

The Community VOICE



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Discover the importance of wetlands



By Gerald Moor and Jenny Blaker January 7, 2010 01:14 pm

Wetlands used to be thought of as useless swamps and wastelands. But since the 1970s we have learned that wetlands perform so many important functions that they are critical to our well-being as a modern urban species. The biological productivity of Bay Area wetlands is among the highest of any ecosystem in the world.

So, what are wetlands? In the simplest terms, wetlands are transitional zones between uplands and large bodies of water such as rivers, lakes, or oceans, where water tends to stand for prolonged periods of time. The main types of wetlands are swamps, marshes, and bogs, which are best recognized by their dominant plants: Trees and shrubs, grasses or sedges, and mosses, respectively.

The Petaluma area contains both fresh and salt water marshes, and seasonal ponds, which contain rainwater in the wet season but tend to dry up during the summer. The Petaluma River is actually a brackish tidal slough which connects to San Francisco Bay and supports along its edges brackish (or salty) tidal marshes, or tidal wetlands.

The central pond in Shollenberger Park is a seasonal pond, which is brackish because it is recharged with brackish water during the river dredging. The side channels (where the cattails are) are a classic freshwater marsh.

Since wetlands are covered with water much or all of the year, the soil under them is saturated with water lacking in oxygen. This supports a unique group of plants called hydrophytes, which can live happily with their roots submerged in water.

Freshwater marshes abound with cattails and bulrush, while salt-water marshes contain cordgrass, pickleweed, salt grass, and other lesser-known species.

Think of wetlands as a giant sponge. They detain water, reducing flooding and erosion downstream during major storms. Natural biological processes purify and filter the water. In some wetlands the detained water can recharge the groundwater, thus storing water for future needs. Marshes contribute to the stability of global levels of nitrogen, sulfur, carbon dioxide, and methane.

Petaluma's wetlands provide critical habitat for many plant and animal species that are adapted to live in wetland environments, some preferring the fresh, and others the brackish waters. Some species live exclusively in wetlands while others depend on wetlands for part of their life cycles.

Many species of fish and seafood use wetlands as their nursery. Over half of the world's migratory birds depend on wetlands to survive during their annual migrations north or south. Of the nearly 400 species of birds found in California, nearly 75 percent are migratory and depend upon marshes and ponds for shelter and food during migration. Petaluma's wetlands provide habitat for endangered and threatened species such as the clapper rail, salt marsh harvest mouse, black rail, and western pond turtle.

Healthy wetlands are complete ecosystems, containing many species of microscopic organisms, invertebrates, plants, fish, birds, reptiles, amphibians and mammals that form a complex food web, or series of food chains.

Wetland plants get energy from the sun, the water and detritus (dead plant and animal material). Detritus also feeds many microorganisms, insects, and fish, which in turn feed larger animals and, in turn, perhaps even larger animals such as wading birds, mink and humans. When the plants and animals die, new detritus is formed. This complex food web recycles energy through both the plant and animal life of the wetland.

When humans use wetlands as the final step in their wastewater treatment process, they are pumping into the marsh a very dilute solution of the detritus from our human lifestyle. This detritus is broken down and consumed by the same mechanisms as the natural detritus of the marsh. Because of the rich nutrition of most wetlands, the quantity of detritus, the dissolved nutrients and the abundance of plants and animals living there, wetlands compete with the richest farmlands in the world for the title of "Most Productive Ecosystems."

Wetlands provide humans with many marketable crops including seafood, fish, cranberries, wild rice, timber, etc. and they help to maintain shipping channels by reducing siltation. They provide for human recreational activities including hunting, fishing, bird watching, boating, swimming, camping, and nature studies.

On Sunday, Jan. 10 at 9 a.m., the Petaluma Wetlands Alliance is offering a "show-and-tell" docent-led tour of Petaluma's wetlands starting at Shollenberger Park. This event is co-hosted by Cotati Creek Critters. RSVP to jenny@creeks.cotati.info or 792-4422.

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