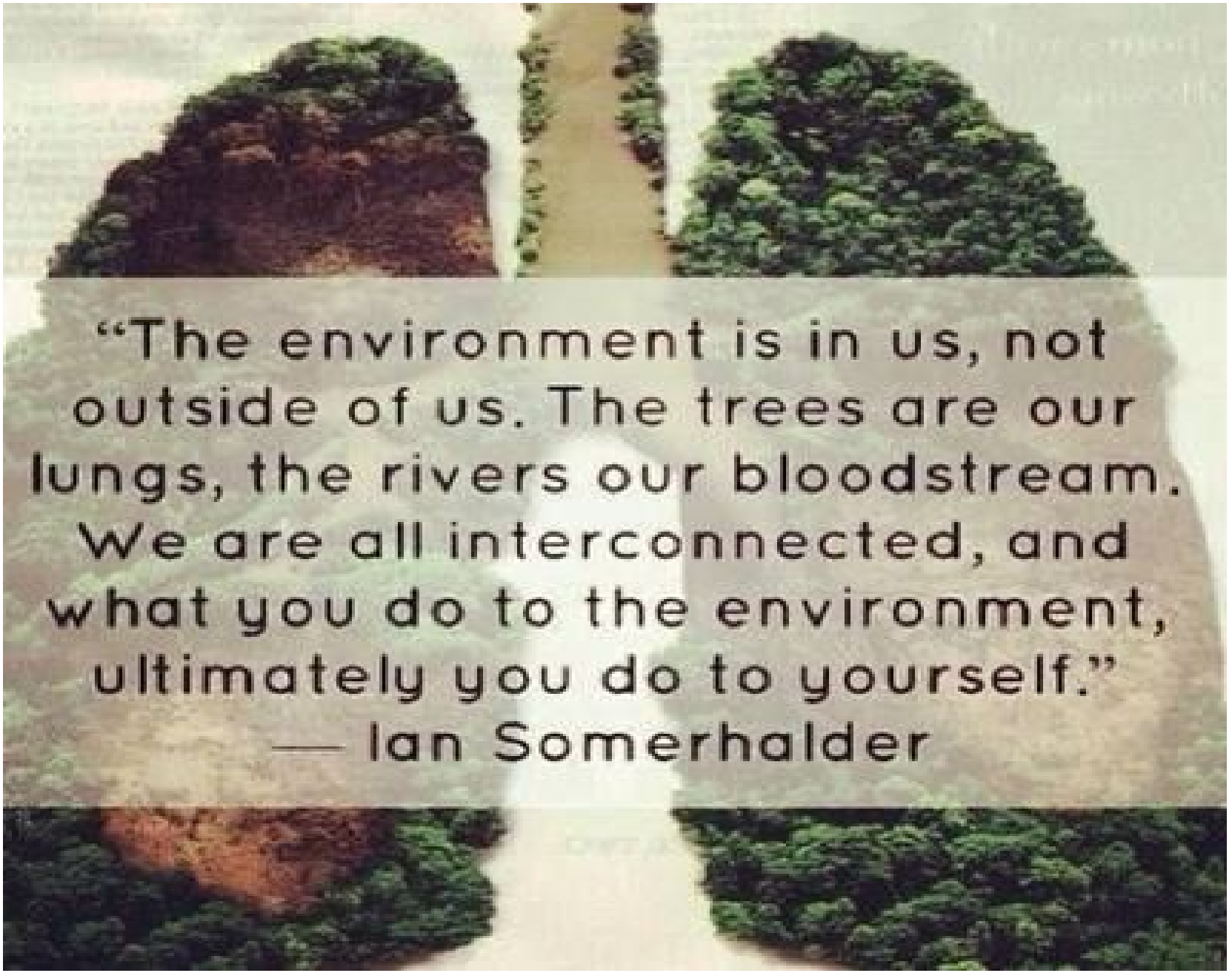

"The environment is in us, not outside of us. The trees are our lungs, the rivers our bloodstream. We are all interconnected, and what you do to the environment, ultimately you do to yourself."
— Ian Somerhalder

“WATER, WATER, EVERWHERE; BUT NOT A DROP TO DRINK!”

Presented by: Jackie Host, Chairman
FFGC Water & Wetlands

“The World Health Organization reports that 1 out of 10 people do not have access to uncontaminated water.”

THIS PRESENTATION TRIES TO ANSWER THESE QUESTIONS:

WHERE DID OUR WATER COME FROM?

WHAT ARE OUR WATER & WETLANDS?

WHY ARE THEY IMPORTANT?

WHAT CAN I DO TO HELP PROTECT THEM FOR FUTURE GENERATIONS?

What is water?

- Water is made of tiny molecules of hydrogen and oxygen.
- Each one is so small that you can't see it even with the most powerful microscope.
- Pure water has no colour, no taste and doesn't smell of anything.
- Water exists in three forms on the Earth:
  > solid (ice, hail, snow or frost)
  > liquid (in lakes, oceans, rain, dew, fog or mist)
  > gas (steam or water vapour - "invisible" water in the air).

Why is water so important?

