Learning Laguna Field Notes: Lower Stone Farm

Fall 2011

For thousands of years Native Southern Pomo people lived along the Laguna and depended on its diverse plants and animals for food and shelter. Today, many Southern Pomo and Coast Miwok people (the Federated Indians of the Graton Rancheria) still live here in their ancestral homeland.

In 1844 Joaquin Carrillo, the eldest brother of Mariano Vallejo's wife, received the Llano de Santa Rosa land grant of 13,360 acres from the Mexican government, including most of the Laguna de Santa Rosa.

In 1868 Harrison Valentine purchased 320 acres that included the land today known as Stone Farm.

In the early days, prior to 1870 and the coming of the railroad, hay, grain and potatoes were grown on the land in commercial quantities. In 1852 Sonoma County had less than 1% of the state's population but produced 21% of the State's potatoes, 8% of its wheat, 6% of its corn, 5% of its onions, 4% of its barley and 3% of its oats.

With the coming of the railroad (around 1870) and as cities grew and a local brewery industry developed, the ranch was used for hop production. By the 1900s, the focus began shifting to dairy ranching.

In 1984, the remainder of the original 320 acres, 112 acres, was purchased by the City of Santa Rosa and named Stone Farm for the owners the City purchased it from. At that time the land was used as open pasture for cattle.

Formerly, the entire property was irrigated and now that is restricted to just 80 acres. Most of the land is currently leased to a dairy producer who pastures heifers. A few acres are leased to an organic fruit and vegetable producer. Both lessees use recycled water for their operations. The Laguna Foundation also leases 4 acres around the farmhouse which is now our headquarters and the soon-to-be Laguna Learning Center.

When the City of Santa Rosa bought this property in 1984, there was very little vegetation. Irwin Creek had no riparian cover. Cows were coming right into the creek which caused major problems with erosion (and nitrogen load in the system).

Riparian vegetation is important as it provides important food, shelter and shade for both aquatic and terrestrial wildlife. Additionally, riparian corridors furnish animals with a route to migrate or disperse under protective cover.

- The first restoration efforts along Irwin Creek occurred in the early 1990s with willow sprigging.
- In 1997 valley oak (Quercus lobata) and Oregon ash (Fraxinus latifolia) were planted.
- March of 2009 two rows of agricultural style planting were installed on the south side of Irwin Creek with valley oak, ash, CA rose, elderberry. Two rows were planted with Willowside school 7th graders and another 2 rows were installed with Laguna Keepers. Rows make the new plantings easy to maintain with irrigation, mowing, etc. Because some plants die, and plants fill in and grow up at different rates, the area will naturalize.
- In March of 2010, 4 more rows were added. Now fencing along Irwin is at 100 feet setback.
- The recent plantings you see on the north side of the creek were installed with volunteers on one day at the January 2011 Tree-a-thon.

Riparian and in-stream habitats support each other, providing necessary resources:

- Stream-side vegetation is rooted in rich soil, obtaining growth nutrients.
- The roots of trees and shrubs help hold the soil in place, preventing erosion.
- Leaves drop into the water, supplying food for aquatic microorganisms and insects.
- Insects and other invertebrates are consumed by fish that are in turn consumed by other animals.
- Organic matter is broken down by decomposers and returned to replenish the soil.
- Dense riparian canopy shades the water, preventing exposure to the sun, and resulting in a significantly lower water temperature. Many organisms have a narrow range of tolerance for temperature. Colder water holds more dissolved oxygen, a critical factor for many animals, especially certain species of fish.

BIRDS LIKELY TO ENCOUNTER IN OPEN PASTURE (in summer and early fall)
Insects are abundant in this area!

Killdeer	Western Meadowlarks
American Goldfinch	White crowned sparrow leaving, Gold crown sparrow coming for winter
Western Kingbird	Robins
Swallows (cliff, barn, violet green swallows migrating south this time of year)	Crows
Black Phoebe (Says phoebe coming back for winter)	Cattle egret, Great Egret, Great Blue Heron
Starlings	Redwing blackbirds
Red-tailed and Red-shouldered hawk	Black-shouldered Kite

LAGUNA HABITAT PLANTS TO KNOW AND TALK ABOUT:

Tule, Cattail, Basket Sedge, Box Elder, Oregon Ash, Elderberry, California Wild Rose, Valley Oak

OAKS ARE IMPORTANT! They provide habitat for hundreds or even thousands of other species! Oaks form the foundation of an intricate food web where herbivores consume acorns, leaves, twigs, sap, roots, flowers and pollen. Because oaks have a diversity of food to offer, they support many types of organisms that use different resources from the same tree. Every part of an oak from treetops to root tips is utilized. In the leaf canopy the wind, light and temperature are moderated. Birds take advantage of this protection to build nests and insects deposit eggs. Cavities in the limbs and trunks provide nesting and hiding opportunities even long after the tree has died. A standing dead tree is referred to as a snag. Snags are potential homes to animals using the cavities or living under the bark. Snags also serve as perches, used by birds of prey as they hunt. The leaf litter under the tree is a moist, nutrient-rich location where many invertebrates and microorganisms live. The soil below the rich litter, surrounding the roots, is home to many arthropods, protists, fungi and bacteria.

