California Wildlife Habitat Relationships System
California Department of Fish and Game
California Interagency Wildlife Task Group

Fresh Emergent Wetland

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Vegetation

Structure-- Fresh Emergent Wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation is generally perennial monocots to 2 m (6.6 ft) tall (Cheatham and Haller 1975, Cowardin et al. 1979). All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment (Gosselink and Turner 1978). The vegetation may vary in size from small clumps to vast areas covering several kilometers. The acreage of Fresh Emergent Wetlands in California has decreased dramatically since the turn of the century due to drainage and conversion to other uses, primarily agriculture (Gilmer et al. 1982).

Composition-- On the upper margins of Fresh Emergent Wetlands, saturated or periodically flooded soils support several moist soil plant species including big leaf sedge, baltic rush, redroot nutgrass and on more alkali sites, saltgrass. On wetter sites, common cattail, tule bulrush, river bulrush, and arrowhead are potential dominant species (Cheatham and Haller 1975, U.S. Army Corps of Engineers 1978, Wentz 1981).

Other Classifications-- Other names for Fresh Emergent Wetland habitats include riverine, lacustrine and palustrine emergent wetland (Cowardin et al. 1979); alkali marsh - 5.23 and fresh water marsh - 5.24 (Cheatham and Haller 1975); tule marsh - 37 (Küchler 1977) and cattail-sedge (Parker and Matyas 1981). The U.S. Fish and Wildlife Service summarizes several Fresh Emergent Wetland classifications according to their occurrence in certain terrestrial habitats (Proctor et al. 1980).

Habitat Stages

Vegetation Change-- 1;2:S-D. It is commonly thought that as depressions or shoreline areas that support Fresh Emergent Wetlands (FEW) accumulate silt, marsh communities are replaced by upland communities. This process is slow unless erosion, either natural or man caused, is accelerated (U.S. Army Corps of Engineers 1978). Fresh emergent wetland habitats may exist in any of the structural classes 1-2:S-D. In areas with relatively stable climatic conditions, fresh emergent wetlands maintain the same appearance year to year (Cowardin et al. 1979); however, where extreme climatic fluctuations occur, they may revert to an open water phase in some years (Stewart and Kantrund 1971).

Duration of Stages-- Fresh Emergent Wetlands are relatively stable successionally (U.S. Army Corps of Engineers 1978) but are transitory in a geological time frame (Odum 1971). Fire, flooding, and draining, maintain shallow basins where Fresh Emergent Wetlands prosper (Odum 1971); but conversion to uplands, which may take from decades to centuries, is the climax. The time this process takes depends on wetland size, rate of sedimentation, frequency of flooding and drainage, and the rate of increase in organic matter. Few studies estimate the time frame of long term wetland succession, but a wetland studied by McAndrews et al. (1976) had a history of 11,000 years and was still present.

Biological Setting

Habitat-- Fresh emergent wetland habitats may occur in association with terrestrial habitats or aquatic habitats including Riverine (RIV), Lacustrine (LAC) and Wet Meadows (WTM). The up\and limit of Fresh Emergent Wetlands is the boundary between land with predominantly hydrophytic cover and land with primarily mesophytic or xerophytic cover or the boundary between hydric and non hydric soils (Cowardin et al. 1979). The boundary between fresh emergent wetlands and deep water habitats (e.g., Lacustrine or Riverine) is the deep water edge of the emergent vegetation. It is generally accepted that this demarcation is at or above the 2 m (6.6 ft) depth (Cowardin et al. 1979, Zoltai et al. 1975). The 2 m (6.6 ft) lower limit for emergent wetlands was selected because it represents the maximum depth to which emergent plants normally grow (Welch 1952, Sculthorpe 1967).

Wildlife Considerations-- Fresh emergent wetlands are among the most productive wildlife habitats in California. They provide food, cover, and water for more than 160 species of birds (U.S. Comptroller General 1979), and numerous mammals, reptiles, and amphibians. Many species rely on Fresh Emergent Wetlands for their entire life cycle. The endangered Santa Cruz long toed salamander and rare black toad require pond water for breeding, while the rare giant garter snake use these wetlands as its primary habitat. The endangered Aleutian Canada goose, bald eagle, and peregrine falcon use Fresh Emergent Wetlands as feeding areas and roost sites (Calif. Dept. Fish Game 1980).

Physical Setting

Physical Setting-- Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. They are found in various landscape depressions or at the edge of rivers or lakes (Wentz 1981). Fresh emergent wetland vegetation zones characteristically occur as a series of concentric rings which follow basin contours and reflect the relative depth and duration of flooding. If the bottom of the wetland is very uneven, vegetation zones may be present in a patchy configuration rather than the classic concentric ring pattern (Millar 1976). Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed (Cowardin et al. 1979). In some areas organic soils (peat) may constitute the primary growth medium (U.S. Army Corps of Engineers 1978). Climatic conditions are highly variable and range from the extreme summer heat of Imperial County to the Great Basin climate of Modoc County where winter temperatures often are well below freezing (Cheatham and Haller 1975).

Distribution

Fresh emergent wetlands are found throughout California at virtually all elevations but are most prevalent below 2270 meters (7500 ft) (Cheatham and Haller 1975). The largest acreage of fresh emergent wetlands occur in the Klamath Basin, Sacramento Valley, San Joaquin Valley, Sacramento-San Joaquin Delta and Imperial Valley-Salton Sea.

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