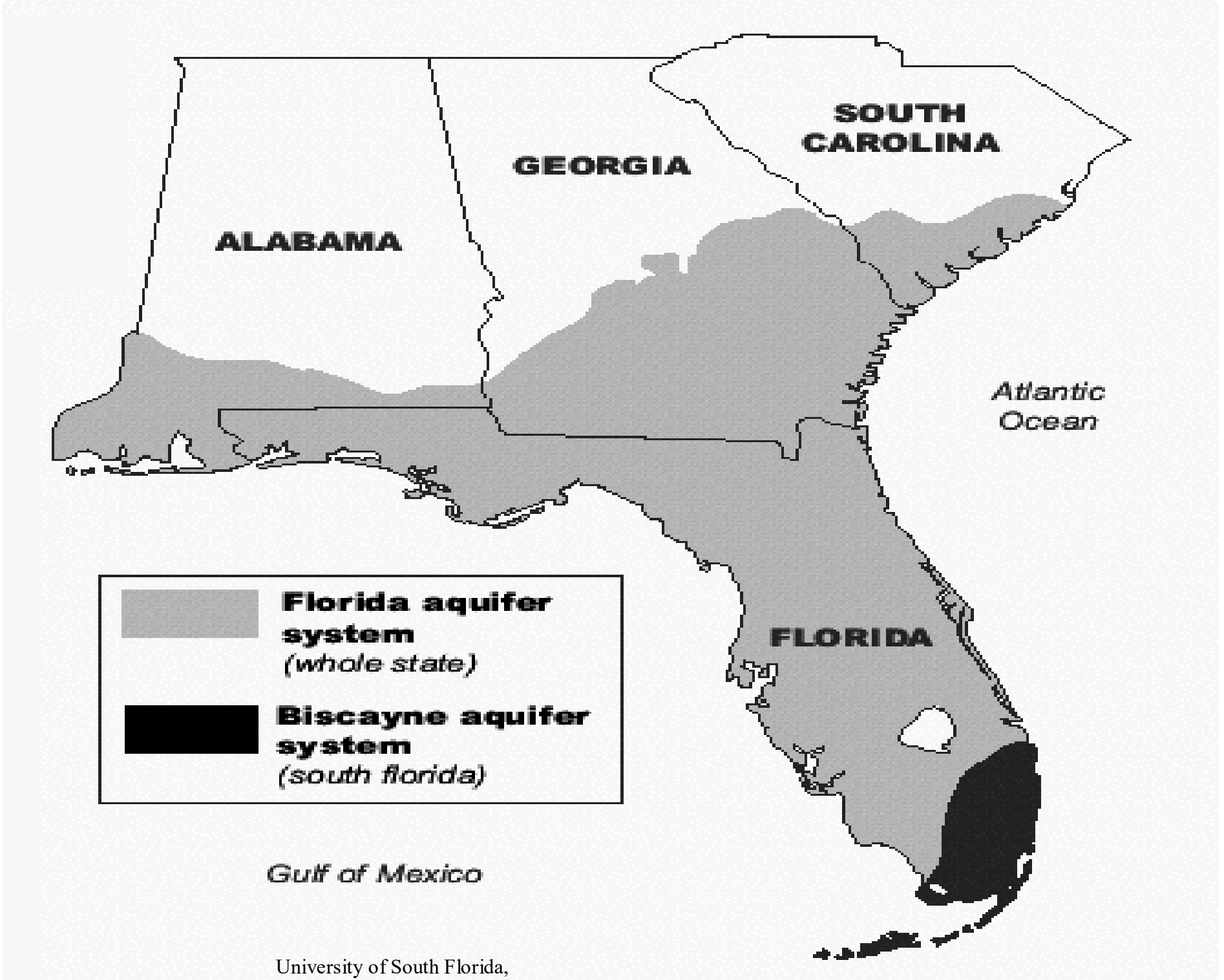
1. All the **chemical reactions** in living things take place in water solutions.
2. Organisms use water to **transport materials** through their bodies.
   - Plants use water to **move minerals and sugars** between roots and leaves.
3. The large percentage of water in living things **acts like an insulator**.
   - The water in a cell helps **keep its temperature constant**, which allows life-sustaining chemical reactions to take place.

WHERE DOES OUR WATER COME FROM?

Floridians rely on underground freshwater reserves to supply our diverse water needs. The biggest aquifer is called the Floridan Aquifer, It was formed about 115,000 years ago in the last glaciation period and underlies most of the state of Florida and parts of Alabama Georgia, Mississippi and South Carolina (Wikipedia).

