



Spotter Cards - A Tool for Docents

Rev. 8.15.22



“**Spotter Cards**” are 5”x7” images that show things that visitors are likely to see along the trails in Armstrong Woods or Pomo Canyon. Cards for Pomo Canyon follow the Armstrong Redwoods cards. They can be laminated and kept together with book rings, or not bound.

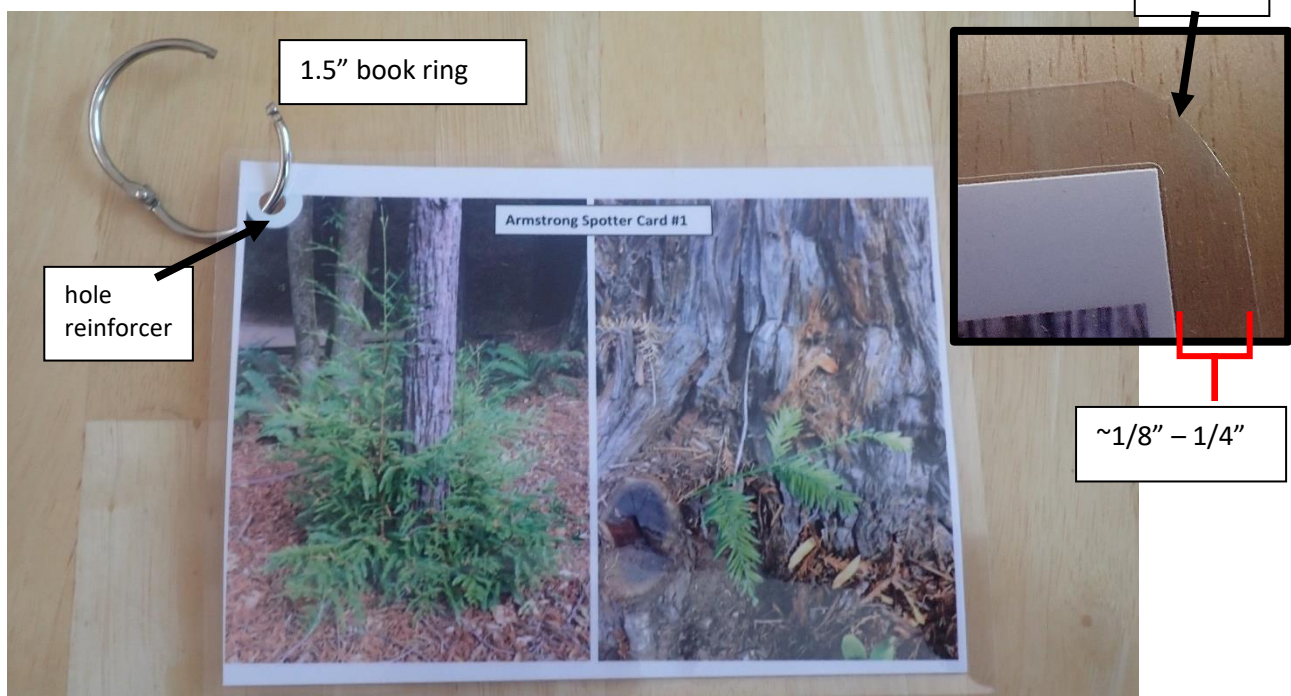
As a docent, you should select whatever cards you want to use and give them to students individually or to “spotting teams” of 2-3 students. The idea is that the students will be looking for the pictured things and will point them out when spotted. This can help with group management.

The cards are intended primarily for use with younger children. Older students can read the information on the back of the cards to others.

Each page has one or more photographs on the top half and some information and possibly more photographs on the lower half. This is so that you can make them into 5” x 7” laminated cards.

Laminating and Binding Cards:

1. Print the cards; cut to size (5”x7”).
2. Glue the information to the back of the photo.
3. Punch a hole in the upper left corner. Leave at least 1/4” of paper around the hole.
4. Add a hole reinforcer. (Clear reinforcers look better but are harder to attach than white.)
5. Lamine.
6. Cut so that there is a 1/8” – 1/4” margin of laminating material all around the paper.
7. Round the corners.
8. Punch again and use a book ring to keep them together in order.





