

Salt Marsh Community



Report:

- You must write a report on the salt marsh trip.
- The first part of your report should be similar to the Sunol Field Report. See p. 53 in your supplement. Again I am looking for your original observations in addition to documentation of what we see as a group.
- You may wish to separate the report into two parts.

Report (continued)

- The subject of the second part of the report is the results of a transect.
- How to write this report is described on p. 70.
- How to do the lab is on p. 71.
- Considerable information on salt marshes begins on p. 80 in the supplement.

Counting pickleweed plants for the transect



What to bring:

- Bring a notepad and pencil.
- Bring warm clothes in case it is cold. You can always leave them in your car.
- Bring water, sunscreen and a hat in case it is hot. Bring a snack.
- Expect to get your feet wet and muddy. Wear old shoes or boots. Bring extra shoes.

Directions to Hayward Shoreline

- Take 580 west. Continue on 238. Go south on 880. Go west on 92.
- Get off the freeway at the Clawiter exit. Go straight at the stop sign and then immediately left onto Breakwater Ave. You should be parallel to the freeway.
- You will see the sign on the next slide on your right, at the end of the road.
- Meet at the front of the building at 9:00 am



HAYWARD SHORELINE INTERPRETIVE CENTER

Hayward Area Recreation and Park District





Salt marshes.

- Very productive communities.
 - High rate of photosynthesis.
- Dead organic material from the marsh = detritus, is food for marsh organisms as well as for mudflat and bay organisms.
- Marsh = wetland without trees.
- Found along the coast in areas protected from waves--San Francisco Bay, Morro Bay, Tomales Bay.

Salt marshes (cont.)

- Soil is rich in decaying organic material but low in oxygen.

Salt marsh plants.

- Flexible--bend with water and wind.
- Well anchored with roots or rhizomes (underground stems).
- Must be able to live in waterlogged soil.
- Plants near the water are inundated two times a day.
- Soil is salty.
- Live in full sun.
- Halophytes = plants that live in saline soil.

Salt marsh plants (cont.)

- Perennial herbs with fleshy stems and small leaves.
 - Why the drought adaptations (fleshy stems and small leaves)?
- Reproduce asexually.
- Low diversity of species.
- Zones of vegetation develop.

Zonation at the salt marsh.

- Zonation in general is caused by differences in climatic or soil conditions.
- What causes it here?
 - Frequency of tidal coverage, differences in salinity
 - How often is the soil covered by water?
 - Where is it the saltiest? Least salty?

The zones

- Mud flats colonized by algae.
- Cord grass (*Spartina*) zone.
 - Roots are inundated at high tide.
 - Because of hollow centers, air can pass from stems to roots.
 - Glands excrete excess salt--look for the crystals on the leaves.
 - In the picture which follows, cord grass looks like miniature corn plants



Cord grass



Zonation at the salt marsh.

- Pickleweed (*Salicornia virginica*) zone.
 - Used to make pickles, glass (glasswort is another name for the plant).

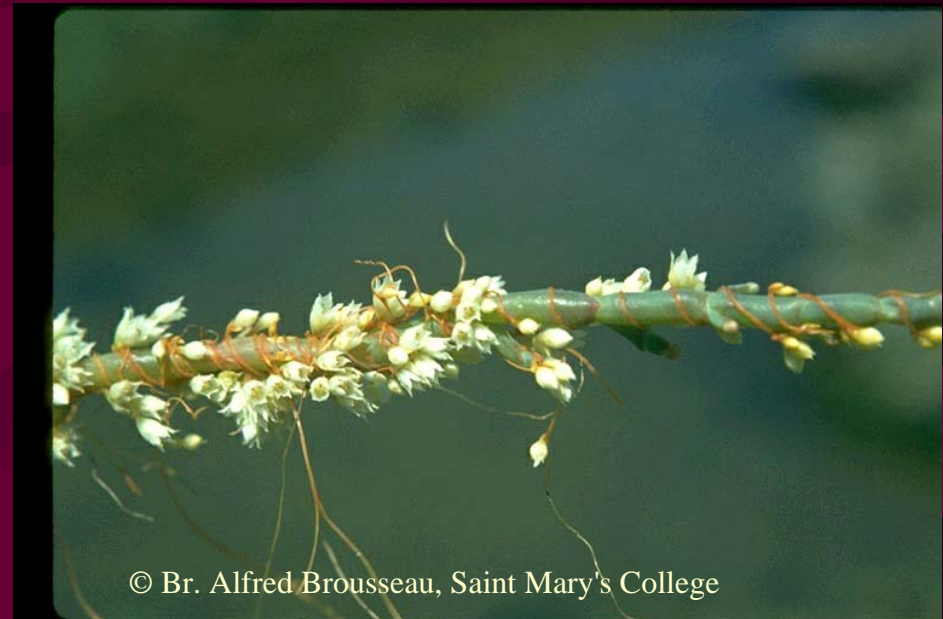


Pickleweed Zone



Pickleweed (continued)

- Succulent.
- Can tolerate high salinity but not constant inundation..
- Accumulates salt-- water moves in.
- Look for the parasitic orange dodder on the pickleweed, shown on the right.



Zonation at the salt marsh

- Salt grass (*Distichlis spicata*) zone.
 - Lower salinity.
 - Looks like Bermuda grass.
 - Secretes excess salt.



Salt Grass Zone



Salt marsh animals.

- Important feeding and nesting area for birds.
- Endangered
 - Salt marsh harvest mouse.
 - Nocturnal seed eater
 - Only found in Bay Area marshes.
 - California clapper rail
 - Sounds like a person clapping.
 - Responsible for “thin as a rail”

Freshwater and brackish water marshes

- The source of fresh water for this marsh is secondary treated waste water.

Freshwater marsh.

- Tules (below) are growing well here.