Florida also has the Biscayne Aquifer which is located just below ground level. This water is often referred to as groundwater or the water table, and provides most of the drinking water used by South Florida residents, visitors and businesses. Because the aquifer is so close to the surface, it is extremely vulnerable to surface contaminants.

https://en.wikipedia.org/wiki/Biscayne_Aquifer

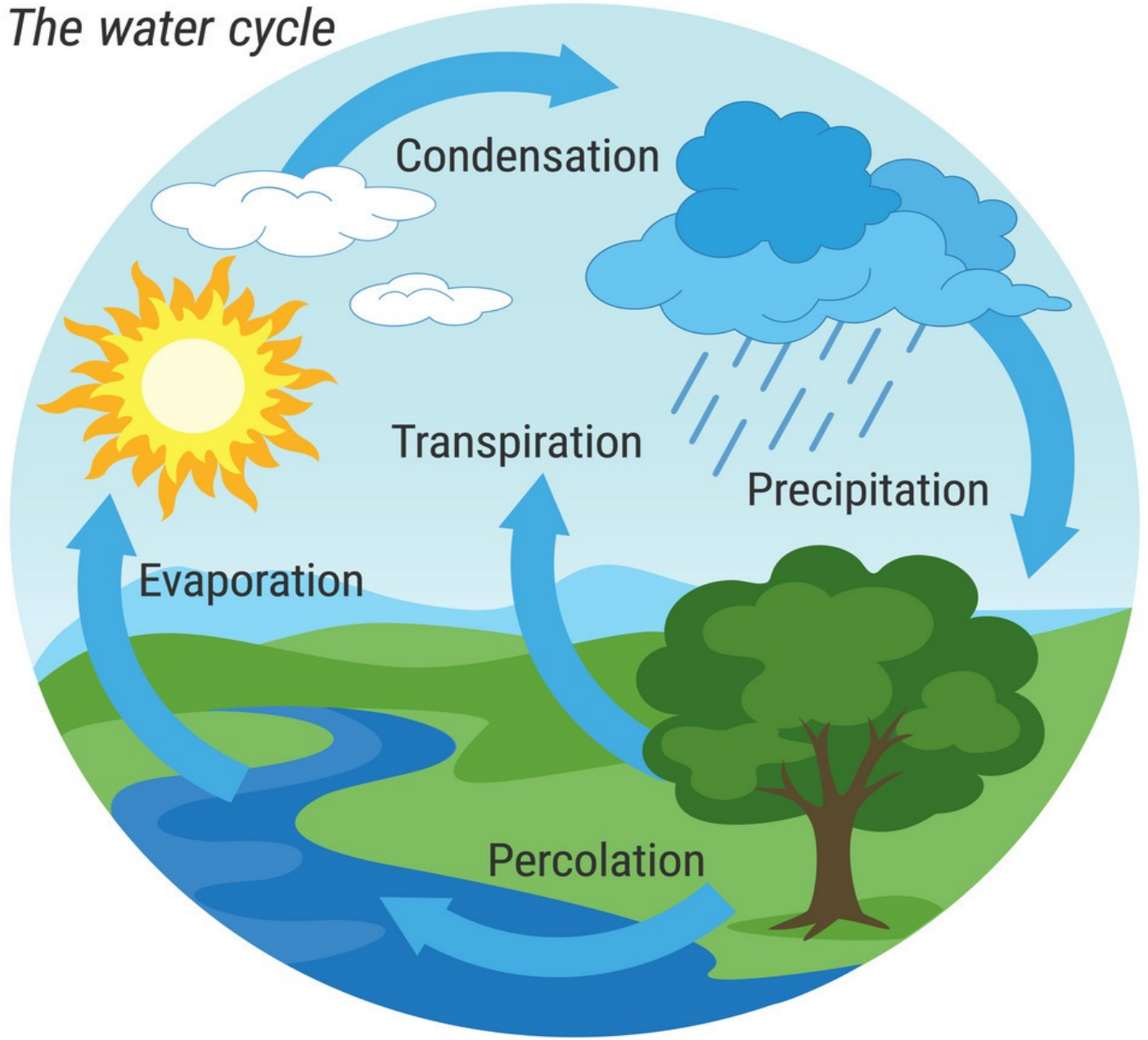


University of South Florida,
https://fcit.usf.edu/florida/lessons/water/water1a.gif

THE HYDROLOGIC CYCLE

The hydrologic cycle constantly renews Earth's supply of freshwater. Simplified, it is a cyclical process of evaporation, condensation, transpiration, precipitation and percolation (edis.ifas.ufl.edu/fe 757).

In some Florida regions, this underground freshwater reserve can no longer sustain the growing water demands of the population, while also feeding Florida's rivers, springs, and lakes (USGS 2016a).



7 WATER FACTS

1. **Water covers 70% of the earth's surface.**
2. **Oceans and Seas comprise 97% of the water on the earth's surface.**
3. **A scant 3% of the water on the earth's surface is fresh water.**
4. **Ice caps account for 2% of the fresh water on the earths surface.**
5. **Only 1% of earth's water is available for our use and only a minuscule percentage of that 1% is actually accessible.**
6. **Of that small percentage of Accessible water 98% is used for agriculture and industry.**
7. **Over a trillion gallons of water Is WASTED in the U.S. annually on bad faucets, toilets, and sprinklers.**

What water does for your body ...

Water is the major component of most body parts.

Forms saliva (digestion).

