Helping to protect, preserve and restore Lake County's lakes.

Lake County Adopt-a-Lake Program

A Citizen's Guide to Lake Protection and Preservation.

Lake County
Department of Environmental Services

Sign up to volunteer:
(352) 253-1659
www.lakecountyfl.gov, keyword: adopt

OVERVIEW OF THE ADOPT-A-LAKE PROGRAM

The Lake County Board of County Commissioners enacted an Adopt-a-Lake Ordinance on January 22, 2008. The purpose of the program is to involve the public to assist with the effort of protecting, preserving and restoring Lake County's most prized natural resource, its hundreds of freshwater lakes.

Volunteers participating in the program save the taxpayers of Lake County countless dollars in shoreline cleanup, education and lake monitoring costs. By adopting a portion of a lake, civic and other nonprofit organizations help to generate pride in their community and create economic benefits to all citizens of Lake County.

Organizations or individuals interested in the Lake County Adopt-a-Lake Program may become involved by contacting the Lake County Department of Environmental Services (352-253-1659) or by submitting a request form online at www.lakecountyfl.gov, keyword: adopt.

WATERFRONT PROPERTY OWNERS BEST MANAGEMENT PRACTICES (BMPs)

Lake County is one of the largest counties in Florida. It contains more lakes than any other county in the state. These lakes are more than just bodies of water; they provide a habitat for a variety of plants and animals.

Lake County's lakes can fill in from erosion and be degraded from the nutrients washed into them from homes and businesses. Harmful materials, which are deposited into gutters and storm drain systems, eventually find their way to lakes, causing algae blooms and fish kills. This causes the water quality and the natural beauty of lakes to be negatively impacted.

To help prevent these negative impacts to the lakes, follow these simple suggestions:

- **Don't litter** — Trash, food wrappers and litter scattered around in the streets can get into lakes and cause harm to fish and wildlife. It also destroys the beautiful natural view.
- **Fertilize and spray sparingly** — These substances can be very detrimental when they are carried to the lakes by stormwater runoff. When fertilizers and pesticides are applied to a lawn, keep them away from the driveway and street so they don't run into the storm drain. Assure a 25-foot buffer between the fertilized area and the water body. Most people fertilize and spray more than is necessary.
- **Be careful with grass and leaves** — Grass and leaves can add nitrates and phosphates to the lakes. Don't blow them into the street or lake, instead bag them or start a compost pile.
- **Clean up after pets** — Pet droppings add to the pollution that harms lakes. Cleaning up after pets is the considerate and responsible thing to do.
- **Wash cars and boats in the yard** — If vehicles are washed on a paved surface the detergents (phosphates) can run into the street and end up in the lake. Detergents add nutrients, which aid the growth of algae within the lake.
- **Protect against erosion** — Exposed soil on construction sites and earthen stockpiles can wash into the storm drains, which run into the lakes. Make sure barriers, such as silt fencing or turbidity screens, are erected to prevent the soil from discharging into the lake.
- **Be a responsible boater** — Oil, gasoline and trash deposited in lakes by boaters are harmful to the lake and the wildlife. Use caution when operating boats near the shore because waves can erode the shoreline and disturb wildlife.

(continued on next page)

WATERFRONT PROPERTY OWNERS BEST MANAGEMENT PRACTICES (BMPs)

