

Wetlands Field Research Protocol

Overview

Wetlands are areas of land that are wet and inundated by water, at least sometimes. The wetlands we will be studying are mostly formed by the saltwater that the tides bring into low land areas. Wetlands provide many important functions which include wildlife housing, plant production or growth, stops for migratory birds, water treatments, air purification, erosion prevention, and flood control. These functions within the wetland help many species survive and avoid extinction. Wetland ecology helps to understand the natural world well enough to predict changes in the wetland. By knowing how wetlands will respond to future situation such as development, pollutants, or climate change we can protect them and therefore, all their functions.

No previous studies on wetlands in BLA had ever been conducted before Ocean Discovery began in 2004. Since 2004 monitoring efforts have taken place in five wetlands (El Rincon, Coronado, Punta Arena, La Gringa, and Las Animas).

During this field research students will collect data to see if there is a relationship between types of flora and fauna in the wetlands. They will take data on types and amounts of flora and fauna along a transect which moves from the uplands (drier) to the lowlands/aquatic areas (wetter) to see if the types of fauna change as the types of flora change.

Research Protocol

*Mentors will be in charge of collecting data with a small group of students. Data collection methods will be reviewed by the Team Lead prior to releasing groups to collect data.

** Expect difficulties in students understanding % coverage. Ask questions to help students come to an understanding of this concept.

Hypotheses:

- **If** the changes in soil between the drier uplands and lower wetlands impacts the types of plants that can grow, **then** we should see a change in the types and amounts of plants as we survey from uplands to lowlands.
- **If** the changes in soil between the drier uplands and lower wetlands impacts the types of animal that can live there, **then** we should see a change in the types and amounts of animals as we survey from uplands to lowlands.

Data Collection

- Each Field Research Group will be assigned a transect.
 - o Each Field Research Group will divide into three teams w/ one staff member or mentor with each team.
- Start in the uplands and lay a 100m transect along your general transect line.
 - o Place one quadrat at the below locations along your 100m transect:
 - 33m
 - 66m
 - 99m
 - o For each quadrat take the below plant measurements:
 - % cover *Batis maritima*
 - % cover *Distichlis spicata*

- % cover *Sarcocornia pacifica*
- % open space
- For each quadrat take the below epifauna measurements, be sure to move the plants aside gently to see the ground:
 - # of Horn snails (*Cerithidea mazatlanica*)
 - # of Fiddler Crabs + holes (*Uca crenulate*)
 - # of other crabs
 - # of other snails
- Pick up transect and lay it out for another 100m towards the waterline and repeat until the entire transect has been surveyed.

Potential questions to ask students throughout the data collection process:

- What observations/questions do you have?
- Why do you think we are doing more than one transect?
- Do you think we are in the uplands, lowlands? Why?
- Are you noticing any changes in the types of plants as we survey? animals?
- Do you feel like you are doing science right now? Why or why not?