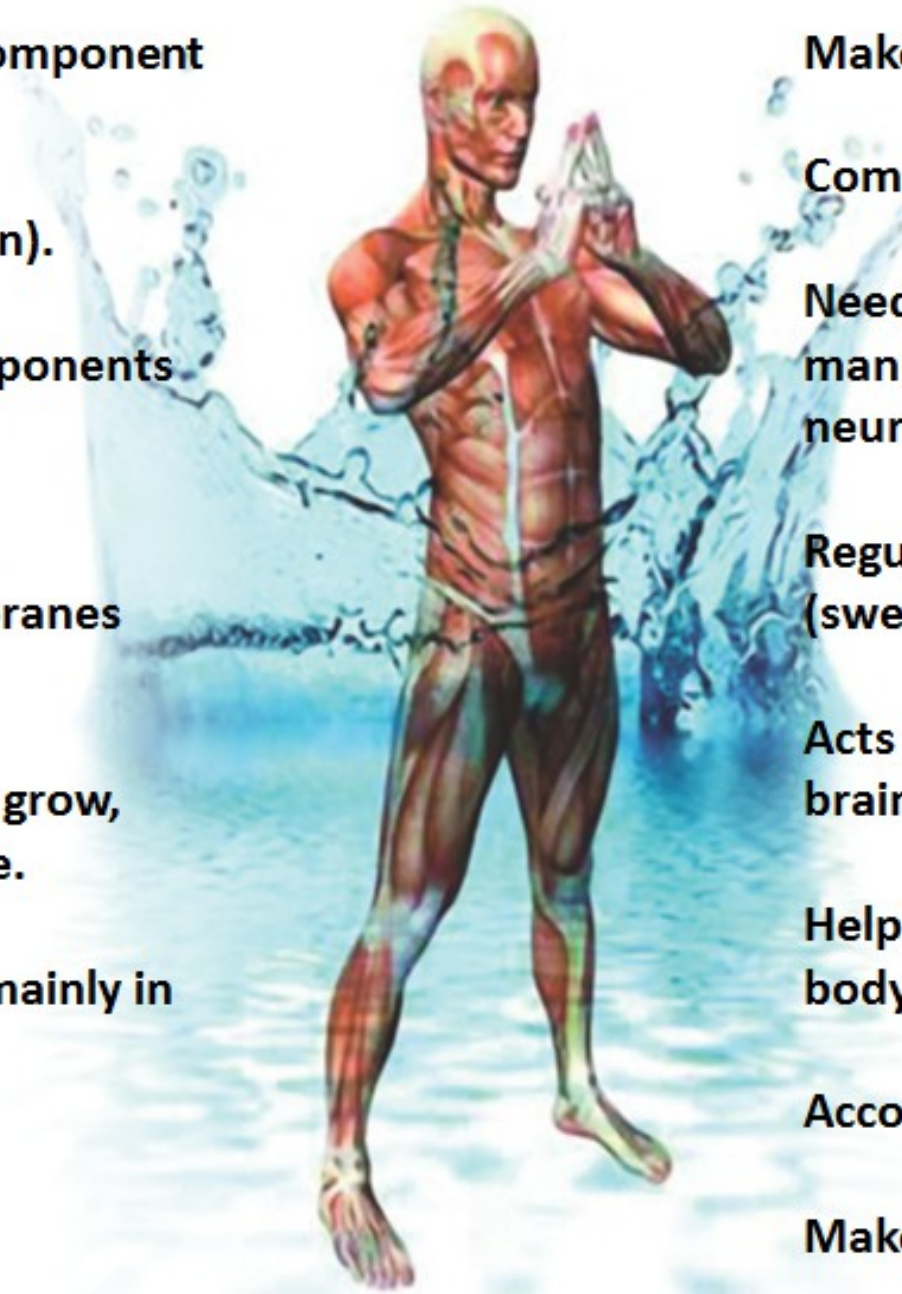
Converts food to components needed for survival – digestion.

Keeps mucosal membranes moist.

Allows body's cells to grow, reproduce and survive.

Flushes body waste, mainly in urine.

Lubricates joints.



Makes up 83% of Blood.

Composes 75% of the Brain.

Needed by the brain to manufacture hormones and neurotransmitters.

Regulates body temperature (sweating and respiration).

Acts as a shock absorber for the brain and spinal cord.

Helps deliver oxygen all over the body.

Accounts for 22% of Bones.

Makes up 75% Muscles

A Global Temperature Regulator

- One of the most important functions of the world ocean is to absorb and store energy from sunlight which in turn regulates temperatures in Earth's atmosphere.
- Because the ocean both absorbs and releases heat slower than land, the temperature of the atmosphere changes more slowly.
- If the ocean did not regulate atmospheric and surface temperatures, temperatures would be too extreme for life to exist on Earth.


Only 1% of the earth's fresh water is available for use.
We can conserve by reducing how much water we use.
Let's make efficient use of our water.
Every drop counts!


Types
Wildlife
Soil
what is a
WETLAND?
Vegetation
Threats
Preservation

Generally speaking, a wetland is an area that is neither dry land nor open water. All wetlands are formed and sustained by the influence of water on land. However, the depth and duration of water in different types of wetlands can be extremely variable. In some wetlands the water is at ground level,where the saturated soils stay wet most of the time. While other wetlands are inundated, with normal water levels above ground.

