

"Why do we need alligators in the swamp?"

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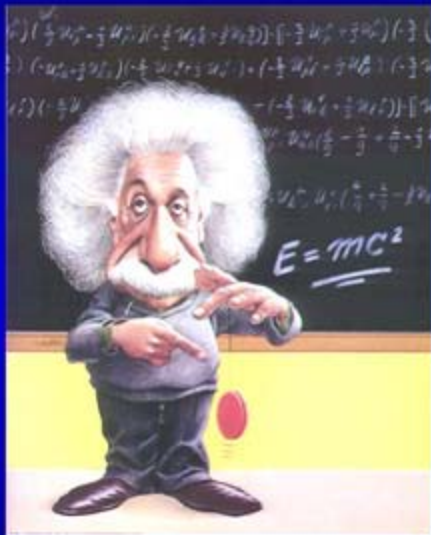
What is a scientist?



Detective



Adventurer



Artist



Story Teller

A Story in Three Parts





Dr. Lou, Ph.D.



Dr. Lou, Ph.D.



44 alligators - some big and some small



Scientific Puzzle

- Why do we need alligator populations in wetlands?







American alligator

- *Alligator mississippiensis*
- Alligator = Spanish - el lagarto
- Species history
 - > 2 million years
 - Only American and Chinese alligators



Archosaurs



Range of American Alligator



Size

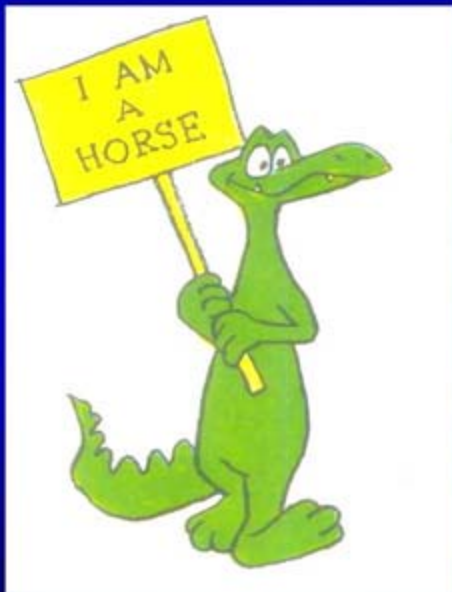


8 inches
20 centimeters

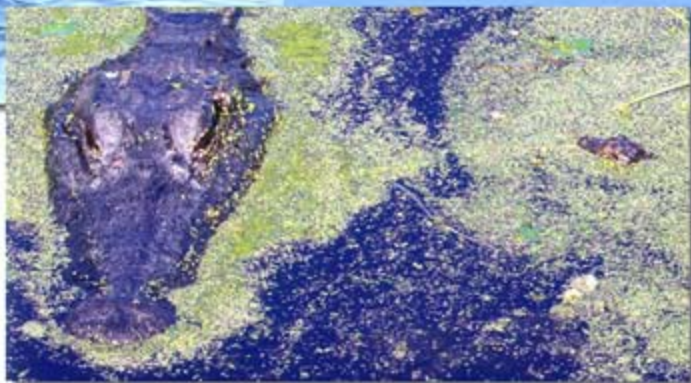


156 inches
13 ft or 4 meter

Can you identify a gator?



Gators are not green!



They have a round snout



Alligator



Crocodile



Gharial

Overbites and No Notches

Alligator



Crocodile



They do smile...



but not like a crocodile!



Is this an alligator?



Is this an alligator?



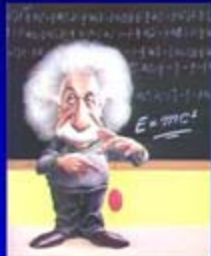
Is this an alligator?

4



Unknown Virginia Tech Skull: Alligator or Crocodile?

4



Keystone Species



KEYSTONE SPECIES



Gator Holes and Trails in the Swamp



'High Ground'





- Why do we need alligator populations in wetlands?



....alligator are a keystone species!



KTU Scientific Mission

- Are waters around Kennedy Space Center healthy?



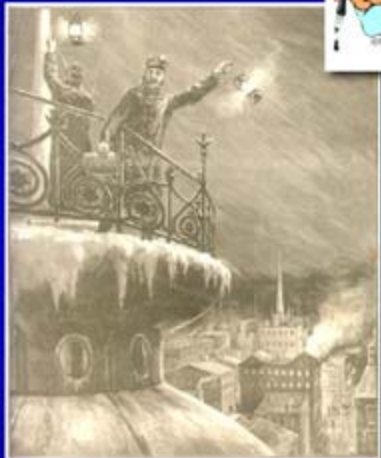








Sentinel Species



'Watch and Warn' Species

A person wearing a white long-sleeved shirt, a white cap, and a black safety harness is seen from the back, sitting in a boat. They are pulling a rope that extends across the surface of the ocean. The water is dark blue with some white foam from the boat's wake. The sky is blue with scattered white clouds. The horizon is visible in the distance.

