Walking Tour of UCSB Campus Lagoon Area

Restoration Projects: Past, Present and Future

UCSB's Cheadle Center for Biodiversity and Ecological Restoration (CCBER) manages and restores the campus natural areas and mitigation projects. The Center offers internships, teaches seminars and houses the University's herbarium and vertebrate collections. We can be reached at 893-2401.

① Shorebird Habitat.

These small islands and shallow-water zones were created along the northern edge of the Campus Lagoon to mitigate the nearby UCen expansion project infringement on the lagoon's 100-foot buffer. They are a successful example of how valuable shorebird habitat can be created adjacent to high use areas of campus. The most common birds seen here include egrets, long-billed dowitchers, black-necked stilts, great blue herons, and black-crowned night-herons.

② Lagoon Park & Enhanced Wetland.

The slope from here, south to the ocean (4-acres) is part of Lagoon Park. This area was restored beginning in 1999 to coastal sage scrub, oak woodland and vernal wetlands in conjunction with the Manzanita Village Restoration Project. It provides a diversity of floral, fruit and seed resources for a variety of insects and birds. This enhanced wetland occurs at a natural seep and has been planted with native trees and shrubs. It is one of the most productive sites in terms of bird life and reflects the successful conversion of an area that was completely decimated during the asphaltum mining days to a viable and self-sustaining habitat.

③ Manzanita Village Restoration Project.

Funded by UCSB Housing and Residential Services, restoration of the site began in August 2002 and serves as mitigation for the adjacent dorms. The project is comprised of six-acres of restored native grassland, vernal pools and vernal marshes, all threatened habitat types, and 1300 linear feet of bioswale creation. More than 80,000 native plants grown from local genotypes at CCBER's nursery and greenhouse were planted over the past three years.

④ Vernal Marsh.

This is the largest vernal marsh at the M.V. Restoration Site. Compared to vernal pools, vernal marshes are deeper and have a longer duration of flooding. The vernal marshes support large emergent vegetation such as California bulrush (*Schoenoplectus americanus*) and common three square (*Schoenoplectus pungens*) and provide nesting habitat for red-winged blackbirds, common yellowthroats, mallards, and other birds.

⑤ Bioswales.

Approximately 40% of the storm water run-off from Manzanita Village flows through some section of bioswale. In place of traditional underground pipe systems, these bioswales convey stormwater and irrigation runoff. In addition, the bioswales serve functions such as reducing nutrient loading to the lagoon, creating habitat for wetland plant and animal species and aesthetically softening the edge between urban and natural areas.

⑥ Vernal Pool.

Look west, these three vernal pools at M.V. were seeded and planted with locally collected materials. Vernal pools are seasonal wetlands that occur in depressions where there is an underlying impermeable layer that becomes saturated during winter rains. The pools pond through the spring and are desiccated through the summer and early fall. A unique suite of plant and animal species adapted to this cyclical process of wetting and drying are found in these pools. Water depth, vegetation cover, and invertebrate populations are monitored regularly.

⑦ Terminal Bioswale (*right*) & Constructed Wetland (*left*).

This innovative Biofiltration System combines cobble-lined drains, bioswales, and two shallow marshes strung together to treat and drain approximately 75% of the Manzanita Village project site. This system demonstrates how excess water and nutrients considered to be a waste product of urbanization can be turned into a resource and used to enhance the environment. More than 27 species of local native wetland plants are growing in the Biofiltration System.

⑧ West Depression.

This is a site of current restoration efforts. Iceplant was successfully solarized (cooked under black plastic) and a gradual restoration of the site is in progress. The site received a large pulse of beach wrack during the December 21st, 2005 storm ("Big Wednesday"). Prior to this event, people had not seen waves wash into the lagoon in over 20 years.

Follow road up to Lagoon Island

⑨ Lagoon Island Point.

This small-scale coastal sage scrub restoration is the beginning of a plan to completely restore native vegetation to Lagoon Island. Here you will see sticky monkey flower (*Mimulus aurantiacus*), seacliff buckwheat (*Eriogonium parviflorum*), golden-yarrow (*Eriophyllum confertiflorum*), bush sunflower (*Encelia californica*), and many more coastal sage scrub species.

⑩ Lagoon Island Trail.

Nearly 1000 oaks were planted on the north-facing slopes in late-2005. Blue tubes, sunk 18 inches into the ground, protect newly sprouted oaks from gophers and squirrels while black weed-mats reduce competition from fast-growing exotic grasses and radish. Along the slope are a few oaks that were planted in the late 1990's and are now 10-feet tall as well as some healthy stands of poison oak; please take care. Oaks also dominate similar north-facing coastal bluffslopes with sandy loam soils found at nearby Douglas Family Preserve, More Mesa and at UCSB's North Bluff. Records indicate many of the oaks at North Bluff were cut down during the late-1800's and early-1900's to render whale blubber at Goleta Beach, support nearby asphaltum mines, and to make way for grazing and agriculture.

⑪ East Depression.

For forty years South African iceplant dominated this site, effectively inhibiting natural sand transport, dune formation, and native species establishment. During 2000-2001, students in a restoration ecology class, under the direction of UCSB's Museum of Systematics and Ecology (now CCBER), wrote a restoration plan for the site. They removed iceplant, restored native dune vegetation, and conducted research and monitoring. The springtime flush of dune species flowers and associated pollinators is spectacular here.

⑫ Campus Point.

Coastal bluffs here are eroding approximately 0.5 feet per year! Erosion is a natural process, but is likely accelerated at this site by multiple trails down the bluff face. Restoration of the bluffs and mesa top with coastal bluff and maritime coastal sage scrub plant communities are slated for this site. These efforts will reduce the loss of topsoil and improve the habitat for wildlife.

⑬ Lagoon Hydrology.

Sea water, pumped from 150 feet off-shore and through marine research laboratories, enters the eastern end of the lagoon at a rate of about 800 gallons per minute. Eight storm drains contribute urban runoff water to the lagoon during rainy months, causing annual fluctuations of salinity. A weir, small overflow drain, at the western end of the lagoon ensures a steady 6 feet maximum water depth and a lake-like appearance. However, this static water level, with no artificial or natural tidal flow, potentially limits shorebird feeding sites and habitat diversity.

⑭ Degraded Wetland.

The Kikuyu grass dominated area to the right, is underlain with hydric soils, and fed by natural seeps and storm drains. A restored wetland is being designed for this site to filter storm water and increase natural biodiversity.

⑮ Bird Island.

Look across the lagoon, this artificial habitat was created in November 2005 on a plastic dock augmented with 6,000 lbs of sand and driftwood. It is now a safe resting site for cormorants, brown pelicans, gulls, and egrets.

⑯ Coastal Sage Scrub.

As part of the UCen mitigation project, this area was restored with willows in the natural seeps and coastal sage scrub species on the upland slopes. Recently, another tier of *Eucalyptus* trees were removed to facilitate further restoration.