern series, One-sided bluegrass series, Pondweeds with floating leaves series, Pondweeds with submerged leaves series, Quillwort series, Saltgrass series, Sedge series, Spikerush series, Tufted hairgrass series and Yellow pond-lily series.

Series restricted to riparian settings:
Black cottonwood series, Mixed willow series, Montane wetland shrub habitat, Mountain alder series, Narrowleaf willow series, Pacific willow series, and Red willow series.

Fauna. Mammals include black-tail and mule deer, black bear, mountain lion, coyote, bobcat, red and gray fox, ringtail, weasels, skunks, badger, mountain sheep, yellow-bellied marmot, marten, fisher, wolverine and porcupine. Grizzly bear, native to the western slope became extinct in 1924. Birds include eagles, hawks, owls, woodpeckers, falcons, osprey, stellar jay, herons, quail, kingfisher, goshawk and blue grouse. Species of concern include the California spotted owl. Introduced species include turkey and beaver.

Climate. At Twin Lakes, just west of project area, the average total annual precipitation was 47.06 in. (1971-2000). Approximately 75% of the total came in the November through March 5-month period. The average annual daily maximum temperature was 52.7ºF, and the average annual daily minimum was 28.8ºF. The average daily maximum temperature in July was 72.0ºF. In January, the average daily minimum was 18.2ºF.

General descriptions of the soils, vegetation, fauna, and climate for the **Mono Ecological Section** along the eastern part of the project area follow:

Soil Taxa. Alfisols, Aridisols, Entisols, Inceptisols, Mollisols and Vertisols in combination with mesic, frigid or cryic soil temperature regimes and aridic, xeric, or aquic soil moisture regimes.

Vegetation. Predominant potential natural communities includes the Big sagebrush series, Utah juniper series, Singleleaf pinyon series, Shadscale series, Low sagebrush series, Jeffrey pine series, White fir series, Aspen series and Bristlecone pine series.

The following series are found throughout the section and are not restricted to or extensive in any subsection. Series dominated by exotic plants are not listed under subsections unless they are extensive and stable.

Series dominated by exotic plants:
Cheatgrass series, Crested wheatgrass series, Introduced perennial grassland series, Kentucky bluegrass series and Tamarisk series.

Series that can occur in all subsections, but are not extensive:
Bulrush series, Bulrush - cattail series, Bur-reed series, Cattail series, Cordgrass series, Ditch-grass series, Duckweed series, Mosquito fern series, One-sided bluegrass series, Pondweeds with floating leaves series, Pondweeds with submerged leaves series, Sedge series and Spikerush series.

Series restricted to riparian settings:
Arroyo willow series, Black cottonwood series, Black willow series, Common reed series, Fremont cottonwood series, Mixed willow series, Narrowleaf willow series, Red willow series and Water birch series.

Fauna. Former inhabitants include grizzly bear and pronghorn antelope. Mammals include black-tailed and mule deer, coyotes, ground squirrels, cottontails, jack rabbits and kangaroo rats. Common birds include turkey vultures, falcons, eagles, hawks, owls, quail, mourning dove, mockingbird, scrub jay, herons, ravens, western meadow lark, finches and sparrows. Introduced species include turkeys and chukars.

Climate. The mean annual precipitation in the ecological section ranges from 5 to 30 inches. At Bodie, a high-elevation site approximately 10 miles north of Mono Lake, the average total annual precipitation was 12.71 in. (1971-2000). Approximately 60% of the total came in the November through March 5-month period. The average annual daily maximum temperature was 56.4ºF, and the average annual daily minimum was 19.4ºF. The average daily maximum temperature in July was 76.6ºF. In January, the average daily minimum was 6.0ºF.

Description of Wetland Habitats: The Lacustrine, Riverine, and Palustrine systems are represented in the subject area. Deepwater habitats include perennial rivers such as American River and lakes and reservoirs such as Lake Tahoe and Union Valley Reservoir.

