



## Hiking Program Talking Points

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### Forrestal Nature Preserve

The Forrestal Nature Preserve is managed by the Palos Verdes Peninsula Land Conservancy which also maintains the trail system, provides removal of non-native plants, and offers restoration projects.

- **History of the Preserve:** The Livingston Mining Co established a working quarry at this site in the early 1920s. Excavation of the igneous rock basalt began at the end of Forrestal Drive and continued on towards the Quarry Bowl. The basalt was used for lining railroad beds and roadways. With airline flight becoming a more popular mode of transportation in the 1950s, there was less need for railroad materials, and the quarry closed. The land was later purchased by the Diamond Brothers Development Co. to establish housing. Plans were made to level the area at Fossil Hill and fill in the Quarry Bowl. However, the feat of terracing the land for the building of homes became an engineering difficulty, and the project was halted. The land was purchased by the City of RPV in 1996 for approximately \$7 million funded by city and state propositions. The 162 acres are established open space for the public with trails designated for pedestrian, bike and equestrian use.
- **Native Coastal Sage Scrub Plant Habitat**
  - ✓ **Sagebrush:** Native Americans (NA) used it for medicinal purposes by making a tea to relieve cramps, pain at childbirth, and as eyewash. Also, it was used as an aromatic in sweat baths, and as an insecticide sprinkled on the floors of dwellings as a flea and tick repellent. The seeds were ground and used in a flour mixture to make flatbread similar to a tortilla. It is sometimes called “cowboy cologne” as the cowboys would rub it on themselves to keep the fleas and ticks off of them. The plant is the nesting site of the [California gnatcatcher](#).
  - ✓ **Sage (black and purple):** Black sage has dark green leaves, and the purple sage has grayish-green leaves. Both have purplish pom-pom like flowers. Both are very aromatic and smell like stuffing when crushed.
  - ✓ **Buckwheat:** California buckwheat has dark green slender leaves and looks like rosemary. Ashy leaf buckwheat has grayish-green colored leaves. Both have pinkish flowers above the leaves that turn brown in the fall. Many birds and insects eat the seeds. The NA used the ground seeds in a flour mixture to make flatbread.
  - ✓ **Lemonade Berry Bush:** It is a large shrub with dark green leaves and red berries that ripen with a white coating that tastes sour. The NA made a refreshing drink from the berries and also roasted the berries to grind for a coffee-like drink.
  - ✓ **Prickly Pear Cactus:** It is an edible plant and the NA ate both the paddle and the fruit. You may spot 3 varieties; beaver tail, coastal, and chaparral. It is a good habitat for the [cactus wren](#). It is known in Mexican cuisine as “nopales” and tastes like green beans. The fruit is sweet and is known as “tuna” in Spanish.
  - ✓ **Jumping Cholla:** Segments detach as if jumping at you. It has barbed spines and is also a good habitat for the [cactus wren](#).
  - ✓ **California Bush Sunflower:** The plant has bright yellow flowers and is a good bird habitat. The lack of water makes for dry branches that appear dead during the summer.
  - ✓ **Coyote Bush:** Separate male and female plants that produce fluffy white flowers. When in bloom the stalks resemble a coyote’s tail. Used by NA to make a tea for use on poison ivy.
  - ✓ **Milkvetch (Rattlepod):** It is a host plant of the Palos Verdes Blue Butterfly. The seedpods, when dry and shaken, sound similar to the rattling of a rattlesnake’s tail. It is also called loco weed due to its sometimes toxic effects on cattle.
  - ✓ **Bunch Grass:** It can live 75-100 years. In years past, hooved animals such as deer and antelopes would eat the tops of the grass and left the roots intact to regenerate growth. Later cattle

introduced in the area ate the roots and all and, therefore, destroyed most of the native grassland. The bunch grasses that we see here are remnants of what was probably a prairie out to the LA basin.

- ✓ **Snake Weed:** This is a very low growing ground cover like plant with tiny flowers that look like snake eyes.
- ✓ **Wild Flowers:** In the spring time you may spot the native Mariposa Lilly, Indian Paint Brush, Wild Hyacinth(blue dick) , and cliff aster. You will also most likely see the yellow flowers of the non-native Black Mustard and Garland Daisy plants which can often take over the preserve.

○ **Other Topics of Discussion**

- ✓ **Geology:** Forrestal is an excellent location to talk about the geological history of the peninsula since many normally buried features were exposed during the excavation of the area. On the cliff faces you will see deposits of Altamira shale and basalt. Altamira shale, aka Palos Verdes Stone, is a sedimentary rock formed from sediments that settled to the ocean floor forming sea beds between 14 and 16 million years ago. As layers of this Altamira shale were being formed, volcanic lava was being injected into these beds forming areas of the igneous rock basalt. About 1 million years ago pressures under the earth's crust caused the ancient sea beds to push up out of the ocean, forming an island that later became the Palos Verdes peninsula. As the land or sea levels shifted dramatically, peninsula beaches were submerged and exposed. Over time, new beaches were formed and old beaches became terraces. There are 13 marine terraces on the Palos Verdes Peninsula.
- ✓ **Crystal Formation:** Crystals, formed as water evaporated from cracks in the Altamira shale and basalt, are clearly visible in the area. **Dolomite** is formed by evaporation of calcium magnesium carbonate solutions. It is used in making steel and in fertilizers. **Gypsum** is formed by evaporation of calcium sulfate solutions, and is softer than dolomite (can be scratched with a fingernail). It is used in the making of plaster and fertilizers. **Quartz** has a composition of silicone dioxide and is used for jewelry, in electronics, and the making of glass. The area that we refer to as the crystal shelf is the best place to find crystal specimens. Fossil hill, at the end of Forrestal Drive, is a great place to find fossils of fish scales and the occasional shark tooth in the shale. At each location always survey the area for snakes before taking a group in.
- ✓ **Bentonite:** At some point during the formation of the Altamira shale, volcanic activity caused a thick layer of ash to settle to the ocean floor, which later solidified into a rock called bentonite. Excessive water build up in this bentonite layer caused what is known as the Portuguese bend land slide.
- ✓ **Klondike Canyon** is so named after what was believed to be gold was discovered in the 1890s. Actually the find was determined to be fool's gold or pyrite. There is an all year running stream here, but the water is contained in PVC pipe so as not to erode the canyon and penetrate the unstable bentonite layer. The canyon is a riparian habitat.
- ✓ **Animals** found in the area include snakes, lizards, fox, raccoons, opossums, cottontail rabbits, and a large variety of birds. Listen for the "mewing" calls of the endangered [gnatcatcher](#).

**Map showing Forrestal Nature Reserve/Ladera Linda and Ocean Trails Reserve at Trump National Golf Club**