- **Use lake friendly surface cover** — Surfaces such as pavers, porous stone, gravel and mulch are much better for walkways and driveways than asphalt or concrete. If you do have a paved area, divert the runoff into a separate area, such as a grassy swale that allows the water to soak into the ground rather than discharging directly into the storm drain or lake.
- **Keep septic tanks and drain fields away from the lakes** — Keep septic tanks and drain fields away from the water's edge and make sure that they are working properly. Use low phosphorous detergents if you have a septic tank. Septic tanks and the drain fields must be 100 feet from the wetland jurisdictional line except in the Lake Apopka drainage basin where they must be 150 feet.
- **Conserve water** — All of Lake County's water resources are interconnected. Using less water in homes, yards, businesses and agriculture can help conserve water. Observe watering guidelines. Consider planting drought-tolerant landscaping.
- **Maintain lakefronts** — Aquatic plants provide habitat, food and shelter for fish and wildlife. Plants also reduce erosion and filter the stormwater runoff, which helps to protect the water quality. A portion of the lakefront (the lesser of 50 feet or 50 percent, with a permit) can be cleared for boating and swimming, but aquatic vegetation should be maintained.
- **Properly maintain vehicles** — Automobiles and other vehicles that leak oil, gas and other fluids pollute the lakes when these materials are washed down the storm drain. Keep driveways and parking areas pollutant free. Properly dispose of motor oil at the County landfill.
- **Obtain the proper permits for water-dependent structures** — Structures such as docks, seawalls and boardwalks require an application and proper permits. A private landowner must obtain a permit from the Florida Department of Environmental Protection (DEP) and a homeowners' association or community area must obtain a permit from the St. Johns River Water Management District. A zoning clearance and building permit must also be obtained from Lake County or a local municipality.
- **Report suspicious activities** — Keep an eye out for activities that might be harmful to lakes. Chemical spills or dumping, wetland or shoreline destruction, wildlife harassment or any other suspicious activity should be reported to local environmental officials. For more information, contact the Lake County Environmental Compliance & Enforcement Division at (352) 343-3776.

AQUATIC PLANTS AND INVASIVE AQUATIC WEEDS

Plants are an important part of healthy, diverse aquatic ecosystems. Aquatic plants play a major role in maintaining the integrity of lakes, ponds, streams and rivers for fish, wildlife, other organisms and human enjoyment. Specific roles of aquatic plants include:

- Habitat and food for fish, invertebrates, amphibians and water fowl
- Food for other wildlife and mammals
- Spawning area for fish, invertebrates and amphibians
- Oxygen production
- Protection of river banks, lakes, reservoir beds and shorelines
- Stabilization of temperature, light and ecosystem function
- Nutrient recycling and slowing of sediment transport

The natural balance between vegetation and other aquatic organisms is disrupted when invasive or non-native (exotic) plants from other parts of the country are introduced to lakes or rivers and become nuisance weeds. Once introduced, these noxious or harmful plants can displace native plants, which are important sources of food and shelter for wildlife.

Invasive vegetation can interfere with recreational activities such as fishing, boating and swimming; property values; and the enjoyment of the natural beauty of Lake County's water resources. In some cases, even native vegetation can grow to nuisance levels, requiring management. Nuisance vegetation can grow quickly to cover a large area. Excessive growth of nuisance vegetation can be responsible for:

- Deterioration of fish and wildlife habitat
- Deterioration of wetlands and water quality
- Diminished water surface area for activities such as fishing and boating
- Impeded navigation
- Reductions in property values
- Flooding

Florida Apple Snail vs. Channeled Apple Snail

The native Florida apple snail, a favorite food of the endangered snail kite and limpkin, now must compete for food and habitat with an apple snail from South America, the channeled apple snail. The voracious channeled apple snail readily consumes almost any aquatic plant. Their heavy feeding on aquatic plants could affect populations of invertebrates that are consumed by small fish, which are in turn eaten by larger fish like largemouth bass and crappie.

