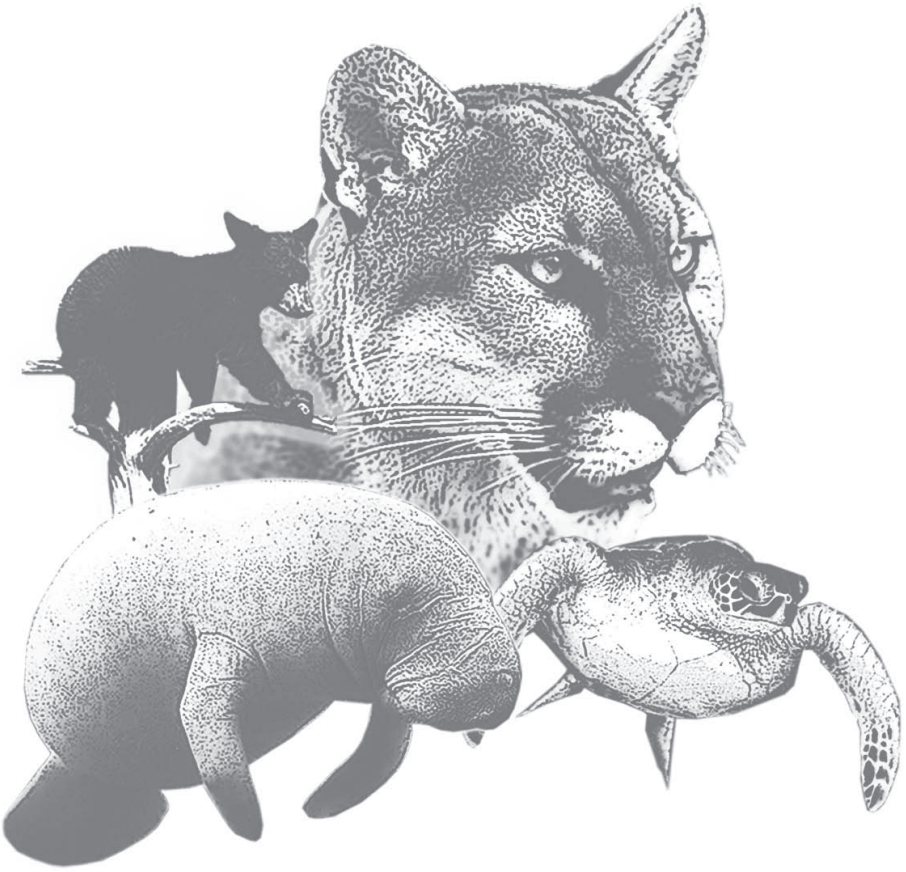
The State of Florida

Environmental Primer

2008



Produced by the

FLORIDA SCENE
STATE COMMITTEE for ENVIRONMENTAL EDUCATION

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ENvironmental Education

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The State Committee for ENvironmental Education was established in 1992 to increase communication and networking among state agencies with environmental education responsibilities in the state of Florida. SCENE succeeds the Interagency Coordination Committee on Environmental Education (ICCEE), a statutorily mandated committee of representatives from state and regional agencies and programs. In 1992, the Florida Environmental Education Act was amended to delete ICCEE provisions. SCENE is voluntarily supported by a chairperson and an administrative assistant who now serve for a two-year period. SCENE, which meets at least twice a year, has an informal agency membership and is guided by the following mission and goals:

Mission:

The State Committee for Environmental Education is an informal group of environmental resource agencies and organizations that provide a communications, networking, support- structure and state-wide vehicle for facilitating environmental education throughout Florida.

Goals:

- To exchange information and ideas which promote environmental education;
- To develop educational strategies that target both residents and visitors;
- To provide opportunities for member groups to share resources and co-sponsor projects;
- To coordinate environmental education activities to avoid duplication of efforts;
- To make recommendations, when requested, to policymakers.

Cover art: Four of Florida's imperiled species are showcased on the cover: Florida panther *(Puma concolor coryi),* Florida manatee *(Trichechus manatus latirostris),* Florida black bear *(Ursus americanus floridanus)* and the Green sea turtle *(Chelonia mydas).*

The Florida Fish and Wildlife Conservation Commission agency administers the management and research needs for each species' conservation and protection.

About the Florida Environmental Primer

As representatives from many government agencies, the State Committee for ENvironmental Education (SCENE) members present this primer to Florida's elected leaders to use for reference purposes during the course of legislative service. Florida's residents and visitors may also benefit from its use since the primer provides information about environmental terms that are important for Florida's current and future well-being.

The purpose of the primer is to establish a common understanding about various scientific or environmental topics/terms that are either a priority for Florida's environmental administrators or are commonly used in environmental education literature, wildlife publications or reports. Web page links to the agency or sponsoring group are included where additional information or a reference is needed. If a link does not work in the online version of this publication, please do an Internet search for the information and look for the agency Web pages. The inclusion of national or federal environmental information is provided to further enhance the understanding of the importance of environmental education on all levels. The primer is available in electronic format upon request to the SCENE chairperson and may be posted on various SCENE member Web sites. Additional hard copies of the primer may be requested from the chairperson and will be provided while supplies last.

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Agency acronyms used in primer:

All state agency Web sites can be accessed through ***www.MyFlorida.com***

DACS	Florida Department of Agriculture and Consumer Services
DCA	Florida Department of Community Affairs
DEP	***Florida Department of Environmental Protection***
DOE	Florida Department of Education
DOF	Florida Department of Agriculture & Consumer Services, Division of Forestry
DOS	Department of State
DOT	Florida Department of Transportation
FSEC	Florida Solar Energy Center
FSU	Florida State University
FWC	***Florida Fish and Wildlife Conservation Commission***
NOAA	National Oceanic & Atmospheric Administration
SCENE	State Committee of ENvironmental Education
UCF	University of Central Florida
UF	University of Florida
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WMD or WMDs	Water Management District(s)

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State Committee
for Environmental Education

Presented to
Charlie Crist, Governor
State of Florida
and to the 2008 Legislative leaders

Why is environmental education important in Florida?

"Environmental education is far more than providing information to create awareness. It is an approach to learning that provides us with opportunities and means to improve our lives by making appropriate choices. It inspires responsible action and cultivates positive, long-term behavior change. Government agencies need to realize that environmental education is a cost-effective complement to law enforcement for changing people's behavior. Signs and fines must be balanced with hearts and mind for the behavior change to endure…. In order for the effects to be durable, environmental education programs need support that is broad-based and long-term."

Kathleen A. Blanchard, Ph.D., Conservation Digest, Vol. 3, No. 4, 1991

Florida is in a constant state of change: People move in and out of the state; they build communities; rebuild hurricane-damaged structures; enjoy the beaches, weather and wildlife; they also pollute, commute and contribute to the growth that impacts the various resources that make Florida unique. Environmental education is important in Florida because it provides people with the opportunity to stop what they are doing long enough to "smell the roses" (or the cypress swamps, native azaleas and fragrant pine cones) so that they can appreciate where they live. This awareness allows them to reflect upon the impacts of their actions on Florida's natural resources. Florida is home to many plant, insect and animal populations that are struggling for space. As Florida residents we can do more to set aside areas in our communities for these native residents. As stewards of Florida we must learn how to maintain an environmental balance for both humans and wildlife.

Environmental education is also important for the educational development of our youth. Studies show that environmental education lessons, which are designed to meet state curriculum goals, can indeed improve student achievement as measured by the state achievement test (Randall, 2001). For example, a set of biodiversity lessons designed to combine biology and writing skills was tested with 132 ninth and tenth graders in Gainesville, Florida. Students practiced effective writing techniques while learning about taxonomy, introduced and invasive species, and endangered habitats by conducting activities with the Florida Museum of Natural History collection databases. The Florida Comprehensive Assessment Test (FCAT) writing rubric was used to score the students' first and last writing assignments to measure change. Results indicate that this combination of writing practice and interesting science topics can significantly increase writing test scores (Randall, 2001). ***http://edis.ifas.ufl.edu/FR114***

Randall, J. M. 2001. Enhancing high school student writing skills with Florida biodiversity education. University of Florida, Gainesville, FL. Masters thesis.

What is the goal of environmental education?

The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its many problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones. (Belgrade Charter, 1976)

Further, environmental education is rooted in the belief that:

- humans can live compatibly with nature
- humans can act equitably toward each other
- human well being is inextricably bound with environmental quality (well being)
- we and the systems we create - our societies, political systems, economies, religions, cultures, technologies - impact the total environment
- people can make informed decisions that consider future generations
- critical and creative thinking, decision making, and communication, as well as collaborative learning must be emphasized, and are essential for active and meaningful learning, both in school and over a lifetime

Environmental education aims for a democratic society in which effective, environmentally literate citizens participate with creativity and responsibility. ***http://eelink.net/pages/Environmental+Education+Network***

Regional Florida Environmental Education Networks:

Duval County EE Network	***http://www.enviroedjax.org/***
Environmental Education Providers of Miami Dade County	***http://www.eepmiami.org/about.htm***
Florida State Parks	http://www.dep.state.fl.us/parks/
Oxbow Nature Center	***http://www.stlucieco.gov/erd/oxbow/***
Peace River Environmental Education Network	***http://www.chnep.org/Events/PREEN.htm***
Southwest Florida Council for Environmental Education	***http://www.swfcee.org/***

(Others networks will be added as they are recognized)

What kinds of environmental education curricula exist in Florida?

- ***Black Bear Curriculum*** (K-12 FWC)
- ***Everglades Curriculum*** (7 & 9 South Florida Water Management District)
- ***Florida Scrub*** (Archbold Biological Station)
- ***Florida Schoolyard Wildlife*** (FWC)
- ***LIFE Program*** (DEP)
- ***Project Learning Tree*** (PreK-12 UF)
- ***Project WILD*** (K-12 FWC)
- ***Solid Choices: Thinking, Learning and Making Decisions About Solid Waste*** (K-8 Environmental Research and Education Foundation)
- ***Water Education*** (St. Johns River Water Management District)
- ***www.WaterMatters.org/education*** (Southwest Florida Water Management District)

Who provides environmental education programs in Florida?

State and federal agencies, environmental educators, classroom teachers, non-profit organizations, nature centers, museums, aquariums and zoos, utility companies, city and county offices, water management districts, local 4-H programs, Girl Scouts and Boy Scouts of America, youth leaders, scientists and researchers, volunteers, parents and grandparents all help conduct or support environmental education throughout Florida. The League of Environmental Educators of Florida (LEEF) provides Florida-based environmental education opportunities and support to environmental educators through its newsletters and annual conference. The North American Association for Environmental Education (NAAEE) further develops environmental education concepts for a broader audience. *(Note: Both LEEF and NAAEE are covered in the definitions section)*

Florida Environmental Definitions

Most of the entries in the primer have lead government acronyms listed after the entry. Web page information is added to certain entries when more information or a reference about the program is available or needed.

- **Aggregation Sites (FWC) –** An area where animal species may gather together for mating purposes or to survive seasonal changes, e.g. various fish species spawn at deep water aggregation sites during certain times of the year (ex. grouper). These areas are popular fishing sites that are sometimes managed to protect the species' future survival. Another example would be warm water sites where Florida manatees gather to survive cold weather.

- **Aggressive Behavior (FWC)** - An animal may display this behavior when they are highly stressed—generally displayed when in defense of themselves, their young, or food. (e.g., a bear may salivate, roar or charge. This behavior may result in an actual or symbolic threat.)

- **Air Pollution - Mobile Sources (EPA/DEP)** - Mobile sources of air pollution are highway and off-road vehicles. The highway sources include automobiles, buses, trucks and other vehicles traveling on public roads. The emissions from highway vehicles represents one third of the overall national volatile organic compounds (VOC) and 40 percent of the overall nitric oxide (NOx) emissions. Some examples of off-road sources are mobile combustion sources such as railroads, marine vessels, off-road motorcycles, farm, construction, industrial and lawn/garden equipment. EPA has begun to regulate mobile sources in a comprehensive manner by setting strict limits on tailpipe emissions and requiring the use of cleaner, low sulfur fuels to help meet these stringent tailpipe standards.

- **Alluvial (FWC) –** Material that is transported and deposited by water, e.g., an alluvial sinkhole is an ancient or relict sinkhole that has been filled with soil and/or sediment.

- **Alternative Energy (UCF - FSEC)** - Energy sources used in non-traditional applications, for example solar to power a home.

- **Aquaculture (DACS)** - Farming in water – the cultivation of animals and plant life in a water environment (ex. fish hatcheries – tropical, food, ornamental plants, native plants used for restoration purposes, shellfish, alligator farms, etc.) ***http://www.floridaaquaculture.com/index.htm*** and ***http://www.flaa.org/***

- **Aquatic Ecosystems (UF/DEP/WMDs)** - An aquatic ecosystem is a group of interacting organisms dependent on one another and their water environment for nutrients (e.g., nitrogen and phosphorus) and shelter. Familiar examples are lakes and rivers, but aquatic ecosystems also include areas such as flood plain marshes, which are flooded with water for only parts of the year. Even aquatic ecosystems that seem like nothing can live there can sustain life—a drop of water is an aquatic ecosystem since it contains or can support living organisms. In fact, ecologists often study drops of water—taken from lakes and rivers—in the lab to understand how these larger aquatic ecosystems work. ***http://waterquality.ifas.ufl.edu/***

- **Aquatic Management (DEP)** - The use of water is increasing as urban, industrial and agricultural expansion has led to increasing competition for the same water supply. Water management involves the anticipation and/or resolution of user conflicts in a way that protects the environment. Good water resource management maintains a balance between growing social and economic demands, and the continued ability of our freshwater resources to support them. The Florida Water Resources Act gives the Florida Department of Environmental Protection (DEP) "general supervisory authority" over the state's five water management districts (WMD) and directs the Department to delegate water resources programs to them where possible. ***http://waterquality.ifas.ufl.edu/***

- **Aquatic Preserve (DEP) –** submerged lands of exceptional beauty that are maintained in their natural or existing conditions. To protect these distinctive natural features for the enjoyment of future generations, the Florida Legislature created aquatic preserves. The first aquatic preserve was established in Estero Bay in 1966. By 1975 the Florida Aquatic Preserve Act was passed and the existing preserves were brought under a standard set of management criteria. DEP's Office of Coastal and Aquatic Managed Areas administers these sites: ***http://www.dep.state.fl.us/coastal/programs/aquatic.htm***

- **Aquifer (DEP) –** Rock and sediment layers that store and yield water. Aquifers are the sources of spring and well water. Some aquifers occur at the surface while others are underground. ***http://www.dep.state.fl.us/geology/geologictopics/hydrogeo.htm***

- **Artificial Food Resources (FWC)** - Food items that are derived directly or indirectly from humans and are not a part of an animal's natural diet (e.g. human foods such as garbage, barbeque, bird feed, lettuce, fish, etc.). Animals may either supplement their diet with these items or become totally dependent on these items. Numerous signs are posted that encourage individuals to not feed birds or wildlife—mostly for the benefit of the wildlife and for the protection and safety of humans ("Do Not Feed Alligators"; "Do Not Feed Bears", etc.)

