



# California State Parks Video Transcript



## ***Dive into an Underwater Park at Salt Point State Park***

I'd like to welcome you this morning to Salt Point State Park to the Gerstle Cove area, which is probably the main point where the public comes to when they come to Salt Point. Beside me here is a sign—the Salt Point Trail. We're actually going to be walking out to the point at Salt Point, and on our way out we'll be discussing what we see when we come to Salt Point, whether it be marine life, whether it be the rock structures, whether it be the natural features if you're a diver under water, or if you're into, this time of the year, the wildflowers and birding and things like that. Let's take a walk, and we'll head out to the point at Salt Point.

As we walk down the walkway towards Salt Point, we can look out and see the tidepools. Today is a fairly low tide—it was a minus 1-foot tide at about 4:00 this morning, and we're a couple hours after that, but there's still a lot of exposed shoreline. We see the mussels on top of the rocks where they're protected from the wave action. You see the eel grass, which is actually a true grass that grows in the ocean.

Then down below us here, below me, you'll see a big kind of a square rock with some interesting marks on it. Square actually doesn't occur in nature too often, but these marks are man made. These are some of the quarry stone, which as a result of the quarry operations here from about 1854 on, where they cut and quarried the sandstone and shipped it out aboard sailing vessels from here down to the San Francisco Bay area. The sandstone was used for streets and sidewalks and also the ships' ballasts. As we look at the rock, it's kind of hard to imagine rocks this size being moved across these shallow areas onboard a vessel, but they had high lines, they had chutes so they could slide the rock down onboard sailing vessels. Here to our left you'll see a rock outcropping. Imagine in 1854 a sailing vessel laying probably 20 to 30 feet outside of that in about 15 feet of water tied up with a loading chute, loading quarry rock and lumber products. When the ship was full, they would set sail, pull themselves out to a mooring anchor, slip the anchor, and head to San Francisco where it would take, on a day like today with these winds, ten to twelve hours before they got to San Francisco.

The ocean here is kind of unusual because we have a very protected area from the north winds, which we have today, and it looks almost like a mill pond. Across the way we'll see a yellow mark on the rock. That's the outer boundary of the Gerstle Cove Marine Reserve. If we were to walk down these rocks, we would see things such as large abalones, limpets, all different kinds of marine life, mussels, and, of course, the smaller fishes and different nudibranch that you might see at a low tide.

Also, looking out here in the early part of the year between February through late April, we'd look out and we might even see a whale coming to the surface, blowing. A little later on, maybe in late April, we'd see a mother gray whale come to the surface, a large spray, next to

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her a small spray. It would be the cow and the calf coming north. At times you look out and you see the cow and the calf laying side-by-side with the calf drinking milk, getting its nourishment. They would lay here for 20 to 40 minutes while the cow fed the calf, and then they would continue on their northbound journey from Baja to the Bering Sea. This, of course, has been going on for millions of years but now the populations of the gray whales are back to probably what they were pre-whale hunting, back in the 1850s to 1860s.

Also, we look out and I happen to see an osprey. It's hard to see now, it's very difficult, it's against the trees that have been burned by the fire at Salt Point in 1993. There's large osprey looking for fish, and it just landed in a tree inside Gerstle Cove. They are one of the two fishermen here that can take things out of the marine reserve because we, as visitors, cannot take anything. But the osprey and the harbor seals can take whatever they want. They can fly in and take their fish. Harbor seals take their fish and go about their business.

As you come to Salt Point, you'll be walking over sandstone, and this sandstone is relatively young geologically. It was formed over in the area that's now the Mojave Desert, probably 180 to 200 million years ago. It was the bottom of an ancient lake or inland sea, and, due to the movement of the land, we have sandstone that has moved basically west and north and continues to do so at a fairly rapid rate. We're moving at about maybe half-an-inch a year because we are on what is called a Pacific Plate. The Pacific Plate is moving north and kind of lifting up at a rate, and we're kind of sliding over the North American Plate. In 1906 this area moved probably about 6 to 10 feet in about 45 seconds.

But the interesting point about the sandstone that we're standing on is that if you look here, you'll see some holes that are kind of unusual. This is what is called tafoni. As you can see here, this impression in the rock is starting to form and there is actually some soft sand as a result of the wind and water action, forming kind of a cup or a hole in the rock. Then you have other areas that are larger, and they are actually forming as a result of the wind and the water. If you look up under here, you probably would find some lichen, which helps etch out the soft sand, and, of course, the harder sandstone is left undisturbed. As we look over here a bit, we'll see a dark piece of rock—a couple pieces there with tafoni, and one looks almost like a mushroom. You can see the softer sandstone coming up through the darker harder sandstone, and that's what forms these rock outcroppings where you have large rocks and nothing in between, because you have harder material, which resists the erosion effects of the water and the wind. Tafoni is interesting because it's found not only here but also back in the Midwest where you have a water that's eroding sandstone. So it's not just common to the coast of California.