Oaks are in the genus Quercus which is a Latin name derived from two Celtic words: *quer* (meaning "fine") and *cuez* (meaning "tree").

Other plants likely to encounter:

The flora of the area represents periodic inundation. This area is underwater in the winter! The bushy arroyo willow and shinny leafed yellow willow, red willow just outside planting area, plus curly dock (*Rumex crispus*) which is not a native but it is a wetland indicator species. This plant traveled aboard ships from Spain in the feed that was given to cattle. Seeds of curly dock can be found in the mud bricks that were used to build local missions.

Smartweed – (*Polygonum amphibium var. emersum***)**
A perennial herb (aquatic) that is native to California and is also found elsewhere in North America and beyond. The plant is classified by the California Department of Food and Agriculture as a noxious weed. It occurs almost always under natural conditions in wetlands and is a food plant for many species of moths.

Dodder – (*Cuscuta* species) looks like netting or spun gold. It is a parasitic annual plant that infests many crops, ornamentals, native plants, and weeds. It is capable of limited photosynthesis, but it obtains nearly all of its energy from the host plant. As dodder plants grow, they continually reattach to the host. When other suitable hosts are nearby, dodder shoots spread from host plant to host plant, often forming a dense mat of intertwined stems. Shaded areas greatly reduce twining and attachment.

Jepson's Butter Celery (Coyote Thistle) (*Eryngium aristulatum*)– is a **perennial herb** that is **native** to California and is found only slightly beyond California borders. Occurs almost always under natural conditions in wetlands. Jepson variety *parishii* is a vernal pool plant.

Yellow Nutsedge- (*Cyperus esculentus)* native to California
Perennial that thrives in waterlogged soil. Their leaves and flowering stalks generally die back in fall as temperatures decrease, but tubers and rhizomes survive in the soil and sprout the following spring once soil temperatures remain higher than 43°F. Rhizomes grow as deep as 8-14 inches. Buds on the tubers sprout and grow to form new plants and eventually form patches that can range up to 10 feet or more in diameter. Yellow nutsedge is cultivated in some countries for its almond-flavored tubers, which are used to make a drink. Since the tubers contain 20-36% oil, this plant has been suggested as potential oil crop for the production of biodiesel.

Cocklebur (Xanthium strumarium**)** native to California
A cocklebur was the inspiration for a Swiss engineer, George deMastral, in 1948, for the invention of Velcro. He examined the burs that stuck to his socks and discovered that they consisted of hundreds of tiny hooks, which attached themselves to anything loopy. Cockleburs tend to grow in areas that are waterlogged much of the year, but dry during the summer. They have a fruit capsule containing two seeds. Only one seed germinates the first year. Germination is delayed in the second seed until the following year. Cocklebur seedlings are high in carboxyatractyloside, a plant growth inhibitor. It has been hypothesized that carboxyatractyloside functions in a germinating cocklebur seed to keep the other seed in the fruit capsule dormant the same year. Carboxyatractyloside causes hypoglycemia in animals that consume it which can lead to death.

Common Chicory (***Cichorium intybus***) introduced – invasive
is an erect, somewhat woody, perennial herbaceous plant with bright blue flowers. It is native to Europe, western Asia and North Africa, and has become naturalized in North America. The root of variety *sativum* is the one used as a coffee substitute. It is also used as forage crop for livestock as it is believed to reduce internal parasites. Other varieties are cultivated for food.

Narrow-leaf milkweed – (Asclepias fascicularis) native to California

Drought tolerant, it prefers seasonally moist soils and likes moderate water. The narrow leaves are the preferred larval food for the Monarch Butterfly. The alkaloids associated with this plant give the butterflies that feed on it protection. Orioles use the dead stems for nests the next spring.

Water Primrose (Ludwigia spp) - Introduced invasive.
A common aquatic ornamental that has spread rapidly in the Laguna, out-competing native marsh plants with resulting loss of biodiversity and loss of habitats for many animal species. Not likely to grow in water greater than 3' in depth. Change in hydrology of channel would likely reduce occurrence.

VIEWING THE LAGUNA

What do you notice about the Laguna in this area? It is straight and channelized! In 1965 Sonoma County Flood Control and Water Conservation District constructed these "channel improvements." To the north is the Laguna Wildlife Area. Long before channelization, this area was the location of Lake Jonive. It is reported that this is also the area where Luther Burbank gathered tules to package his flower bulbs for shipment. Be sure to look for dragonflies hunting and aquatic critters swimming. The snag across the channel often has birds perched on the look-out for a meal. Glance south and north along the channel and scout for birds like great egrets, great blue herons and night herons.

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