



### Mark your calendars...

- November 17, 9 am—4H Marine Ecology Judging Event at Camp Ocala
- November-December—look for outdoor fishing line recycling stations to be installed throughout the 4 county area (sponsors listed on page 3).

## Water and watersheds

This issue of Aqua Notes is devoted to water conservation and protection of water quality. For the past few years, rainfall in NE Florida has been below “normal” levels. These drought conditions have caused changes in the biology of the St. Johns River, as salty water is now found where previously the water was fresh. Residents in some areas have been placed under water use restrictions, raising the concern about whether we will have enough clean fresh drinking water in the future. We rely on water not only for drinking, but also for the production of our food and almost everything that we use on a daily basis. The amount of water present on earth does not change, so it is very important that we take measures to ensure that our water is available in a form that we can utilize and that this water does not become polluted. In this newsletter, you will find many things that you can do as an individual to help protect this precious resource.



Wetlands are important feeding grounds for many coastal birds

Maia McGuire

### Inside this issue:

Water usage facts	2
Water conservation tips	2
Reclaimed water	2
There’s an estuary living next door	3
Recycle your fishing line	3
The importance of wetlands	3
Trash on the beach	4

## Fresh water facts

Like energy, water is not created or destroyed, it just changes form. About 97% of the Earth’s water is in the oceans, 2% is in ice caps and glaciers; less than 1% is available to humans as underground or surface fresh water. In the US, about 44% of all fresh water taken out of lakes and aquifers each year evaporates or infiltrates into the ground and is not available to be re-used. Agriculture uses 81% of all water consumed in the US; usually, less than 1% of the water used in crop production is assimilated into the plants.

## Water usage facts

How much water does your household use each day? Here are some average water usage facts for everyday activities:



Showering: 7-10 gallons per minute

Bath (full tub): 36-50 gallons

Lawn watering (hand): 10 gallons

Dishwasher (full cycle): 15 gallons

Clothes washer (Full cycle): 60 gallons

Flushing toilet (regular flow): 5-7 gallons

Flushing toilet (low flow): 2-4 gallons

Leaking toilet: 60 gallons per day

Brushing teeth with water running: 10 gallons

Shaving with water running: 20 gallons

Leaky faucet: 15-20 gallons per day



## Water conservation tips

- If you have an older toilet, place a half-gallon jug filled with water in the toilet tank. You will save water every time you flush.
- Take shorter showers; don't let the water run when you brush your teeth or shave.
- Check your water meter when no water is being used—if the dial moves, you have a leak somewhere. Find it and fix it!
- Wash clothes and dishes only when you have a full load.
- Water your garden before 10 am and after 4 pm to reduce evaporation. Only water when needed—from November through February, you should only need to water every 1-2 weeks; less if there is substantial rainfall. Use a rain gauge to tell when you have applied 2/3 to 3/4" of water—that is all most Florida soils and grasses require.

## Reclaimed water



*Use it Again, Florida!*

Reclaimed water is wastewater that has been treated enough so that it is safe to use for irrigation. This water is not good enough for drinking, but it can be used in many other ways. About 40% of reclaimed water is used to water public areas such as parks, golf courses, highway medians and residential neighborhoods. Areas that are watered with reclaimed water are marked with signs that indicate that the water should not be used for drinking (non potable).

## There's an estuary living next door

- Estuaries are bodies of water where fresh and salt water mix. The St. Johns River and the intracoastal waterway are examples of estuaries
- Estuaries are home to many commercially important and endangered types of animals and shellfish. Most commercially important fish, shrimp and crabs spend at least part of their lives in an estuary. Good water quality is vital to keeping shellfish like oysters and clams healthy and edible.
- Anything that we put on the ground or pour down the drain can potentially end up in the estuary (through stormwater drainage or treated sewage effluent.
- Read labels and follow directions when applying fertilizers and pesticides—fertilizer runoff can cause harmful algal blooms like red tides.
- Dispose of hazardous wastes (including automotive oil) properly. 51% of the oil entering the oceans comes from runoff from the land.



## Recycle your fishing line

- Thanks go to the following groups that have sponsored monofilament fishing line recycling stations. Look for them soon at a boat ramp, beach or fishing pier near you!
- Flagler Beach Sport Fishing Club, Flagler Audubon Society, Flagler County (5+), Riverside-Argyle-West Lions Club of Jacksonville (3), Scottish Rites Bodies of Jacksonville (2), Stewards of the St. Johns River, Duval Audubon Society, Inc. (3), Palm Cove Marina, Jacksonville Fraternal Order of Police, Guana Tolomato Matanzas National Estuarine Research Reserve (2), Fort Matanzas National Monument (3), St. Augustine Shores Service Corporation, St. Johns County Parks and Recreation (4), Amelia Island Turtle Watch, Inc., Fort Clinch State Park.

To find out more about  
fishing line recycling, call  
904-461-4014

## The importance of wetlands

- Almost 60% of Florida's freshwater marshlands have been destroyed since 1936; much of this because of channelization of water from the Kissimmee and Everglades watershed regions.
- Wetlands (saltmarsh and mangroves) provide important habitat and nursery areas
- The large amount of plant material in wetlands provides a wide base for the estuary food web
- Wetlands provide flood control, help filter sediments and pollutants out of water that runs off the land and allow us to enjoy a healthy estuary.





NE Florida Sea Grant Extension Program  
233 Marine Center Drive  
St. Augustine, FL 32080

Phone/fax: 904-461-4014

*Science serving  
coastal Florida*

## Trash on the beach—worth a second look?

Every year, about 10,000 shipping containers get washed overboard at sea. Most of these containers will eventually corrode and if the contents float, they can make their way literally around the world. Scientists have been able to learn a lot about the timing and direction of ocean currents from reports of drift items that wash ashore on beaches! Here are some of the types of “lost” shipments that we know about:

- A container of almost 5 million Lego pieces bound from Rotterdam to New York went overboard in the Atlantic Ocean in February 1997. Ironically these Legos have an ocean theme and include mini dive flippers, spear guns and yellow rafts. These pieces are small (the rafts at 2” are the largest items) and easily overlooked.
- Nike sneakers (80,000 lost in the Pacific in 1990 and 18,000 more in 1999), black thong sandals with a lightning bolt logo through the sole (lost in the Pacific in 1994). Apparently ocean currents act differently on left and right shoes.
- 29,000 bathtub toys (yellow ducks, green frogs, red beavers and blue turtles) made by The First Years, washed overboard in 1992 in the Pacific. Some of these toys have made their way through the Arctic Ocean and have washed up on beaches in England. They are due to arrive on Atlantic beaches in North America in the next year. 34,000 hockey gloves washed overboard in the Pacific in 1994
- Rugrats toys, specifically, “Tommy Pickles” heads! These toys based on the Nickelodeon cartoon series were bound for a fast food chain when they were apparently lost at sea in the Pacific Ocean. The large “Tommy” heads float and began washing up on Oregon beaches in early 2000.