To make the situation even more confusing, the water levels in some wetlands can fluctuate dramatically. Many wetlands are dry for extended periods, but these same wetlands at other times may contain several feet of water. Many wetlands are dry for extended periods, but these same wetlands at other times may contain several feet of water.

Florida wetlands generally include swamps, marshes, bay-heads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include long-leaf or slash pine flatwoods with an understory dominated by saw palmetto. . . ."

Alarmingly, 22 states have
lost almost 50 percent or more of their original wetland areas.

Florida has lost the most wetland acres of any state,
approximately 9.3 million acres,or 46 percent of its 1780s total

Resource: soils.ifas.ufl.edu/wetlandextension/threats.htm.

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WHY ARE WETLANDS IMPORTANT?

-Wetlands provide important ecological services and support many native plants and wildlife!

-Wetlands provide habitats for plants and wildlife above and below the water!

-Wetland plants provide oxygen and absorb carbon dioxide!

-Wetland plants improve water quality by removing hazardous chemicals. They are the kidneys that filter our water systems!

-Wetland plants help control erosion!

-Wetlands are beautiful!

-Wetlands have a valuable impact on our economy!

The Everglades

www.exploringnature.org

Florida Pickerel Weed

Florida Sundew


COPYRIGHT KIM SENG | CAPTAINKIMO.COM

WHAT IS KILLING OUR WETLANDS

-Excess nutrients or sediment in runoff from adjacent areas

-Ditching and draining

-Diked off from its water sources

-Excess sediment from eroding slopes

-Altered hydrology by road crossings, undersized culverts

-Soil dumping and fill

-Soil removal; oxidation of organics, groundwater removal

-Toxic soils from on and off site industrial practices

-Loss of biodiversity because of habitat change

-Loss of native plant species because of invasive plants

What are the 10 biggest environmental threats to our water & wetlands in Florida?

1. Population:

Without a doubt the biggest issue facing Florida's environment is over population of humans. All major environmental issues flow from the very fact that we are over populating the planet.

In 2015 the population was over 20.6 million people. We have over 1,000 people a day moving to Florida.

2. Climate Change:

An overwhelming majority of climate scientists, believe that human activities are currently affecting the climate and that the tipping point has already been passed. In other words, it is too late to undo the damage that climate change has done to the environment. At this stage the best we can do is regulate the further impact upon the environment by developing more environmentally friendly methods of energy production by reducing the mining and burning of fossil fuels.

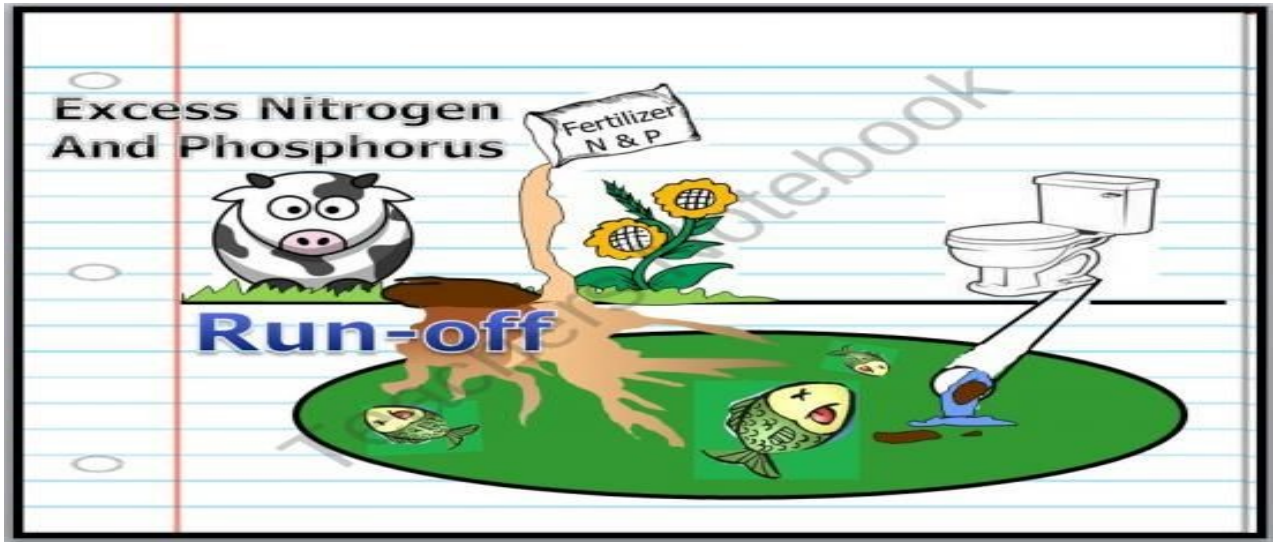
3. Loss of Biodiversity:

The loss of biodiversity in Florida can be directly related to the behaviors of human beings. Humans have destroyed and continue to destroy the habitats of species on a daily basis.

When we exterminate one species, it has a trickle up and down effect in the food chain which in turn upsets the Eco-systems inter-dependent on one another in our water, land and air. Everything is connected and plays a vital part of a healthy earth.

