GLOSSARY:

Calcareous parafite: Communities of algae, fungus, and bacteria that grow as a thin film on rocks and plants, and sometimes float along on the surface of water. This is important because it is food for other animals, creates oxygen for water, and filters out phosphorus.

Estuaries: The wide lower course of a river where it flows into the sea. Estuaries experience tidal flows and their water is a changing mixture of fresh and salt.

Everglades: A tract of low, swampy land, especially in southern Florida, characterized by clumps of tall grass and numerous branching waterways.

Forage: To search about, seek, rummage, hunt (usually for food).

Limestone: Sedimentary rock consisting mainly of calcium carbonate, deposited as the calcareous remains of marine animals. Often used as a building stone and in the manufacture of cement.

Metabolize: The chemical processes by which cells produce the substances and energy needed to sustain life. As part of metabolism, organic compounds are broken down to provide heat and energy. Simpler molecules are also used to build more complex compounds like proteins for growth and repair of tissues.

Peat Soil: A soil type that has some mineral content, formed under conditions of excess moisture from precipitation or from stagnant fresh or slowly running ground water. Peat soils are the upper portion of peat bog deposits, formed below a layer of particular types of vegetation that thrive under conditions of excess moisture.

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Show Me Science
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The Florida Everglades

K4617DVD

***Advanced* Teachers Guide**

SYNOPSIS:

The Everglades are subtropical wetland areas in southern Florida. Beginning in central Florida near Orlando, the Kissimmee River flows south into Lake Okeechobee. Wa-ter then leaves the lake and flows southward across a limestone shelf to Florida Bay at the southern end of the slate.

This program explores the Everglades ecosystems and explains how development of the area brought unexpected damage. It discusses the plans for restoring the natural habitat and eliminating excessive chemicals and harmful invasive species.

CURRICULUM UNITS:

- Ecology
- Engineering
- Environmental science
- Geology
- Oceanography
- Physical science

CAREER OPPORTUNITIES:

- Chemist
- Conservation specialist
- Ecologist
- Environmental engineer
- Geologist
- Hydrologist
- Oceanographer

PROGRAM OVERVIEW:

The Florida Everglades, an extremely diverse ecosystem that hosts a wide variety of flora and fauna, began to form about 5000 years ago when sea levels stabilized after the last ice age. Mangrove coastlines, hardwood forests, and cypress swamps began to flourish.

Water covered the lower half of the state of Florida, and slowly drained into estuaries, supporting a dynamic salt water system. But as populations increased in Florida and the demand for farmland, timber and houses grew, the health of the Everglades was compromised.

Developers rerouted parts of the Kissimmee River eliminating thousands of acres of floodplain and marshland. In the 1940's, the state government and the Army Corp of Engineers began to fix these mistakes.

Scientists continually check the soil quality, water quantity and quality, water distribution, bottom sediments, and phosphorus levels to monitor the health of the Everglades. They also keep a close watch on plant distribution because some of the plants in the Everglades act as natural filters for excessive levels of phosphorus.

ISSUES & CRITICAL THINKING:

1. Have students research and map the Everglades. Ask them to point out where the Everglades begin and where they end.

2. Ask students to research factors that have altered the Kissimmee River over time through human interference. Have students discuss the status of the river today.

3. Have students diagram a food web showing the relationship of species living in the Everglades. Discuss their food web and how removing specific species from the web can impact other species.

4. Have students make a poster describing what people can do to restore the Everglades.