



# California State Parks

## Video Transcript



### ***Berry Creek Falls at Big Basin Redwoods State Park***

Welcome to Big Basin Redwoods State Park, California's oldest state park. We're about sixty miles south of San Francisco. And today we're going to be hiking out to Berry Creek Falls along the Skyline-to-the-Sea Trail. Big Basin is well known for the redwoods, but within its 18,000 acres are housed a great diversity of habitats—from chaparral to wetlands, to Monterey pine forests and sandy beaches. Today we're going to be focusing on the redwood trees. Much of Big Basin's redwood forest is old growth redwood forest, meaning that some of the trees are hundreds or even thousands of years old. As a matter of fact, Big Basin is home to the largest contiguous old growth redwood forest south of San Francisco. Well let's go ahead and get started on our tour.

Come along . . .

The redwood forest is a rain forest and has elements in common with the tropical rain forests of Central and South America. This redwood forest is at the southern end of a very large rain forest that extends from Alaska down to just south of Monterey Bay. And like the rain forests in Central and South America, there's a great diversity of life in the crowns of the trees as well as down on the ground. A great variety of fungi thrive in the winter world of the redwood forest, and they provide an important winter food source for insects, rodents, newts, slugs, and other redwood creatures—with over 1,500 different types of invertebrates, a hundred different species of mosses and lichens, and over a hundred different species of birds and animals up in the crowns, and over 3,000 different species of invertebrates and 700 different kinds of plants and animals and fungi down on the ground. Popular belief is that the density of the Central and South American rain forest is such that it is the most dense place on earth. But, in fact, the redwood forest is almost ten times more dense than the densest parts of Central and South American rain forests. Well, let's keep an eye out for some of those plants and animals as we continue our hike.

VISITOR: Oh hey look at these little guys.

GUIDE: It's real easy to be awed by the size of these great redwood trees—some of them reaching heights over 300 feet high—but the fact is there are beautiful things to see down on the ground here, such as this tiny little mushroom that's just barely over an inch high. Here's some more beautiful little fungi growing out of the ground down here—barely over an inch high—and the color of the California golden poppy.

VISITOR: Look at how lush it is.

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GUIDE: The redwood forest can really be compared to a huge sponge. The duff, which is made up of dead organic matter, and the large root systems of the redwoods really do an amazing job of soaking up all the water that's rushing through underneath us here and dripping down in beautiful little waterfalls like this. We're, as you know, heading off to Berry Creek Falls, and they are certainly going to be significantly larger than this, but they're absolutely beautiful no matter how great the water seems to be falling. Well Julie, let's continue our hike to Berry Creek Falls.

Hey look, Julie, here's some witch's butter. This stuff is great to touch.

VISITOR: Oh it's really slimy and rubbery.

GUIDE: Yeah, we actually call it a slime mold. This is bracket mold, Julie, and it often grows on vertical surfaces like this cut tree.

VISITOR: Oh and that's a lot firmer.

GUIDE: We certainly see a lot of these beautiful fungi coming out in the wintertime, but the fact is the fungus is under the ground all year round. In the wintertime we actually see the flowering part of the fungus, and that's what we're looking at here. You can really see what I meant when I said the redwood forest could be compared to a giant sponge on the bark of this redwood tree.

VISITOR: Yeah, this tree has absorbed a lot of water. Its bark is really soft and mushy. This looks really soft and mushy, too.

GUIDE: Yeah, there's many different kinds of mosses and lichens here in the redwood forest, and in the wintertime we can really appreciate just how much it absorbs the water we've been talking about. But notice, as you look around out here, you really don't see very much in the way of moss or lichen growing on the redwoods themselves.

VISITOR: Oh – what is that?

GUIDE: Oh wow!

VISITOR: So, what's it doing now?