4. The Phosphorus and Nitrogen Cycle Impacts

Although the effect of human activities on the carbon cycle is better known, the lesser known effect on the cycle of Nitrogen actually has a greater impact on the environment. Every year, humans convert an estimated 120 million tons of nitrogen from the atmosphere into reactive forms such as nitrates, mainly in the production of nitrogen-based fertilizer for crops and in the use of food additives. The run off from crops into our oceans has a negative effect upon phytoplankton which is responsible for the production of of most of the oxygen in our air.



5. PRIVATIZATION OF WATER:

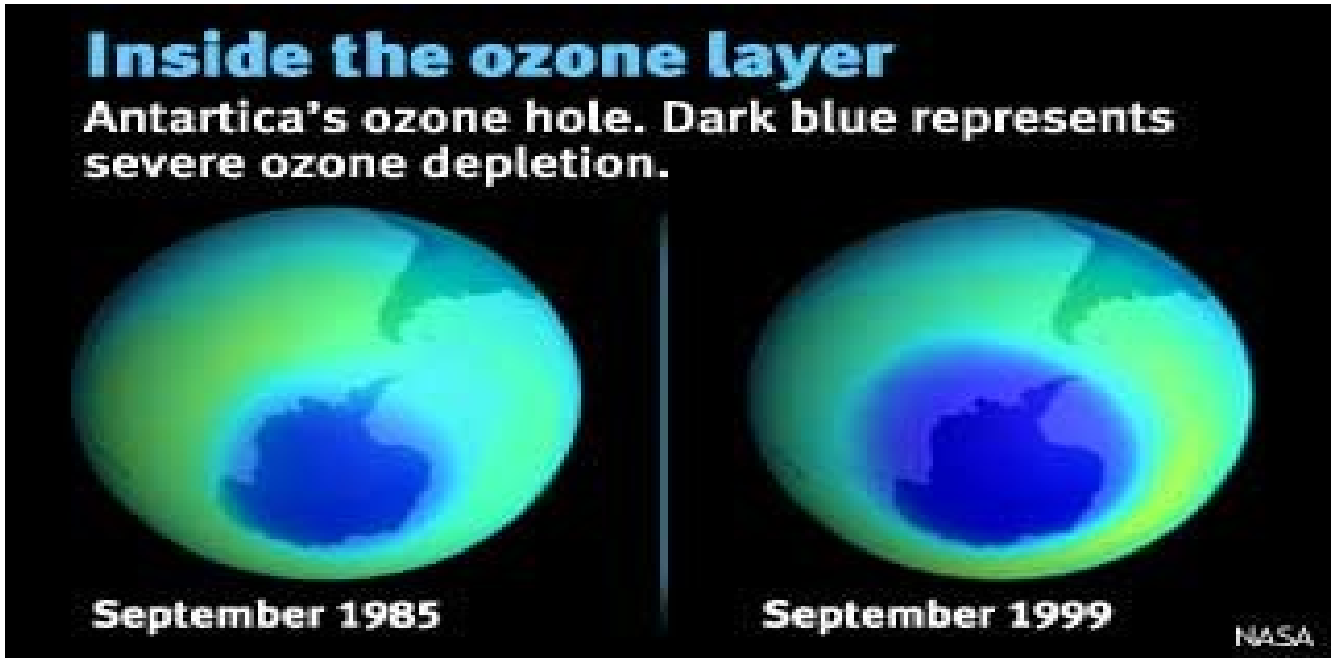
Many experts believe that in the near future water will become a commodity just like Gold and Oil. Some experts say that wars will be fought over who owns the water supply. It is predicted by 2050 that two thirds of the worlds population will not have access to clean water. Water banking has already begun in Florida as huge water withdrawal permits are being given to corporations.

6. Ocean Acidification:

Over the last 250 years, surface acidity of the ocean has increased by an estimated 30%. The acidity is expected to increase by 150% by 2100. The effect of over acidification of the oceans on sea creatures such as shellfish and plankton is similar to osteoporosis in humans. The effect of ocean acidification may soon challenge marine life on a scale that Florida and the rest of the planet has not seen for millions of years.

7. Pollution:

Pollution of air, water and soil by chemical compounds that take many years to breakdown. Most of these chemicals are the bi-products of our modern lifestyle and are created by industry and motor vehicle exhaust. Common toxic substances also include heavy metals, nitrates and plastic. Many plastics including the microplastics end up in the ocean, lakes, springs and rivers. They have a devastating effect on water quality, water creatures, plants and our health.