- **Artificial Lighting (FWC)** - Usually associated with sea turtle nesting beaches, these lights impact hatchlings by confusing them and drawing them to areas with high light levels. During nesting season, beach areas should be kept as dark as possible so that the hatchlings head toward the water, which provides natural light reflection, instead of the "artificial light" provided by street, business or house lights. The following guidelines show ways to improve beach/light conditions during nesting season (see also Disorientation for other light source impacts) ***http://www.myfwc.com/seaturtle/Lighting/Light_Pollution.htm***

- **Artificial Reef (FWC/DEP/ACOE) –** Made up of items such as submerged concrete reef balls, military tanks, large retired ships, etc. the artificial reef sites provide additional habitat areas for marine life to gather and populate through adaptation of the site. Information about these permitted sites is available to anglers and divers who then visit the areas to fish or recreate. Most counties with artificial reefs close by benefit economically from visitors to the site(s). Permits are required to put artificial reefs along Florida's coastal waterways. ***http://myfwc.com/marine/ar/index.asp***

- **At-risk Species (FWC)** - Any species that is listed as endangered, threatened or a species of special concern. At-risk species receive more protection and are managed for conservation purposes under approved species management plans.

- **Attractants (FWC) –** Items that draw an animal into an area where they may be intentionally or unintentionally harmed. These may include food items or non-food related items (i.e. deer feeder, turkey call).

- **Association for Conservation Information (ACI) (FWC member)** - a non-profit association of information and education professionals representing state, federal and Canadian agencies and private conservation organizations. ACI was organized in 1938 and incorporated in 1984. ACI member professionals play a major role in providing natural resource, environmental, wildlife and other information and education to the public through a variety of means, many of which are continental in scope. ACI trains and informs the staffs of member agencies and provides forums to exchange ideas, new concepts, and to improve skills and craftsmanship. ***http://www.aci-net.org***

- **Aversive Conditioning (FWC) (a.k.a. Deterrent Conditioning)** - An unpleasant, non-lethal, result of an action, e.g. a bear touches an electric fence when it attempts to enter a fenced off area. The current halts the bear's actions by making it change its behavior right away. If the bear encounters the same result every time it touches a fence then the reinforcement of the deterrent conditioning should make the bear change its behavior (see also positive reinforcement and conditioned reinforcement).

- **Beach Cleaning (DEP/FWC)** - Beach cleaning involves the removal of material left by the tides or from beach goers on Florida's sandy shorelines. Stranded or storm uprooted seaweed provides an important food source for beach and near shore food chains, and should be left in place when possible. Human debris (trash, plastics, discarded fishing gear, etc.) can pose a hazard to humans and animals, and should be removed. The use of mechanized beach cleaning equipment is limited when threatened and endangered sea turtles are nesting. Share the Beach guidelines were created to address this activity: ***http://myfwc.com/seaturtle/Beach%20Activities/Beach_Cleaning.htm*** Special consideration should be given to nesting season for shore birds as well ***http://myfwc.com/shorebirds/BNB/*** .

- **Beach Nourishment (DEP/FWC)** - Sand that has been lost through long shore drift or storm erosion is collected from an offshore location by a dredge and is piped onto the beach. The slurry of sand and water exits the pipe onto the beach and once the water drains away, only sand is left behind. Bulldozers move this new sand on the beach until the beach matches the design profile. This process is often expensive depending upon the source (and thus the cost) of the sand. Beach nourishment is almost always used as part of a coastal defense scheme. A poorly-designed and/or executed beach nourishment project can result in a severely impacted ecosystem, regardless of how much care is taken to deal with the sustainability of the littoral environment. Once a beach is nourished, it almost always is necessary to regularly replace sand since nourished beaches tend to erode faster than natural beaches. Beach nourishment projects should not occur during sea turtle or shore bird nesting seasons. ***http://www.dep.state.fl.us/beaches/programs/bcherosn.htm***

- **Bedding Plane (FWC) –** In sedimentary or stratified rocks (rocks with visible lines), a surface that separates each layer from those above or below it is called a bedding plane.

- **Benthic Zone (DEP/UF) –** Bottom of rivers, lakes, or oceans; this zone is commonly an area of low oxygen and anaerobic decomposition.

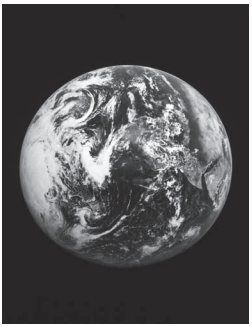
- **Benthos (DEP/UF)** - Aquatic plants or animals that live on or near the bottom of a water body.

- **Best Management Practice (All agencies) (a.k.a. BMP) –** Using the best available information, data and methods in order to reach the desired goal or objective. The term is often used for practices relating to the prevention of non-point source pollution. (Note: Forward-thinking industries that use best management practices may reap many financial rewards as well as reduced liabilities.)

- **Biological Diversity (DEP/FWC) (a.k.a. Biodiversity) –** In general, this refers to the variety of life on Earth. More specifically it relates to the variety at different levels (genetic, species, and ecosystem) for a specific area or region.

- **Biological Status Review (FWC)** - The biology, life history and available data on each species under review varies greatly. Species experts, both within and outside of the FWC, use the best available science, data and information for each species' review. In addition, the review considers the unique risks each species faces so that the appropriate imperilment category (endangered, threatened, special concern) is identified. To strengthen this review recommendation, all information and findings are evaluated by independent (non-government) scientists to ensure that the biological review panel made sound science-based decisions/recommendations (a process used by scientists called, "peer review").

- **Biosphere (DEP)** - The biosphere is the life zone of the Earth and includes all living organisms, including man, and all organic matter that has not yet decomposed. The biosphere is structured into a hierarchy known as the food chain whereby all life is dependent upon the first tier (i.e. mainly the primary producers that are capable of photosynthesis). Energy and mass is transferred from one level of the food chain to the next with an efficiency of about 10%. All organisms are intrinsically linked to their physical environment and the relationship between an organism and its environment is the study of ecology. The biosphere can be divided into distinct ecosystems that represent the interactions between a group of organisms forming a trophic pyramid and the environment or habitat in which they live.



- **Biota –** Animal or plant life of a region considered as a total ecological entity.

- **Borrow Pit (DOF) –** An excavation site outside of a construction area where fill material is removed to provide material necessary to that construction. Borrow pits were also created by Florida's early inhabitants for construction of burial mounds. Wildlife may also create borrow pits to build up nesting mounds (ex. alligator nests)

- **Carrying Capacity (FWC) –** The maximum number of organisms that can be supported in a given area or habitat (e.g. the ratio of predator/prey species is at the appropriate balance for each species to survive in the given area; the area provides adequate food, water, shelter and space for species survival). Positive or negative impacts to habitat areas often regulate the species that survive—more food = successful births and species survival, less food = competition and more deaths until a new carrying capacity is reached. Negative natural impacts to the habitat may include flood, fire, drought, storm damage or other events.

- **Cavity Tree/Den tree (DOF) (a.k.a. Standing Snag) –** Mature hardwood and softwood trees that are hollow and typically of the older age classes are used by certain birds and other small wildlife species for shelter and habitat.

- **Chronic Wasting Disease (FWC) – (a.k.a. CWD)** Chronic Wasting Disease is a progressive, neurological, debilitating disease that belongs to a family of diseases known as Transmissible Spongiform Encephalopathies (TSEs). It is believed to be caused by an abnormal protein called a prion. CWD has been diagnosed in mule deer, white-tailed deer, and Rocky Mountain elk in captive herds and in the wild. Other cervids (antlered animals) may also be susceptible. CWD attacks the brains of infected animals, causing them to become emaciated, display abnormal behavior, and lose bodily functions. CWD is a fatal disease. Clinical signs include excessive salivation and grinding of teeth, increased drinking and urination, dramatic loss of weight and body condition, poor hair coat, staggering, and finally death. Behavioral changes, including decreased interaction with other animals, listlessness, lowering of the head, blank facial expression, and repetitive walking in set patterns also may occur. FWC asks the general public to look out for deer showing symptoms indicative of CWD. If you see a sickly, extremely skinny deer report its location to the CWD hotline, toll free (866) 293-9282. For more information about CWD ***http://myfwc.com/cwd/***

- **Citizen Science (DEP) –** Non-formal and voluntary efforts to engage the general public in research especially that pertaining to environmental monitoring often in collaboration with scientists. Examples include the Audubon Societies Christmas Bird Count, World Water Monitoring Day, and Project Budburst. Citizen science combines science, education and civic engagement in pursuit of knowledge.

- **Class I Waters (DOF/WMDs) –** Water bodies that serve as sources of potable water supply; designated by the State for additional water quality protection.

- **Clean Marina Program (DEP/Stakeholders) –** (also available Clean Boatyard, Clean Retailer, and Clean Boater) The effects of year-round boating activities contribute to constant and growing pressure on the state's fragile aquatic and marine ecosystems. Clean water is essential to this multi-billion dollar industry. The aim of the Clean Marina Program (CMP) is prevention. Marine facilities and boaters may not be aware of the environmental laws, rules and jurisdictions with which they must comply. CMP provides guidelines to make sure that marine facilities and boaters do not pollute the aquatic environment they rely on for business or recreation. In order for a facility to earn its designation as a Clean Marina, the marina, boatyard or marine retailer must complete a Clean Marina Workshop and take the necessary steps set forth in the Clean Marina Program, which

is a partnership between DEP and the Clean Boating Partnership. The criteria which must be met fall into the following categories: environmental management, marine environmental quality, and services. ***www.dep.state.fl.us/cleanmarina***

- **Clear-cutting (DOF) –** A silviculture (land management) system in which all timber fit for sale is harvested (cut down) within a certain area in one operation.

- **Coastal Armoring (DEP/FWC)** - Armoring refers to coastal protection measures such as seawalls, bulkheads, and other similar structures designed to prevent the erosion of landward property immediately behind the structure. Armoring of the coastline with various types of hard substances has provided an effective means to protect development from the destructive effects of waves and tides caused by storm events. Even though it is effective in protecting structures, it can have an adverse effect on property to either side or directly in front of the structure. Seawalls and other armoring structures are not able to absorb the energy of waves and currents as well as unaltered coastline. Therefore this energy may be deflected to either side of the structure or to the shoreline in front of the structure, leading to accelerated erosion in these areas. If the threat (or perceived threat) of erosion is severe, there may be an increase in the miles of coast altered by armoring, which is an important indicator of the loss of natural coastline, and can indirectly indicate loss of natural habitat for wildlife and loss of land for public use. ***http://www.dep.state.fl.us/beaches/publications/pdf/bcap.pdf***

- **Coastal Building Zone (DEP/DCF/NOAA) –** The area from the seasonal high water mark to a line 1,500 feet landward of the coastal construction control line for sandy beaches. On barrier islands the coastal building zone extends 5,000 feet landward from the coastal construction control line. Construction in the coastal building zone is subject to more stringent requirements than structures built farther inland. Check with local city or county governments if you plan to build. Contact DEP Bureau of Beaches and Coastal Systems for permits.

- **Coastal Construction Control Line (DEP/FWC) –** Established by the Florida Department of Environmental Protection along the State's sandy beaches. The lines define the areas which can expect significant erosion and over wash of property during a major storm. The CCCL provides protection for Florida's beaches and dunes while assuring reasonable use of private property. ***http://www.dep.state.fl.us/beaches/programs/ccclprog.htm***

- **Common Species (FWC) –** species such as quail, dove, squirrels, skunks, rabbits, etc. Species that you may see on a regular basis.

- **Community (FWC) –** An association of interacting populations, usually defined by the nature of their interactions or the place in which they live.

- **Community Liaisons (FWC)** - Individuals who actively get involved with wildlife issues in their communities and act as bridges between government agencies and/or private organizations, citizens, and residents.

- **Comprehensive Everglades Restoration Plan/CERP (USACE and SFWMD) –** CERP provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including the Everglades. It covers 16 counties over an 18,000-square-mile area and centers on an update of the ***Central & Southern Florida (C&SF) Project*** also known as the Restudy. The Plan was approved in the ***Water Resources Development Act (WRDA)*** of 2000. It includes more than 60 elements, will take more than 30 years to construct and will cost an estimated $7.8 billion. ***http://www.evergladesplan.org/index.aspx***

- **Conditioned Reinforcement (FWC)** - A meaningless signal that occurs in conjunction with either positive or negative behavior and is associated with the arrival of a reinforcement, which increases the probability that the act will occur again (e.g., the sound of a deer feeder automatic "on" switch just before corn is dispersed). The sound may trigger a response by animals in the given area.

- ***Conservation (DEP/FWC)*** – Controlled use, protection and management of natural resources for the benefit of the resources and public use.

- **Conservation Education (FWC) –** Providing information or hands on educational experiences to individuals/groups with the focus of changing personal behaviors for the benefit of natural resources (e.g. A national conservation education program, Project WILD ***http://www.projectwild.org/***, teaches wildlife ethics and awareness to students.)

- **Conservation Stewardship (FWC) –** taking personal responsibility to sustain, and enhance natural resources (e.g. participating in coastal clean up programs) while accepting the obligation to the environment and future users (e.g. practice recycling and encouraging children to get involved in conservation activities).

