



# The Pickleweed

The Newsletter of the Huntington Beach Wetlands Conservancy, Inc. (A Nonprofit Corporation)

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## A Message From Our Chairperson

Summer is here and along with it many varied bird species arrive which visit our coastal wetlands. One of the articles in this newsletter gives a first hand account of one of the survey teams at our last bird survey conducted this past April. I think you'll find the article very interesting and informative. One of the bird species which visits our wetlands every summer is the Belding's Savannah Sparrow. This little endangered species bird makes its summer home here, nesting and raising its young in areas of the wetlands thick with a plant called pickleweed. You'll find another article in the newsletter fully describing this plant, its benefits to wetlands and bird life, and the very limited and dwindling areas of our Southern California coastline able to offer conditions to support it.

Another article describes the planning taking place for our new interpretive center which will be located in our new building located at Pacific Coast Highway and Newland Street. This master plan development process will take some time to complete, but we're confident the finished product will provide the blueprint for a world class educational facility.

This fall, assuming we have all the needed permits in hand, we will commence the long awaited dream of our organization, the restoration and enhancement of our approximately 137 acres of mostly degraded wetlands. An article below describes the project in detail. We are very excited and hope all of you will come to join us when we celebrate with a ground breaking ceremony later this year.

And finally, even though we have the funds in hand for the current restoration project, we are in need of on-going maintenance and operating funds. Your continued donations significantly help us in our mission to preserve, restore, and maintain coastal wetlands.

We thank you for your continued help, and hope you enjoy our newsletter.

Jack Kirkorn

## Getting To Know Pickleweed

By Corinne Monroe, Aquarium of the Pacific

Pickleweed species belong to the Goosefoot family (*Chenopodiaceae*) which includes sugar beets and spinach. *Salicornia virginica* is a California native species of pickleweed. It has many common names including glasswort, Virginia pickleweed, sampfire, and sea asparagus. The name

'pickleweed' comes from the pickle-like appearance of its stem segments and its salty taste. It is a halophyte commonly found in estuaries and bays where there is protection from wave action. It is often said that pickleweed can survive under conditions that no other salt tolerant plant is able to.



Pickleweed is typically found along the Pacific coast from south Alaska to Baja California, and the Atlantic coast from New England to Florida, and the Gulf coast. The plants typically grow in the high to middle tide zones of saltmarshes or salt flats, often covered with water. It will also grow in salty ground with no tide coverage at all. It requires clear water and large quantities of sunlight to survive. It can also grow in extremely salty soil so it is sometimes found in beach areas where there is moisture or in former salt marshes where it is cut off from tidal flow as it currently is in the Huntington Beach Wetlands except for Talbert Marsh.

Pickleweed is a very common, somewhat shrubby, succulent, perennial plant that is usually a gray-green. It is low-growing. The central stem has segments in an opposite branching pattern. The segments turn red just before they drop off. New green growth occurs during the rainy winter season. At first glance the plant does not seem to have any flowers or leaves; however, both are hidden in the joints of the stems. The tiny flowers are 0.25 inches tall and a creamy color. Occasionally, the stems grow so closely together that the plant almost looks bushy. Some botanists believe that the stems of pickleweed plants are actually greatly modified leaves. Pickleweed obtains its food through photosynthesis.

Flowering occurs from August to November. Male and female sex organs are on separate flowers and pollen is

carried from the male plant to the female by the wind. The seeds formed after fertilization are dispersed by the tides or rain. Tiny hair-like structures on the seeds act like Velcro™ giving the seeds the ability to trap air bubbles so they float or attach to floating debris to be deposited somewhere on the surface of the soil where germination will take place.

Pickleweed handles salt in two ways - as a salt excluder and a salt accumulator. Some salt is filtered out at the roots by sodium-potassium pumps in the plant's cell membranes. Excess salt is pumped by other cells to vacuoles (storage cells) at the tips of the plant's jointed segments. When the vacuoles are full and cannot hold any more salt, the cells break down and die, and the segment turns red and falls off. In the fall a meadow of pickleweed can be a red blaze of color.

Pickleweed is important to the survival of several saltmarsh residents. It is food for both birds and mammals. It is food for both birds and mammals. Belding's Savannah Sparrows, (*Passerculus sandwichensis beldingi*), are a California state protected bird and a candidate for federal protection under the Endangered Species Act. These non-migratory birds are local year-round residents of the Huntington Beach Wetlands, Los Cerritos Wetlands, the Bolsa Chica Ecological Reserve, and the Seal Beach National Wildlife Refuge where they stake out a territory and build nests above the highest tide line to avoid being flooded. The nest material consists of pickleweed and twigs. Some species of migratory ducks eat pickleweed seeds. It is also the primary habitat for the endangered and federally protected salt marsh harvest mouse found in the San Francisco Bay region.