Look around for redwood trees sprouting at the base of other redwoods. Coast Redwoods can readily sprout from the root crown (root collar), or from a cut tree. If the roots aren't killed, this helps redwoods regrow after a fire.

Whether from a root crown or a stump, this is usually called "stump sprouting." Trees that sprout from the above ground stump don't usually survive very long, while those that grow from the root crown/root collar may live for hundreds or thousands of years.

Redwoods are one of the few gymnosperms (cone bearing plants) that do this readily, but many angiosperms (flowering plants) such as bay, tanoak, and fruit trees do.

photos: by Mike Roa





Armstrong Woods Spotter Card #2



Bay flowers in February



Bay seeds in July

Armstrong Spotter Card #2

Bay

4+

Look for green or yellow leaves on the ground. Pick one up and smell it. Does it remind you of any spices that you might have at home?

This tree has many names, including **Bay, California Bay, Laurel, Bay-Laurel, Oregon Myrtle, and Pepperwood.**

It is not the same species as the plant whose leaves we use in spaghetti sauce and soups, but it is closely related.

Fleas and some other insects don't like the smell of the leaves, so Native Americans used them as an insect repellent in their homes.

They would also wipe their bodies with crushed leaves to disguise their scent when hunting. And, if properly prepared, the seeds are edible.

The wood is used to make beautiful bowls.

photos: by Mike Roa

Armstrong Spotter Card #3



Armstrong Spotter Card #3

Redwood Sorrel

ALL

The plants that look like clover are called **Redwood Sorrel**.

When it is cool and shady, the leaves stick straight out, but when the plants are in the warm sunlight, the leaves often droop down.

Plants have openings on the bottom of their leaves. Air, including carbon dioxide, which is needed for photosynthesis, enters through those holes, and water vapor and oxygen are given off through the holes.

How would drooping leaves reduce water loss from the leaves?

(Less water evaporates from the underside of the leaves.)

photos:: by Mike Roa

Armstrong Spotter Card #4



Fiddlehead in March



FCC



Sori in June

Armstrong Spotter Card #4

Sword Fern

ALL

The big structure that looks like a big feather is called a frond.

The frond has many feather-like leaflets called pinnae* projecting out from each side

This is called a Sword Fern because at the base of each pinna is a projection that looks sort of like the hilt of a sword.

Sori (singular sorus) can sometimes be found on the back of the pinnae. They develop at different times in different kinds of ferns. These dark brown structures contain sporangia (singular: sporangium), which produce spores, which are sort of like seeds.

As the frond grows from the ground, the tip forms a “fiddlehead.”

*The word root “pinna” (plural: pinnae) means feather or feather-like.

Photo credits: Sword: from Flickr, photo by Mchandler1991

All others by Mike Roa

Armstrong Spotter Card #5: Bracken ALL

The big structure that looks like a big feather is called a frond.

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These dark brown structures contain sporangia (singular: sporangium), which produce spores, which are sort of like seeds.

As the frond grows from the ground, the tip forms a "fiddlehead." Look for these in the spring.

*The word root "pinna" (plural: pinnae) means feather or feather-like.

photos: by Mike Roa

Armstrong Spotter Card #5



Armstrong Spotter Card #6 Ca. Hazelnut 4+

*Do not pick the leaf, but gently feel it.
How would you describe it?
(Shake hands with Hazel.)*

*Have you ever had Nutella? Nutella is
like peanut butter, but it is made from
the hazelnut.*

This is the **California Hazelnut**.

It is a different species from the one used for Nutella, but it is similar. California Hazelnuts are smaller than the ones used in Nutella. Hazelnuts are also called filberts.

Native Americans prized the thin, pliable young hazelnut stems that sprouted after a fire because they were very useful for making baskets.

(The photo of the basket was taken in the Jesse Peter Multicultural Museum at Santa Rosa Junior College. It shows a cradle basket made partly from hazel stems. The basket was made by Elsie Allen, after whom a local high school was named.)

credits: green seed by Karen Gebbia others by Mike Roa



Seed in early May



Seeds in July

Armstrong Spotter Card #7

Poison Oak vines

4+

The vine growing on the tree is **poison oak**.
Poison oak can grow as a shrub or vine.

