

# Lesson 11: Succession Patterns Lab

## ~ Day 1~

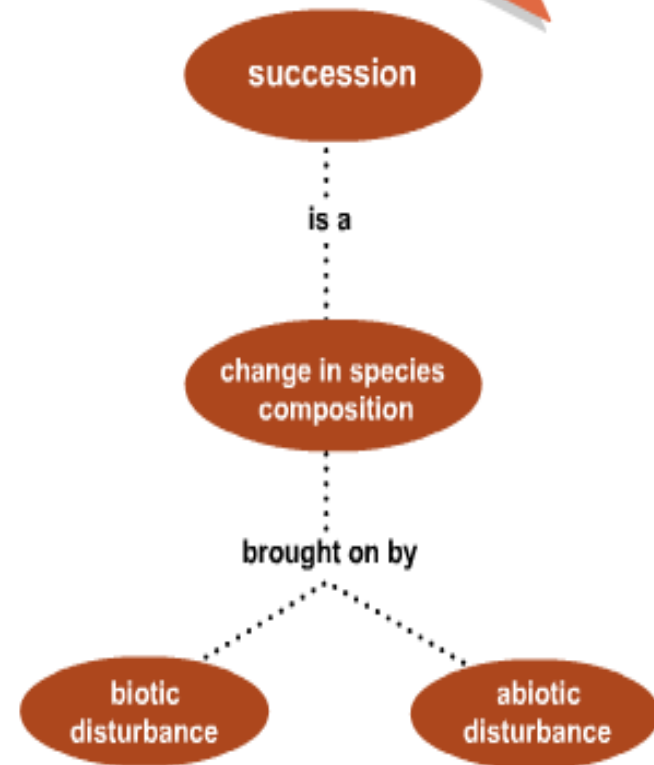
Ecosystems follow certain patterns of change when they are recovering from a disaster.

When Mount Saint Helens in Washington State erupted in 1980, the surrounding landscape changed dramatically. Trees and other plants were killed, and the soil was buried beneath many feet of volcanic ash. In the years that followed, plant life slowly began to return in an ecological phenomenon called *succession*. In this lab, you will

### GOALS FOR THIS LESSON

- Conduct an investigation to show patterns of change in an ecosystem.

Mastery Map



## Lesson 11: Succession Patterns Lab

Ecosystems are dynamic places.