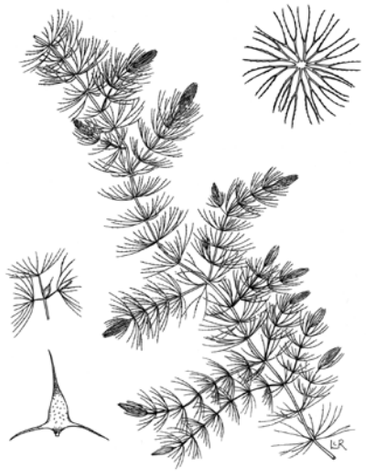
Florida Apple Snail

Channeled Apple Snail

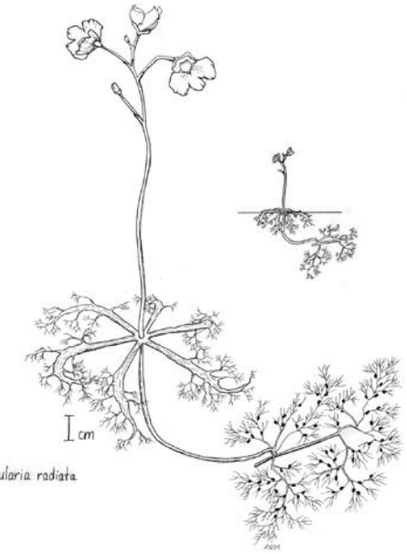
Photos by Jeffrey Lotz, DPI
University of Florida

FLORIDA NATIVE PLANTS

Submersed Plants



Coontail *(Ceratophyllum demersum)* has no roots and is free-floating. It grows in sluggish waters. Because its feathery leaves are arranged in whorls on the stem, this plant resembles a racoon's tail. The fan-shaped leaves are best observed in the water. Each leaf has several small teeth on the midribs. These tiny teeth give the plant a rough feel when pulled through the hand. Coontail's flowers are very small and rarely seen.

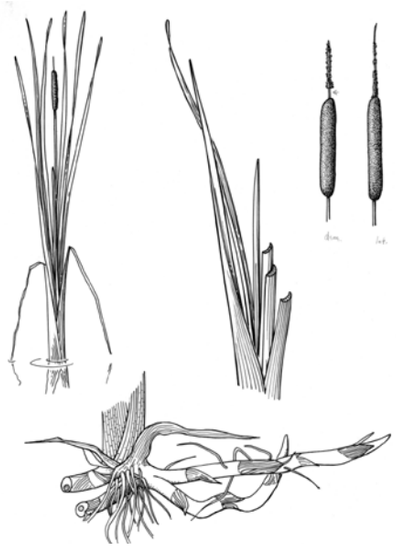


Bladderworts *(Utricularia radiata)* are submersed, free-floating and rootless. They have main stems from which lacy, often complex leaves grow. Bladderwort flowers are usually bright yellow (but sometimes lavender, depending on species); the flowers have two "lip-like" petals of about equal size. Flowers are on long stalks that emerge several inches above the water. The carnivorous bladders are attached at regular intervals along the linear leaf segments.

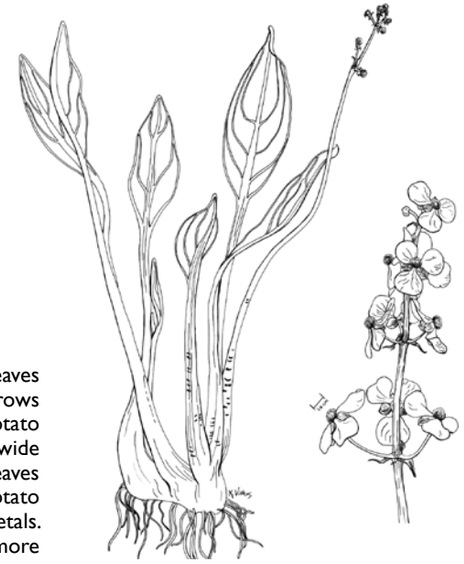
NATIVE AND COMMON INVASIVE PLANTS IN FLORIDA

FLORIDA NATIVE PLANTS

Emersed Plants



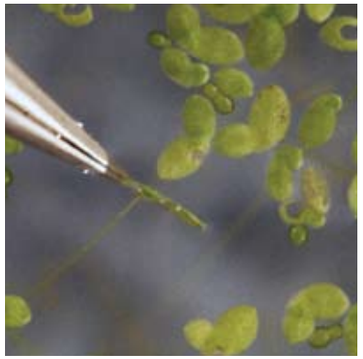
Cat-tails *(Typha* species*)* get their name from their brown cylindrical flower spikes which can be more than one foot long. Cat-tails provide protective cover and nesting areas for animals and birds. Cat-tails' rhizomes (roots) are extensive with stems up to nine feet tall. Leaf blades are stiff, strap-like and rounded on the back. The blades sheathed together at base to appear flattened;

