ABALONE COVE ECOLOGICAL RESERVE
TALKING POINTS

- Abalone Cove Ecological Reserve spans a total of 64 acres.

- Central to this location is Palos Verde's diverse **Coastal Sage Scrub (CSS) habitat followed by the State Marine Conservation Area (SMCA)** both of these areas contain important natural and marine resources.

- Along with Sacred Cove and Abalone Cove within this Ecological Reserve are the bluffs, tidepools, Inspiration Point and Portuguese Point.

- Highlights to Sacred Cove are the rare plants, black sand, and the sea caves.

A BIT OF HISTORY ON ABALONE

https://caseagrant.ucsd.edu/news/abalone-the-story-of-a-treasured-mollusk-on-the-california-coast

Abalone Cove was named for the abundance of the large sea snail. This is a mollusk often consumed through the ages. A shallow ear-shaped shell that is lined with a pearl

- **Native Americans harvested abalone from the intertidal zone**. The numbers of harvesters and their small area of harvesting (restricted to picking abalone at low tide) probably had a relatively minor effect on the population of abalone. Abalone shell pieces are found in Indian middens along the coast of California, showing that this was a common food and jewelry item for hundreds of years.
- **Japanese fishermen harvested abalone in California during the 1800s and early 1900s**. Most of this was done intertidally in the late 1800s. and then by diving in the early 1900s. The supply of intertidal abalone quickly began to decline.

- Abalone Cove was so named because of the abundance of this large sea snail, an edible mollusk of with a shallow ear-shaped shell lined with mother-of-pearl and pierced with a line of respiratory holes. Abalone is rarely found in its namesake area. The lining within the shell is created from the snails mucus secretion. The shiny internal layers of the *Abalone shells* is made of nacre, (same as with pearls) *Nacre* is 95 per cent calcium carbonate – chalk. Nacre has a super strength. It's microscopic structure is stacked like bricks that made with layers of chitin in between. *Chitin is the same tough protein that makes insect exoskeletons and shrimp shells. If the outside of the shell gets damaged, the inner nacre layer stops cracks from growing bigger. The nacreous crystals slide over one another and the chitin stretches, dampening the energy of a spreading crack and halting it in its tracks.*

- Abalone are a favorite food for some marine species including sea otters, but, in general the abalone is well protected by its strong shell. For thousands of years the abalone existed with its natural marine predators.

- **Environmental changes reduced the number of abalone:** Severe El Niño's events (1980s and 1990s) were responsible for the warmup of our California ocean waters. This ignited a decreased level of nutrient levels and withering of the kelp beds. The **Giant Kelp** *Macrocystis pyrifera* (Giant brown kelp) is a main food source for the abalone, this created issues for the success of the populations of abalone. A condition known as Withering Syndrome (WS) also *Withering Foot Disease. This disease reduced the populations of abalone. Due to WS, the abalone snail becomes smaller. However, the snail's shell remains the same in size. Once the animal has become so debilitated, it can no longer secure itself to the rocks and is preyed upon. California abalone stocks were especially hit hard in the 90's. By '97 the take of Sol Cal abalone was closed to both commercial and sport divers.* It was feared that some species would become extinct.

GEOLOGY

- Palos Verdes Peninsula Abalone Cove Ecological Reserve is primarily an old marine terrace with steep eroded canyons which drain southwesterly into the Pacific Ocean. Differentially eroded shale has created stair-stepped tidepool surfaces. This unique geography, formed from millions of years of volcanic activity, plate tectonics and terracing from changing sea levels. The nine-mile wide Peninsula was once an island, now rises above the Los Angeles Basin with a highest elevation at to a maximum of 1,480 feet, with uniquely terraced configurations and steep, rocky cliffs jutting upward 50 to 300 feet from the ocean.

- The dividing boundary of the Portuguese Bend slide and the **Abalone Cove slide** runs through the Shoreline Park Reserve; the parking and picnicking area are on the **Abalone Cove block**.

- The underlying geologic material consists of marine sedimentary and basaltic rocks. Exposed Monterey shale, bentonite, (including pillow lava, a basalt formed when magma is cooled very rapidly as it is extruded into large bodies of water) give us a peek into the Reserve's geologic history.

