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4H352

Aquatic and Marine Ecosystems—Appendices: Glossary and Additional Resources[1]

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To access other sections and lessons of the *Aquatic and Marine Ecosystems: Leader's Activity Guide*, view the EDIS topic page here.

Glossary

Abiotic—The non-living component of an ecosystem.

Absorption—The process that occurs when water (and nutrients) in the soil is taken up by the root systems of plants and used for their physiological processes.

Aquifer—An underground formation of permeable rock, sand or gravel that holds vast amounts of water.

Biotic—The living component of a community.

Climax community—The final stage in the process of succession.

Condensation—The process that occurs when water vapor cools and turns into drops that will form precipitation.

Community—All of the living things in a given area.

Decomposers—Organisms, such as bacteria and fungi, that break down organic matter or detritus into nutrients which may be recycled through the ecosystem.

Dehydration—The movement of water out of a body or object.

Detritus—Partially decomposed plants and other organisms.

Ecological succession—The progressive change in the plants and animals, and non-living factors of an ecosystem over time.

Ecosystem—The community and the nonliving environment that function together as an interdependent unit.

Emergent plants—Plants that are rooted in the bottom and extend out of the water

Eutrophication—The "aging" of a water body due to the addition of organic matter.

Evaporation—The process that occurs when water enters the air in the form of a gas called vapor.

Free floating plants—Plants that have roots in the water which are not attached to the bottom.

Food chain—The flow of energy from one organism to the next within a community.

Food web—The interconnected pattern of separate food chains in a community.

1. This document is 4H352, one of a series of the 4-H Youth Development Department, UF/IFAS Extension. Original publication date May 1998. Revised November 2014. Reviewed October 2017. Visit the EDIS website at http://edis.ifas.ufl.edu.

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Groundwater—Water below the water.

Habitat—The place where an organism lives.

Infiltration—The process that occurs when water soaks into the ground (as compared to runoff).

Limiting factor—Too much or too little of an abiotic factor which can prevent an organism from living in a specific environment.

Osmosis—The movement of a dissolved substance across a membrane (as of a living cell) from areas of high concentration to lower concentration.

Phytoplankton—Microscopic free floating plants found in the water column.

Precipitation—The process of water falling to the Earth as rain, mist, snow, sleet, or hail.

Producers—Green plants that utilize sunlight to make their own food through the process of photosynthesis

Primary consumers—Animals that feed only on producer organisms.

Secondary consumers—Animals that feed on primary consumers.

Submergent plants—Plants that are rooted in the bottom and do not extend above the water surface.

Surface runoff—Water which directly flows across the land into streams, rivers, or lakes.

Terrestrial—Anything related to the land or its inhabitants, as compared to water or air.

Transpiration—A process that occurs when water absorbed by plant roots is drawn through the body of a plant and then evaporates from the surface of leaves and stems.

Trophic level—Each successive level of producers and consumers in a food chain.

Water table—The upper limit of a portion of the soil that is totally saturated with water.

Additional Resources

Websites

Center for Aquatic Plants, University of Florida Institute of Food and Agricultural Sciences—http://aquat1.ifas.ufl.edu/

A wide variety of free and for-sale products and services are available including:

- Online Newsletter: "Aquaphyte" news of interest to teachers, students and others: http://plants.ifas.ufl.edu/node/498
- Online Book: "Identification and Biology of Non-Native Plants in Florida's Natural Areas": http://plants.ifas.ufl.edu/node/646

Additional materials available:

- Aquatic and Wetland Plant Glossary: http://plants.ifas.ufl.edu/glossary
- Photographs and Descriptions of Aquatic and Wetland Plants - 12 online: http://plants.ifas.ufl.edu/node/22
- Line Drawings of Aquatic and Wetland Plants - 65 online: http://plants.ifas.ufl.edu/linedrawings
- Freshwater Plants Poster: http://plants.ifas.ufl.edu/node/606#native
- Aquatic and Wetland Plant ID Cards: http://plants.ifas.ufl.edu/node/597#aquatic
- Educational Video Programs: http://plants.ifas.ufl.edu/node/608
- Prohibited Aquatic Plants List: http://plants.ifas.ufl.edu/caip_files/5B-64.011_ProhibitedAquaticPlantsList_Feb2012.pdf
- Management Methods for Controlling Unwanted Aquatic Plants: http://plants.ifas.ufl.edu/node/673
- Online Aquatic and Wetland Plant Database: http://plants.ifas.ufl.edu/APIRS/
- Bibliography of Aquatic and Wetland Plant Manuals, Field Guides, and Textbooks: http://plants.ifas.ufl.edu/node/490

University of Florida Herbarium, Florida Museum of Natural History—http://www.flmnh.ufl.edu/natsci/herbarium/

Materials and services available:

- Bibliography of literature useful to the study of Florida plants: http://www.flmnh.ufl.edu/herbarium/bib/

- Generic Flora of the Southeastern United States project: http://www.flmnh.ufl.edu/herbarium/genflor/
- Herbarium Library - Search the books and reprints catalog: http://www.flmnh.ufl.edu/herbarium/lib/
- Local Flora: Vascular Plants of North Central Florida: http://www.flmnh.ufl.edu/herbarium/locfl/
- Preparation of plant specimens for deposit as herbarium vouchers: http://www.flmnh.ufl.edu/herbarium/voucher.htm
- Vascular plant type collections catalog: http://www.flmnh.ufl.edu/herbarium/flasvasc.htm