Wetlands in the project area include wet meadows in grasslands; seeps near the base of hills, ponds and wet depressions in glaciated areas; high-elevation forested wetlands dominated by lodgepole pine; fens; narrow forested and shrub dominated zones on banks and benches along streams; and broader floodplain areas that are seasonally flooded and usually dominated by trees. Many small wetlands have been created or modified by human activity (e.g., excavation) such as farm ponds and impoundments.

Description of wetland habitats by Cowardin (1979) classification:

L1UBG	Intermittently exposed, deepwater habitat in lake systems. These areas are usually inundated, but occasionally become dry during drought periods.
L1UBH	Permanently flooded, deepwater habitat greater than 20 acres in size (e.g., natural lake).
L1UBHh	Permanently flooded, deepwater habitat greater than 20 acres in size that is created by an impoundment (e.g., reservoir).
L2ABF	Semi-permanently flooded aquatic beds (e.g., *Nuphar luteum*) in shallow water of lake systems.
L2ABH	Permanently flooded aquatic beds (e.g., *Nuphar luteum*) in shallow water of lake systems.
L2UBF	Semi-permanently flooded, shallow (<2 meters) portions of lakes.
L2UBG	Intermittently exposed shallow (<2 meters) portions of lakes.
L2US	Unconsolidated shore areas of lacustrine systems (e.g., Mono Lake) where water regimes range from intermittently flooded to seasonally flooded. Accurate water regime designations could not be determined.
L2USC	Seasonally flooded unconsolidated shore (e.g., flats) in lake systems.
R2UBH	Permanently flooded lower perennial rivers.
R2USC	Seasonally flooded unconsolidated substrate (e.g., sand bars) associated with lower perennial riverine systems.
R3UBH	Permanently flooded upper perennial rivers.
R3USC	Seasonally flooded unconsolidated substrate (e.g., sand bars) associated with lower perennial riverine systems.
R4SBA	Temporarily flooded riverine channels.
R4SBC	Seasonally flooded riverine channels.
R4SBF	Semi-permanently flooded riverine channels.
R4SBKA	Temporarily flooded riverine channels that have their water regime controlled by artificial means (e.g., pumps).

R4SBKC	Seasonally flooded riverine channels that have their water regime controlled by artificial means (e.g., pumps).
R4SBKF	Semi-permanently flooded riverine channels that have their water regime controlled by artificial means (e.g., pumps).
PABF	Semi-permanently flooded ponds vegetated with aquatic beds (e.g., *Potamogeton* spp.).
PABG	Intermittently exposed ponds vegetated with aquatic beds (e.g., *Potamogeton* spp.).
PABH	Permanently flooded ponds vegetated with aquatic beds (e.g., *Potamogeton* spp.).
PEMA	Temporarily flooded wetlands (e.g., wet meadows) dominated by persistent herbaceous vegetation. Common plants include *Juncus* spp., *Rumex* spp., and grasses.
PEMB	Saturated emergent wetland usually found in seep areas, montane meadows, or on organic soils (e.g., fens and bogs). Species may include *Carex exsiccate*, *Deschampsia cespitosa*, and *Juncus balticus*.
PEMC	Seasonally flooded wetlands dominated by persistent herbaceous vegetation. Common plants include *Juncus* spp., *Carex* spp., *Eleocharis* spp., and *Ranunculus* spp.
PEMF	Semi-permanently flooded depressions comprised of erect, rooted, herbaceous vegetation (e.g., *Scirpus* spp., *Polygonum hydropiperoides*, and *Typha* spp.).
PEMH	Permanently flooded depressions comprised of erect, rooted, herbaceous vegetation such as *Scirpus* spp., *Alisma* spp., and *Sparganium* spp..
PRBK	Man-made ponds with rock bottom substrate. The amount and duration of flooding is controlled by pumps in combination with dikes or dams.
PSSA	Temporarily flooded scrub-shrub wetland typically found in drainages, along streams, and on the floodplains of rivers. Willow (*Salix* spp.), *Alnus rhombifolia*, and *Ribes* spp. are common in these wetland areas.
PSSB	Saturated scrub-shrub wetland found in seep areas or on organic soils such as fens or bogs.
PSSC	Seasonally flooded scrub-shrub wetland typically found in drainages, along streams, and on the floodplains of rivers. Willow (*Salix* spp.) and alder (*Alnus* spp.) are common in these wetland areas.