What do you know about poison oak?

Notice that the leaves are in groups of three.
There is a saying:

"Leaves of three, leave it be."

Do you see any other plants with leaves in threes?

photos: by Mike Roa



Armstrong Spotter Card #7

Armstrong Spotter Card #8.

Tree with ramp ALL

A good place to hug a tree!

The ramp helps protect some of the tree roots from damage from tree lovers!

Photo: by Mike Roa



Armstrong Spotter Card #8

Armstrong Spotter Card #9



Armstrong Spotter Card #9. Graffiti Log

ALL

What have people done to this log?

Do people come to Armstrong Redwoods, or any other park, to see other peoples' names carved into trees, fences, tables, stumps, logs, or other park features?

Why do you think people carve their initials?

Will you ever carve your initials into a log or table in a park?

Photo: by Mike Roa

**Armstrong Spotter Card #10.
Goose Pen / Fire Cave ALL**

When fire burns through the bark of a tree it sometimes burns some of the wood in the tree, creating a hollow cave called a "goose pen" or "fire cave."

Why do you think it might be called a goose pen?

Notice how far up the tree burned, and how much scar tissue has grown to help it heal.

What might live in a goose pen?

(spiders, bats)

Photo: by Greg Corby



Armstrong Spotter Card #10

Armstrong Spotter Card #11.

Icicle Tree

4+

A burl is an abnormal growth on a tree.

Some unusual long, hanging burls have grown on the "Icicle Tree."

Why is the tree called the Icicle Tree?

If you look closely, you can see that the burls were cut off by someone who thought that it was more important for him (or her) to have the wood than for you to be able to enjoy an undamaged natural burl growth.

In the winter and spring roots grow from the cut burl, but they die back in the summer and fall because they don't reach soil.

Photo : by Mike Roa

Armstrong Spotter Card #11



**A Armstrong Spotter Card #12.
Colonel Armstrong Tree ALL**

This tree is named after Cololer Armstrong.

Who was Colonel Armstrong?

***How tall is the Colonel Armstrong tree?
Really?***

***What is the diameter of the Colonel
Armstrong tree?***

Really?

***How do you think they decided on the
approximate age?***

***We recently measured the tree and the
diameter is about 14.6' at the base.***

Photo : by Greg Corby



Armstrong Spotter Card #12

Armstrong Spotter Card #13.
Parson Jones Tree at sign ALL

How tall is the Parson Jones tree?

How do you know?

Is it really that tall today?

What if it was measured 50 years ago?

Would it still be the same height?

Could it be shorter?

How might it have become shorter?

What does "diameter" mean?

What is the diameter of the Parson Jones tree?

Is that really the diameter today?

What if it was measured 50 years ago?

Notice black poison oak sap.

Native Americans used it to color the fibers in their baskets so that they could make designs.

Photo : by Greg Corby

Armstrong Spotter Card #13



GC

Armstrong Spotter Card #14



Armstrong Spotter Card #14. "skull" roots

ALL

What part of the tree is this?

What does this root system look like to you?

Tyrannosaurus rex or Triceratops skull? Wild boar skull?

Photo: by Mike Roa



Armstrong Spotter Card #15. Root system

ALL

What do you think this is?

(This stump was brought here from the Russian River.)

Photo: by Greg Corby

Armstrong Spotter Card # 16: Recovery from the Walbridge Fire

Do you see new plants sprouting from burned soil or charred tree bases?



new sprouts after the Walbridge Fire. Left to right:

tanoak
(from root crown)

sword fern **redwood sorrel**
(from rhizomes)

coast redwood
(from root crown)

Armstrong Spotter Card #16. Recovery from the Walbridge Fire

Fire is a natural part of the forest ecosystem. Many plants, including the coast redwood, are adapted to survive the fires that naturally burn through redwood forests every few years. Some plants, called “fire followers” actually need fire to enable their seeds to sprout.

Native Americans used fire to keep grassy fields from becoming forested because many of the plants and animals that they used preferred or required grassy areas rather than shady forests. In some places they burned areas every year or two.