- **Conservation Strategy (FWC)** (see Florida Comprehensive Wildlife Conservation Strategy, a.k.a. CWCS or Strategy)

- **Corridor (DEP/FWC)** (a.k.a. Greenway, see also Wildlife Corridor) A route that permits the direct travel or spread of animals or plants from one area or region to another, either by the gradual spread of a population of a species along the route or by actual movement of animals, seeds, pollen, spores or microbes. Can also be a way

of moving people from one area to another via a scenic pathway or abandoned rail line without the use of a motorized vehicle – hiking, biking, canoeing, horseback riding, etc. ***http://www.dep.state.fl.us/gwt/guide/***

- **Data Deficient Species (FWC) –** listed species that may not have enough scientific data available about their habitat, life history or seasonal patterns needed to make an appropriate management decision for their protection.
- **Data Gap (FWC) –** A clear data need identified.
- **Density – (DEP)** The number of individual plants or animals per unit of livable area.
- **Depredating Animal (FWC)** - A wild animal that kills livestock, pets, or destroys agricultural crops. Depredating animals are likely to repeat this behavior. (Call Wildlife Alert at 1-888-404-FWCC (3922) for assistance)
- **Deterrents (FWC) –** A negative stimulus used to prevent undesirable behavior and to prevent an animal from reaching its intended reward.
- **Detritus (DOF) –** The broken down debris of rocks or decaying plant material such as leaves, branches, etc.—serves as a food source for certain insects.
- **Disorientation (FWC) –** (see also Artificial Lighting, a.k.a. Artificial Illumination) - Disorientation events are usually in reference to sea turtles on nesting beaches. When sea turtle hatchlings emerge from their nests they get confused because of the light sources near nesting beaches. The hatchlings head toward the bright "artificial lights" and don't head toward the water (which usually reflects the moon and starlight that hatchlings use as a guide to the water). This disorientation event is deadly as the small hatchlings use up their energy resources as they are led farther and farther away from the water by the lights. ***http://www.myfwc.com/seaturtle/Lighting/Light_Disorient.htm***
- **Disperse (animal) (FWC) –** The action of an animal that leaves its birth area to establish its own home range.
- **Displaced Animal (FWC)** - An animal that has been impacted by alteration of its environment either through natural or human-related causes.
- **Diversity (FWC) –** Different species that live together in an ecosystem; a measure of the variety of species in an ecosystem that takes into account the relative abundance of each species.
- **Dominant (FWC) –** The characteristic species in a particular plant community, contributing most to the general appearance and influencing which other plants and animals live there; typically the largest plant species or the one with the greatest aerial coverage.

- **Drainage Basin (DEP) (a.k.a. watershed or basin)** - A region of land where water from rain drains into a body of water, such as a river, lake, wetland, sea, or ocean. This drainage basin/watershed area includes both the streams and rivers that convey the water as well as the land surfaces from which water drains into those channels. The drainage basin acts like a funnel - collecting all the water within the area covered by the basin and channeling it into a waterway. ***http://waterquality.ifas.ufl.edu/Water%20primer/Primer-main.htm***

- **Ecology (DEP/FWC/UF) –** The study of relationships between organisms and their environment. Ecologists study these relationships and how factors such as population size, pollutants, rainfall and temperature influence them. Ecology fields of study include the interaction among individuals in the following areas: population ecology (single species), community ecology (among different species), and ecosystem ecology (groups of species and the physical environment).

- **Ecological Forecasting (NOAA) –** Ecological forecasts predict the impacts of chemical, biological, and physical changes on ecosystems, ecosystem components, and people. Researchers review data to forecast where, when, and how severe impacts to the environment will be in order to be better prepared for the future. For example, ecological forecasting approaches are a useful technique for predicting where damage to coastal ecosystems is most (or least) likely to occur due to climate changes. Forecasting techniques allow researchers to know where in advance to look for the effects of climate change, e.g. the movement of invasive species, which allows researchers the opportunity to generate hypotheses that can be tested under field conditions. ***http://oceanservice.noaa.gov/topics/coasts/ecoforecasting/welcome.html***

- **Ecosystem (DEP/UF/FWC/WMDs) –** A natural system formed by the interaction of a group of organisms (such as plants and animals) and their non-living environment—each depends on the other for survival.

- **Ecosystem Management (DEP/UF/FWC)** - A comprehensive, flexible approach to managing Florida's biological and physical environments (plants, animals, land and water, etc.)—through the use of planning (for growth), purchasing of properties (ex. for wild land preservation), environmental education, regulation (for species or area protection), and pollution prevention—which is designed to maintain, protect and improve the state's natural, managed, and human communities.

- **Ecotourism (DEP)** - A form of tourism that is economically viable, environmentally sensitive and socially equitable. Ecotourism focuses on local culture, wilderness adventures, volunteering, personal growth and learning new ways to live on the planet; typically involving travel to destinations where the flora, fauna, and cultural heritage are the primary attractions. Responsible ecotourism includes programs that minimize the broad impacts of traditional tourism on the natural environment and enhances the cultural character of local people.

- **EcoVentures (DEP/FWC) –** EcoVentures was an interactive multimedia environmental education product developed in the late '90s to educate students about Florida's environmental resources. The educational program covers Florida's physical environment, its ecosystems, fishing and the Florida economy, management of aquatic resources and takes a look to Florida's future. The first set of materials was distributed in 1998. An update in 2002 included more information about the Gulf of Mexico. This timeless resource should provide students with the opportunity to learn about Florida's environment well into the next century. ***http://garnet.acns.fsu.edu/~gdawson/Ecodescribe.html***

- **Endangered Species (FWC)** - A species in danger of becoming extinct that is protected by the Endangered Species Act. Any species of fish and wildlife that occurs naturally in Florida, whose chances of survival are in jeopardy due to loss of habitat; high demand for commercial, sporting, scientific, or educational purposes; disease; predation; lack of protection/management practices; or other natural or manmade factors that affects its continued existence. ***http://myfwc.com/imperiledspecies/rules.htm*** State Endangered Species Act 372.072. FWC Rule 68A-1004 (27).

- **Endangered Species Act (ESA) 1973** - ***http://epw.senate.gov/esa73.pdf*** provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. The Act:

    - authorizes the determination and listing of species as endangered and threatened;
    - prohibits unauthorized taking, possession, sale, and transport of endangered species;
    - provides authority to acquire land for the conservation of listed species, using land and water conservation funds;
    - authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants;

- authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and
- authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued under the Act.

- **Endemic (DEP) –** Species that are found only in a particular area or that need certain conditions to survive, e.g. the Anastasia Island beach mouse is only found on Anastasia Island. It is endemic to that area.

- **Energy Efficiency (UCF - FSEC)** - Minimizing the amount of energy used to accomplish the same task.

- **Environment (DEP) –** Similar to habitat, your personal environment is what you see, hear, smell or feel when you wake up each day. It includes your personal space, your community and nearby natural areas. Living in the natural environment are plants, insects and wildlife that rely on people to keep their share of habitat—water, air, and land—clean, while providing the natural communities with adequate space and shelter so that they, too, can survive. The environment is the sum of all external conditions that affect the life, development and survival of an organism.

- **Environmental Assessment (EA - see also the National Environmental Policy Act)** - Under the Council of Environmental Quality regulations, a federal agency may prepare an environmental assessment to determine whether the preparation of an Environmental Impact Statement is necessary. That is, an EA may conclude that the proposed action (usually related to some kind of development or construction project) would not significantly affect the environment. Rather than proceed with preparing an EIS, the federal agency may issue a finding of no significant impact (FONSI).

- **Environmental Citizenship (DEP)** - Environmental citizenship is a personal commitment to learning more about the natural environment and to taking responsible environmental action. It encourages individuals, communities, and organizations to think about the environmental rights and responsibilities we all have as residents of planet Earth and then doing something to make improvements to our environment. Environmental citizenship means caring for the Earth so that everyone and everything has the opportunity to survive.

- **Environmental Education (EPA) –** Increases public awareness and knowledge about environmental issues and provides the skills necessary to make informed decisions and take responsible actions. While environmental education helps create awareness of

the natural environment, it is based on objective and scientifically sound information. It does not advocate a particular viewpoint or course of action. It teaches individuals how to weigh various sides of an issue through critical thinking and it enhances their own problem-solving and decision-making skills. ***http://www.epa.gov/epahome/educational.htm***

- **Environmentally Endangered Lands (EEL) Program –** (Brevard County, Florida) - The Environmentally Endangered Lands (EEL) Program is dedicated to conservation through land acquisition and management. Brevard County's Parks and Recreation Department manages and assists the program. The EEL Program protects Brevard County's unique natural habitats, while managing them for their rare, threatened, endangered, or endemic plants and animals.

  Three directives guide the EEL Program. The first is to conserve the natural resources of Brevard County through acquisition of environmentally sensitive lands and subsequent management of the natural resources. The second is to provide environmental education opportunities on EEL sanctuaries. Third, the EEL Program provides passive recreation opportunities, such as hiking and wildlife observation, on EEL sanctuaries. ***http://www.brevardparks.com/eel/faq/intro.htm***

- **Environmental Engineer (DEP) –** An environmental engineer is a person who applies science to the pursuit of making the world a safer place for animals and humans. Environmental engineering is like other engineering careers in that it combines the principles of mathematics and science to solve problems or create new products. The difference is the focus. Environmental engineers focus their work on environmental problems or impacts—hazardous waste, air-pollution, public health, oil spills, wastewater, etc.

- **Environmental Impact Statement** - The National Environmental Policy Act (NEPA) includes the specific requirement that all federal agencies must prepare and circulate, for major federal actions significantly affecting the quality of the human environment, a detailed statement on the environmental impacts, adverse environmental effects, and alternatives to the proposed action. Consequently, federal agencies began developing environmental impact statements (EIS) to evaluate the impacts of an activity, and a set of alternative actions, on the affected environment.

- **Environmental Information (EPA) –** Information that provides facts or opinions about environmental issues or problems, but may not enhance critical-thinking, problem solving or decision-making skills.

- **Environmental Issue (EPA) –** An issue of importance to the community leaders, school district, city, state, or region; i.e., one community may have significant air pollution problems which make it a priority to teach about the solutions to air pollution because of

the effects on human health; another community may experience rapid development that threatens a nearby wildlife habitat, thus making habitat or ecosystem protection a high priority.

- **Environmental Literacy –** Environmental literacy requires a fundamental understanding of the systems of the natural world, the relationships and interactions between the living and the non-living environment, and the ability to deal sensibly with problems that involve scientific evidence, uncertainty, and economic, aesthetic and ethical considerations.

- **Environmental Literacy Council** - The Environmental Literacy Council is dedicated to helping citizens, especially young people, participate wisely in this arena. An independent, non-profit organization, the Council gives teachers the tools to help students develop environmental literacy: a fundamental understanding of the systems of the world, both living and non-living, along with the analytical skills needed to weigh scientific evidence and policy choices. ***http://www.enviroliteracy.org/index.php***

- **Environmental Monitoring** - The process of checking, observing, or keeping track of a natural environment for a specified period of time or at specified intervals.

- **Environmental Protection (DEP)** - Florida recognizes that natural resources and environments need to be protected so that these areas benefit the species that rely on them for survival. The Florida Department of Environmental Protection is the lead agency protecting the states' environmental resources ***http://www.dep.state.fl.us/***

- **Environmental Protection Agency –** The Environmental Protection Agency (EPA) leads the nation's environmental science, research, education and assessment efforts through the following programs ***http://www.epa.gov/***:

  1. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, and delegates to states and tribes the responsibility for issuing permits and for monitoring and enforcing compliance.
  2. In recent years, between 40 and 50 percent of EPA's enacted budgets have provided direct support through grants to State environmental programs. EPA grants to States, non-profits and educational institutions support high-quality research that will improve the scientific basis for decisions on national environmental issues and help EPA achieve its goals.

3. At laboratories located throughout the nation, the Agency works to assess environmental conditions and to identify, understand, and solve current and future environmental problems; integrate the work of scientific partners such as nations, private sector organizations, academia and other agencies; and provide leadership in addressing emerging environmental issues and in advancing the science and technology of risk assessment and risk management. ***More information***
4. The Agency works through its headquarters and regional offices with over 10,000 industries, businesses, non-profit organizations, and state and local governments, on over 40 voluntary pollution prevention programs and energy conservation efforts. Partners set voluntary pollution-management goals; examples include conserving water and energy, minimizing greenhouse gases, slashing toxic emissions, re-using solid waste, controlling indoor air pollution, and getting a handle on pesticide risks. In return, EPA provides incentives like vital public recognition and access to emerging information. ***More information***
5. EPA advances educational efforts to develop an environmentally conscious and responsible public, and to inspire personal responsibility in caring for the environment. ***More information***
6. Through written materials and this Web site, EPA informs the public about our activities. ***Web publishing schedule***

- **Environmental Resource Permitting (DEP) (a.k.a. ERP) –** ERP is a term that describes a very common set of activities that is common to everyone developing a piece of property from a single home-owner to corporations. The ERP program regulates activities involving the alteration of surface water flows, including stormwater management (ponds, ditches and swales) and dredging and filling in wetlands and other surface waters.

- **Environmental Stewardship (DEP/FWC/EPA) –** The term is used to describe a philosophical concept of partnership between government, the public, resource users and business groups who all take responsibility to care for Florida's natural resources. It is defined for environmental education purposes as: voluntary commitment, behavior, and accomplishments that result in environmental protection or improvement. Stewardship refers to an acceptance of personal responsibility for actions to improve environmental quality and to achieve sustainable outcomes. Stewardship involves initiative and actions to enhance the state of the environment for the benefit of humanity and the animal kingdom. Some examples are: minimizing or eliminating pollution at its source; using energy and natural resources efficiently; decreasing the use of hazardous chemicals; recycling wastes

effectively; and conserving or restoring forests, prairies, wetlands, rivers, and urban parks to improve the quality of ecosystems, health, and life itself. Stewardship can be practiced by individuals, groups, schools, organizations, companies, communities, and local and state governments.

- **Enviroscape (DEP) –** A hands on teaching tool/display that demonstrates various concepts including but not limited to watersheds, non-point source pollution, surfacewater-groundwater interactions and watershed management. DEP staff makes several of these units available to schools so that students can learn more about how they relate to their watershed. ***http://www.enviroscapes.com/ http://www.dep.state.fl.us/Water/nonpoint/escape.htm***

- **Ephemeral Pond (FWC)** - short term, seasonal ponds. Ephemeral ponds are also known as temporary ponds, temporary wetlands, isolated wetlands, vernal pools (usually a term for northern and western ponds), cypress domes, prairie wetlands, etc. Here in Florida these ponds usually fill up in the winter and then again in the summer. Their hydro-periods vary so some can hold water for a few years and others for a few weeks a year. The most important aspect of these ponds (from an amphibian perspective) is that they are fishless. About half of Florida's amphibian species can not breed in ponds with fish—including some of the more rare species such as striped newts, Flatwoods salamanders, gopher frogs and ornate chorus frogs. These areas are very important for wildlife! Off-road vehicles can impact these important areas when the vehicles are allowed to go "mud-bogging" or drive through seasonal wet areas. Management of these ponds is important for the survival of these amphibian species.

- **Epifauna (FWC) –** Animals that live on the ocean bottom, either attached or moving freely over it.

