Nature At Home

We hope to inspire kids of all ages to learn about the natural world and discover new connections to nature.

With support from the Morning Star FOUNDATION

Ponderosa Pine Life Cycle – Part One

View the video at DishmanHills.org/Nature-At-Home

On a recent ramble in the Dishman Hills, I looked down at the forest floor next to the trail and saw many tiny pine seedlings. Each had a bare brownish stem with a cluster of green needles at the top. The sunny patch of ground that I was looking at was packed with seedlings. (Ponderosa pine trees need a lot of direct sun light every day in order to grow.)

About every eight years, sometimes longer depending on local environmental condition, the Ponderosa pines will produce a heavy crop of cones. (Each cone can hold up to 70 seeds.) These seeds are so small that they can travel up to 100 feet from their parent tree before they reach the *forest floor*. If conditions are just right where they land, many will *germinate* and become *seedlings.* The germinated seed immediately sends out a root 20 inches or more in length to find water. The seedlings in this picture are less than three inches tall and in their second year of life.

Within a few feet of the group of *seedlings*, I saw a group of Ponderosa pine *saplings*. The saplings averaged between 6 and 7 feet tall and had several bands of branches on their thin trunks.

Saplings are always reaching for the sun. To do this they use most of the food produced in their needles and nutrients and water gathered by their roots into keeping the long needles in their *crowns* in direct sunlight. Their trunks are thin because most of their energy is used to grow taller than the saplings around them.

You can count the sections of bare trunk between the groups of branches to find out how long the saplings have been growing. This group is about 15 to 17 years old. I also noticed that there were fewer saplings than the seedlings I had looked at earlier. I wondered where they went?

I think about the *Laws of Life: light, air, water, soil.* I know that this tree *species* needs a lot of energy from direct sun*light.* This energy allows it to change enough carbon dioxide (CO_2) from the air and water (H_2O) from the soil into the different kinds of *sugars* that it needs to grow.

I think I will keep an eye on this new crop of ponderosa to see how old they are when they begin producing branches. That will give me a more accurate idea of how old the group of saplings really are. (Number of years to first branches + number of spaces between branches = age of sapling).

I am going to be on the lookout for more groups of saplings as I walk through nature. Maybe I can find out how much time will pass until ponderosa in my area produce another big crop of cones.

Now I look up into the *canopy* and see a huge Ponderosa pine. At the top, where most of the needles are located, it is glowing in the sunlight. Remember, lots of direct sunlight is essential to creating the food that the trees need to survive and flourish through *photosynthesis* in each of the thousands of needles in their crowns.

Finally, I look down the trail and see big spaces between each large Ponderosa. Each of these huge ponderosa pines started off as one of many small seedlings. Over the decades, each found a way to win the race first as *seedling* and then as *sapling* to grow into the huge trees I see today.

All plants need more than *sunlight* to grow. They also need water, rich *soil* and *nutrients.*

Find out were these nutrients come from in

Ponderosa Pine Life Cycle Part Two

If you have any questions, e-mail us at Education@DishmanHills.org