The Walbridge Fire burned in Austin Creek State Recreation Area and some of Armstrong Woods in August and September, 2020. The photos on the other side show new plants sprouting in the Spring of 2021. In Armstrong, the Walbridge fire didn’t burn very hot, so extreme heat didn’t go far down into the soil. The root crowns of many redwood, bay, and tanoak trees survived, as did the underground stems (rhizomes) of many ferns and other plants such as redwood sorrel and Trillium.

For a variety of reasons, coast redwoods seldom Successfully sprout from seeds. The Walbridge fire burned off the layer of duff that usually keeps the seeds from successful sprouting. The photo at the right, taken along the trail near the picnic area in June, 2022, shows redwood seedlings about two years after the Walbridge fire. **Can you find seedlings along the trail now?**





Pomo Canyon Spotter Cards:



rev. 6.30.21

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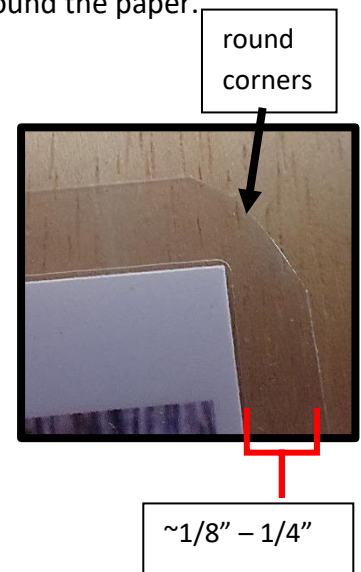
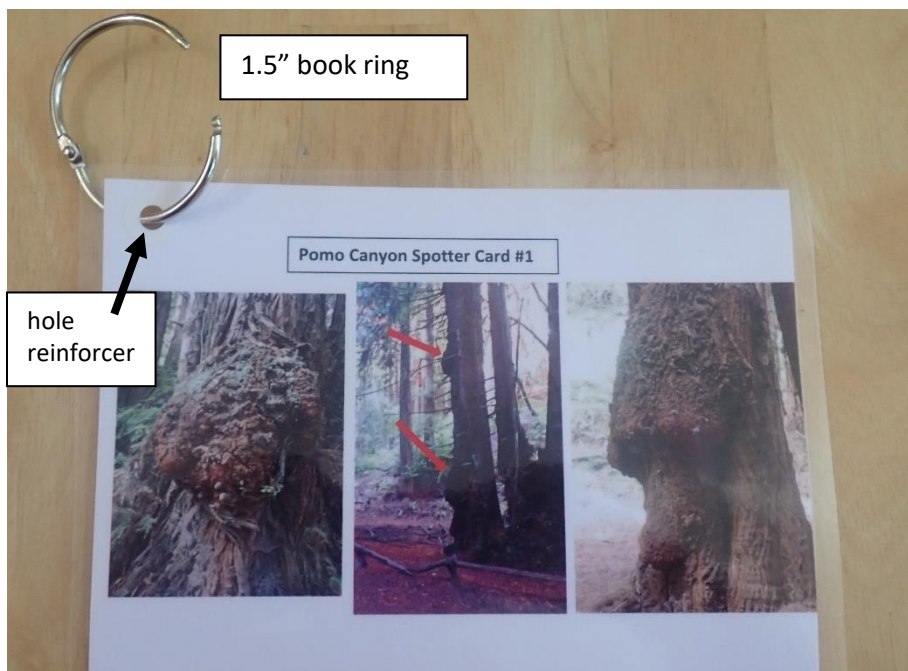
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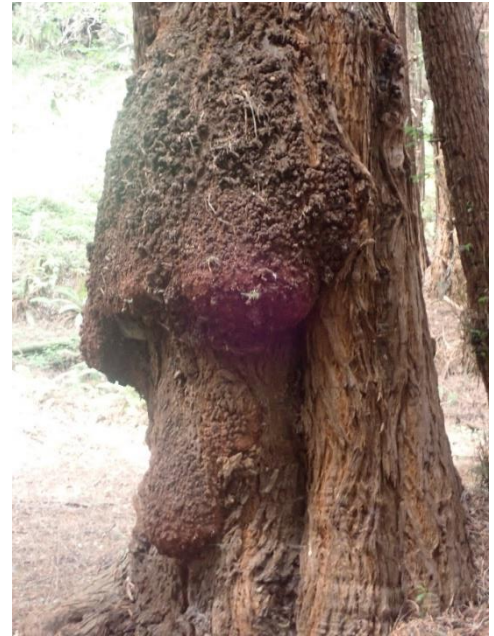
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Pomo Canyon Spotter Card #1



Pomo Canyon Spotter Card #1

Redwood Burl

4+

The bumps found on some redwood trees are called burls.
Other trees such as bay trees can also form burls.