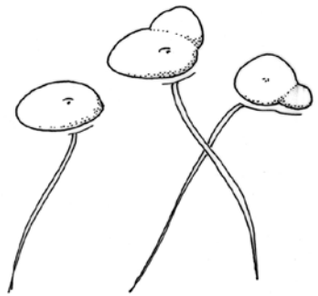


Duck potato *(Sagittaria lancifolia)* is an emersed plant. Its large leaves and conspicuous flowers make it easy to find in the wild. It grows commonly in swamps, ditches, lakes and stream margins. Duck potato has large, firm, lance-shaped leaves, which are typically four inches wide and up to two feet long. The leaf bases taper to the stem. The leaves grow as a fan-like rosette from underground rhizomes. Duck potato flowers are typical sagittaria flowers: showy and white, with three petals. Flowers are extended on thick stalks that are often a foot or more above the leaves.

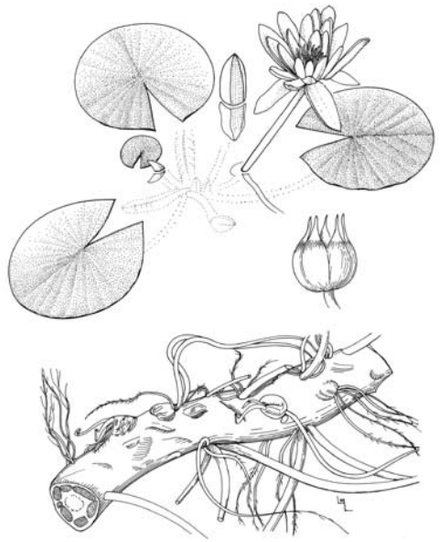
FLORIDA NATIVE PLANTS

Free-Floating and Floating Leaved Plants





Small Duckweed *(Lemna valdiviana)* are floating plants but very noticeable as they often form large floating mats. They are commonly found in still or sluggish waters. They are tiny (1/16 to 1/8 inch) green plants with shoe-shaped leaves. Each plant has two to several leaves joined at the base. A single root hangs beneath.



Water lilies *(Nymphaea odorata)* are often recognized by their floating leaves. There are about 40 species of water lily in the world, plus numerous hybrids and varieties. Water lily leaves are nearly circular in shape. They are notched to the center. Its leaf lobes are pointed. The leaves arise on stalks from long rhizomes in the mud. Fragrant water lily flowers are showy white and aromatic. Flowers of unusual color and shape are characteristic of hybrid water lilies.

NATIVE AND COMMON INVASIVE PLANTS IN FLORIDA

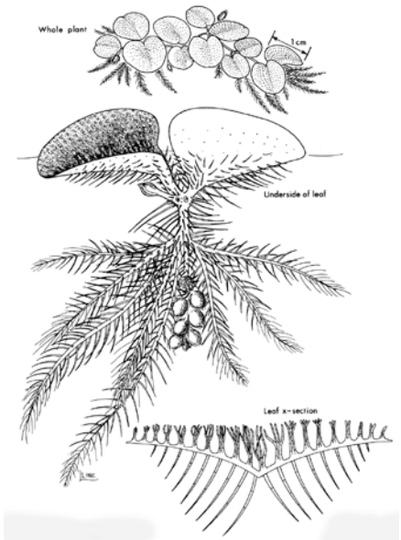
FLORIDA NATIVE PLANTS

Grasses

Saw-grass *(Cladium jamaicense)* is a large sedge and a dominant plant in the Everglades. Their stems are hallow and reach between four to 10 feet tall. The leaf blades are stiff and typically more than three feet long. They are relatively narrow, only up to 3/4 inches wide and are flat at the base and become V-shaped near the tips. The margins and underside midribs of the blades have small sharp sawteeth. The inflorescence (flowers) are light reddish brown and are large, tall, complex, often extending several feet above the leave spikelets.