A couple sea lions—they stuck their heads up just outside the wash rocks there. They're coming in towards the cove.

What we have north of Salt Point, and we come north along the coast, we have a break in the rock strata. It looks like a very nice calm area. And right in front of us is the infamous Salt Point Rip. The rip is a term for a rip current, which is the result of water building up from these waves we see coming in, and the water has to go somewhere. So what it does, it finds the deepest part and goes right back out into the ocean after being pushed up on land. If you were a diver, you would look out and say, "Gee, it's nice and calm there. There's no white water, and let's go there." Then you'd be in trouble. You can actually see the rip starting to

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form. It's where the waves don't break as the waves come to shore. The water is rushing out. It's deeper, and divers will go in there and get in trouble.

In the last 20 some years, since I've been here, we've had literally hundreds of divers get in trouble in this rip—some that didn't survive. Most are rescued, and a lot of them were scared when they came ashore. They did not want to continue diving anymore because they came within an inch of losing their life. We can see now the white water building up, and, again, there's an area where there's no wave breaking. That's the Salt Point Rip. Some days when there's large wave action, we will see a rip current going out to sea, probably an eighth-of-a-mile, several hundred yards offshore, and then the rip dissipates. Well, we can see now the waves have actually died. We have a lot of just green and white water. We still have that one area where the water is starting to go out to sea, and that's the deep water where the rip runs.

As we look out there, we also see a couple of sea lions coming southbound just through the water. They come up very rapidly, very small sea lions on the south side of the rip. For abalone divers, this is a wonderful place to dive because there's a lot of abalone. Abalone are a prized marine snail that the divers dive for, or at low tide go out and pick off the rocks. They're actually nothing more than a giant marine snail similar to what you find in your backyard, but their flesh is highly prized, and the divers come up here and in some cases risk their life to find an abalone.

Here we're looking at a beautiful example of the spring yellow beach lupine that covers the coastal terrace at Salt Point. It's a predominate spring flower, and it's absolutely beautiful. It gives a golden color for those of you walking north.

As you look north, you'll also see all of the sea stacks, which are actually outcroppings of hard sandstone that survived when this area was underwater, perhaps 100,000 years ago or more. It's hard to say because as we're slowly uplifting, these could have been underwater as recent as maybe 10,000 years ago, just before the ice ages. But these sea stacks are pretty common along the coastal terrace and provides a interesting point of view when you see these and imagine at one time these were underwater. Where we're standing now, we'd be under maybe 100 feet of water.

We have a pretty typical weather pattern here today—quite cool, winds out of the northwest, expected to reach maybe gale force later on today, heavy overcast and a bit of clearing. We might see the sun later, we might not. It's quite difficult in the summertime to have overcast for days on end or even weeks on end, but traditionally it burns off about 11 o'clock and you have a nice sunny afternoon, although a bit breezy.

As we look south, we also can see the effects of the fire from 1993, November, Thanksgiving fire where Salt Point was devastated by a fire that burned 460 acres in a very short period of time. Trees are coming back. The young pine trees are anywhere from 15 to 20 feet tall. The only trees that really survived the fire, of course, are the coastal redwoods. We will find those in a few areas where they're still growing and protected from the salt spray. The pines grow in the areas where the redwoods don't because they can take the salt spray. Redwoods need water and no salt spray. Look north and see the ridgeline coming down to the ocean, to the big sea stacks. The big point north to us here is called Moon Rock Point and farther north is Horseshoe Point. The north park boundary is Horseshoe Point. Look out and see—it looks

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almost like a surreal landscape with the lupine and these large rocks sticking up out of the coastal grasses.

Now we're at the entrance to Gerstle Cove Reserve. We've come down the launch ramp to the end of the area where you can drive, where we'll be walking down into the marine reserve itself. As we look down towards the ocean, we look at a large outcropping right underneath our visitor center. And if we were to look closely at that, we would look and see what looks like nature's concrete or conglomerate rock. This is part of the sandstone that was formed under the ancient sea off the Mojave Desert area about 200 million years ago. If we look closely, also we'll see a large steel ring set in the stone above the beach area. This was part of the loading chute operation from the 1850s through, actually, the 1930s. It was where they would tie up a sailing vessel to hold it in place while they were loading either the sandstone or the lumber products, which they cut back in the hills behind us here in Salt Point State Park.