The Chumash and the Tongva-Gabrielino Native Americans used the ashes of pickleweed in the production of soap and the stems of the plants for seasoning and as a vegetable. In the summer pickleweed (sea asparagus) is still harvested for its tender green tips. The tips are used fresh in salads, steamed to serve as a vegetable, or pickled.

#### **Life Birds #405 and #406 in Huntington Beach Wetlands**

By Elliotte Rusty Harold

Saturday, April 5th, I woke up at 5:00 A.M. to get out to Huntington Beach at 6:00. The occasion was the quarterly bird census at the Huntington Beach Wetlands Conservancy. This is about 100 acres of mostly salt panne habitat along Pacific Coast Highway, mixed in with industrial plants, housing, and roads. Somehow several large and small parcels have been saved from the sprawling development of Huntington Beach, and the hope is to save more. Restoration projects are scheduled to improve the habitat, so we're counting the birds to track the effects of this eventual work. Plans are to dig a channel to flood some of the areas starting this September. Censuses have been ongoing for about a year and a half now to establish a baseline to measure the success against.

My survey team (me, Tom Dixon, Pat Cabe, and Dick Cabe) more or less circumnavigated the rectangular area (Magnolia Marsh) we'd been assigned, starting from the corner near the

wildlife refuge and moving counterclockwise. Initially we picked up all the usual suspects: Song Sparrow, Common Yellowthroat, Mourning Dove, and European Starling. Equally



*Belding's Savannah Sparrow*

numerous were Belding's Savannah Sparrows. This usually rare subspecies is holding on only here at the Huntington Beach Wetlands, at Bolsa Chica, and at a few other similarly isolated habitats along PCH. It's less yellow, and has much darker, denser breast streaking than the Savannah Sparrows I'm used to from Floyd Bennett Field and Fort Tilden back home in New York.

Scoping the salt panne in area 2 we almost immediately found hundreds of shorebirds. Western Sandpipers were the most numerous, but we also tallied many Least Sandpipers, Willets, and Dunlin. No Dowitchers or Curlews though.

We had the usual flyover species: Ring-billed Gull, Western Gull, American Crow, Common Raven, and several herons including Great Blue Heron, Snowy Egret, and Great Egret. However the best was a bird I initially miscalled as a Ring-billed Gull, because, well, it didn't seem to fit anything else I knew; and Ring-billed Gulls are pretty common out there. Fortunately Pat and Dick were more familiar with the local



*Black-necked Stilts*

avifauna than I was and correctly noted that the almost complete lack of black on the wings tagged it as a Glaucous-winged Gull, life bird #405 for me.

After that we turned north along the east edge of the marsh adjacent to Magnolia Street. We continued upping the tallies of Song Sparrow, Savannah Sparrow, and Common Yellowthroat. We added our first Black-necked Stilts in a small inlet. I also got my first taste of the local pickleweed, a common edible plant of the salt marsh that tastes like a slightly dill, slightly sour, very salty pickle.

By the time we reached the Northwest corner, the salt panne was alive with hundreds of Semipalmated Plovers. We must have missed them fly in because I'm pretty confident they weren't there earlier when we'd been scoping the same area from the other side. Somehow out of all these, one of my teammates found one single Western Snowy Plover. It was fairly obvious in my scope once I was told where to look, and that was life bird #406 for me.

We closed off the rectangle heading south toward the ocean, but this didn't really add any more to the tally since we were now recovering a lot of the same ground from a different direction. We finished the day with 26 species and maybe a thousand or so individuals. Not bad for a couple of hours.

### **Our Future Interpretive Center**

By Jennifer Rigby, The Acorn Group

Since February 2008, the Huntington Beach Wetlands Conservancy, Wetlands and Wildlife Care Center, and The Acorn Group have been working on the master plan for the interpretive center that will be open to the public. New exhibits will transform the cavernous space into a dynamic museum



atmosphere where concepts come alive and displays beg to be touched. It has been an exciting process, in part because of the uniqueness of the partnership and the subject matter itself. What sets this facility apart from neighboring coastal wetlands is the cooperative aspect of restoring habitats while rehabilitating the wildlife that live there. People who visit the new center will be treated to new experiences, including the opportunity to remotely watch the care and feeding of feathered patients at the adjacent Wetlands and Wildlife Care Center hospital.