A burl is an abnormal growth. It doesn't seem to harm the tree.

Branches sprout from burls.

Do you see any small branches sprouting from the burl?

Burls contain buds that can sprout branches.

Burl wood is quite beautiful.

Sometimes people make furniture from burl wood.

Photos: by Mike Roa

Pomo Spotter Card #2 Basal Sprouts from Redwood

4+



Look around for redwood trees sprouting at the base of other redwoods.

Like the bay trees that we saw earlier, redwoods can readily sprout from the root crown (root collar), or from a cut tree. If the roots aren't killed, this helps redwoods regrow after a fire.

Whether from a root crown or a stump, this is usually called "stump sprouting."

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photos: by Mike Roa



Pomo Spotter Card #3



Bay flowers in February



Bay seeds in July

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They would also wipe their bodies with crushed leaves to disguise their scent when hunting. And, if properly prepared, the seeds are edible.

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photos: by Mike Roa

Pomo Spotter Card #4



Pomo Spotter Card #4 Redwood Sorrel

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(Less water evaporates from the underside of the leaves.)

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FCC



Sori in June

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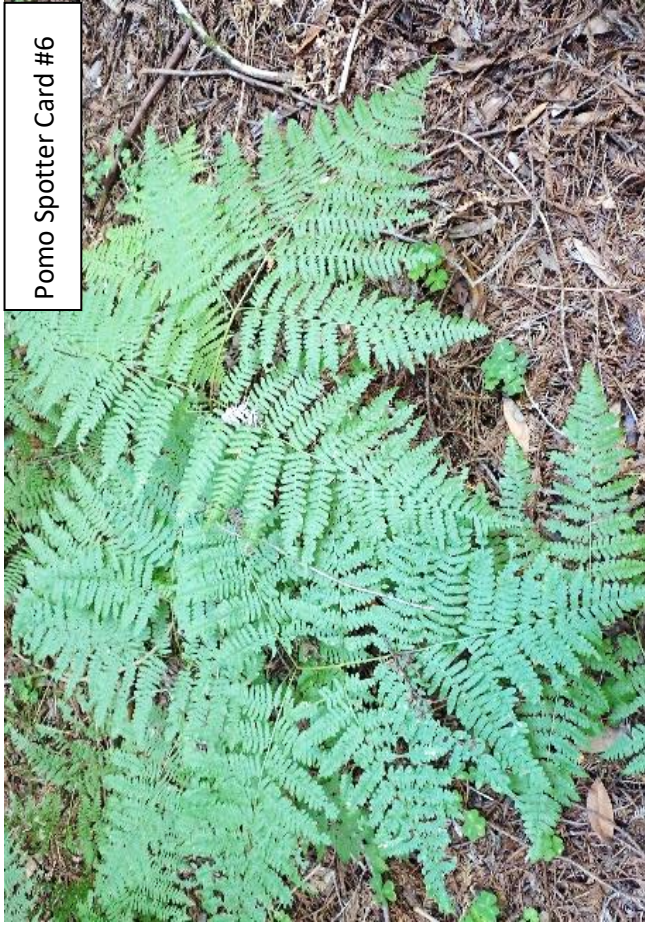
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photos: by Mike Roa

Pomo Spotter Card #6



Pomo Spotter Card #7 Ca. Hazelnut

4+

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How would you describe it?
(Shake hands with Hazel.)*

*Have you ever had Nutella? Nutella is
like peanut butter, but it is made from
the hazelnut.*

This is the **California Hazelnut**.
It is a different species from the one used
for Nutella, but it is similar. California
Hazelnuts are smaller than the ones used in
Nutella. Hazelnuts are also called filberts.

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hazelnut stems that sprouted after a fire because
they were very useful for making baskets.