PSSF	Semi-permanently flooded scrub-shrub wetland often associated with beaver activity (i.e., PSSFb)
PFOA	Temporarily flooded forested wetland found along streams and on river floodplains. Cottonwood (*Populus* spp.) and alder (*Alnus* spp.) are common in these wetland areas.
PFOB	Saturated forested wetland usually found in seep areas or on the periphery of fens or bogs. *Pinus contorta* is common in these areas.
PFOC	Seasonally flooded forested wetland found along streams and on river floodplains. Cottonwood (*Populus* spp.) and alder (*Alnus* spp.) are common in these wetland areas.
PUSA	Temporarily flooded basins with little or no vegetation.
PUSC	Seasonally flooded basins with little or no vegetation.
PUSKC	Seasonally flooded basins with little or no vegetation that have their water regime controlled by artificial means (e.g., pumps).
PUBF	Semi-permanently flooded ponds.
PUBKF	Semi-permanently flooded ponds that have their water regime controlled by artificial means (e.g., pumps).
PUBG	Intermittently exposed ponds.
PUBH	Permanently flooded ponds.

Notes:

1. The codes listed above may be followed by a special modifier described below:

SPECIAL MODIFIER	DESCRIPTION
b	Beaver - Wetland is created, modified or supported by the action of beavers. The beaver modifier is used on all delineations where visible hydrologic changes have occurred due to beaver activity.
d	Partially Drained - The water level has been artificially lowered, but the area is still classified as wetland because soil moisture is sufficient to support hydrophytes. This modifier is also used to indicate extensive ditch networks in wetlands where, due to the complexity or narrow width of the ditches, individual delineation is not possible.
f	Farmed - The soil surface has been mechanically or physically altered for production of crops, but hydrophytes will become re-established if farming is discontinued.
h	Diked/Impounded - Created or modified by a man-made barrier or dam which obstructs the inflow or outflow of water.
r	Artificial - Substrates classified as Rock Bottom, Unconsolidated Bottom, Rocky Shore and Unconsolidated Shore that were emplaced by man using natural or synthetic materials.
x	Excavated - Lies within a basin or channel excavated by man.

2. Some attributes for wetland polygons may show a mix of wetland classes. For example, a seasonally flooded wetland containing a mix of scrub-shrub and emergent vegetation will be labeled PEM/SSC.

3. Some maps show subclass designations following classes (e.g., FO1 indicates broad-leaved deciduous trees; and EM1 indicates persistent emergent vegetation). The following list identifies subclass codes used on some of the quads included in the project area:

AB3: rooted vascular (e.g., *Potamogeton* spp.).
AB4: floating vascular (e.g., *Lemna* spp.) aquatic beds
EM1: persistent emergent
FO1: broad-leaved deciduous forest
FO4: needle-leaved evergreen forest
SS1: broad-leaved deciduous scrub-shrub
SS4: needle-leaved evergreen scrub-shrub

References:

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. Laroe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. United States Department of the Interior, Fish and Wildlife Service, FWS/PBS 79/81, Washington, D.C.

USDA. 1974. *Soil Survey of Tahoe Basin Area, California and Nevada.* United States Department of Agriculture, Soil Conservation Service, Washington D.C.

USDA. 1997. *Ecological Subregions of California*. US Dept. of Agriculture, Forest Service, R5-EM-TP-005, Washington, D.C.

U.S. Fish and Wildlife Service. 1988. *National List of Plant Species that Occur in Wetlands: California (Region0)*. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C.

U.S. Fish and Wildlife Service. 1995. *Photointerpretation Conventions for the National Wetlands Inventory*. United States Department of the Interior, Fish and Wildlife Service, Washington D.C.