- **Epizootic (FWC) –** An animal die-off which is caused by a particular event, disease or activity. Several past manatee epizootics were the result of red tide events in south Florida.

- **Erosion (DOF) –** The downhill or down-stream movement of dirt/soil as a result of wearing away by water, wind, gravity or solution (e.g. The dissolution of limestone that leads to sinkhole formation is an example of chemical erosion, while the deepening of stream channels by water moving through them is an example of mechanical erosion).

- **Estuarine/Estuary (DEP/NOAA/WMDs/UF) –** A body of water where freshwater and salt water meet and mix. An estuary is a partially enclosed body of water where saltwater from the sea mixes with freshwater from rivers, streams and creeks. These areas of transition between the land and the sea are tidally driven, like the sea, but sheltered from the full force of ocean wind and waves, more

like a river. Estuaries are generally enclosed in part by the coastline, marshes and wetlands; the seaward border may be barrier islands, reefs and sand or mud flats. ***http://www.estuaries.gov***

- **Everglades (DEP/WMD/USACE/NPS)** – The Florida Everglades span the entire southern half of Florida, covering over a million and a half acres, and constitute the largest subtropical wetland in North America. (see entry for Comprehensive Everglades Restoration Project or ***http://www.evergladesplan.org/index.aspx***)

- **Evolution** - Changes in the inherited traits of a population from one generation to the next over long periods of time leading to both changes in the characteristics of existing species and the development of new species. These changes originate from mutation and the introduction of genes from other populations. Related concepts include isolation, changing environmental pressures, and the process of natural selection which work together to contribute to evolution.

- **Exotic Species (FWC)** – (also see information posted for Nonnative Species) – Introduced species that are not native to the place where they are found. Florida has many exotic plants and animals ***http://myfwc.com/nonnatives/***

- **Extinction (FWC)** – The complete loss of survival of a plant, animal or other organism/species, which may occur in a particular area or worldwide.

- **Extirpate (FWC)** – The removal, elimination or disappearance of a species from a part of its range.

- **Feral (FWC)** – An animal that has changed from a domestic (tame) animal to a wild or untamed animal and the offspring of these animals, e.g. feral cats can be found statewide, Burmese pythons are reported breeding in the Everglades—most animals that are considered feral are also found on exotic/nonnative species lists and compete with native wildlife for survival. ***http://myfwc.com/cats/ and http://myfwc.com/critters/exotics/SpeciesNumberResults.asp?SPPNO=46***

- **Fisheries Management (FWC)** – management practices that make sure Florida's fish are healthy and that the population grows to meet consumer demand in addition to providing protection for the survival of the species. Closed seasons, size limits, catch limits and the encouragement of catch and release practices are some management practices that assist with the survival of fish stocks.

- **Floridan Aquifer (DEP)** - Underground rock layers which both store and yield water. The Floridan aquifer is one of the highest producing aquifers in the world. It is found throughout Florida and extends into

the southern portions of Alabama, Georgia, and South Carolina. This aquifer system is comprised of a sequence of limestone and dolomite, which thickens from about 250 feet in Georgia to about 3000 feet in south Florida. The Floridan aquifer system has been divided into an upper and lower aquifer separated by a unit of lower permeability. The upper Floridan aquifer is the principal source of water supply in most of north and central Florida. http://www.dep.state.fl.us/swapp/Aquifer.asp. See also: ***http://www.floridasprings.org/***

- **Florida Administrative Weekly (DOS) (a.k.a. F.A.W.)** - The Florida Department of State provides information about any official notices of rules, meetings or workshops, bids and other official business through this service. All state agencies and local entities are required to advertise these items within a certain time frame before any business can occur. The Florida Administrative Weekly on the Web provides citizens direct access to proposed rules and regulations affecting all Floridians, as well as notices of public meetings and bid announcements. ***http://faw.dos.state.fl.us/***

- **Florida Communities Trust (DCA)** - Florida Communities Trust (F.C.T.) is a state land acquisition grant program that provides funding to local governments and eligible non-profit environmental organizations for acquisition of community-based parks, open space and greenways that further outdoor recreation and natural resource protection needs identified in local government comprehensive plans. ***http://www.dca.state.fl.us/fhcd/fct/index.cfm***

- **Florida Comprehensive Wildlife Conservation Strategy (FWC) (a.k.a. CWCS, The Strategy or Wildlife Action Plan)** - An action plan to conserve all of Florida's wildlife. The Strategy addresses conservation issues, management needs, and wildlife conservation priorities. Florida's CWCS Plan was submitted to the U.S. Fish and Wildlife Service on September 15 2006. The strategy is intended to be used by anyone with an interest in wildlife conservation. ***http://myfwc.com/wildlifelegacy/publicreview.html***

- **Florida-friendly Landscaping – (UF/WMD) (a.k.a. Xeriscape)** - means any quality landscape practice that conserves water, protects the environment, is adaptable to local conditions and is drought tolerant. The principles of Florida-friendly landscaping include planning and design, appropriate choice of plants, and soil analysis. These practices include the use of solid waste compost, efficient irrigation, practical use of turf, appropriate use of mulches, and proper landscape maintenance. For more information about this topic go to the Florida Statutes 373.185 ***http://www.swfwmd.state.fl.us/yards/***

- **Florida Forever (DEP) –** Florida Forever was established to conserve environmentally sensitive land and wildlife habitat, protect and restore water resources, provide parks for people, and preserve cultural and historical sites in our state. The DEP Division of State Lands has primary responsibility for the Florida Forever

land acquisition program, the world's largest conservation land buying program - collectively, the State of Florida has protected over 535,643 acres of land with $1.8 billion in Florida Forever funds through December 2006. ***http://www.dep.state.fl.us/lands/acquisition/FloridaForever/***

- **Florida Highway Beautification Program (DOT)** - The Florida Department of Transportation's first priority in the design, construction, and maintenance of every highway landscape project is safety. In addition, it is expected that landscape projects be cost effective, aesthetically pleasing, compatible with Florida's ecology, and practical to maintain. Support for highway beautification is available to local governments and local highway beautification councils to conserve natural resources and scenic beauty, and to plant native wildflowers and plants along the rights-of-way of state roads and highways. www.myfloridabeautiful.com.

- **Florida Marine Science Educators Association (FMSEA)** – FMSEA is a professional association of individuals and organizations devoted to the cause of marine education in Florida. FMSEA provides a network for marine educators working together to coordinate and expand marine education, communication and interaction. ***www.fmsea.org***

- **Florida Natural Areas Inventory (FNAI, a.k.a. "F-Nay")** – A branch of the Florida State University's Institute for Science and Public Affairs. The mission of the Florida Natural Areas Inventory is to collect, interpret and disseminate ecological information critical to the conservation of Florida's biological diversity. FNAI's database and expertise facilitate environmentally sound planning and natural resource management to protect the plants, animals, and communities that represent Florida's natural heritage. ***http://www.fnai.org/***

- **Florida Solar Energy Center (UCF)** – The Florida Solar Energy Center (FSEC) is the largest and most active state-supported renewable energy and energy efficiency research organization in the United States. A research institute of the University of Central Florida, FSEC is the state's energy research and education institute. FSEC provides several downloadable curriculum activity units, which were modeled after the Project Learning Tree and Project WILD programs. These include Solar Matters, Alternative Fuel Matters, High Energy Hydrogen, Building Performance Matters and Understanding Solar Energy. The SunSmart Schools program is administered by FSEC and has a very strong environmental component. Besides renewable energy, FSEC covers global climate change, peak oil, sustainability and resource depletion ***http://www.fsec.ucf.edu/en/***.

- **Florida Strategic Vision (FWC)** - Florida's plan for conserving all wildlife for future generations.

- **Florida Wildflower Program (DOT) –** Administered by the Florida Wildflower Foundation. The Foundation manages the proceeds from the wildflower license plate and awards grants in the areas of Research, Education, and Community Plantings. The mission is to increase public awareness and support for the research and planting of native Florida wildflowers. ***http://www.floridawildflowerfoundation.org***

- **Florida Wildlife Legacy Initiative (FWC) (a.k.a. Wildlife Legacy) –** FWC's direction for native wildlife and habitat conservation efforts in Florida. The Initiative has three objectives: (1) implement Florida's Comprehensive Wildlife Conservation Strategy, (2) build partnerships for wildlife conservation across the state, and (3) use Florida's State Wildlife Grants Program funds to support partnership building and implementation of the Strategy. ***http://myfwc.com/Wildlifelegacy/faqs.html***

- **Food Conditioned (animal) (FWC)** - An animal that associates structures/vehicles/people with food. This animal has received a food reward and has developed a positive association with structures/vehicles/people. This animal can become more habituated with each successful visit. (e.g. bears foraging in garbage cans, dolphins begging for fish handouts, squirrels or birds fed at parks)

- **Food Conditioned/Habituated (animal) (FWC)** - The food conditioned/ habituated animal is one that has made a strong positive association with structures/vehicles/people and is no longer afraid to approach under all but the most stressful conditions to the animal. This animal may increase its level of aggression to obtain foods. If the animal is successful, it will no longer leave the immediate vicinity and may under some circumstances be defensive of the food source. (e.g. bears may become aggressive, dolphins may bite, squirrels and birds become a nuisance in pursuit of food).

- **Fragmentation (FWC) –** The break up of large habitats into isolated or small patches. Florida's wildlife populations are impacted by this fragmentation when development disrupts wildlife travel corridors and habitat areas.

- **Game Species (FWC) –** Species that are hunted or fished.

- **Geocaching** - Geocaching is an entertaining adventure game for Global Positioning Systems (GPS) users. Participating in a cache (any type of "treasure" left by the person who documents the site) hunt is a good way to take advantage of the wonderful features and capability of a GPS unit. The basic idea is to have individuals

and organizations set up caches all over the world and share the locations of these caches on the internet. GPS users can then use the location coordinates to find the caches. Once found, a cache may provide the visitor with a wide variety of rewards. All the visitor is asked to do is if they take something they should try to leave something for the cache. Florida Geocaching Association: ***http://65.34.18.106/news.php***, FWC locations: ***http://myfwc.com/recreation/geocaching/index.html***

- **Geographic Information System (found in all agencies) (GIS)** – A computer system capable of assembling, storing, manipulating and displaying geographically reference information, i.e., data identified according to their locations—manatee deaths in the state, seagrass communities, location of springs, waterway speed zones, animal tracking, artificial reef locations, etc.

- **G-litter (DOT)** – Refers to the litter that is found along neighborhood or community road sides. "Glitter Bugs" are usually young people who pick up litter from these areas. State of Florida highway maps show a bug that says "Keep Florida glitter clean."

- **Global Warming (aka climate change)** - The Earth's climate has changed many times during the planet's history, with events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the Sun have affected the Earth's climate. Beginning late in the 18th century, human activities associated with the Industrial Revolution have also changed the composition of the atmosphere and therefore likely are influencing the Earth's climate. For over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has caused the concentrations of heat-trapping "greenhouse gases" to increase significantly in our atmosphere. These gases prevent heat from escaping to space, somewhat like the glass panels of a greenhouse. Greenhouse gases are necessary to life as we know it, because they keep the planet's surface warmer than it otherwise would be. But, as the concentrations of these gases continue to increase in the atmosphere, the Earth's temperature is climbing above past levels. According to NOAA and NASA data, the Earth's average surface temperature has increased by about 1.2 to 1.4°F since 1900. The warmest global average temperatures on record have all occurred within the past 15 years, with the warmest two years being 1998 and 2005. Most of the warming in recent decades is likely the result of human activities. Other aspects of the climate are also changing such as rainfall patterns, snow and ice cover, and sea level. If greenhouse gases continue to increase, climate models predict that the average temperature at the Earth's surface could increase from 2.5 to 10.4°F above 1990 levels by the end of this century. Scientists are certain that human activities are changing the composition of the atmosphere, and that increasing

the concentration of greenhouse gases will change the planet's climate. But they are not sure by how much it will change, at what rate it will change, or what the exact effects will be. ***http://www.epa.gov/climatechange/ http://www.worldviewofglobalwarming.org/index.html***

- **Green Infrastructure (DEP/FWC)** – The Nation's natural life support system—a strategically planned and managed network of wilderness, parks, greenways, conservation easements, and working lands with conservation value that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to the health and quality of life for America's communities and people. ***http://www.greeninfrastructure.net/***

- **Greenhouse Effect (and Enhanced Greenhouse) (UF)** – The natural process whereby gases in our atmosphere trap heat radiated from the Earth's surface which helps maintain a suitable temperature for life. This natural process can become problematic if the heat trapping capacity of the atmosphere is enhanced by the build-up of human generated greenhouse gases such as carbon dioxide. This enhanced greenhouse effect is the primary source of concern behind global climate change.

- **Greenways (DEP) (see Corridor)** – Greenways are managed for conservation or recreational purposes. The corridors follow natural land or water features such as ridges or rivers, or human landscape features such as abandoned railroad corridors or canals. Florida has an extensive greenways and trails network that provides recreational opportunities for biking, hiking, canoeing, horseback riding, ATVs and kayaking. The greenways and trails are a link between communities and provide a way to enjoy the natural environment without being impacted by motorized vehicle traffic. ***http://www.dep.state.fl.us/gwt/guide/***

- **Ground-truthing (FWC)** – process of verifying if information about an area is correct. For example, researchers who use aerial maps to locate a site can visit the location to ground-truth the area for what they thought they saw or for what they think should be at that location. The verification of a site allows managers to make appropriate decisions based on the need of the area. The state's regional trails systems and bird watching areas used ground-truthing in the set up of these areas.

- **Groundwater (WMD)** –The supply of fresh water found beneath the earth's surface (usually in aquifers) which is often used for supplying wells and springs.

- **Groundwater level (DEP/WMD) –** The measurement, in feet, of the elevation of the top of an aquifer, as measured in a network of groundwater monitoring wells and/or supply wells. The level can fluctuate in response to aquifer recharge and groundwater withdrawals.

- **Habitat (DEP/FWC) –**The natural environment including both living and non-living elements where a plant or animal grows and lives. A healthy habitat includes air, water, adequate space to live, shelter and food.

- **Habitat Conservation Plan (FWC) –** A comprehensive planning document that is a mandatory component of an incidental take permit pursuant to section 10(a) (2) of the Endangered Species Act (ESA).

- **Habitat Fragmentation (FWC)** - Habitat that is separated by natural or physical barriers (e.g. mountains, rivers, roads, development, etc.). These barriers can obstruct the movement of animals from finding the habitat they need to survive.

- **Habitat Islands (FWC) –** Small pockets of habitat areas that are surrounded by development or other natural resources (river, mountain, etc.) that limit their growth or spread.