Maidencane *(Panicum hemitomon)* is a valuable and common native that can form large stands in the water or even on dry banks. It may be confused with torpedo grass, para grass, cupscale grass or blue maidencane. It provides food, protection and nesting materials for wildlife. Maidencane is a grass with extensive rhizomes and narrow stems up to six feet long. The smooth leaf blades are flat or folded, pointed at the tips, and up to one inch wide and 12 inches long. Inflorescence (flowers) are erect, narrow, spike-like and range from four to 12 inches long.

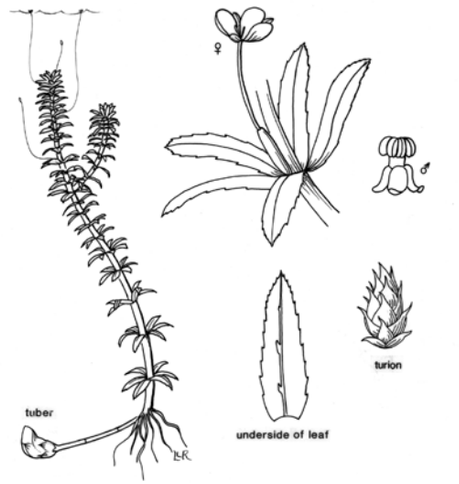
COMMON INVASIVE PLANTS OF FLORIDA



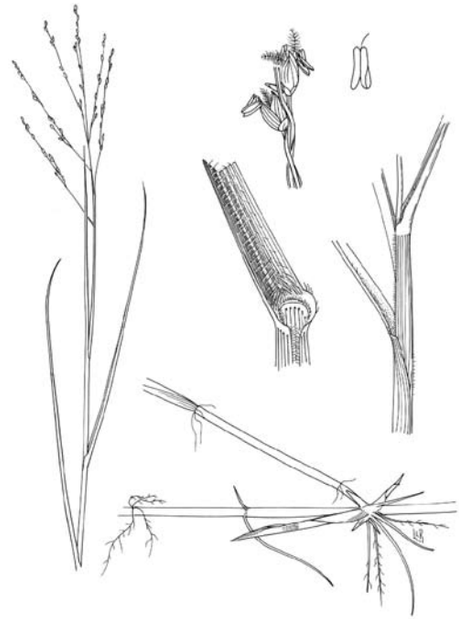
Salvinia *(Salvinia minima)* are floating ferns, thus also referred to as Water Ferns. There are 10 species of Salvinia in the world, none of which are native to the United States. This species is about 3/4 inch in width. Salvinia has joined oval leaves which are covered with stiff hairs. It has root-like structures which are actually modified fronds.

Water Spinach *(Ipomoea aquatica)* has a long viney stem which distinguishes it from other aquatic plants. Its vines can reach nine feet long. Water spinach leaves are almost arrowhead-shaped, one to six inches long, and one to three inches wide. The leaves have notched bases, with rounded or pointed lobes. The morning-glory-like flowers are about two inches wide, funnel-shaped and can be white, pink or pale lilac.

COMMON INVASIVE PLANTS OF FLORIDA



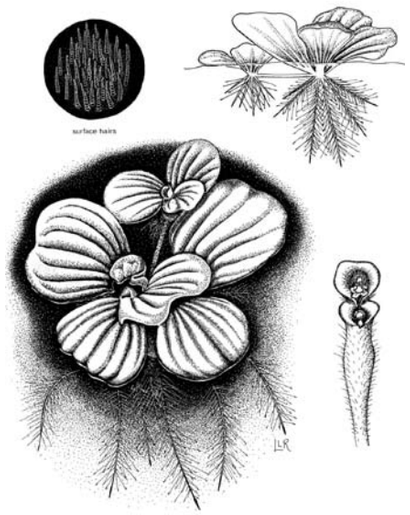
Hydrilla *(Hydrilla verticillata)* is a submersed plant with long, slender stems that branch and spread across the water surface. Their leaves are small, pointed and arranged in whorls of four to eight along the stem. The leaf margins are distinctly saw-toothed making the plant noticeably rough to the touch when pulled through the hand.