(The photo of the basket was taken in the Jesse Peter
Multicultural Museum at Santa Rosa Junior College. It shows a
cradle basket made partly from hazel stems. The basket was
made by Elsie Allen, after whom a local high school was named.)

credits: green seed by Karen Gebbia others by Mike Roa

Pomo Spotter Card #7



KG

Seed in early May



Seeds in July

Pomo Spotter Card #8



These photos were taken in February of 2021. In April, someone broke the fungi off. **Have they regrown yet?**



Pomo Spotter Card #8

Bracket Fungus on a Bay Tree

ALL

These are a kind of fungus called Bracket Fungus, Shelf Fungus, or Artist's Conk.

These pictures were taken in the winter. Notice the brown spores coating the bay tree below the fungi.

Why would they be called shelf fungus?

Why would they be called Artist's Conk?

The underside of the fungus is soft and white. If it is scratched, it turns brown. Sometimes people break them from the tree or log and draw on them.

Would it be okay to break these off?

Why not? They were broken off in April 2021. Hopefully they will regrow.



Image at right from Flickr, by Joyce others by Mike Roa

Pomo Spotter Card #9



Pomo Spotter Card #9

Fragile Area Sign

ALL

Why do you think the fence and signs were put here?

These areas were heavily used for years because they are level and close to the entrance to the canyon.

Too much use caused trampling of the plants and loss of the duff layer that protects the soil. Park managers were concerned that the soil would erode into the creek and that compacted soil would harm the redwood trees' roots.

photos: by Mike Roa

Pomo Spotter Card #10



Equisetum emerging in the Spring

Pomo Spotter Card #10

Horsetail

ALL

These plants are called “horsetail” plants. ***Why do you think they are called that?***

The scientific name is *Equisetum*.

The scientific name for the horse is *Equus caballus*, and a zebra is *Equus quagga*. An equestrian is someone who rides horses.

Some species, called scouring rush (photo at right), don’t have the leaves sticking out.

WITHOUT PICKING THEM, gently feel the plants. Do they feel dry and rough?

They have a lot of silica in their stems, which makes them rough, so early settlers used them to scour their pots and pans.

photos: by Mike Roa



Pomo Spotter Card #11



Pomo Spotter Card #11

Five-Finger Fern

4+

This fern is called the Five-Finger Fern.

How many “fingers” does it have?

Do all of them have the same number of “fingers?”

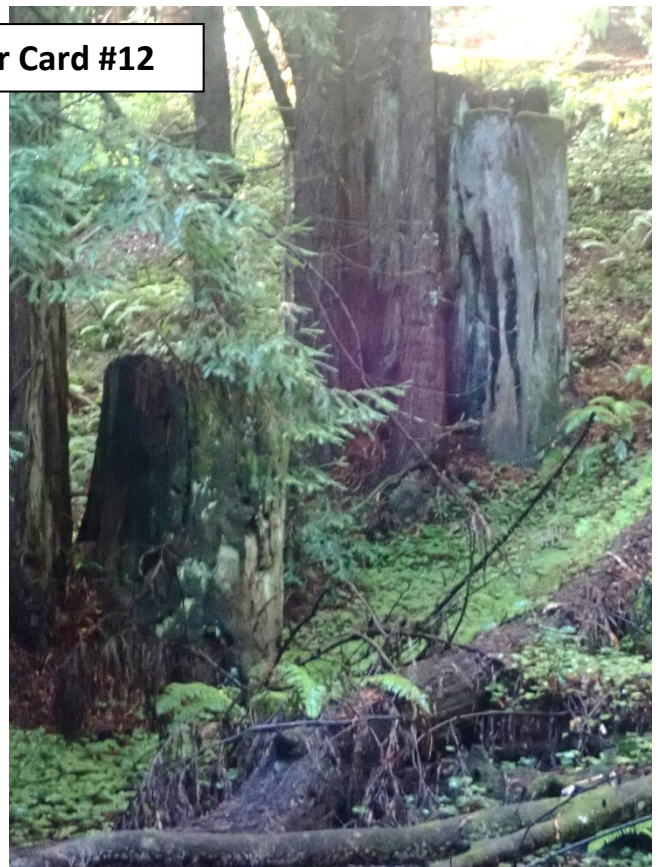
Native Americans used the dark stipe (the stem) for making designs in their baskets.

photos: by Mike Roa

Can you spot any tall stumps of trees that were cut far above ground level?