- **Habitat Protection (FWC) –** Guidelines, rules or restrictions are put in place (enacted) to protect habitat areas for the long-term benefit of Florida's wildlife and human population. Protecting Florida's habitat ensures that each species has what it needs to survive. Habitat protection can be anything from protecting the dunes and sea oats on a beach to regulating adequate water flow from a spring to cutting down on the use of fertilizers on lawns. Habitat impacts happen when poor planning and inadequate environmental controls are allowed to occur.

- **Habituation (animal) (FWC) (same as Food Conditioned and Food Conditioned Habituated)** - an animal that has grown accustomed to being in proximity to people, but does not identify structures/ vehicles/people as a potential food source. Although a habituated animal no longer perceives people and human activity as a threat (e.g. bear coming into residential area for acorns, fish fry scraps, etc.), such an animal is not necessarily a threat to people either. The probability of this animal receiving a food source is high due to its proximity to people and people's problem behavior of offering unsecured attractants to bears.

- **Harmful Algal Bloom (FWC/NOAA/DOH) (a.k.a. HAB) –** The rapid growth of a toxic or nuisance algae species that negatively affects natural resources or humans. Red Tide is an HAB that affects the Florida's southwest coast and has killed hundreds of manatees and thousands of fish. ***http://research.myfwc.com/features/category_main.asp?id=1510 http://www.whoi.edu/redtide/whathabs/whathabs.html***

- **Hazardous Waste (DEP)** - Waste that poses a risk to human, animal or environmental health which requires special disposal techniques to make it harmless or less dangerous. To find more information, please go to the DEP Web site ***http://www.dep.state.fl.us/waste/categories/shw/default.htm***

- **Healthy Habitat + Healthy Wildlife = Healthy People (FWC)** – A common sense explanation for a healthy environmental community and the people who live in that community. Visitors to our state do not come to see pollution or sick wildlife—keeping Florida's natural areas healthy ensures economic health and benefits for Florida's residents.

- **High Priority Habitats (FWC)** – Identified in the Wildlife Legacy Initiative, the following habitats are Florida's highest priority for conservation: Scrub, softwater stream, coral reef, sandhill, spring/spring run and submerged aquatic vegetation (seagrass).

- **Historic Land Cover (FWC)** - Land use (by human and/or wildlife populations) and land cover (natural vegetation, features and water sources) define the context of the socio-ecosystem, and alterations in their patterns represent some of the diverse changes in the system. We ask: How have land use and land cover changed in the past, and how are they changing today? How do land-use and land-cover changes alter the ecological and social environment in the city, and how do human perceptions of these changes alter future decision making? How does current land cover changes impact: climate changes (drought, rain, etc.); water policy, use and supply; and the natural areas when nutrients and toxins from populated areas are introduced? How do human activities, behaviors, and values change biodiversity and its components—population abundance, species distribution and richness, and community and trophic (nutrition) structure? By comparing historic land cover maps with current land cover information, researchers are able to address the above questions. ***http://landcover.usgs.gov/landcoverdata.php***

- **Human Environment** – the surroundings in which people conduct their lives, including built and natural environments, as well as cultural resources.

- **Hydric (FWC)** – An environment that contains an abundance of moisture.

- **Hydrilla (DEP)** – an invasive, exotic, aquatic plant that is growing rampant in many Florida springs and rivers.

- **Imperiled Species (FWC)** – Species that are considered to be endangered, threatened or a species of special concern. These species are managed and protected for conservation by the state or federal agencies, e.g., panthers, manatees, right whales, gopher tortoises, Miami blue butterfly, caracara, etc. See list of Florida imperiled species ***http://myfwc.com/imperiledspecies/***

- **Impermeable – (DEP) –** not permitting the passage of fluids. In the case of geologic formations, an impermeable layer of earth is one through which groundwater cannot pass.

- **Impervious Surface (DEP)** - Mainly composed of constructed surfaces—rooftops, sidewalks, roads, and parking lots—that are covered by material such as asphalt, concrete, brick, and stone. These materials seal surfaces, repel water and prevent water from seeping down into the ground/soil.

- **Impoundment Areas (DOF) –** Those areas in which water is artificially stored (impounded)—dam, dike, floodgate or other barrier.

- **Incompatible Release of Water (FWC) –** Release of freshwater into marine/estuarine systems in a manner that is inconsistent with the natural timing, distribution, and quantity of fresh water into that system. This includes large pulses of fresh water into estuaries during high rain events to prevent flooding of urban areas, when the natural flow would be much slower and of much less quantity.

- **Incompatible Fishing Pressure (FWC) –** Harvesting of fish and other marine resources to an extent that results in decreased populations of these species to levels that jeopardize their ecological integrity and the integrity of the ecosystem of which they are a part. An example is the over-harvesting of herbivorous fish such as parrotfish that consume algae on coral reefs, thereby allowing the algae to overpopulate the reef and out-compete corals for space.

- **Incompatible Recreational Activities (FWC) –** Recreational activities that disturb, degrade, or destroy natural habitat (e.g. mud-bogging in ponds, prop scarring activity in seagrass beds, anchor damage to coral, etc.) This can also include unmanaged or unauthorized recreation, vehicles and boats traveling outside of established transport corridors, as well as recreation exceeding carrying capacity for the natural system.

- **Incompatible Wildlife and Fisheries Management (FWC) –** Wildlife or fisheries management or policies that harm native habitats and/or wildlife. For example, maintaining high water levels in salt marshes to promote waterfowl hunting when natural water levels would be lower. This type of management is usually done as a socio-economic, rather than ecological benefit.

- **Indigenous (DEP/FWC) –** Native; living or occurring naturally in a specific environment (e.g. the Florida manatee, a subspecies of the West Indian manatee, is indigenous to Florida)

- **Intermittent Stream (DOF) –** A stream that has a well defined channel but does not flow unless certain climate conditions occur (e.g. rain, flood)

- **International Union for Conservation of Nature and Natural Resources (formerly known as IUCN)—**Now called The World Conservation Union or "Union"). The Union is the world's largest international conservation network of organizations. The Union brings together 82 States, 111 government agencies, more than 800 non-governmental organizations (NGOs), and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. Its mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. ***http://www.iucn.org*** Scientists and biologists in most State of Florida agencies refer to the IUCN or the Union when working on environmental or conservation issues. In its projects, the Union applies sound ecosystem management to conserve biodiversity and builds sustainable livelihoods for those directly dependent on natural resources. The Union is actively engaged in managing and restoring ecosystems and improving people's lives, economies and societies.

- **Interpretation (NAI/DEP)** - An educational process that is intended to stimulate and facilitate people's understanding of place, so that empathy towards, stewardship, conservation, heritage, culture and landscape is developed. Florida State Park rangers provide interpretative services when they conduct programs at camp fire circles, guide visitor boat tours or lead hikes in the state parks. Other groups may provide services at visitor centers, state museums or historic sites.

- **Invasive Species—**Plants and Animals (DEP/FWC) (also see information posted for Exotic Species, Nonnative Species.) - An introduced, nonnative species that out competes native species or causes harm to the natural ecosystem. Nonnative species do not have the natural control species from their native countries and may harm Florida's environment and economic health if released into the wild. Rapid growth and spread, such as with Australian pines and Brazilian pepper plants in south Florida, crowd out native vegetation; iguanas, Burmese pythons and the Nile monitor lizard consume native plants and animals in certain areas of the state. Hydrilla, an aquatic plant, is one of Florida's most invasive, nonnative, aquatic plants found in Florida springs and rivers. ***http://www.dep.state.fl.us/lands/invaspec/***

- **Karst (DEP) –** Landforms such as sinkholes, caverns, springs, sinking streams and natural bridges that form when slightly acidic, naturally occurring waters dissolve limestone, dolostone and gypsum which are soluble rocks. Florida has numerous karst features. http://www.dep.state.fl.us/geology/geologictopics/springs/sp_52.pdf

- **Keeping common species common (FWC) –** Part of the Florida Wildlife Legacy – Improving conditions so that common species of wildlife, such as quail, skunks and rabbits, don't become as rare as black bears, sea turtles and red-cockaded woodpeckers.

- **Keystone Species (FWC/DEP)** - A species that supports the survival of other species and whose presence is critical to that community. The gopher tortoise is a keystone species because it shares its long burrow with other species, including rabbits, gopher frogs, Florida mice, eastern diamondback rattlesnakes, indigo snakes and gopher crickets. Its burrows provide refuge for other animals if fire occurs in its habitat. Top predators, like panthers, are also considered keystone species because they serve a role in the predator/prey life cycle.

- **Land Conservation (DEP) –** Conserving land for the purpose of protecting important terrestrial areas that have significant conservation, recreation, ecological, historical, or aesthetic values, or that are threatened by conversion from their natural or recreational state to other uses. A conservation easement (or conservation restriction) is a legal agreement between a landowner and a land trust or government agency that permanently limits uses of the land in order to protect its conservation values. It allows land owners to continue to own and use their land and to sell it or pass it on to heirs. Conservation easements offer great flexibility. An easement on property containing rare wildlife habitat might prohibit any development, for example, while one on a farm might allow continued farming and the building of additional agricultural structures. An easement may apply to just a portion of the property, and need not require public access.

  The Florida Department of Environmental Protection through the Florida Forever land acquisition program purchases land to conserve it for future generations: ***http://www.dep.state.fl.us/lands/acquisition/FloridaForever/***

- **Landowner Incentive Program (FWC)** - Habitat loss in Florida is increasing at an alarming rate. With land clearing and habitat fragmentation, many endemic species have suffered significant population losses. Species at risk in Florida include 110 vertebrates, 8 invertebrates and 542 plant species. The key to conserving these native species involves maintaining or enhancing habitats that currently exist on private lands. Accordingly, FWC is working with private landowners to educate and encourage land management actions that will maintain or enhance habitat conditions that benefit the needs of listed species ***http://www.myfwc.com/lip/***

- **League of Environmental Educators in Florida (a.k.a. LEEF) –** Florida teachers and environmental leaders make up this league of educators who meet on an annual basis to share environmental education information or to develop education skills used to teach the next generation about Florida's environment. ***http://leef-florida.org/net/content/default.aspx?s=0.0.110.37432***

- **LIFE Program (DEP)** - LIFE stands for "Learning in Florida's Environment." The LIFE Program is a network of field-based, environmental-science, education programs that are conducted at different sites around the state. Each program represents a partnership between the Florida Department of Environmental Protection and a local school district. The goal of each LIFE Program site is to increase student achievement and teacher professional development in Science. The content and delivery of each program varies from site to site; however, each LIFE Program shares a core set of guiding principles ***http://www.dep.state.fl.us/secretary/ed/***.

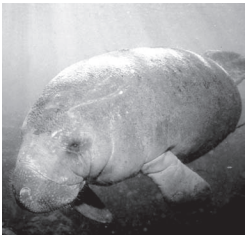
- **Light Pollution (FWC) –** Often related to sea turtles and beach lighting, light pollution is the excessive glow that lights up the sky near beaches. For millions of years female sea turtles have been coming ashore to lay their eggs on beaches. In the past, the hatchling turtles were guided to the ocean by an instinct to travel away from the dark silhouettes of the dune vegetation, toward the brightest horizon, which was the light from the sky reflecting off the ocean. In present times, many coastal areas are highly populated. There are many artificial lights near the beach that can deter females from nesting and disorient hatchling sea turtles. The hatchlings travel inland, toward the artificial lights, where they often die from dehydration, are preyed upon by fire ants and ghost crabs, or sometimes crawl onto the road where they are run over by cars. FWC provides expertise for addressing light pollution along Florida's coast ***http://myfwc.com/seaturtle/index.htm***

- **Limestone (DEP) –** A sedimentary rock primarily composed of the mineral calcite (CaCO3). Limestone is soluble and often develops karst features when weathered. ***http://www.dep.state.fl.us/geology/geologictopics/rocks/florida_rocks.htm***

- **Low Impact Development (DEP/WMD/UF)** - Low Impact Development (LID) is an innovative stormwater management approach with a basic principle that is modeled after nature: manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID's goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Techniques are based on the premise that stormwater management should not be seen as stormwater disposal. Instead of conveying and managing / treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, LID addresses stormwater through small, cost-effective landscape features located

at the lot level. These landscape features, known as Integrated Management Practices (IMPs), are the building blocks of LID. Almost all components of the urban environment have the potential to serve as an IMP. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks, and medians. LID is a versatile approach that can be applied equally well to new development, urban retrofits, and redevelopment / revitalization projects.

- **Manatee Protection Plan (FWC)** – The Florida Fish and Wildlife Conservation Commission encourages County MPPs to be adopted as an amendment to the county's comprehensive plans. The individual components—boat facility siting, protection measures, education and awareness, etc.—must be compatible with local policies and ordinances while addressing manatee concerns. In setting policies to safeguard manatees and their habitats, the MPPs will also help with increasing boater safety, facilitating recreation planning, and protecting estuarine habitat critical to many species. Much of the Commission's research and work is aimed at reducing manatee mortality. However, equally important is the protection of habitat to ensure the long-term viability of the species. For this reason, the comprehensive manatee protection plan addresses ecosystem management. Due to the complexity of issues a county must address in its plan and the range of information that must be collected, plans are expected to be several years in development. ***http://myfwc.com/manatee/mpp/***



- **Mangroves (DEP)** - Mangroves are one of Florida's true native species. These coastal trees thrive in salty environments because they are able to obtain freshwater from saltwater. Some mangrove species secrete excess salt through their leaves; others block absorption of salt at their roots. Florida's estimated 469,000 acres of mangrove forests contribute to the overall health of the state's southern coastal zone. This ecosystem traps and cycles various organic materials, chemical elements, and important nutrients. Mangrove roots act not only as physical traps but provide attachment surfaces for various marine organisms. Many of these attached organisms filter water through their bodies and, in turn, trap and cycle nutrients. The relationship between mangroves and their associated marine life cannot be overemphasized. Mangroves provide protected nursery areas for fishes, crustaceans, and shellfish. They also provide food for a multitude of marine species such as snook, snapper, tarpon, jack, sheepshead, red drum, oyster, and shrimp. Florida's important recreational and commercial fisheries will drastically decline without healthy mangrove forests. Many animals find shelter either in the roots or branches of mangroves. Mangrove branches are rookeries, or nesting areas, for beautiful coastal birds such as brown pelicans and roseate spoonbills. ***http://www.dep.state.fl.us/coastal/habitats/mangroves.htm***

- **Marine Mammal Protection Act (MMPA)** - ***Marine Mammal Protection Act (MMPA***) [pdf] was enacted on October 21, 1972. All ***marine mammals*** are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the U.S.