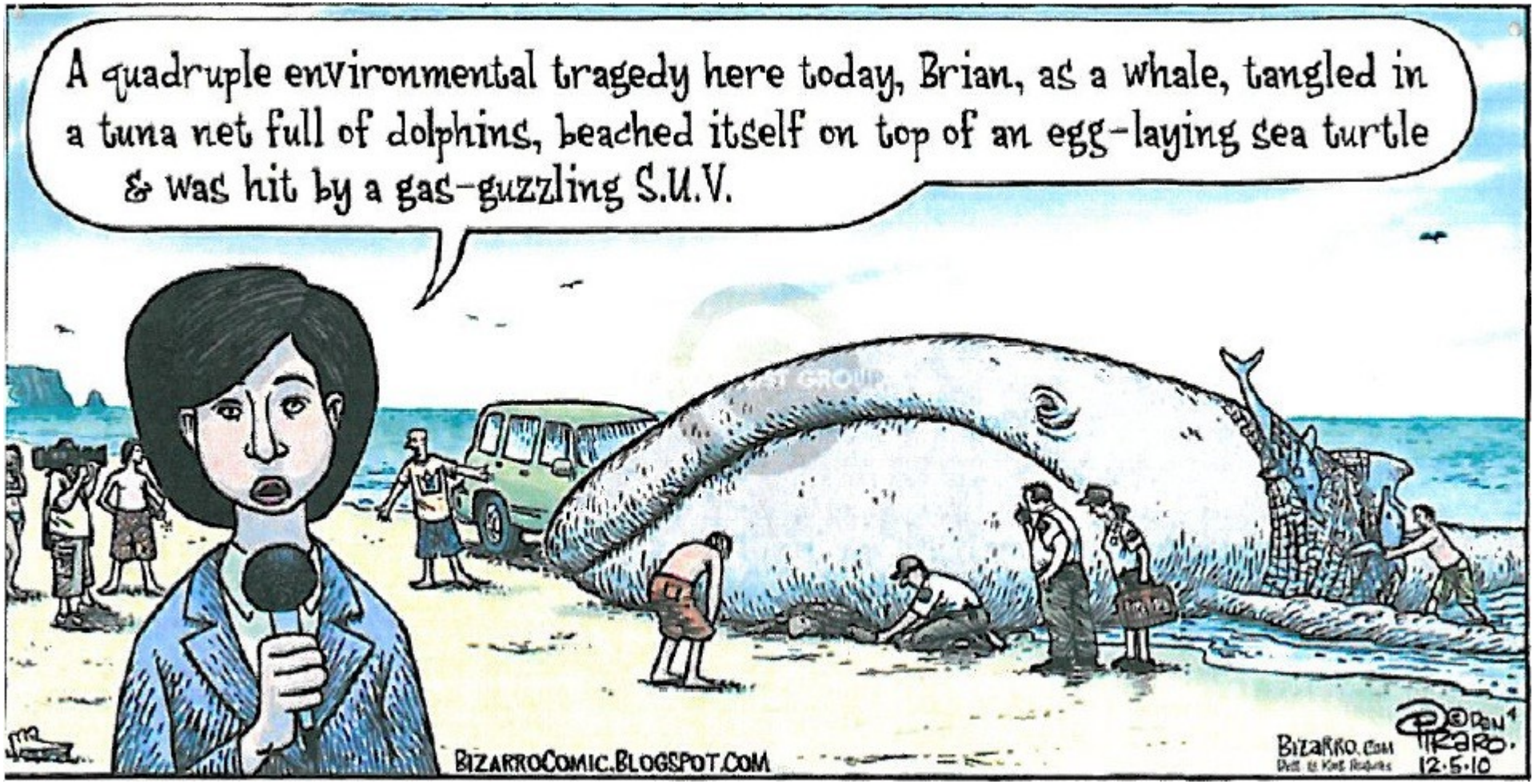


8. Ozone Layer Depletion:

Depletion of our ozone layer has been mainly attributed to the release of chemical pollution containing the chemicals Chlorine and Bromide. Once the chemicals reach the upper atmosphere, they cause ozone molecules to break apart causing a hole to form, the largest of which is over the Antarctic. According to the Environmental Protection Agency, one atom of chlorine can break down more than 100, 000 ozone molecules.

9. Over Fishing

It is estimated that by 2050 that there will be no fish left in the sea and they may disappear from lakes, rivers and springs before then.



10. Deforestation: Florida & Worldwide

Since 1990 half of the worlds rain forests have been destroyed. The clearing of forests continue at an alarming rate. Also, due to pollution, trees are now dying globally at a rate never before seen. Trees and plants play a huge part in the water cycle because they are responsible for extracting groundwater from the soil and returning it the atmosphere. When trees are cut down the water isn't released into the atmosphere and the balance of the wa

Here are some of the areas where water & wetlands are compromised in Florida...

- The Florida Everglades is being called the Neverglades because over 40,000 acres of sea-grass died in the Florida Bay last fall. Too much water in South Dade and too little water in Taylor Slough is the reason. Solutions to this problem should be a priority but money that could be used for this purpose seems to be distributed elsewhere by our legislature. Also, invasive species threaten native plants and wildlife.
- Many lakes in Keystone Heights area, which is the largest recharge area in NE Florida for the Floridan Aquifer have dried up. Many other lakes and ponds throughout Florida are polluted and below any known historical levels.

