



Exploring Sanctuary Landscapes



NATIONAL MARINE
SANCTUARIES

8.5" x 11" High-Resolution Photos
Suitable for Printing

Let's Go to the Coast!

National Marine Sanctuary Sites to "Visit"



Olympic Coast National Marine Sanctuary Washington



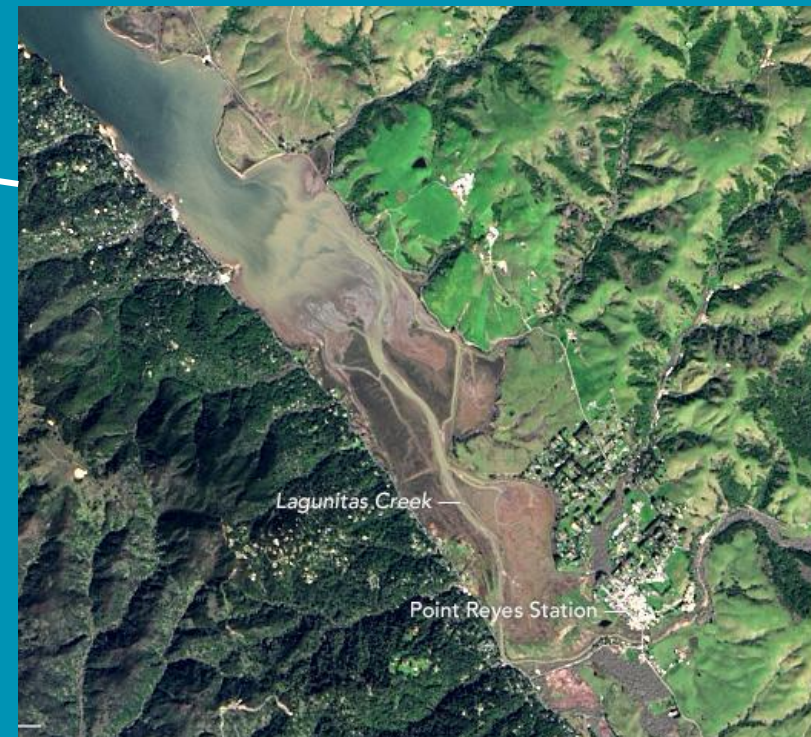
Point Reyes National Seashore, California (Near Greater Farallones National Marine Sanctuary)



Aerial View of Point Reyes National Seashore & Tomales Bay, California



Tomales Bay lies above the San Andreas Fault, which divides the Pacific Plate from the North American Plate. (Site of major earthquakes, including 1906)



Florida Keys National Marine Sanctuary



Mallows Bay National Marine Sanctuary Maryland



1. Where are you and how did this coastal landscape form?



This peninsula has long baffled geologists. Why should the rocks of this craggy coast match rocks in the Tehachapi Mountains more than 310 miles (500 km) to the south?

The exposed headlands survived millions of years of erosion. Weaker rocks were eroded away.

The coast is always eroding due to constant wave action, but the rocks can also move vertically here. Uplift is a phenomenon where the Earth's crust is pushed upward due to tectonic activity. We can study the cliffs here to tell us how fast rocks are being uplifted compared to sea level.

2. Where are you and how did this coastal landscape form?



These stacks (also called sea stacks) were formed by strong wave action. Softer materials erode, leaving harder materials behind.

The sand was deposited by rivers and longshore currents (that move parallel to the coast).

Powerful winter wave action removes sediment from shorelines. Gentle summer wave action re-builds beaches.

3. Where are you and how did this coastal landscape form?



Sands here are from broken down calcium carbonate skeletons of coral and other organisms. Wave action from storms including hurricanes redistributes these sediments locally. But waves are normally gentle here.

You can also explore mangrove forests, which protect the coast and provide wildlife habitat, in this national marine sanctuary.



4. Where are you and how did this coastal landscape form?



The tidal river here is constantly depositing sediment. Submerged shipwreck hulls act as “flowerpots” that trap sediment, which has allowed the formation of vegetation “islands.”

Beneath the surface, these man-made “reefs” stabilize sediment, allowing for the establishment of underwater grasses. These plants provide important habitat for fish, invertebrates, birds and aquatic mammals.