  Congress passed the Marine Mammal Protection Act of 1972 based on the following findings and policies:

  - Some marine mammal species or stocks may be in danger of extinction or depletion as a result of human activities;
  - These species or stocks must not be permitted to fall below their optimum sustainable population level ("depleted");
  - Measures should be taken to replenish these species or stocks;
  - There is inadequate knowledge of the ecology and population dynamics; and
  - Marine mammals have proven to be resources of great international significance.

  The MMPA was amended substantially in 1994 to provide for:

  - Certain exceptions to the take prohibitions, such as for Alaska Native subsistence and ***permits and authorizations*** for scientific research;
  - A program to authorize and control the taking of marine mammals incidental to ***commercial fishing operations***;
  - Preparation of ***stock assessments*** for all marine mammal stocks in waters under U.S. jurisdiction; and
  - Studies of pinniped-fishery interactions.

- **Marine Mammal Stranding Event (FWC) –** One to several marine mammals may beach themselves for health or other reasons. Smaller animals, like dolphins, have a better chance of survival since their internal organs do not get crushed from the full weight of their body as does a marine mammal such as a large whale. Dolphins and small whales are easier to transport to rehabilitation facilities. Additional stranding information is available through the NOAA Fisheries Service ***http://www.nmfs.noaa.gov/strandings.htm*** To report marine mammal stranding events in Florida, call the FWC Wildlife Alert number: 1-888-404-FWCC (3922).

- **Migration (FWC)** - Wildlife movement from one habitat area to another—may be influenced by weather/seasons or abundance of food sources (the annual coming and going of "snow birds" to the warmer areas of Florida could be considered a migration as well).

- **Mitigation (FWC/DEP) –** A payment or other exchange (compensation) that is required for the use of or development of natural resources or habitat (usually for construction purposes) that are pivotal to the survival or well-being of listed species. ***http://myfwc.com/recreation/mit_parks.htm***l

- **Mitigation Banking (DEP) –** Mitigation banking is a practice in which an environmental enhancement and preservation project is conducted by a public agency or private entity ("banker") to provide mitigation for unavoidable impacts within a defined region (mitigation service area). The "bank" is the site itself, and the currency sold by the banker to the impact permittee is a credit, which represents the ecological value equivalent to the complete restoration of one acre. The number of potential credits permitted for the bank and the credit debits required for impact permits are determined by the permitting agencies. Chapter 373.4135 Florida Statutes states: "Mitigation banks and offsite regional mitigation should emphasize the restoration and enhancement of degraded ecosystems and the preservation of uplands and wetlands as intact ecosystems rather than alteration of landscapes to create wetlands. This is best accomplished through restoration of ecological communities that were historically present." ***http://www.floridadep.org/water/wetlands/mitigation/mitigation_banking.htm***

- **Monofilament Recovery and Recycling Program (FWC) –** The Monofilament Recovery & Recycling Program (MRRP) is a statewide effort to educate the public on the problems caused by monofilament line (fishing line) left in the environment, to encourage recycling through a network of line recycling bins and drop-off locations, and to conduct volunteer monofilament line cleanup events. ***www.fishinglinerecycling.org***

- **National Ambient Air Quality Standards (EPA)** - The Clean Air Act requires EPA to set national ambient air quality standards for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found all over the United States:
  - particle pollution (often referred to as particulate matter)
  - ground-level ozone
  - carbon monoxide
  - sulfur oxides
  - nitrogen oxides
  - lead

  These pollutants can harm your health and the environment, and cause property damage. Of the six pollutants, particle pollution and ground-level ozone are the most widespread health threats. EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible

levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards. National Ambient Air Quality Standards

- **National Association for Interpretation (NAI)** - is a professional organization dedicated to advancing the profession of heritage interpretation, currently serving about 5000 members in the United States, Canada, and over thirty other nations. Individual members include those who work at parks, museums, nature centers, zoos, botanical gardens, aquariums, commercial tour companies, and theme parks. Commercial and institutional members include those who provide services to the heritage interpretation industry. ***http://www.interpnet.com/***

- **National Environmental Policy Act (NEPA)** - was signed into law in January 1970. Its general purposes are: to declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality (CEQ). The National Environmental Policy Act (NEPA) includes the specific requirement that all federal agencies must prepare and circulate, for major federal actions significantly affecting the quality of the human environment, a detailed statement on the environmental impacts, adverse environmental effects, and alternatives to the proposed action. Consequently, federal agencies began developing environmental impact statements (EIS) to evaluate the impacts of an activity, and a set of alternative actions, on the affected environment. Under CEQ regulations, a federal agency may prepare an environmental assessment (EA) to determine whether the preparation of an EIS is necessary. That is, an EA may conclude that the proposed action would not significantly affect the environment. Rather than proceed with preparing an EIS, the federal agency may issue a finding of no significant impact (FONSI). ***http://www.dep.state.fl.us/secretary/oip/nepa.htm***

- **National Estuarine Research Reserve –** An area of estuarine waters and adjacent coastal uplands that have been designated by joint action of the state and the federal government. The federal government provides the oversight, coordination and funding. The state provides for the management and protection of the site and matching funding. The reserves' programs include research, education, training, and land management/stewardship. Florida has three NERR sites. ***http://www.dep.state.fl.us/coastal/programs/nerrs.htm***

- **National Marine Educators Association (NMEA) –** NMEA brings together those interested in the study and enjoyment of both fresh and salt water and provides a focus for marine and aquatic studies all over the world. The Florida Marine Science Educators Association is a regional chapter of this national association. ***http://www.marine-ed.org/***

- **National Marine Fisheries Service (NMFS) –** (Part of NOAA - see below) NOAA Fisheries Service is dedicated to the stewardship of living marine resources through science-based conservation and management, and the promotion of healthy ecosystems.

- **National Marine Sanctuary –** A federally designated and protected marine area. The Florida Keys National Marine Sanctuary is the NMS in Florida.

- **National Oceanic & Atmospheric Administration (NOAA - also pronounced "Noah") –** U.S. Department of Commerce - The National Oceanic and Atmospheric Administration conducts research and gathers data about the global oceans, atmosphere, space and sun, and applies this knowledge to science and service that touch the lives of all Americans. ***http://www.noaa.gov/***

- **National Park Service (NPS) –** Administered by the U.S. Department of the Interior, Florida has 11 National Park Service properties ***http://home.nps.gov/applications/parksearch/state.cfm?st=fl***

- **Native Species (FWC/DEP) (a.k.a. common species) –** animals or other organisms that were here prior to European colonization in the early 16th century.

- **Natural Heritage (FWC) –** The natural community that we have inherited and will eventually pass on to the next generation. Climate change is forcing us to make appropriate changes so that future generations have adequate natural areas, wildlife and communities. ***http://palmm.fcla.edu/lfnh/***

- **Nature-Deficit Disorder** - Identified by Richard Louv in his book, "Last Child in the Woods: Saving our Children from Nature-Deficit Disorder." While not a medical condition, the concept is a wake up call to action for parents and community leaders to make sure that today's children have the opportunity to benefit from a direct connection with the outdoor world. Today, kids are aware of the global threats to the environment—but, they do not get the physical contact or have the intimacy with nature that the previous generations enjoyed. As a result, they have what is called a "nature-deficit disorder." It is up to those in power or who make environmental changes to include opportunities for current and future generations to explore and experience nature. Children should be encouraged to "go out and play" outdoors. ISBN -10: 1-56512-522-3 (PB)

- **Necropsy (FWC-FWRI) –** An autopsy that is performed on a dead animal—usually done for an imperiled species (manatee, sea turtle, etc.) or for an unusual die-off of a particular species (e.g. fish kills or marine mammal stranding event). The State's marine mammal necropsy facility is located on the grounds of Eckerd College in St. Petersburg, Florida. ***http://research.myfwc.com/features/category_sub.asp?id=2258***

- **Negative Reinforcement** - An action or stimulus that causes an animal to halt or avoid a certain negative behavior.

- **No Child Left Inside –** An initiative that focuses on providing children with the opportunity to learn, play and explore outdoors. Richard Louv (see Nature-deficit disorder, page 43), triggered the No Child Left Inside initiative, which is growing nationwide as more developers, environmental educators, ranchers and other stakeholders try to provide opportunities for children to experience the outdoors. The No Child Left Behind Act does not mention environmental education. Thanks to the growing momentum created by people around the country, the 2007 draft reauthorization of NCLB dedicates 14 pages to environmental education, including two new grant programs to support teaching and learning about the environment. ***http://www.cbf.org/site/PageServer?pagename=act_sub_actioncenter_federal_NCLB http://www.nochildleftinside.org/*** and ***http://www.naaee.org/ee-advocacy***

- **Non-game Wildlife (FWC)** - Non-game wildlife are animals that are not typically hunted or monitored for hunting or harvesting purposes. Examples would be Florida's marine mammals, skunks, most birds, etc. More information about these species is found on the FWC web site in the wildlife or "critter" pages. ***www.MyFWC.com***

- **Nonnative Species (FWC/DEP) (a.k.a. exotic species) –** Plants or animals that are not native to Florida. They are brought in either intentionally, as ornamentals or pets, or accidentally, as hitchhikers that arrive at airports, seaports or through the mail. Florida hosts over 300 nonnative animal species (31 mammals, 196 bird species, 48 reptiles, 4 amphibians, and 32 fish species). Many groups in Florida work to stop the spread of these species so that Florida's native wildlife species can survive. One third of all plant species in Florida are nonnative species. ***www.MyFWC.com***

- **Nonpoint Source (NPS) Pollution (DEP/DOF) –** NPS pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution occurs when rainfall, (snowmelt,) or irrigation runs over land or through the ground, picks up pollutants throughout the watershed, and deposits them into rivers, lakes, and coastal waters or introduces them

into ground water. NPS pollution also includes adverse changes to the vegetation, shape, and flow of streams and other aquatic systems. NPS pollution is widespread because it can occur anytime activities disturb the land or water. Septic systems, urban runoff, construction, recreational boating, agriculture, forestry, grazing, physical changes to stream channels, and habitat degradation are all potential sources of NPS pollution. Careless or uninformed household management also contributes to NPS pollution problems, *http://www.dep.state.fl.us/water/nonpoint/faq.htm*

- **North American Association for Environmental Education (NAAEE)** - NAAEE is the "home" for people from more than 55 countries who believe in teaching people how to think about the environment, not what to think. The members use high-quality teaching methods and sound, environmentally sustainable concepts through a cooperative, non-confrontational, scientifically-balanced approach to promoting education about environmental issues. *http://www.naaee.org/*

- **Nuisance Species (FWC) –** Native species at densities sufficient to threaten other Species of Greatest Conservation Need through competition, predation, habitat destruction or pathogen movement.

- **Nuisance Wildlife (FWC/UF-IFAS) –** For people not used to wildlife or who don't understand an animal's nature or characteristics, any perceived threat can be a reason for labeling wildlife as a nuisance. Although some unpleasant interactions with our wild neighbors can result in human death, injury, property damage or minor nuisances, a good bit of our frustrations with wildlife can be taken care of just by learning why a situation occurs. Other difficulties with wildlife require action. Knowing why the snake is in your garden, why the armadillo is digging up your lawn, or why the woodpecker is drilling holes in the side of your house is an essential first step toward resolving these and other wildlife nuisance problems. Often the reasons are obvious. Snakes prefer shaded areas where they might find a toad, mouse, or other food item. Armadillos don't excavate lawns as a prank--they are merely looking for ants, grubs, and other soil-dwelling insects. Woodpeckers may be marking their territory… Misunderstandings are common causes of many frustrations and fears that people have about wildlife. If you would like to report nuisance wildlife, please contact the FWC Resource Alert Number 1-888-404-FWCC (3922).

- **Outdoor Recreation (FWC/DEP)** - Activities such as canoeing, hiking, fishing, horseback riding, etc. Outdoor recreation opportunities are provided around the state at various parks, conservation or wildlife management areas. *http://myfwc.com/recreation/ http://www.dep.state.fl.us/parks/*

- **Outstanding Florida Water (DEP/DOF) –** An Outstanding Florida Water (OFW) is a water designated worthy of special protection because of its natural attributes. This special designation is applied to certain waters, and is intended to protect existing good water quality. Most OFWs are areas managed by the state or federal government as parks, including wildlife refuges, preserves, marine sanctuaries, estuarine research reserves, certain waters within state or national forests, scenic and wild rivers, or aquatic preserves. Generally, the waters within these managed areas are OFWs because the managing agency has requested this special protection. Waters that are not already in a state or federal managed area, may be designated as "special water" OFWs if certain requirements are met including a public process of designation. All waters of the state fall into one of five surface water classifications (***62-302.400 F.A.C.***) with specific criteria applicable to each class of water. ***http://www.dep.state.fl.us/water/wqssp/ofwqa.htm***

- **Outstanding National Resource Waters (DOF) –** Water bodies that have characteristics that meet specific water quality standards for national designation for protection from pollution and degradation.

- **Overfishing (FWC/NOAA) –** Commercial or recreational fishers who remove too many mature breeding age fish in aggregation or spawning areas can reduce future fish stocks. Fisheries Management provides rules and guidance to ensure that fish populations survive. ***http://www.nmfs.noaa.gov/***

- **Ozone (O3) (EPA/DEP) –** Ozone is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad," depending on its location in the atmosphere.

  "Bad" Ozone - In the earth's lower atmosphere, ground-level ozone is considered "bad." Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" ozone. Rural areas are subject to increased ozone levels because wind carries ozone and pollutants form hundreds of miles away from the original sources of pollution.

  What makes ozone bad for people is that breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue.

The Clean Air Act requires EPA to set air quality standards to protect both public health and the public welfare (e.g. crops and vegetation). Ground-level ozone affects both.

"Good" ozone occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful rays.

