**APES- Chapter #10**

***Ecological Restoration***

**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Learning Objectives:**

* *What ecological restoration means*
* *What kinds of goals are possible for ecological restoration*
* *What basic approaches, methods and limits apply to restoration*
* *How an ecosystem restores itself through ecological succession after a disturbance*
* *What role disturbances play in the persistence of ecosystems*
* *How physical forces and biological processes affect the land*
* *Why ecosystems do not remain in a steady state*

*Read: Case Study: Restoring a Ponderosa Forest*

**1:** Explain why fires can be good for forests and how suppressing fires can actually be **harmful** to some biomes.

**2:** Explain the theory of a ***“climax state”*** of an ecosystem.

**3:** Explain what kind of restoration is occurring in the **Kissimmi River in Florida**. *Why?*

**4:** Explain what kind of restoration is occurring in **Everglades National Park**. *Why?*

**5:** Describe each stage of **Ecological Succession**:

* **Primary Succession**:
* **Secondary Succession**:

**6:** Describe the **general patterns** of succession:

**7:** Define:

* ***Pioneers (Early-Successional Species):***
* ***Late-Successional Species: (Give examples)***

**8: *Explain*** how the storage of chemical elements changes with succession:

**9:** How does **Facilitation** help pave the way for species to thrive. Explain.

**10:** Explain how **interference** can affect species propagation in the new area.

**11:** What is a **life history difference**?

**12:** Define Chronic Patchiness:

*Applying Ecological Knowledge to Restore Heavily Damaged Lands and Ecosystems*

**13:** What is being done in **Great Britain** to help restore lands after hundreds of years of mining has left the land barren and damaged?

**Study Questions:**

**1:** Farming has been described as managing land to keep it in an early stage of succession. *What does this mean, and how is it achieved?*

**2:** Redwood trees reproduce successfully only after disturbances (including fire and floods), yet individual redwood trees may live more than 1,000 years. *Is Redwood an early or late-successional species?*

**3:** Why could it be said that succession does not take place in a desert shrubland (*an area where rainfall is very low and the only plants are certain drough adapted shrubs?)*

**4:** Early in the twentieth century, a large meteorite collided with the Earth in Siberia and destroyed boreal forests over a large area. *In what ways might restoration and succession following this large-scale disturbance differ from restoration and succession after a fire burned a few hectares in the same forest.*