The exhibit space will be organized in three sections. In the first section, visitors will walk along a meandering boardwalk to view coastal wetlands at work. Intermittent calls of clapper rails, terns, and osprey and the sound of the surf add realism to the boardwalk experience. Subsurface cutaways of the mud substrate exposed at low tide, saltwater-saturated cordgrass at high tide, and a narrow vertical column of water with models of larvae of important fisheries will give visitors a close-up view of different wetland profiles.

A portion of the boardwalk will also reveal the complexity of work involved in habitat restoration, such as the permitting effort, the need to address problem discharges, the labor intensity of planting, and the ongoing commitment required to ensure long-term restoration success. A simulation game will challenge younger visitors to "control" various factors, such as urban runoff or invasive species that must be considered when restoring wetlands.

The second exhibit section will highlight the turning point marked by the *American Trader* spill in 1990. Interpretive panels and a push-button activated monitor will display film footage from the oil spill and the clean-up efforts (and wildlife rescue) that followed. Replicated globs of oil will appear to ooze from the wall and floor, reminding visitors of its permeability and the hazards it creates. Other panels will highlight the policy changes that ensued following the *American Trader* spill including establishment of the Office of Spill Prevention and Response in California's Department of Fish and Game, as well as the roles of the Wetlands and Wildlife Care Center and Huntington Beach Wetlands Conservancy.

The third exhibit section will consist of a simulated interactive "wildlife care hospital." Visitors young and older will be invited to handle various diagnostic tools used to determine cause of injury or illness. These include a microscope with a selection of slides, an x ray light box that illuminates various x-rays, and a computer screen modified to resemble an ultrasound screen that projects images of various patients. Visitors will be challenged to read "case histories" of patients, explore the medical tools, search for clues, and try to identify each animal's medical problem.

By the time visitors complete their own "rounds" in the center, they will have been treated to an intimate view of the magical, waterlogged world of a salt marsh. It is our goal that they leave with a deeper appreciation for wetlands, wildlife, and the work of the Care Center and Conservancy.

### **An Historic Marshland on the Road to Recovery**

By Therese Quesada, Moffatt & Nichol

California's Huntington Beach Wetlands represent one of few remaining opportunities to undo the damage of past industry and reconnect one of the state's rare historic marsh plains with the Pacific Ocean. The Huntington Beach Wetlands Conservancy embraced the undertaking in 1985 and, over the past 23 years, has acquired land ownership and over \$7.5 million of a projected \$10 million needed for the project.

Aware of successes at the Batiquitos Lagoon to the south and the Bolsa Chica Wetlands to the north, the Conservancy contracted with Moffatt & Nichol to begin a phased restoration targeting 130 acres of the 188 acres that remain of the formerly 2,900-acre Santa Ana River estuary. "This project is especially interesting because we are rehabilitating a large area of former wetlands in an urban setting. We are building on the 25-acre restoration of the adjacent Talbert Marsh," comments Moffatt & Nichol's Robert Sloop, P.E., assistant project manager for the restoration.



Made up of salt marsh, seasonal ponds, and coastal dunes, the once-vibrant wetlands at the mouth of the Santa Ana River gave way over the years to residential, agricultural, and industrial development. The site's sole source of seawater filled with sand, trapped from tidal flow by a patchwork of flood control levees and channels, leaving a thirsty coastal habitat. Limited from further development by the California Coastal Act of 1972, the site today stands alone, flanked by

residential tracts, a major power generating station, oil tanks, a county sewage disposal facility, and Pacific Coast Highway.

The project, under the watchful eye of Gary Gorman, the Wetlands Conservancy's Project Manager, will restore fish and wildlife habitats, improve flood control and water quality, and provide controlled public access on walk trails. Phased over three years to accommodate the breeding seasons of native birds, 2008-2009 construction will dredge about 183,000 cubic yards of sandy sediment from the Talbert Marsh and the ocean access channel, and excavate about 75,000 cubic yards of silt, clay and other material from the Brookhurst Marsh.

"The critical issue in the restoration plan is the distribution of various types of habitat to establish a viable wetland ecosystem," explains Sloop. "The different habitat zones are separated by elevation and tidal inundation, so we performed detailed hydraulic modeling with varying grading plans to create the proper mix of subtidal, mudflat, salt marsh cord grass, pickleweed, salt grass, salt panne, and upland areas. We also proposed a staged construction scheme to provide the existing endangered species a place of refuge during the construction."

Construction is expected to begin in September 2008 and continue through 2012.

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