For more information about ozone, please visit ***http://www.epa.gov/ozone/strathome.html***

- **Pathogens – (FWC) –** Any agent, most commonly a microorganism, capable of causing disease.
- **Peak Oil (UCF - FSEC)** - The point at which half the available petroleum reserves have been expended.
- **Perennial Stream –** A watercourse that flows in a well-defined channel throughout most of the year under normal weather/climatic conditions.
- **Pervious Surface (DEP) –** Ground cover that allows water to drain or seep into the ground/soil, e.g., grasses, wooded areas, sand, brick pavers, gravel, undeveloped areas, etc.
- **Photovoltaic (UCF - FSEC)** - Technology of converting sunlight into electricity using solar cells.
- **Pollutants/Pollution (DEP/DOF) –** Natural or man-made waste material that contaminates air, soil, or water (ex. Oil spills, exhaust from vehicles, plant discharge) or makes the environment unsuitable for human existence (e.g., excess CO2 in the atmosphere).
- **Pollution Prevention (DEP) –** Pollution prevention is a voluntary, proactive change to an industrial process that eliminates or reduces the generation of hazardous substances, increases efficiency, or conserves natural resources. Pollution prevention is a series of techniques used to reduce or eliminate pollution generated. In contrast to most pollution control strategies that manage a pollutant's effect on the environment after it is generated, pollution prevention seeks to increase the efficiency of a process to reduce or eliminate the pollutant before it becomes waste to be managed. Note: Pollution prevention can be practiced not only by industries, but also individuals. Simply changing a traditional incandescent light bulb to a compact fluorescent light (CFL) is pollution prevention. ***http://www.dep.state.fl.us/pollutionprevention/aboutus.htm***
- **Pollution Prevention Program (DEP) –** The Pollution Prevention Program offers free technical assistance to Florida's industries, businesses and government agencies that result in economic, health, and environmental benefits. A business that moves ahead of the regulatory curve by focusing on preventing hazardous waste and emissions can become more competitive and increase profits while they reduce worker exposure, lower disposal and pollution

control costs, and decrease long-term liabilities. Initiatives can also minimize raw material consumption and energy usage. ***http://www.dep.state.fl.us/pollutionprevention/***

- **(Animal) Population Management and Research (FWC) –** FWC manages the state's fish and wildlife populations through a variety of programs. Management plans are developed to guide the research that ensures the fish and wildlife populations either grow or are sustained. Fish and wildlife managers use the research results to make appropriate management changes that benefit each species long-term survival.

- **Positive Reinforcement (FWC) –** An action or stimulus that causes an animal to perform a certain behavior. Wildlife feeding stations or bird feeders could be considered as places where positive reinforcement occurs—if an animal visits the feeder then they will receive food. The unintended consequences is when animals that are not intended to visit the feeder discover the food source and recognize the benefits, e.g., bears destroy bird feeders or forage in unsecured dumpsters.

- **Prescribed Fire (DOF/DEP) (a.k.a. prescribed burn or controlled burn)** - A fire that is set to control the buildup of natural fuels in wooded areas. The fires provide plants and animals with new growth opportunities—seeds are distributed, underbrush is burned away, new food sources are easier to find as new plants grow. Prescribed fires also help control wild fires from devastating woodlands or homes near these areas. Select areas are burned every 3-5 years. Prescribed burning mimics natural fire cycles to restore natural communities, perpetuates fire-adapted plants and animals, reduces undergrowth that accumulates over time, reduces unnatural dominance of hardwood species, cycles nutrients, controls tree diseases, and decreases the potential for destructive wildfires. Burned areas experience an increase in native wildflowers, birds and other wildlife. Since Florida has become developed and lightning fires are not allowed to burn, fuels build up to dangerous levels. Destructive wildfires in Florida have occurred over the last few decades because the forests haven't had regular fuel reduction. Florida's pine forests need prescribed fire every few years to maintain safe, reduced fuel levels. ***http://www.dep.state.fl.us/secretary/news/2007/04/0414_01.htm***

- **Preventive Measures** - Steps individuals can take in and around their property to secure items that might attract wildlife and result in a negative encounter (e.g. securing garbage, bird feeders, pet foods, etc. from bears).

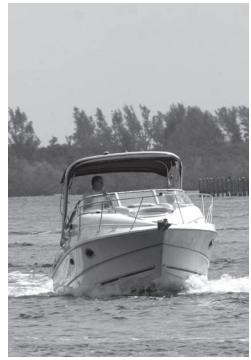
- **Project Learning Tree (UF) –** Project Learning Tree (PLT) meets state and national education standards. The curriculum materials provide the tools educators need to bring the environment into the classroom and their students into the

environment. Topics range from forests, wildlife, and water, to community planning, waste management and energy. ***http://www.plt.org/index.cfm*** and ***http://sfrc.ufl.edu/plt***

- **Project WET (WMD) (Project Water Education for Teachers)** - Project WET is committed to global water education that is implemented at the community level, usually through workshops for teachers. ***http://www.projectwet.org/***

- **Project WILD (FWC) (Project Wildlife in Learning Design)** - is an interdisciplinary conservation and environmental education program emphasizing wildlife. The program is designed for educators of kindergarten through 12th grade students. Project WILD capitalizes on the natural interest that children and adults have in wildlife by providing hands-on activities that enhance student learning in all subject and skill areas. Project WILD leaders in Florida created several activities that relate to Florida's Comprehensive Assessment Tests (FCAT) ***http://myfwc.com/educator/projwild.html***

- **Prop Scarring (DEP/FWC) –** Prop scarring occurs when motorized vessels power through seagrass beds. The churned up trail leaves a "scar" in this aquatic habitat system that can take years to heal. Numerous prop scars can decrease the benefits of the seagrass community as it allows predatory species into this marine nursery area. Excessive prop scarring can remove large areas of vegetation. Guidelines to avoid prop scarring seagrass areas are to avoid these shallow areas or to pole, paddle or walk you vessel to deeper water. Powering through the area churns up sediments, destroys root systems and removes habitat or food needed for marine life. Education and awareness is the key to the survival of these habitat areas. Seagrass planting can sometimes regenerate these areas: ***http://research.myfwc.com/features/view_article.asp?id=25310 http://www.dep.state.fl.us/coastal/habitats/seagrass/awareness/basics.htm***



- **Public Conservation Land (FWC/DOF) –** Lands that are owned and managed by any unit of local, state or federal government for the conservation of natural resources, including wildlife. Most public lands are protected from development except to allow for certain outdoor recreation activities and limited comfort needs.

- **Recovery (FWC) –** Improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a)(1) of ESA; the process by which species' ecosystems are restored so they can support self-sustaining and self-regulating populations of the listed species as persistent members of native biotic communities.

- **Red Tide (FWC) (see also Harmful algal blooms)** - The proliferation of toxic marine plankton that often causes fish kills and can contaminate certain edible shellfish. Red tide is a natural phenomenon that can be stimulated by the addition of nutrients. Manatee die-offs are usually the result of the ingestion of red tide organisms.

- **Reintroduction (DEP/FWC)** – A plant or animal that is moved back into a location where it historically occurred (usually after impacts to the location are addressed)

- **Relocation (FWC)** - The physical removal of an animal from its original location and depositing it in another location or area that has appropriate habitat for its survival. Nuisance wildlife animals and animals in development areas such as gopher tortoises are often relocated after proper permits are processed or procedures are followed.

- **Renewable Energy (UCF - FSEC)** - Energy sources that are replenished in a short period of time after they are used, such as solar and wind.

- **Resource Alert Number (FWC) (a.k.a. Wildlife Alert Number) 1-888-404-FWCC (3922) or #FWC** - The number you call to report emergencies, deaths, orphaned animals, injuries, poaching, harassment, etc. of Florida's wildlife or those using the resources.

- **Resource Depletion (UCF - FSEC)** - The using up of materials or commodities such as petroleum, land, timber, etc. within an area.

- **Resource Protection (FWC/DEP)** – Management of Florida's natural resources is important for the state's economic and environmental health. Various agencies provide resource protection through management plans, partnerships, on-site staff, law enforcement, and outreach or community relations. Protecting Florida's resources should be the focus of all residents and visitors since impacts to the resources destroy the benefits that make Florida a great place to live.

- **Responsible Angler (FWC) (a.k.a. angler ethics)** – guidelines to follow so that anglers do not impact the fisheries stock, other anglers or the environment. ***http://myfwc.com/Fishing/docum/anglerethics.html***

- **Restoration (DEP)** – Management actions that are used to return a vegetative community or ecosystem back to its original, natural condition. The Florida Park Service manages its properties to restore them back to pre-European conditions.

- **Retention Pond** - An artificial pond used to store storm water so that it eventually recharges underground aquifers, instead of being released into surface waters.

- **Riparian (FWC) –** Areas along or adjacent to a river or stream bank whose waters provide soil moisture significantly in excess of what is available from rainfall.
- **Rip-rap (DOT/DOF)** - Stone chunks/materials that are placed on slopes to reduce erosion of the slope.
- **Runoff (FWC)** - The flow of water, usually from precipitation, which is not absorbed into the ground. It flows across the land and eventually runs into stream channels, lakes, oceans, and depressions or low points in the Earth's surface. Runoff can pick up pollutants from the air and land, carrying them into the water body and affecting the species that live there.
- **Sanctuary (FWS/FWC) –** an area set aside where animals and/or birds are protected from hunting, molestation or disturbance. Florida has numerous state and national wildlife sanctuaries: ***http://gorp.away.com/gorp/resource/us_nwr/fl.htm***
- **Science-based Research/Decisions (FWC)** - Management decisions that are based on sound science data or research findings.
- **Science Methods –** Note: There is no single method used by all scientists. There are many shared methods when scientists make scientific inquiries such as asking questions, researching what is an already known, investigating, interpreting results and sharing information. A basic scientific method is:
  - Ask a Question
  - Do Background Research
  - Construct a Hypothesis (If I do _____; then this _____ will happen) – need to have something that is measurable.
  - Test Your Hypothesis by Doing an Experiment
  - Analyze Your Data and Draw a Conclusion (your hypothesis may be correct or you will find out something else based on your experiments)
  - Communicate or Publish Your Results

  For examples about this topic please browse this site. The information is available for students who work on science fair projects. ***http://www.sciencebuddies.org/mentoring/project_scientific_method.shtml***
- **Scientific Peer Review (DEP/FWC)** - Independent (non-government or agency) scientists who evaluate science-based decisions/ recommendations about various subjects.
- **Scientific Theory –** a widely accepted hypothesis that explains repeatable observations or results of experiments. In February 2008, the term was approved for use with Florida science curricula (e.g. the Scientific Theory of Evolution) and textbooks.

- **Schoolyard Ecology/Ecosystems (FWC) –** (a.k.a. Schoolyard Wildlife Project) Students and teachers take steps to ensure that restored habitat areas on school grounds have food, water, space and shelter for wildlife. ***http://myfwc.com/educator/schoolya.html***

- **Seagrass Habitat (FWC)** - In Florida, seagrass provides a refuge and nursery for hundreds of wildlife species including commercially and recreationally valuable fish and invertebrates. Seagrasses also keep our waters clean through nutrient recycling and by removing sediments from the water with their root systems and leaves. Protection of seagrass habitat is important for Florida's economy as healthy seagrass habitat provides opportunities for wildlife watching and fishing—both of which provide jobs for thousands of Florida's residents and bring revenue into the state. The economic value of seagrass to recreational and commercial fisheries has been estimated to be over $12,500/acre/year (Virnstein and Morris 1996); with an estimated 2 million acres of seagrass documented in Florida waters.

- **Seasonal Behavior (FWC) (also includes seasonal migration)** - Activity or movement of an animal attributed to food availability, reproduction, rearing of young, etc.

- **Seaward (FWC) –** toward the sea.

- **Shoreline Hardening (FWC) –** The clearing of the natural vegetation along the shore and into the water along with putting in things like concrete docks and walls right next to the water's edge. Cutting the grass right to the water's edge is another way of hardening the shoreline. The water becomes dirty and both plant and animal communities are destroyed thereby causing a dramatic loss of habitat. A buffer of vegetation along a shoreline will help slow sediments from entering the water body when heavy rains occur.

- **Silviculture (DOF) –** The art and science of controlling the establishment, growth, composition, health and quality of forest and woodland vegetation to meet the diverse interests of landowners and a wide variety of land management objectives.

- **Sinkhole (DEP)** - Sinkholes occur when earth on the surface collapses into a subterranean cavity that has formed in a limestone bed. ***http://www.dep.state.fl.us/geology/geologictopics/sinkhole.htm***

- **Solar Energy (UCF - FSEC)** - Radiant energy from the sun or use of the sun's electromagnetic spectrum to do work ***http://www.fsec.ucf.edu/en/***.

- **Special Management Zone (DOF) –** An area that is near a waterway in which special management precautions are used to protect natural resources.

- **Species (DEP/FWC) –** Plants, animals, fish, etc. (a.k.a. organisms) of the same kind that mate and produce fertile offspring.

- **Species of Greatest Conservation Need (FWC) –** Part of the Florida Wildlife Strategy - animals whose populations are of concern and are at risk or declining. It can include federal-listed, state-listed, and game species as well as many others whose populations are of concern. ***http://myfwc.com/wildlifelegacy/publicreview.html***

- **Species of Special Concern (FWC) –** A species, subspecies, or isolated population of a species or subspecies which is facing a moderate risk of extinction or removal from Florida in the future [as determined by the FWC Rule 68A-1004 (27)].

- **Speed Zones (FWC) –** Mostly related to Florida waterways—speed zones are put in areas where human safety or wildlife protection is needed. These zones—IDLE Speed and SLOW Speed—are found throughout Florida. NO ENTRY areas are placed where wildlife sanctuaries are located or at places near power plants for security purposes. Information about speed zones is found in boating safety or on county speed zone maps/boater guides ***www.My.FWC.com***

- **Sport Fish Restoration (FWC) -** The Federal Aid in Sport Fish Restoration program is a joint effort between Federal, State, industry, boaters, and anglers to support increased sport fishing and boating opportunities through the collection of excise taxes. This program is an exceptional example of a "user pays and user benefits" program (***Cycle of Success***). Anglers and boaters purchase the license. Industry (manufacturers) pays the excise tax which is deposited in the U.S. Department of Treasury. These funds are administered by the U.S. Fish and Wildlife and the U.S. Coast Guard (Boat Safety only) and apportioned to the State agency for eligible sport fish activities (in this case FWC) which improves fishing and boating and the anglers and boaters benefit from the work of the State agency. ***http://www.gsmfc.org/sfrp.html***

- **Spring (DEP/WMD) –** A point (opening) where underground water emerges onto the Earth's surface (including the bottom of the ocean). Some areas have more than one spring that emerges to add to the flow or filling up of the water body. Florida has many springs that are found throughout the state. ***http://www.dep.state.fl.us/springs/reports/index.htm***

- **Stakeholder (All agencies) –** Any person or organization that has an interest in the actions or discussions relating to the outcome of a project. Input from stakeholders is important for any state agency whose actions may impact or benefit a community or a species (e.g. Stakeholders, such as the Save the Manatee Club and boater interest groups, provide comments for the development of the Florida Manatee Management Plan).

- **Standing Snag (DOF/DEP) –** A dead tree that is used as a habitat for birds or other wildlife. The dead tree usually does not have a crown of branches and leaves and the trunk is still "standing."