Torpedo Grass *(Panicum repens)* is a highly invasive exotic weed from Australia and is often mistaken for native Maidencane. It grows rapidly and extensively throughout Florida, along canal ditches and banks and along shores of lakes, often extending into the water to form large floating mats. It also grows terrestrially and may be found in pastures, grovelands and even sand dunes. The plants are erect or leaning up to about three feet tall. It stems are rigid with narrow leaves which are only 1/16 to 1/4 inch wide and two to 10 inches long. The inflorescence (flower) is three to nine inches long, branched and somewhat open, with branches pointing upward.

COMMON INVASIVE PLANTS OF FLORIDA

Water Hyacinth *(Eichhornia crassipes)* is a floating plant. This invasive nuisance plant often jams rivers and lakes with uncounted thousands of tons of floating plant matter. A healthy acre of water hyacinths can weight up to 200 tons. The plants vary in size from a few inches to over three feet tall with showy lavender flowers and dark feathery roots. Water Hyacinth leaves are rounded and leathery, attached to spongy and sometimes inflated stalks.



Water lettuce *(Pistia stratiotes)* is a floating plant. Experts disagree as to whether water lettuce is a native or has been introduced. It occurs in lakes, rivers and canals, occasionally forming large dense mats. As its name implies, water lettuce resembles a floating open head of lettuce. Water lettuce has very thick leaves which are a light dull green, hairy and ridged. There are no leaf stalks. Water lettuce roots are light-colored and feathery. Its flowers are inconspicuous.

NATIVE AND COMMON INVASIVE PLANTS IN FLORIDA

COMMON INVASIVE PLANTS OF FLORIDA

Primrose Willow *(Ludwigia peruviana)* is usually an emersed plant. They commonly grow in shallow marshy areas, borrow pits and ditches. They flower in all seasons except winter. There are 30 species of Ludwigia occurring in Florida. Water primroses grow to five or six feet tall; however some are only inches tall. Stems are branched and sometimes have long hairs. The leaves are ovate to lance-shaped, and up to six inches long. Leaves are covered on both sides by minute soft hairs. Most water primroses have conspicuous four or five petaled yellow flowers.

Wild taro *(Colocasia esculenta)* is an non-native emersed plant, having been imported from the Pacific Islands. It occurs in and out of water. Wild taro leaves are medium to large-size. They are arrowhead-shaped with heart-shaped leaf bases. The leaves can grow up to two feet long. They are dark, velvety green and water repellent. Wild taro leaves are peltate: the leaf stem attaches more-or-less to the middle of the underside of the leaf. Leaf stems grow up to four feet tall. Flowers occur in small finger-like spikes.

NATIVE AND COMMON INVASIVE PLANTS IN FLORIDA

COMMON INVASIVE PLANTS OF FLORIDA

Brazilian pepper-tree *(Schinus terebinthifolius)* is one of the most aggressive of the invasive non-indigenous plants in Florida. It is invading aquatic and terrestrial habitats, greatly reducing the quality of native biotic communities in the state. Brazilian pepper is a small tree, growing up to 30 feet tall, with a short trunk usually hidden by dense intertwining branches. The leaves have a reddish, sometimes winged midrib, with three to 13 finely toothed leaflets which are one to two inches long. The leaves smell of turpentine when crushed. Flowers are white. The fruits are in clusters, glossy, green and juicy at first, becoming bright red as they ripen. The red skin dries to become a papery shell surrounding the seed.

All plant data and descriptions courtesy of the University of Florida, Center for Aquatic and Invasive Plants Web site http://plants.ifas.ufl.edu.