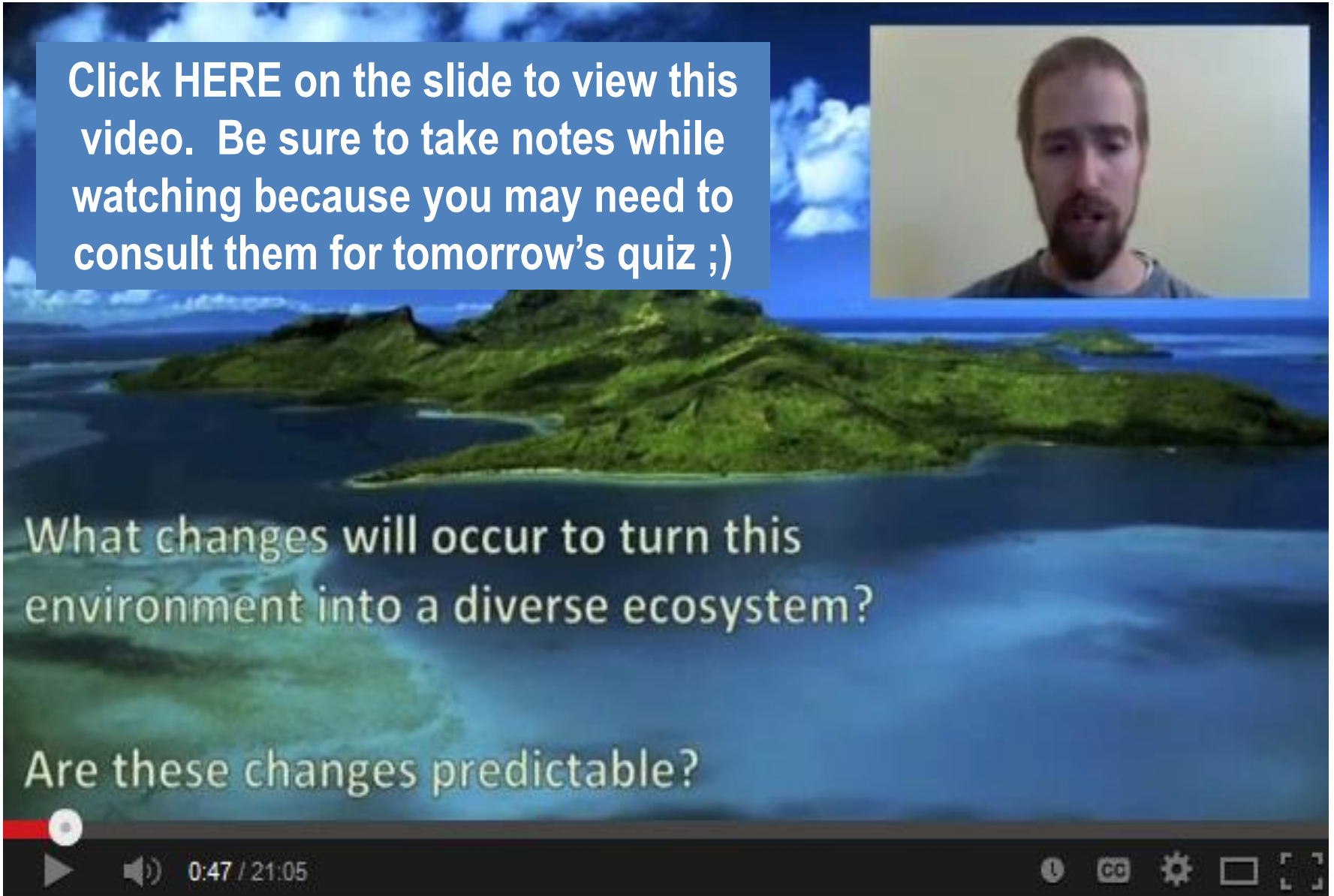
~ Day 1 ~

Click [HERE](#) on the slide to view this video. Be sure to take notes while watching because you may need to consult them for tomorrow's quiz ;)



What changes will occur to turn this environment into a diverse ecosystem?

Are these changes predictable?



## Lesson 11: Succession Patterns Lab

**Ecosystems are dynamic places.**

In the spring of 1980, Mount Saint Helens, a volcanic mountain in Washington State, experienced a massive eruption that collapsed a whole side of the mountain face. A huge plume of smoke and ash spewed out of the mountain for 9 straight hours, darkening the sky and raining ash down on the surrounding landscape.

As you have learned, ecosystems are dynamic places that experience change every day. Some of those changes can be small, such as the temperature fluctuations that occur from one day to the next, while others are more extreme, such as the changes that occur as seasons shift from one to the next. In the case of the eruption of Mount Saint Helens, the change was quite sudden, and it radically altered the ecosystem around the volcano.

~ Day 1 ~



The eruption of Mount Saint Helens dramatically changed the neighboring ecosystem.



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Sometimes ecosystems experience catastrophic changes.

Like volcanic eruptions, extreme events such as fires, floods, tornadoes, and hurricanes affect ecosystems from time to time. Sometimes those events are so severe that they strip the ecosystem of nearly every life-form—plants, animals, fungi, and everything else.

Yet, over a period of years, an ecosystem will start springing back. Even in places where plant life has burned all the way to the ground, plants will begin to sprout. Birds from neighboring areas may deposit seeds on the bare ground, and the wind may blow seeds into the area. As plant life begins to return, so do animals. The change in species composition following a disturbance like a volcanic eruption or a fire is called succession. The first stage of succession, in which plants begin to grow on newly formed soil, is called primary succession.



Controlled Burns

~ Day 1 ~

Some ecosystems depend on regular fires to maintain species diversity. Certain American forests and the great prairies of the Midwest are examples of fire-dependent ecosystems. Today, managers of forests and wild prairies often conduct controlled burns meant to mimic the natural fires that periodically burned thousands of acres in the ancient past.



Some events are so severe that they strip the ecosystem of nearly every life-form.



## Lesson 11: Succession Patterns Lab

~ Day 1~

**Primary succession occurs after an entire ecosystem is disrupted.**

After some major ecological disturbances, not only is the plant and animal life killed, but the soil is also washed away, buried, or otherwise made inaccessible in the ecosystem. Succession after that kind of disturbance is primary succession.

Primary succession first requires the formation of new land to support small, low-growing plants, or *ground cover*. If the soil has been washed away or covered up, for example, new soil must eventually form to support plant life.



Primary succession involves the formation of ground cover. In this photo taken on Mount Saint Helens 14 years after the eruption, you can see small plants growing up through the trees that were leveled by the event.

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Ecosystems go through patterns of succession when recovering from disruptive events.

In this lab, you will study a series of photographs taken in a particular area of Mount Saint Helens, Meta Lake. The area had been clear-cut before the volcano erupted—meaning that all trees were cut down and used to manufacture different products.

Click Primary Succession and study the series of photographs taken at different times after the volcano erupted in 1980. Pay careful attention to the changes in vegetation that took place over a period of 24 years.

~ Day 1~



Primary Succession

**To view  
larger  
pictures,  
click [HERE](#)  
on this slide.**

## Lesson 11: Succession Patterns Lab

~ Day 1~

After completing this lesson, be sure to mark it complete.

- Click Course Home in the navigation at left.
- On the Course Home page, go to Course Checklist link at the bottom of the page and click View Checklist.
- Check the box next to this lesson to mark it complete.