GUIDE: Well, banana slugs love this kind of environment that we're looking at right here. They love the little crevices and the moist, mossy-covered cliffs and vertical surfaces that you see here. He's cruising around right now, probably munching on some stuff. Banana slugs are a very important part of the redwood forest ecosystem. Banana slugs are really the soil producers, so they scoot around on the ground and on these surfaces, and they eat up all this duff and all this organic matter on the ground, and they produce soil for us.

VISITOR: So you think he's eating that dead dry leaf stuff right there?

GUIDE: Exactly. They're very, very slimy, and we're going to pick him up here in a minute. But before we do, we have to be concerned about the different salts and minerals on our

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hands, so we're going to put some water on our hands and make our hands real moist so we don't hurt it. Okay, Julie, here—why don't you pick him up?

VISITOR: All right. I'd love to. I think.

GUIDE: Get your hands nice and moist. There you go. He's really slimy. He might curl up a bit here. He's not sure if you're some large bird or mammal who's thinking about eating him.

VISITOR: He did. His little eye things went back inside. But he's starting to move around on my hand.

GUIDE: He sure will. He'll adapt pretty quickly to you once he realizes you're not a critter who's going to be eating him.

VISITOR: And, so, what's this part on the front of him?

GUIDE: That's his mantle, and you can barely see it starting to open over here. That's his breathing hole—that tiny little hole will probably get about up to maybe ten times the size of what you see right now. See how it's starting to get a little bit bigger—very slowly? That's where they breathe

VISITOR: And then what's the funny little ribbed part at the bottom?

GUIDE: Well, banana slugs are mollusks and they're also gastropods. Gastropod means "stomach foot." That's his foot, and that's what he uses to move around on the ground.

VISITOR: And move around on my hand. It kind of tickles while he moves around.

GUIDE: [Laughing] It does. Look there goes his breathing hole, getting quite large now

VISITOR: I think his eye stems are starting to come out again.

GUIDE: That's right. There they go. You know he can only see light and shadows, he can't really make out colors or distinctive shapes, and that's one of the reasons, when you first picked him up, that he got into that defensive posture there.

VISITOR: He didn't know I was friendly.

GUIDE: That's right.

VISITOR: And I can feel this funny tickling right where his front is.

GUIDE: That's his mouth, moving along. He's wondering if there's any good stuff to eat on your hand there as he's scooting along.

VISITOR: Well I guess if he likes dead stuff, he's picking up the dead skin cells on my hand

GUIDE: Yummy.

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VISITOR: It feels like a little file against my finger.

GUIDE: Sort of like a kitten who's licking you with their sandpaper tongue.

VISITOR: Exactly. I'll have a nice clean spot later.

GUIDE: Oh you will.

VISITOR: Shall we put him back now?

GUIDE: Yeah, let's put him back exactly like we found him. It's always important to do that when we find things in the forest.

VISITOR: I'll sit him on top of that duff.

GUIDE: And he will continue on with his afternoon meal. You know his bright yellow color is very interesting. It actually serves as a great camouflage. At certain times of year it's almost impossible to distinguish him from the yellow leaves that fall from some of the trees here.

VISITOR: Yeah. He looks like some of those leaves. He's getting interested in his surroundings again.

GUIDE: I think he's hungry.

VISITOR: So, Jonathan, I've noticed a lot of these broad leaf trees around.

GUIDE: These are tan oak trees, Julie, and they're pretty easy to recognize by their leaf patterns. If I take one here—one of these big ones—and turn it over, turn it upside down, take a look at the back. What's it kind of look like to you?

VISITOR: Oh, I imagine a little parking lot where you'd park your car.

GUIDE: Exactly. Whenever you see these parking lot leaves like this, you know that's a tan oak tree. As a matter of fact, I have some tan oak acorns right here for us to look at.

VISITOR: They're pretty big.

GUIDE: They are. And this is the little hat that goes on top of them. This is how they grow on the tree as a matter of fact.

VISITOR: Fuzzy little hat.