Catching an Adult Alligator

Kennedy Space Center





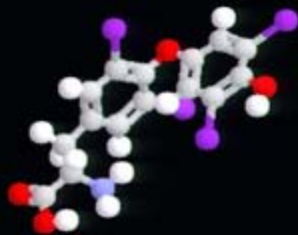




What did we find?



- Males and females may have low thyroid hormone
- Contaminants in the blood....like metals and flame retardants



thyroxine



PCBs



What does this mean?

- Low thyroxine and contaminants could mean.....
 - Poor growth
 - Unhealthy eggs
 - Bad eggs = fewer baby alligators

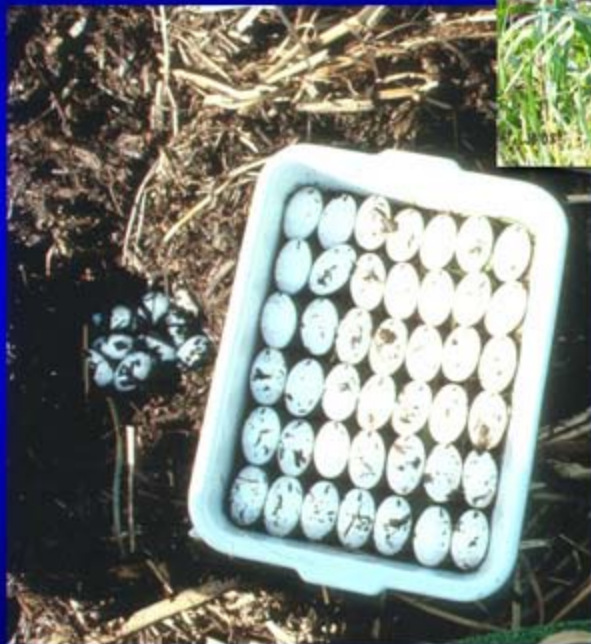


An aerial photograph of a dense, green mangrove forest. The vegetation is thick and lush, with various shades of green. Several palm trees are visible, their fronds and trunks standing out against the dense canopy. The overall scene is a natural, undisturbed landscape.

Searching for Gator Nests

Kennedy Space Center

Some eggs good.....
Some bad



Heavy metals
and other contaminants
in the eggs.....



Mom's food is important.

4





What did we find?

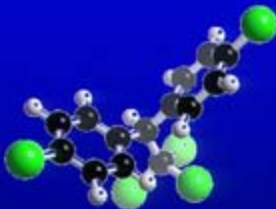
- Eggs had contaminants



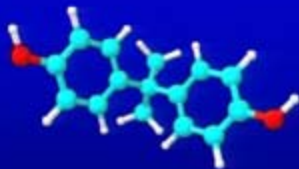
aluminum



cadmium



ddt



Bisphenol A



SILENT
SPRING



RACHEL CARSON



Give a Hoot - Don't Pollute





Who Pollutes?

We all do!



What pollutes our environment?



Oil



Drugs



Plastics



Pesticides



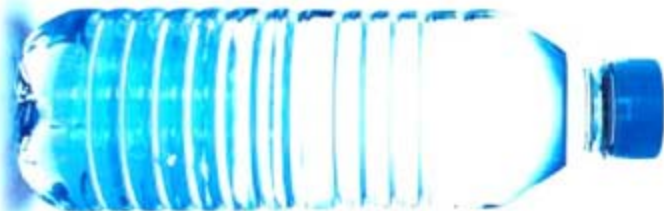
Fertilizer



Plastic Bottles



- Americans use 2.5 million plastic bottles/ hour
- 8" bottle



- 315.65 miles/hour or 7575.75 miles/day
 - 7575 miles = 35 round trips between Blacksburg and Washington DC
- Only 30% of plastic bottles are recycled

What should you do?

- Each person should recycle 1 bottle a day.



- $400 \text{ kids} \times 1 \text{ bottle} \times 365 \text{ days} = 146000 \text{ bottles}$ or 18.43 miles of plastic
- or....

Or...4171 jackets

25 old plastic bottles
can be recycled into
one new fleece jacket!



So...plastics and alligators??



Every time you use a chemical...
you put it in the environment

4



So....think before use





Help Keep the Earth Clean



4