- These physical characteristics give the Peninsula stellar views of the Pacific Ocean, Catalina Island and the Los Angeles/Long Beach Harbor the Los Angeles Basin, the Mountain Ranges of Santa Monica, San Gabriel and Santa Ana.

PLANT LIFE

- The Coastal Sage plant community is a unique part of the peninsula. The Palos Verdes Peninsula Land Conservancy handle all of the important restoration efforts which includes our native plant families.

- ** Thank you to our local Conservancy's ongoing restoration efforts, many of PV's unique *Coastal Sage Scrub* plants can be found in the Reserve. A little about the relationship with Palos Verdes Peninsula Land Conservancy (PVPLC):

- The Land Conservancy holds the easement over the whole of PVNP(Palos Verdes Nature Preserve), ABCO (Abalone Cove is within that easement). As the originating (easement) document explains, this limits uses of the land for protection for conservation value purposes.
- After 25 years of research, negotiations and revisions, in 2019, an NCCP/HCP *(Natural Communities Conservation Plan/Habitat Conservation Plan* protecting 1400 acres of open space) was finally voted on and approved. The idea behind having an NCCP/HCP is significant for the sensitive species that are within the preserve. This included our very supportive local state and federal agencies (CDFW - *California Department of Fish and Wildlife and* USFW- *U.S. Fish and Wildlife Service).* RPV and PVPLC will hold this conservation easement in perpetuity for the protection of land and wildlife.

Established plant species -

- **Lemonade berry** (*Rhus integrifolia*)
- **California bush sunflower** (*Encelia californica*)
- **California sagebrush** (*Artemisia californica*)
- **Wild cucumber** (*Marah macrocarpus*)

Sensitive plant species found at this site -

- **Aphanisma** (Aphanisma blitoides)
- **Seacliff buckwheat** (Eriogonum parvifolium)
- **Wooly seablight** (Suaeda taxifolia)
- **South coast saltscale** (Atriplex pacifica)

- **Sea dahlia** (*Leptosyne maritima)*

Coastal Sage Scrub

These types of plants are found throughout the reserve. They are known as a **Halophytes** - a salt tolerant plant that thrives in higher salt concentrations. They have adapted to the winds and soils that surround the PV landscape. They thrive due to the similarities of PH (shared genus in desert plants.

- **Bladderpod** *(Peritoma arborea)* Small shrub from So Cal - Long stamens, giving them a delicate, with clusters of golden-yellow flowers. These flowers are accompanied by lantern-like seed pods which can become almost translucent with age.
- **California Boxthorn *(Lycium californicum)*** During the summer months it can be seen with small flowering leaf systems (typically after a first rains of winter) still in dormant in appearance (dried). **Found at the edge of the bluff area.
- **Coast Saltbush/Quailbush** *(Atriplex lentiformis)*

SUCCULENTS

- **Cholla Cactus** *(Cylindropuntia prolifera)*
- **Coastal Prickly-pear** *(Opuntia littoralis)*
- **Tall Prickly-pear** *(Opuntia oricola)*

- The *spherical fruit* found on these succulent species is purplish red in appearance on the outside, whitish/juicy on the inside. It is often seen on these succulent species and can be upwards to 6 centimeters.

- Known as a *Tuna* and is often seen being consumed or taken by our local and visiting wildlife and human community members. The tuna can be made into a very delicious jelly, the paddles themselves are also a delicacy the taste has been compared to that of green beans.

INVASIVES - Most Common Non-Native Plant Species found In our area -

- **Acacia** (*Acacia cyclops*)
- **Black mustard** (*brassica nigra*)
- **Brazilian pepper** (*Schinus terebinthifolia*)
- **Peruvian pepper** (*Schinus mole*)
- **Spiny holdback** (*Tara spinosa*)
- **Various non-native grasses**

East of the parking lot area are additional sprouting invasives to be aware of -

- **Cheese weed mallow** (*Malva parviflora*)
- **Filaree** (*Erodium Cicutarium*), (Erodium spp.)