GUIDE: Aren't they neat? Tan oaks were very important to the Native Americans who lived here in the Santa Cruz Mountains area. They were also a food source. They were also important to the early settlers who came in. As a matter of fact, the early settlers are the ones who gave them their name—tan oak trees—because of the tannic acid that they were able to leach out of the bark of these trees. They used that tannic acid to tan leather. Down in Santa

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Cruz and Redwood City there were a couple of very large tanning outlets. They are also important to the animals that live here in the redwood forest. As a matter of fact we might hear today while we're hiking around some of the acorn woodpeckers who get their name from the fact that they store hundreds and sometimes thousands of these inside of little holes in the barks of the different kinds of trees we have here in the redwood forest.

VISITOR: Neat. I'll look for that.

GUIDE: You see this guy?

VISITOR: Oh hey!

GUIDE: He's a pretty one. Yeah, that's incredible—look at him go.

GUIDE: It's so important that we really leave the things from the redwood forest in the redwood forest when we're visiting. People have a tendency to want to come through and take cones or pick mushrooms, but the fact is when you take something out of the forest, you never know whose meal that is that you are taking away.

GUIDE: Well here we are at Waddell Creek, and Waddell Creek is really the central artery of water that runs through the watershed here in Big Basin. As a matter of fact, all the water that starts out at all the peaks on the tops of all our hills around here eventually makes its way here to Waddell Creek. Waddell Creek flows all the way down to the Pacific Ocean. As a matter of fact it, connects up with Berry Creek Falls just a little ways down the trail here, and that's where we're headed.

VISITOR: All right. Let's go.

GUIDE: Great! Here's one of the ground cover plants in Big Basin. This is a fetid adder's tongue. It's just a beautiful flower, however there is something unique about it. It's a plant that requires flies in order to pollinate—and in order to attract flies, it emits a rather obnoxious scent—something like rotting flesh—which we don't find too pleasant, but of course it's a wonderful perfume to the flies.

GUIDE: As we're hiking through the redwood forest here in Big Basin, we often see these redwood trees growing very close together. Sometimes they grow in perfect circles. We call those "fairy rings," and what we're seeing is an interesting reproductive adaptation of redwood trees. You see, as the roots grow down into the ground, and they only go about six feet deep, they go out for about 150 feet in every direction. The redwood roots actually tie together and intermingle with each other and help hold each other up here in the redwood forest. As those roots grow out, something fascinating happens called crown root sprouting. Sprouts actually come out of the roots, out of the ground, and actually grow into these trees that we see here. So we see this very large tree right here, another tree that's significantly smaller, and a very small tree relative to the size of the other two. This is an example of crown root sprouting that we're seeing.

Now, another reproductive method for redwood trees, like any other tree or plant for that matter, is seeds, and if we look right inside here, we can see what a redwood cone looks like.

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Redwoods are conifers, or cone producing trees, and of course we're all familiar with pinecones. But, as you can see, these cones are very small relative to the size of the tree. Some cones of other types of trees get up to 27 pounds in weight, quite large even though the trees themselves that those cones come from aren't very big. Now inside each of these cones is anywhere from about 60 to just over 100 very small seeds, and I have a few of those for us to look at here. We can see just how small a redwood seed is, and it's just absolutely amazing to think that from something so small grows the tallest living plant that we have here in Big Basin Redwoods State Park.

Here we are at Berry Creek Falls, and Berry Creek Falls are really the bottom falls in a series of falls on Berry Creek. Just above these waterfalls we have Cascade Falls and above that Golden and Silver Falls—and we'll take a look at each of those. Now you remember that we said earlier that Big Basin is a rain forest, and a rain forest is all about water. As a matter of fact we get over 60 inches of rain every year here in Big Basin. As that water flows down the hills and into the creeks, like Waddell Creek that we saw earlier, along the way it's absorbed by the complex root systems of the redwood trees. Now, certainly the trees get a significant portion of their water from the absorption of this groundwater into the root system, but, as you'll find out, there's other ways that these trees get their water as well. But we're going to go ahead and take a look at the rest of the falls now. So let's continue on our hike.