- **State Buffer Preserve (DEP) (See Aquatic Preserve) –** Coastal uplands that are managed to protect the watershed of an adjacent Aquatic Preserve.
- **State Committee for Environmental Education (DEP/DOE/FWC/DCA/UF/FSU/WMDs/DOF/etc.)** - SCENE was established in 1992 to increase communication and networking among state agencies with environmental education responsibilities in the state of Florida.
- **Steephead Stream (DEP/WMD) –** Steephead streams are a distinct type of slope forest stream found only in Northwest Florida. They are formed when groundwater leaks through porous sand onto a sloping surface at the head of the stream. Steephead streams can easily disappear after upland erosion deposits sediment into the channel. In contrast, streams developed by surface runoff from rainfall are able to flush channel sediment deposits. These steephead habitats contain many species of endemic biota as well as rare northern plants. Only 515 miles of Seepage/Steephead Stream habitat exists in Florida. ***http://water.dep.state.fl.us/eswizard/esdata/pdfs/342.pdf***
- **Storm-water (DEP)** - Water that is generated by rainfall and is often routed into drain systems in urban areas to prevent flooding.
- **Strategic Habitat Conservation Areas (FWC) –** Uplands and wetlands that are important habitat areas that are currently not protected or managed.
- **Subject Matter Expert (FWC) (commonly referred by the acronym S.M.E.) –** Government agencies coined this phrase to identify individuals with expertise in specific fields of study.
- **Submerged Aquatic Vegetation (FWC/DEP) (a.k.a. SAV) –** SAV refers to any rooted plant that remains primarily submerged in fresh or marine water. This includes seagrasses as well as submerged plants found in lakes and rivers. ***www.dep.state.fl.us/northwest/Ecosys/section/SAVBrochure08.pdf***

  FWC considers SAV as a high priority habitat *(see seagrass).* ***http://myfwc.com/Wildlifelegacy/review/Submerged.pdf***
- **Subspecies (DEP/FWC) –** A group of sexually mature natural populations (plants, wildlife, etc.) that differ taxonomically from other groups within a biological species (e.g. the Florida manatee and the Amazonian manatee are subspecies of the West Indian manatee—slight gene pool characteristic differences occur because they are isolated geographically from the "parent" species).
- **Sub-urban Areas (a.k.a. suburban)** - Areas that have become developed into residential communities or towns.

- **Succession Zone (DEP) –** A gradual and orderly change to an ecosystem brought about by a change in plant or animal species, e.g., hurricanes or invasive species can change an ecosystem to a point where the plants and animals that used to live there are no longer able to survive and are in time replaced (through succession) by other plant and animal species.

- **Surface Water (DEP)** - All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.); also refers to springs, wells, or other collectors which are directly influenced by surface water.

- **Sustainable Communities (DCA/UF)** - simply defined; sustainability is meeting current survival needs without overusing or destroying the resources that future generations will need for survival.

  More comprehensively, it means looking at the issues and problems facing our world with a new perspective - one that focuses on three interdependent areas of concern: ecological preservation, economic viability, and social justice.

  To be sustainable, therefore, a practice must preserve rather than destroy its ecological base, ensure rather than undermine long-term economic benefits, and advance rather than retard matters of fairness, equity and diversity. ***http://www.sustainability.ufl.edu/whatis.html***

- **Sustainable development** - Development that ensures that the use of resources and the environment today does not restrict their use by future generations.

- **Synoptic Survey (FWC)** - "Synoptic" means presenting a general view of the whole. A manatee synoptic survey is a simultaneous count of manatees over a broad area. The FWC uses these surveys to obtain a general count of manatees statewide. Timing a synoptic survey is not an easy task, given the unpredictable nature of Florida weather and the logistics involved in organizing a survey of this magnitude on short notice. Synoptic surveys are scheduled about five to seven days in advance, which gives staff members time to notify the proper authorities (for example, power plants, sheriff and police departments, airport towers, etc.). Because the surveys are organized many days in advance, sometimes weather conditions are not perfect on the day of the survey. However, with each season, staff members become better at predicting the best time to count manatees, and the higher counts in recent years are, in part, reflective of improved knowledge. ***http://research.myfwc.com***

- **Take (FWC/USFWS) –** "Take" usually relates to an individual's action toward wildlife in the following ways - to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to

attempt to engage in any such conduct. Restrictions on take are listed in various wildlife rules. Please call the FWC Wildlife Alert number at 1-888-404-FWCC (3922) to report "take" incidents.

- **Taxon (FWC) (plural – taxa) –** A general term for any taxonomic category (e.g., a species, genus, family, order, etc.) used to scientifically sort plants or animals.

- **Telemetry (FWC) –** (a.k.a. radio-telemetry) Determining animal movements and habitat use are important aspects of research conducted by the FWC. Radio-telemetry tags allow scientists to track manatees; radio-telemetry-collars allow scientists to track panthers and radio-transmitters provide information about burrowing owls. The tags used on manatees contain a satellite and VHF transmitter. The satellite transmitter sends signals to receivers on two NOAA weather satellites in polar orbit. Service Argos processes the transmissions at receiving stations and calculates the location of each transmitter.

- **Threatened Species (FWC)** - Any species of fish and wildlife naturally occurring in Florida which may not be in immediate danger of extinction, but which exists in such small populations so as to become endangered if it is subjected to increased stress as a result of further modification of its environment. ***http://myfwc.com/imperiledspecies/rules.htm*** State Endangered Species Act 372.072 (text was not simplified)

- **Toxic Air Pollutants (EPA/DEP) (also known as hazardous air pollutants - HAPs) –** Toxic air pollutants are those pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. U.S. EPA currently regulates 187 HAPs Toxic air pollutants.

- **Trophic Pyramid –** Similar to the food pyramid that people are familiar with, the trophic pyramid relates to plants and animals. Producers make up what ecologists refer to as the first trophic level. Producers are the algae, cyanobacteria and plants within an ecosystem. They produce the foods on which the other trophic levels feed. Trophic levels are simply a way for ecologists to describe the food chain. It is important to note that trophic levels are visualized as pyramidal in shape. Because energy is lost in the form of heat at each level, the quantity of life that can be supported becomes smaller at each level. All biological factors decrease at each ascending level: energy, biomass, and number of organisms. Biological systems are typically composed of four trophic levels: producers—herbivores—small carnivores—large carnivores. There are animals that overlap these groupings, such as scavengers and omnivores. ***http://www.nps.gov/archive/grsa/resources/curriculum/elem/lesson37.htm***

- **Turbidity (FWC)** - In water bodies, turbidity is the condition of having suspended particles that reduce the ability of light to penetrate beneath the surface. Soil erosion, runoff, and phytoplankton blooms can increase turbidity.

- **Turtle Excluder Device (NOAA) (a.k.a. TED)** - A "Turtle Excluder Device" is a grid of bars with an opening either at the top or the bottom of the trawl net. The grid is fitted into the neck of a shrimp trawl. Small animals such as shrimp pass through the bars and are caught in the bag end of the trawl. When larger animals, such as marine turtles and sharks are captured in the trawl they strike the grid bars and are ejected through the opening. ***http://www.nmfs.noaa.gov/pr/species/turtles/teds.htm***

- **Umbrella Species (FWC)** - Species at the top of food chains with large habitat/home ranges. By protecting these top species, all other species (some lesser known) that live in their habitat also receive protection.

- **Upland (DEP/FWC) –** The highest parts of a region or tract of land—usually found away from the coast. Upland species are those plants and animals that live in these non-coastal habitat areas.

- **Urban Runoff** - Storm water from city streets and adjacent domestic or commercial properties that may carry pollutants of various kinds into the sewer systems and/or receiving waters (rivers, lakes, ocean or gulf).

- **Visual Display Behavior (animal) (FWC)** - Body expression, postures (e.g. tail erect, ears laid back, etc.), and/or noises (e.g. grunts, moans, howls, etc.) which allow animals to communicate.

- **Wastewater (DEP)** - Water that carries wastes from homes, businesses, and industries; a mixture of water and dissolved or suspended solids.

- **Water body (DOF/WMDs/DEP/FWC) –** Any river, creek, slough, canal, lake, reservoir, pond, spring run, sinkhole or other natural or man-made watercourse which flows within a defined channel or is contained within a recognizable shoreline.

- **Water Conservation (WMDs)** - The care, preservation, protection and wise use of water.

- **Water Control Structure (DOF/FWC/ACOE) –** Any structure used to regulate surface or sub-surface water levels (e.g. dam, flood gate, etc.)

- **Water Management (DEP/WMDs)** - The study, planning, monitoring and application of quantitative and qualitative control and development techniques for long-term, multiple use of the diverse forms of water resources. ***http://waterquality.ifas.ufl.edu/Water%20primer/Primer-main.htm***

- **Water Management Districts (WMD) –** Five Water Management Districts exist in Florida: Northwest Florida Water Management District, Suwannee River Water Management District, St. Johns River Water Management District, South Florida Water Management District and Southwest Florida Water Management District. The districts were created by the Water Resources Act of 1972. Each WMD administers flood protection programs and performs technical investigations into water resources. The districts also develop water management plans for water shortages in times of drought and to acquire and manage lands for water management purposes under the Save Our Rivers program. Regulatory programs delegated to the districts include programs to manage the consumptive use of water, aquifer recharge, well construction and surface water management. Each district provides educational programs for the people within their district. For more information about your district, please review WMD links on this Web site: ***http://www.dep.state.fl.us/secretary/watman/***

- **Water Quality (WMDs/UF)** - A term used to describe the chemical, physical, and biological characteristics of water with respect to its suitability for a particular use. ***http://waterquality.ifas.ufl.edu/***

- **Watershed (DEP) (a.k.a. Drainage basin)** - A watershed is simply the geographic area through which water flows across the land and drains into a common body of water, whether a stream, river, lake, or ocean. It includes tributaries (wetlands, streams, canals, ditches, etc.) as well as stormwater runoff from the land, the quality and quantity of which are affected by all the alterations to the land--agriculture, roadways, urban development, and the like. Watersheds are usually separated from other watersheds by naturally elevated areas. ***http://www.dep.state.fl.us/water/watersheds/index.htm***

- **Wetlands (DEP/DOF)** - Florida wetlands are defined as those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. However, just as the general term wetland has been subject to varying opinions so have some of the concepts of the definition. To further clarify and standardize the intent of the definition, a methodology for identifying and delineating wetlands is provided in ***Rule 62-340 F.A.C. http://www.dep.state.fl.us/water/wetlands/delineation/introduc.htm***

- **White Paper –** informal research about a particular subject—usually science related and mentioned regularly by scientists or biologists. Subject information and references are gathered for future needs and placed in one document. White papers are not peer-reviewed but can provide information about subjects at workshops or conferences.

- **Wildfire (DOF)** - Any fire that is not controlled.

- **Wildlife (FWC) –** Any species of wild, free-ranging fauna including fish. Wildlife may also be fauna in captive breeding programs, the object of which is to reintroduce individuals of a depleted indigenous species in a previously occupied range.

- **Wildlife Action Plan (FWC)** see Florida Comprehensive Wildlife Conservation Strategy

- **Wildlife Alert number (FWC) (a.k.a. Resource Alert) 1-888-404-FWCC (3922) –** Individuals are encouraged to call this number to report wildlife or resource emergencies, deaths, harassment or violations. Wildlife Alert Reward program ***http://myfwc.com/law/Alert/***

- **Wildlife Corridor (FWC) (see also Corridor and Wildlife Underpass)** - A wildlife corridor joins fragmented habitats so that species can increase their gene flow and food sources. Wildlife crossings or underpasses are found in these areas so that wildlife can cross under major or interstate highways without being injured or killed.

- **Wildlife Education (FWC/DEP/WMDs/UF) –** education programs that teach people about Florida's wildlife. Project WILD is an example of a wildlife education program ***http://myfwc.com/educator/projwild.html***

- **Wildlife Habitat (FWC) –** natural areas where wildlife live. Adequate habitat includes shelter, water, space and food appropriate for each species survival.

- **Wildlife Legacy (FWC) – (a.k.a. Florida Wildlife Legacy) –** FWC's direction for native wildlife and habitat conservation efforts in Florida. The Wildlife Legacy has three objectives: (1) implement Florida's Comprehensive Wildlife Conservation Strategy, (2) build partnerships for wildlife conservation across the state, and (3) use Florida's State Wildlife Grants Program funds to support partnership building and implementation of the Strategy. ***http://myfwc.com/Wildlifelegacy/faqs.html***

- **Wildlife Management Area (FWC) –** FWC assists with the management of ~5.7 million acres of public and private lands in Florida—a total of 133 Wildlife Management Areas in Florida. The emphasis of these management areas is to benefit plant and

wildlife populations through the acquisition of land, planning for the management of the property, and providing quality wildlife-based public use of the areas. FWC works to restore degraded plant and wildlife communities and actively pursues the acquisition of new public lands that are vital links or additions to current properties or which benefit the conservation of imperiled species.

- **Wildlife Underpass (FWC/DOT) –** A passageway that is constructed under roadways to allow wildlife to cross a high traffic area without being hit or killed by vehicles.

- **World Conservation Union (a.k.a. IUCN or Union)** (see explanation under International Union for Conservation of Nature and Natural Resources)

- **Xeriscape (WMDs/UF) –** "Xeriscape" or "Florida-friendly landscaping" means any quality landscape practice that conserves water, protects the environment and is adaptable to local conditions and which are drought tolerant. The principles of Xeriscape include planning and design, appropriate choice of plants and soil analysis. Soil analysis may include the use of solid waste compost, efficient irrigation, practical use of turf, appropriate use of mulches, and proper maintenance. For more information about this topic go to the Florida Statutes 373.185 *http://www.leg.state.fl.us/statutes/index.cfm?mode=View%20Statutes&SubMenu=1&App_mode=Display_Statute&Search_String=xeriscape&URL=CH0373/Sec185.HTM* (Note: The term "xeriscaping" is increasingly being replaced by "Florida-friendly landscaping" in much of the state, and the latter is the term used by the University of Florida Extension Service.)

Final Comments

Thank you for allowing SCENE to introduce you to some of the environmental terms, programs and definitions used by Florida's state agencies and universities. Please continue to use this reference guide and links to further your environmental awareness and protection of the natural resources of our great state.

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SCENE member agencies provide a variety of programs, products and services that help to promote environmental education in Florida. These resources enable the public, government leaders, visitors, teachers, and students to be informed about environmental issues in Florida.

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Jeff Caster (1997-1998)	Florida Department of Transportation
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