Florida Department of Environmental Protection—http://www.dep.state.fl.us/

The website for the Florida Department of Environmental Protection contains a large amount of useful information for youth and youth leaders interested in environmental education. Online publications about topics specific to aquatic and marine ecosystems include:

- "Toward Environmental Citizenship" describes environmental responsibilities for all Floridians: http://www.dep.state.fl.us/secretary/ed/publications/files/4_001_enviro_citizenship_guide.pdf

4-H_2O—http://www.4-h.org/youth-development-programs/4-h-science-programs/environmental-science-alternative-energy/4h2online/

Welcome to 4-H2Online—a community for youth to learn about water quality, water conservation and watershed issues. Throughout this site you'll find 4-H's "Exploring Your Environment" Grab-n-Go's and information on how youth nationwide are addressing water issues in their communities. Get started by watching the podcast series "A Day Without Water" to learn more about how you can make an impact in your community!

Florida Sea Grant—Marine education resources—https://www.flseagrant.org/

Florida Sea Grant provides marine education programs to formal and nonformal educators and works closely with the 4-H marine education program. Their website provide links to publications, curricula, lessons, and other educational sites and resources.

Florida Marine Science Educators Association—http://www.fmsea.org/

FMSEA is a professional association of individuals and organizations devoted to the cause of marine education in Florida. They provide workshops and conferences plus a quarterly newsletter that often highlights teaching aids and classroom resource lists.

DVDs

Careers in Florida's Freshwater Environments

This fast-paced musical DVD and companion booklet introduces middle school students to the many occupations needed to protect and preserve our lakes, rivers and wetlands. Included are introductions to jobs in wildlife, fisheries, plants, water chemistry, recreation, information, and teaching. Some occupations require a high school education, some require college, but emphasis is placed on the fact that all jobs require that students learn what they are studying in school right now. (IFAS Catalog No. DVD 1236)

http://ifasbooks.ifas.ufl.edu/p-49-careers-in-floridas-freshwater-environments.aspx

Aquatic Plant Identification Series

This four-disc DVD set was created for the benefit of aquatic plant managers, regulators, students and the general public, and uses everyday language to identify aquatic plants in Florida. (IFAS Catalog No. DVD 084)

Disc 1: Floating and Floating-leaved Plants—28 minutes

Disc 2: Emersed Plants—81 minutes

Disc 3: Submersed Plants—62 minutes

Disc 4: Grasses, Sedges, and Rushes—110 minutes

http://ifasbooks.ifas.ufl.edu/p-47-aquatic-plant-identification-series.aspx

Florida's Aquatic Plant Story

Produced for general public audiences, this consumer-oriented DVD describes the benefits of native aquatic plants and recounts problems caused by some exotics. Introduces the major methods of aquatic plant management. 24 min. (IFAS Catalog No. DVD 1238)

http://ifasbooks.ifas.ufl.edu/p-51-floridas-aquatic-plant-story.aspx

What Makes a Quality Lake?

Produced for secondary school students and general public audiences, this program explains the meaning of "Lake Eutrophication." Featuring limnologist Dr. Daniel Canfield, viewers learn about the natural and human factors that help determine a lake's "trophic state". Viewers also learn the differences between oligotrophic, mesotrophic, eutrophic and hypereutrophic lakes in terms of water clarity, algae, higher plants and fish. 1992. 24 min. (IFAS Catalog No. DVD 1237)

http://ifasbooks.ifas.ufl.edu/p-50-what-makes-a-quality-lake.aspx

Florida Lakewatch

This video is an introduction to Florida Lakewatch, an organization of citizen volunteers who monitor the water quality of lakes, rivers and bays. 1993. 12 min. (IFAS Catalog No. VT-438)

http://lakewatch.ifas.ufl.edu/

Other Resources

Aquatic and Wetland Plant Identification Cards are from the University of Florida Aquatic and Wetland Plant Information Retrieval System (APIRS). A "deck" of 3" x 4" aquatic plant identification cards for in-the-field use. Color photographs and identification information on 67 aquatic and wetland plants is included in the Aquatic Plant Identification Deck. The water resistant laminated cards are held together by a metal post, allowing for quick and easy comparisons between the ID cards and the plants needing identification. List of plants featured in ID Deck. The ID Deck may be purchased for $10.00, plus tax and shipping and handling, from UF/IFAS Publications, PO Box 110011, Gainesville, FL, 32611-0011, 352-392-1764. The UF/IFAS Catalog number of the ID deck is Publication Number SM-50.

http://plants.ifas.ufl.edu/node/597#aquatic

Freshwater Plants Poster features 63 aquatic and wetland plants in a typical natural setting. The poster shows the common and scientific names of the plants, is in full-color and is 2 ft. x 3 ft. in size. It is suitable for framing or tacking to the wall. Teachers in Florida may obtain the poster for free. This office has already given away 10,000 copies to teachers, libraries, environmental agency trainers, etc. If you would like to receive a free copy, please contact the APIRS office by e-mail or contact: APIRS, Center for Aquatic Plants, 7922 NW 71 Street, Gainesville, FL, 32653, 352-392-1799. For everyone else, the poster costs $7.00 each plus tax and shipping and handling. To order, contact: UF/IFAS Publications Office, University of Florida, PO Box 110011, Gainesville, FL, 32611-0011, 352-392-1764. The UF/IFAS Catalog number of the poster is Publications Number SM-51.

http://plants.ifas.ufl.edu/node/606#native

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Scouting Guide to The Florida Keys, A. (1986). The Florida National High Adventure Sea Base.