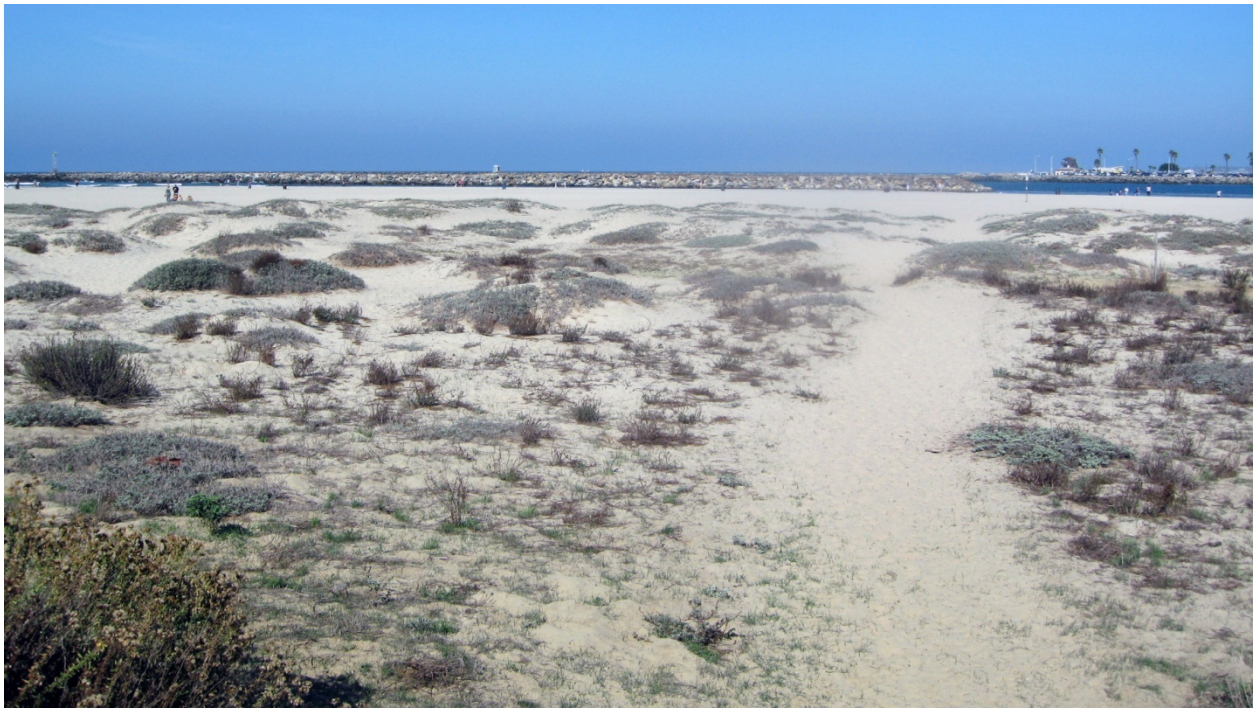
BEACH ECOLOGY COALITION: PLANT MANAGEMENT

When developing best management practices for sandy beach ecosystems it is important to consider the presence of native and invasive plant species. Native plants provide numerous benefits for our beaches while invasive plants pose many threats. In fact, after habitat loss invasive species are the second-greatest threat to plants and animals worldwide.



Plants may be impacted by a variety of beach uses ranging from the average family picnicking, walkers, joggers and kite- or wind-surfers on the sand, dog off-leash areas on the beach and dunes, beach games such as soccer and volleyball, emergency and maintenance vehicles driving on the beach, major special events such as triathlons, as well as illegal activities such as off-roading and illegal beach fires.

Benefits of native plants

- Native plants tend to have deep root systems that help retain sand, increasing stability and providing natural erosion protection against waves and flooding.
- They provide a buffer that protects open space from invasive species.
- Plants in coastal beaches and dune areas must be resilient enough to withstand exposure to salt and wind along with sandy soils. Native species are able to survive these conditions naturally.
- They do not require watering, pruning, pesticides or commercial fertilizers.
- Native plants support native animals—particularly those that are sensitive to habitat loss and human impacts. Native animals are also natural predators that help keep the beach ecosystem healthy and balanced.
- They provide cover and food sources for local wildlife including endangered shorebirds and other important species.

- Native plants also provide a suitable habitat for animals such as birds and lizards that prey on insects that are often considered "pests".
- They allow for more diversity of plants, which in turn is more beneficial for native animals.

