

Rush Ranch's Tidal Marsh
Docent Training Talk Notes
S. Ferner, June 9, 2011

Definitions:

Marsh: An area that is wet during at least part of the growing season and supports growth of grass-like plants. A marsh is a type of wetland.

Tidal marsh: A marsh that is regularly flooded by tidal water.

Wetland: WET – LAND. Lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (EPA). "Half-way worlds between terrestrial and aquatic ecosystems that exhibit some of the characteristics of both." Smith, 1980.

Estuary: A semi-enclosed body of water where freshwater from river(s) meets and mixes with saltwater from the ocean.

Functions of Marshes:

Nursery habitat (Chinook salmon, delta smelt, and many more)
Filter sediment (dirt) and pollutants from river and tidal water
Ameliorate floods by slowing release of water
Shelter and food for migratory birds (waterfowl, especially)

Marsh loss in San Francisco Estuary:

Tidal marsh habitat decreased from about 190,000 acres to 40,000 acres. This is a loss of about 80%. (Some sources say as high as 90% - answer depends on classifications and definitions.)
Moist grassland/vernal pool habitat has decreased from about 24,000 acres to 15,000 acres. (Habitat Goals, 2000. p.30).

Rush Ranch Tidal Marsh is now unique:

Rush Ranch is a rare remnant marsh and is in better shape than most other remaining tidal brackish marshes in San Francisco Estuary. It is therefore frequently used as a "reference site" – a model to show scientists how a natural tidal marsh functioned and looked, and a point of comparison between a "healthy" marsh (Rush Ranch) and other restored, created, or altered marshes.

Examples of recent and current use as a reference site include:

Tidal channels variability by C. Enright, Department of Water Resources.

Tidal channel shape by S. Pearce and J. Collins, San Francisco Estuary Institute

Salt marsh harvest mouse population density and behavior (telemetry), Department of Fish and Game, as part of Hill Slough restoration project.

Suisun thistle seed viability, reproductive success, and response to *Lepidium latifolium*, R. Schneider, San Francisco State University.

Rush Ranch is part of NOAA's National Estuarine Research Reserve System, which brings long-term monitoring, coordination of research, and additional funding to the marsh.

www.nerrs.noaa.gov

Good references for more information:

For San Francisco Bay history: Baylands Ecosystem Habitat Goals, Chapter 2: The Baylands Past and Present, [http://www.sfestuary.org/userfiles/d/docs/Habitat_Goals\[Part2\].pdf](http://www.sfestuary.org/userfiles/d/docs/Habitat_Goals[Part2].pdf)

For basic estuary and marsh information: www.estuaries.gov