

INTRODUCTION TO MALIBU LAGOON

- Malibu Lagoon History:
 - 1805 – land grant made to Jose Bartolome Tapia who grazed his cattle on the land. 1848 – rancho Malibu 14,000 acres, 1892 Rindge family purchased the 13,330 acre ranch (\$10 per acre, 35 yrs earlier it sold for 0.10 per acre)
 - Lagoon size present day – approx. 20 acres.
 - 1940-1960 – used as a dump site for fill material by CalTrans and others (PCH improvements and rerouted)
 - By the late 1970's the flood plain and most of the lagoon had been filled. – 2 little league baseball fields occupied some of the land.
 - Early 1980's- the lagoon was enlarged to serve as a bird sanctuary and an artificial marshland. – Malibu lagoon state park – to control pollution of the lagoon, the park administrator ordered the lagoon flushed into first point (as far from Surfrider Beach as possible)
 - 1983 – lagoon restored – the little league fields were removed and three channels were dug at right angles to the creek
 - 2006 – plan to further restore the lagoon
 - 2008/9 – restored parking area – removed paving and put in pervious substrate and native plants
 - 2011 – plans to be further restored and enhanced

- Malibu Creek Watershed
 - Drains approx. 110 miles from southern Simi Hills, westernmost San Fernando Valley
 - Malibu creek was boundary between Chumash and Gabrielino tribes
 - *U-mali-wu* – “it makes a loud noise there.” – Spanish recorded it as Malibu and is spelled this way on the Topanga Malibu Sequit land grant on July 12, 1805

- Types of estuaries – classified by geomorphology
 - Malibu Lagoon is a bar-built estuary
 - Bar-built estuaries – sand bar builds in front of river mouth (also Carpinteria SM)
 - Other types of estuaries include Delta (Mississippi River delta), Coastal Plain (Narragansett Bay, Chesapeake Bay), Tectonic (San Francisco Bay), Fjords (Glacier Bay Alaska)

- Estuaries in California
 - 38% wetlands lost in US
 - 60-90% of all wetlands in California are lost (impacted or completely destroyed)

- Estuaries, wetlands and lagoons
 - Lagoons are part of an estuary and estuaries are part of a wetland.
 - Estuarine habitats inc. salt marshes, mangrove forests, tidal creeks, subtidal channels and basins, reefs, rocky intertidal shores, mud flats, barrier beaches
 - Lagoons are brackish – meaning they have freshwater and saltwater mixing. Saltwater is more dense than freshwater and this sinks. Tidal influx and freshwater flow helps with mixing.
 - Lagoons in So Cal are historically seasonal – they are open to the ocean in the wet winters and closed during the dry summers – many are now artificially opened for part of the year due to excess drainage from the watershed (runoff or water treatment plants).

RCD Educator Training Guide – Introduction to Malibu Lagoon

- Importance of estuaries – productivity, nursery areas, filtration, spawning sites, migration routes, resting and feeding areas
- Threats to estuaries – infilling (“land reclamation”), dredging, eutrophication and pollution, loss of river flow (dams), unnatural freshwater input, invasive species

Teaching tips

- Ask lots of questions, make sure the students are engaged
- Use props, anecdotes when possible
- Relate material to something they might know about (spongebob, nemo!)
- Keep your talking to a minimum and have the students teach one another when possible
- Have the students do hands-on activities as much as possible

Recommended Reading and Useful Websites:

- Stream Biology and Ecology – <http://chamisa.freeshell.org/>
- Malibu Lagoon History –
 - <http://www.parks.ca.gov/pages/980/files/000%20appendix%20a%20-%20malibu%20lagoon%20restoration%20and%20enhancement%20plan.pdf>
 - http://www.malibucomplete.com/mc_history_dev_1970s-91_lagoon.php
 - http://sites.healthebay.org/assets/pdffdocs/mlhep/Malibu_Lagoon_Restoration_Technical_Info.pdf
 - http://www.malibucomplete.com/mc_history_spanish.php
 - <http://www.santamonicabay.org/smbay/ProblemsSolutions/HabitatsLivingResources/WetlandsandRiparianCorridors/tabid/77/Default.aspx>