Well here we are a little closer to Berry Creek Falls. And as we look around at the lush ferns and mosses surrounding the falls, we can really see just how dependent upon the water here in the rain forest these plants are. Well Julie, looks like you've found another friend. That's the California newt. As you can tell from their very moist skin there, they're absolutely dependent upon the water here in Big Basin. These little guys will actually return to the very same spot they were born each and every year to find a mate and lay eggs and start the whole reproductive process all over again. Let's be sure to put him down where we found him so that he can go on his pleasant, merry little way. There he goes.

VISITOR: Look how well he blends in.

GUIDE: As we've mentioned, we get about 60 inches of water every year here at Big Basin, but that only comes in the wintertime. Now, we have a couple of interesting things to talk about here with regards to the leaves on redwood trees. First of all, take a look at these leaves. These leaves are actually shaped so that the water runs off from the rain, right off the leaves and into the ground and is absorbed by the root system. That's an important part of where these trees get their water during the wintertime. But during the summertime we don't get very much rain at all here in Big Basin, and up at the tops of these trees where the leaves are exposed it can get quite warm. So we have a different kind of leaf that's found at the top of the trees, and these leaves—these needles which are modified leaves—are actually curled up a bit so that they're not flat and exposed to the sun where they'll actually cook up there in the warm summer temperatures. But these needles are fascinating in their own right. They help with water as well in the tree. They're actually capable of absorbing moisture out of the fog that we get here along the California coast. As a matter of fact the fog is a critical component for these redwood trees. If it weren't for the fog they simply wouldn't survive here. They wouldn't get enough moisture. About 40% of the water they need comes from the fog that we get here along the coast here in the summertime.

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VISITOR: What's going on here, Jonathan?

GUIDE: These are lichen, Julie.

VISITOR: They're so different. This one's really stringy and rubbery, and this one's so leafy and flat.

GUIDE: There's a few different kinds of lichen. We've talked a lot about the fact that the plants and animals of the redwood forest here really depend on the rain and the fog and just moisture in general, and these are no exception. These are dormant when there's no moisture, and as soon as we start getting rain and a lot of fog, you really start to see these growing all over the place here in the forest. That's a good thing because lichen is an indicator species, and when we see lots of lichen, we know we have real good air quality here in the rain forest.

VISITOR: I've seen it all over, so this must be a healthy forest.

GUIDE: It is. I'll tell you what, why don't we go back to park headquarters and let's talk a little bit about the future of the park? We've had a great time out here today, but let's find out what's in store for things going forward here at Big Basin.

Well, here we are back at park headquarters. We've had a great time walking out to Berry Creek Falls today. We went out to the falls on the Skyline-to-the-Sea-Trail. We went up Berry Creek Trail and came back on the Sunset Trail. We've done about eleven miles today. We've had a great time, and I think we've learned a lot. Julie what do you think?

VISITOR: That was amazing, and I had never thought about this as an actual rain forest here in North America. It was neat to think about how all the plants and the animals, as well as the redwoods, depend on the precipitation and the groundwater and the fog for their survival here. And you know at the end you were talking about the lichen being a sign that this is a healthy forest—that made me feel really good.

GUIDE: You know, we're really lucky that over 100 years ago a group of local people got together and decided to do something to set this land aside so that it was available to the plants and the animals—and the people. Understanding the intricate relationships between the plants and animals and weather systems is absolutely critical to ensuring that it stays around for another 100 years. We've managed to see the park grow from 3,800 acres to nearly 18,000 acres, and we just hope to see that continue to grow.

VISITOR: It was fun to cover a little piece of it today.

GUIDE: It really was. Well, thanks very much. We hope you had a great time, and we hope you'll come back and visit Big Basin again.

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