Pomo Spotter Card #12



Pomo Spotter Card #12

Tall Stumps

ALL

Many of the trees in Pomo Canyon were cut far above the ground. Some were cut over 15 feet above the ground!

Why would the loggers have done that?

Redwoods can get so big and heavy that they compress the wood at the base of the tree. It can get so dense that it would sink if they tried to float it up the river to Duncan's Mill to make it into lumber. The wood can also get compressed so much that the grain at the base becomes wavy, which does not make for good boards. And some trees flare out at the base. Cutting through the dense, hard, wide base would be a lot more work for just a little more lumber.

So they would cut a notch in the bark and wood, insert a board, and stand on it to get higher up the trunk. That board is called a springboard.

Were most of these trees cut before or after the fire that charred them?

Most were cut before the fire, as shown by the charring in the springboard notches.

photos: by Mike Roa

Pomo Spotter Card #13

Can you spot notches in stumps?



Pomo Spotter Card #13

Notches in Stumps

ALL

These notches were made by loggers when they cut the trees.

Why would they have done that?

Redwoods can get so big and heavy that they compress the wood at the base of the tree. It can get so dense that it would sink if they tried to float it up the river to Duncan's Mill to make it into lumber. The wood can also get compressed so that the grain at the base becomes wavy, which does not make for good boards. And some trees flare out at the base. Cutting through the wide base would be a lot more work for not much more lumber.

So loggers would cut a notch in the bark and wood, insert a board, and stand on it to get higher up the trunk. That board is called a springboard.

Were these trees cut before or after the fire that charred them?

Cut before the fire, as shown by the charring in the springboard notches.

photos: by Mike Roa

Pomo Spotter Card #14



Pomo Spotter Card #14

Plants Growing on Logs or Stumps

ALL

What do plants need in order to live? Can you name the four main things?

They are sunlight, air (carbon dioxide), minerals or soil, and water.

These plants are living on redwood logs and stumps. They have plenty of air.

What might the log or stump provide?

In the summertime, the soil can get pretty dry on a warm day even if there is lots of fog in the morning. When the fog drips onto the rotting log or stump, the soft rotting wood acts like a sponge and holds water that the plants can then use.

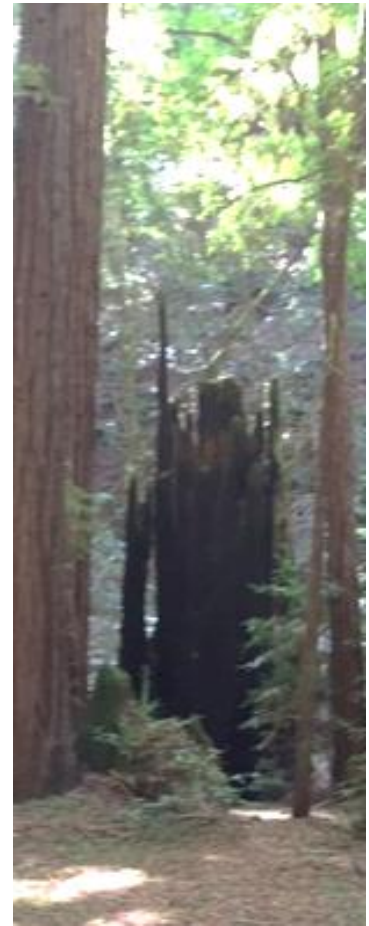
How do you think the plants got to the top of the log or stump?

Some seeds might fall from above. Small seeds or spores from ferns might be blown there. And animals might bring the seeds there in their scat (poop).

photos: by Mike Roa



Pomo Spotter Card #15



photos: by Mike Roa

Pomo Spotter Card #15. Snags

ALL

***Do you see any dead trees, or the remains of dead trees?
These are called "snags."***

Snags are important to the forest ecosystem because they provide habitat for many different kinds of animals.

Over 600 types of plants and animals have been found to live on snags in the redwood forest!