WATER QUALITY SAMPLING AND DATA

The Lake County Water Resources Management Laboratory has been monitoring the water quality in the major lake chains of the County since 1969. The data is compiled into a local database and is then submitted to a central statewide database, STORET, where other agencies can access this water-quality data. This data is used to prepare water-quality reports such as the 305b and 303d reports issued by Florida Department of Environmental Protection (DEP).

The laboratory staff collects and analyzes the data from many of the County's lakes and springs. The laboratory also performs analysis of groundwater samples like drinking water.

Frequently Asked Questions About Water Quality

Q. Is it safe to swim in a lake?

A. If available, the Lake County Water Resources Management Laboratory can provide the latest data on a lake, however; there is no guarantee that a natural water body will be safe for swimming. Bacterial counts can fluctuate throughout the day. Also don't forget about other dangers such as alligators or poisonous snakes. Always use caution while swimming, skiing or jet skiing in a natural water body.

Q. If drinking water is clear and smells OK, is it safe to drink?

A. Unsafe bacteria do not smell. They can only be detected using tests designed for that purpose. Well water should be tested for bacteria once a year.

Water Resource Atlas

The Lake County Board of County Commissioners, in cooperation with the Lake County Water Authority and the University of South Florida, have developed an interactive web application using the County's Geographic Information System (GIS) database to provide water-quality data, hydrology, watershed information, boat ramps, recreational sites, historical information and aerial photographs.

The atlas was designed to provide citizens, environmental professionals, planners and others with current and historical water resource data and other related historical information on Lake County. To access this information, log on to http://wateratlas.co.lake.fl.us.

POLLUTION PREVENTION

Monofilament (fishing line) Recycling

It takes about 600 years for fishing line to breakdown once it has been left in lakes. This fishing line is harmful to wildlife and boat motors, but it can be recycled.

Frequently Asked Questions about Monofilament Recycling

Q. What is monofilament?

A. Most fishing line used today is monofilament — a strong, flexible, single strand plastic line.

Q. Is throwing fish line in the garbage OK?

A. Even though fishing line is thrown in the garbage, it may end up in the environment. When throwing fishing line away, it is best to cut it into short pieces (less than 12 inches).

Q. The line I use becomes brittle after a week in the sun, how can it be an environmental problem?

A. The sun's ultraviolet (UV) rays can cause fishing line to break easily. However, UV rays cannot penetrate very far in the water, so line that is underwater or in the shade will not be broken down.

Do you know how long it takes trash to disappear from lakes?

- Paper towels — 2-4 weeks
- Newspaper — 6 weeks
- Cardboard box — 2 months
- Apple core — 2 months
- Cigarette butt — up to 12 years
- Painted wood — 13 years
- Styrofoam cup — 50 years
- Aluminum can — 200 years
- Plastic drink bottle — 450 years
- Glass bottles — Undetermined

Q. How is monofilament harmful?

A. Birds and animals cannot see the line so it is easy for them to become tangled in it. Line can also wrap around boat propellers and cause damage.

Q. How can I recycle my used fishing line?

A. Look for outdoor (PVC) recycling containers at boat ramps, fishing piers, parks, etc. Ask your local tackle shop if they recycle.

LAKE COUNTY

DEPARTMENT OF
ENVIRONMENTAL SERVICES

13130 County Landfill Road
Tavares, FL 32778
Phone: (352) 253-1659

www.lakecountyfl.gov
keyword: adopt

WATERSHED ACTION VOLUNTEERS
St. Johns River Water Management District

A Program of the St. Johns River Water
Management District
107 N. Lake Ave., Tavares, FL 32778
Phone: (352) 343-3777, ext. 88

www.sjrwmd.com/education/wav/

Photo and Illustrations: All plant specimen photos and illustrations provided by the University of Florida/IFAS Center for Aquatic and Invasive Plants. Used with permission. For additional information on Florida's aquatic and invasive plants log on to http://plants.ifas.ufl.edu/.