Threats of invasive plants

- Nonnative, or invasive plants disrupt the natural ecosystem balance and threaten the survival of native plants and animals. They compete with native plants for resources such as water, sunlight and nutrients.
- They displace native vegetation because their natural competitors are not present, giving them an unnatural advantage.
- They often exhibit fast growth, high seed production, and rapid maturation allowing them to spread quickly and easily without natural controls.
- Invasive plants can significantly degrade wildlife habitat. Their presence results in decreased diversity and abundance of native plants which is less suitable for native animals. In particular they impact rare, threatened and endangered species.
- Invasive plants contribute to erosion and destabilization of beach ecosystems.
- They result in increased costs to agencies for control, treatment and removal.

Some examples of native plants found in California's beach habitats (see www.Calflora.org) [PARTIAL LIST ONLY]

- Alkali Heath *(Frankenia salina)*
- Beach Evening Primrose (*Camissonia cheiranthifolia*)
- Beach Morning Glory *(Calystegia soldanella)*
- Beach Sand Verbena (*Abronia umbellata*)
- Beach Saltbush *(Atriplex leucophylla*)
- Nuttall's Lotus (*Lotus nuttallianus*)
- Silver Beach-Bur (*Ambrosia chamissonis*)
- Yellow Monkey Flower *(Mimulus guttatus)*

Some examples of invasive plants often found in beach areas (see www.Calflora.org) [PARTIAL LIST ONLY]

- Bermuda Buttercup (*Oxalis pes-caprae)*
- Black Mustard *(Brassica nigra)*
- Crown Daisy (*Chrysanthemum coronarium)*
- Crystalline Iceplant *(Mesembryanthemum crystallinum)*
- Iceplant or Sea-Fig *(Carpobrotus chilensis)*
- Jimson Weed (*Datura stramonium)*
- Jubata Grass (*Cortaderia jubata)*
- Pampas Grass *(Cortaderia selloana*)

Wetlands

Coastal wetlands are a unique and extremely important ecosystem that are often adjacent to sandy beaches in California. The importance of protecting native plants and preventing or removing invasive plants is critical in these areas. It is estimated that over 90% of wetlands in California have been destroyed. These habitats are incredibly sensitive and provide an enormous benefit to many animals, including endangered species like the Clapper Rail. Wetlands provide a sheltered habitat that is used as a breeding and nursery ground for marine life such as fish and invertebrates. They improve water quality naturally by transforming pollutants into nutrients for plants. Also, wetlands are able to absorb large quantities of water and act like a sponge, protecting surrounding areas from flooding and erosion. There are many organizations dedicated to restoring and protecting these habitats. If your beach management area includes a wetland, please confer with a local organization in your region. Here are some links to some helpful resources:

- Bolsa Chica Conservancy (http://bolsachica.org/)
- Malibu Lagoon Restoration Project (http://www.restoremalibulagoon.com/)
- Orange County Coastkeeper (http://www.coastkeeper.org/wetland-and-riparian-area-protection/)
- San Elijo Lagoon Conservancy (http://www.sanelijo.org)
- Southern California Wetlands Recovery Project (http://www.scwrp.org/)
- Tijuana River National Estuarine Research Reserve (http://trnerr.org/)

Summary

Beach maintenance efforts need to protect native plants, avoid disturbance whenever feasible, and promote recovery of native species. Conversely, management plans should include prevention, early detection, control and removal of invasive plants. Species of each vary per region, so it is important to refer to local resources for lists of native and invasive plants appropriate for your management area. Here are some publications with more information:

- "America's Least Wanted" (NatureServe.org)
- California Native Plant Society (http://www.cnps.org)
- "Don't Plant a Pest!" brochures (http://www.cal-ipc.org)
- Plant Right (http://www.plantright.org/)

Glossary of terms

Ecosystem: A biological community of interacting organisms and their physical environment.

Invasive Plants: Plants that occur outside their natural range. Also referred to as non-native, alien species, weeds, exotic, introduced or non-indigenous. Their natural range is elsewhere and have been accidentally or purposely moved to a new location.

Habitat: The natural environment in which a plant or animal normally grows.

Native Plants: Plants that occur naturally in a specific region, area, habitat or ecosystem without direct or indirect human intervention. Also referred to as indigenous, aboriginal, and endemic.

Wetland: A low-lying area of land that is saturated with moisture, especially when regarded as the natural habitat of wildlife.