As you go into Gerstle Cove Reserve, you'll be looking at all kinds of different marine life and remember, as we walk down in here, these things are all protected. It's okay to look, take pictures, but do not disturb. These are here for our children, grandchildren, great-grandchildren, etc., to enjoy so that they can have the same expectations of what marine life is as we have. I'll be walking down. You can follow me down into the cove, and we'll be seeing large chunks of driftwood, which are pushed up here by the major storm waves. You'll also see the effects of the storm waves on some of the ramps as we walk into the Gerstle Cove Marine Reserve. So follow me down.

As we come down here, we'll see some of the examples of the nature's concrete and manmade concrete. These small pieces here in my left hand are manmade concrete. In my right hand is the conglomerate nature's concrete. They look fairly similar. The only difference is this is formed probably 25 years ago, part of the steps that used to be here. This was formed 200 million years ago. If you look closely at it, they're really quite similar.

On the beach we find, quite often, examples of nature's fury. This is a piece of palm kelp that has been torn loose from its holdfast. Holdfasts are basically roots where it was growing out on the outer part of Gerstle Cove, and it washed into shore here on the beach at Gerstle Cove. There are actually still live mussels that the holdfast grew around and to provide a support for the palm kelp. The name palm kelp, if you look closely at it, it looks like a palm tree. This was a favorite food of the Native Americans. In fact, they still use it for various purposes. It can't be taken. It's protected by state law, but it's an interesting example of marine adaptations along the coast. Interesting still where the holdfast with the live mussels in the root structure.

Down in the tidepool area of Gerstle Cove Reserve there are literally hundreds of different types of marine animals and plants. Some of the most common ones you'll see are the starfish, an example of a couple right here beside me, the limpets, which look like little cone-shaped shells, stuck all over the rocks, and of course the anemones. It's interesting, the anemones vary in size from the small size of a half-dollar to the very large down here which are the size of my hand or bigger. There's actually one over here behind me. It's difficult to see, but it's probably about that size, a foot long, and this time of the day, because there's no water around, it's just lost a lot of its "size." When the water comes back up, it will pump up with water and increase its size. These anemones lay on the rocks and grab whatever comes by in the way of food and eat that. Now it's important, when you're walking across the rocks,

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not to step on these because these anemones are very fragile. Try to step between the rocks so you don't step on them.

The coverings of the rocks are interesting because they're again, marine algae. This looks like it's slick, and it's very slick—some marine algae growing on top of the rock, the sandstone. Then, of course, you have your different kinds of marine plants that are growing on top of the rocks also. These will vary from time of the year to what's growing here. We have here what's called sea lettuce, which was used by the Native Americans, and they still use it. It's used in various different types of cooking. The more resilient or rubbery looking marine algae last pretty much year-round. The sea lettuce is only a very short-lived marine plant.

Notice on the rocks we have a steel ring that was placed back probably around 1853 to 1854 by the people that had the lumber mill and the sandstone quarry. This was used as a tie point to tie a large rope or hawser onto the rock and then out to the sailing vessel, which laid alongside what looks like a rock wall here outside in the cove. This would hold the ship in place. There were several of these. There were two or three on each side, and the ship would be held in place so the loading chute would allow the lumber and/or sandstone to come down and on board the vessel. Then when the people were ready to move the ship, they would untie the ropes, the ropes would be pulled in, the ship would, with a windlass, pull itself out to a mooring anchor offshore, slip the mooring anchor, and then set sail and head to San Francisco. These are remnants that have survived over 150 years of wear and tear. If you look closely at this, this ring is just about ready to rust through, but because it's iron it doesn't rust as fast as your common steel today. It takes along time for it to rust through. Just the wear and tear of the movement of that ring has worn more than actual corrosion due to the salt air conditions.

Now we look—you're also looking at a different layer of sandstone. It's kind of interesting. This is your very common sandstone. It's very fine. It has a very distinct demarcation line here where your heavier sediment formed on top of your very fine sediment. This probably is a result of years and years and years of real slow sedimentation. This is very coarse rock as a result of maybe a series of years of tremendous sedimentation, heavy flows where the rock actually was moved down without being broken up into very fine sediment. This was formed and over millions of years became what we call now as conglomerate or nature's concrete. In here you'll find everything from granite to metamorphic rock, and other sedimentary rock. It's interesting to look at it and try to imagine where this rock came from and how old it is. Here is a typical example of the different strata and how the land has been slowly uplifted from a level position to where it's kicked up at about a 40-degree angle today.

Here we have water coming down through the cracks in the rock as a result of the breaks or fissures in the rock. This is water that's naturally occurring. It comes down by gravity flow, down to the lowest point, which would be the ocean. At this time of the year we still have a lot of water movement. We had a very wet spring, and so these are producing more water over a longer period of time. Normally they'd be dry at this time of the year. If you look back up behind us, you'll see more springs coming down, fresh water that comes down the hillsides and eventually ends up in the ocean.