- **Public Employees for Environmental Responsibility report that one out of eight Florida public water systems has pollution violations involving chemical and fecal contamination. They blast the Governor and FDEP because enforcement of clean water standards has plummeted since 2010.**
- **A summer of polluted discharges from Lake Okeechobee into the Caloosahatchee and St. Lucie estuaries have led to toxic algae blooms along Florida's Treasure Coast. Plans to store and clean phosphorus-laden water before releasing it into the Everglades have been demanded by environmentalists for years but efforts to buy land for the project have been sidelined mainly because of sugar-industry opposition.**


WE CAN'T
DRINK
THEIR
MONEY*
*or benzene, toluene, ethylbenzene, naphthalene, xylene, 2-butoxyethanol,
hydrogen fluoride, ethylene glycol, hydrogen chloride, formaldehyde, etc.
RESIST HYDRO-FRACKING!
justseeds.org

HYDROLOGIC FRACTURING – A BAD IDEA FOR FLORIDA

- **A lawsuit has been filed by a coalition of environmental groups fighting extensive seismic exploration for oil and gas in the Big Cypress National Preserve which is home to many endangered species and is also a major watershed for the Everglades National Park. The testing is the first step towards "fracking" the Park and elsewhere in Florida.**
- **Sabal Pipeline - the Army Corps of Engineers has approved 3 permits that would allow construction of a 515 mile pipeline that will transport fracked gas across 699 water-bodies and harm 1,958 wetland systems in Alabama, Georgia and from Madison County to Orange County in Florida.**

- **Despite public protests the Environmental Regulation Commission approved FDEP amendments that would allow industry to put more toxins known to cause cancer, birth defects and other health problems in Florida's waters. SHAME ON THEM**
- **Springs – Silver Springs, and almost every natural spring in Florida is putting out less water than ever and is also compromised with chemicals causing algae bloom and fish and wildlife death.**
- **The St. Johns River and most other rivers and streams in Florida are compromised because of over-pumping and pollution. Barnacles are found further upstream than ever.**
- **Florida's beaches and coastlines – Erosion, pollution, overpopulation AND invasive species.**

DILBERT *by SCOTT ADAMS*

HELP SOLVE THE WATER CRISIS!

BE AN ADVOCATE FOR

FLORIDA'S WATER AND WETLANDS!

HOW TO BE AN ADVOCATE

"You can change the image of things to come. But you can't do it sitting on your hands..."

--The Honorable John Edward Porter, Research! America Chair.

"We can't rely on science to speak for itself; it's something we have to give a face and a voice to - yours!"

-- Mary Woolley, Research!America President and CEO.

ENGAGE THE MEDIA -

- **Contact reporters who cover research and related issues and suggest new sources or story ideas they might consider.**
- **Write a letter to the editor of local and national magazines and newspapers expressing your viewpoint-positive or negative-of a story about research you read; be brief and use examples and poll data.**

CONTACT YOUR LOCAL, STATE AND NATIONAL GOVERNMENT OFFICIALS.

Q. IS IT BETTER TO CALL, WRITE, EMAIL OR VISIT MY REPRESENTATIVES?

Prepare: You want to go into the meeting prepared. How does the official stand on this issue or other issues related to it. Know something personal. You want them to know that you have done your homework. You want to anticipate their reaction and understand some of their motivations.

Connect: Make a personal connection. Let them know if you represent a constituency. How many people do you represent. That matters very much to them. Explain why you care and put it in a personal context. You never know where connections will intersect.

Ask: There's a reason you went there and don't leave without asking for it. Know what it is you want. Ask where your legislator stands on the issue.

Follow up: If you don't follow up, it's like the meeting never happened. Send a thank you note. If there was an agreement, acknowledge it in writing. Send any information that was agreed to in the meeting.

TIPS TO WRITING GOOD LETTERS

- Keep your letter to one topic
- Keep your letter short and to the point
- Let your lawmaker know how the issue affects you personally & be courteous.
- Let your lawmaker know you live and vote in the state or district
- Address your lawmakers by “the Honorable” followed by his/her name, and begin the letter “Dear Senator,” or “Dear Representative”

Educate: Educate yourself about the topic. There is no need to feel like you have to be an expert. You have a right to be there. There's a reason you care and something that drove you to take your time to do this. Present the issue. What is in it for the legislator's constituency? Have a few strong statistics. Very often, it is information we bring to these meetings that helps to frame their decisions. This happens all the time.

ENVIRONMENTAL EDUCATION SAVES THE DAY

Q. IF I START LOBBYING OR ADVOCATING MY REPRESENTATIVES, WILL I HAVE TO REGISTER AS A LOBBYIST?

A. You will not have to register if you are advocating, educating and raising awareness. You will not need to register as a lobbyist, even if you continually contact your representatives about a specific piece of legislation. A private citizen acting on their own, or as a volunteer with an organization, does not have to register as a lobbyist.

BE A WATER WARRIOR

“WATER IS FLORIDA'S LIFEBLOOD. IT IS ESSENTIAL TO SUSTAIN ALL LIVING PLANTS AND CREATURES. IT IS ESSENTIAL TO OUR ECONOMY AND WELL BEING. FLORIDA IS BLESSED WITH AN ABUNDANT AQUIFER, BEAUTIFUL WETLANDS, SPRINGS, RIVERS, LAKES, AND SURROUNDED BY THE OCEAN. FLORIDA IS DEFINED BY THE HEALTH OF IT'S WATER RESOURCES AND IT DESERVES ALL THE PROTECTION WE CAN PROVIDE.”

JACKIE HOST, FFGC CHAIRMAN
WATER & WETLANDS