Look above and you'll see the different types of wildflowers that are growing on this cliff edge right above the ocean at Gerstle Cove. You have lupine, of course, which you've just seen.

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There is also quite a bit of Indian paintbrush, the reddish flower. All different kinds of other coastal flowers that you'll see. This is an example of the different myriad of colors that you'll see in the springtime at Salt Point. From the reds to the purples to the yellows and, of course, the greens of your grasses. They're starting to turn now because things are starting to dry out.

The pursuit of abalone is probably the main focus for the visitation to Salt Point State Park, although it's less so as the population changes and the amount of abalone that can be taken during any year decreases. Abalone is still a very plentiful resource here at Salt Point State Park. I'm going to show you how they're detached from the rocks. You have to have an abalone iron. It can't have any sharp edges. You must have a measuring device capable of accurately measuring the species of abalone that are being taken. And of course, you have to have a fishing license, which I have, and a punch card, which I have also. If you're going to take this abalone, be careful of whenever you're out there. Make sure you keep an eye on the ocean that it's not too rough so you get washed off the rocks or get hit by a large sleeper wave.

So, to detach the abalone, you take the iron and put it against the rock and pry away and use the abalone shell and the rock as a fulcrum. We'll be reaching down for the abalone. You can see the abalone actually moving now, and you push against the rock and detach it in one quick motion. There is a red abalone, *Haliotis rufescens*, and the abalone is interesting, they have two eyes, one on either side. They've got a series of feelers, which help them find their way around, and they attach themselves to the rock by this large foot that you see here. If you were to put your hand on it, they would suck down to the point that in a bit you wouldn't be able to pull away except by forcing it. This abalone is probably anywhere from 10 to 15 years old. It's a red abalone, I can tell that by the color of the shell and the shape of the shell and the number of holes. Now as to whether it's a legal size or not, it's just basically undersized. It's about 1/16-of-an-inch undersized, so that means I have to replace it back on the rock from which detached. So I would take the abalone—this hasn't been cut at all, you see its mouth right here where it feeds on the kelp—and put it back on the rock from which detached. So I take it and place it back down on the rock, and it would attach itself. You see it moving and attaching. That abalone is going to be eating the kelp that's there. It may move from that location. When the tide comes in, it may move out into deeper water. But normally they stay on that rock for the rest of their life. They settle out, find a rock they like and stay there—move during the night to feed and come back to that same rock.

We have here a tidepool—a pretty classic tidepool. This is in an area that's above the reach of most of the water except for very high tide or major storm surf. But these animals and marine life and plants survive in a very hospitable environment. Presently the water temperature is around 50 degrees. But if this was a hot sunny day, the water could get as high as 80 to 85 degrees. And if you're out in the direct sun with no shade, it could be as hot as well over 100 degrees. So imagine going from 100 degrees to 40 degrees in just a matter of a few minutes when a wave comes over you. They have to be a very, very resilient plant and/or animal to survive in these environments.

The starfish is actually probably here to eat anything—anemones, they would eat the hermit crabs—anything they can get their stomach around. Actually their stomach comes out of the body and surrounds whatever they're going to eat. They dissolve it and discard the shell or whatever that's not edible. This is what happens when an anemone has some food that comes to it. This is dropped into the shell into the anemone. The anemone curls around it and

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stings it with its stinging cells, which are on all of those little tentacles. And, in this case, the anemone will not do anything because the shell is too tough, but it'll hold it for a while until it realizes it's not good and then open up and disgorge the shell and wait for the next bit of food to come by.

The crabs that are right next to the little purple shore crab right next to the anemone that is crawling out could be a source of food, but he's probably smart enough not to get too close to the center of the anemone. He's coming out looking for food himself. He would eat any one of the hermit crabs or anything else that he can get a hold of.

In this tidepool we have coralline algae amongst the other algae. That's the one at the tip of the iron. It looks like it's coral. It's as close to coral as we have in these cool temperate waters. It forms a hard exoskeleton that survives once it dies, it kind of bleaches white. It will survive on the shore and eventually form part of the sand along the shore. These are actually plants that photosynthesize and grow and live in these areas along the sea shore.

We hope you've enjoyed this tour of Salt Point State Park. Just as a tidepool is a world in miniature, so, too, is this park a microcosm of sorts—a rich storehouse of coastal resources and wonders, each with its own story to tell. Strange geologic features, traces of human history, highly-adapted life forms that thrive along the shore—these things are preserved and protected here for you and future generations to enjoy. Please come visit us again.

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