BLUE CRABS: THE STRUGGLE FOR LIFE

WHY ARE BLUE CRABS IMPORTANT?

- IMPORTANT FOR FISHERMAN– THEY'RE DELICIOUS!
- THEY FEED ON ALMOST ANYTHING THEY CAN GET HOLD OF, INCLUDING MUSSELS, SNAILS, FISH, PLANTS, DEAD ANIMALS AND EVEN…
  - **OTHER BLUE CRABS**! THOSE CANNIBALS!
- THEY EAT THINGS THAT MOST ANIMALS WILL NOT EAT.
- THEY HELP TO MANAGE OTHER POPULATIONS SO THAT MORE SPECIES CAN COEXIST

http://eol.org/pages/312939/overview

WHERE DO CRABS LIVE?

- ESTUARIES!
- WHY ARE THEY IMPORTANT??
  - FILTER THE WATER
  - LOTS OF NUTRIENTS
  - PROVIDE HOMES FOR BABIES
  - PROTECT THE COAST AND BEACHES
  - REDUCE EROSION
  - PROVIDE LOTS OF FISH

http://upload.wikimedia.org/wikipedia/commons/f/f8/Exe_estuary_from_balloon.jpg

Estuary = A semi-enclosed body of water between a river and the ocean

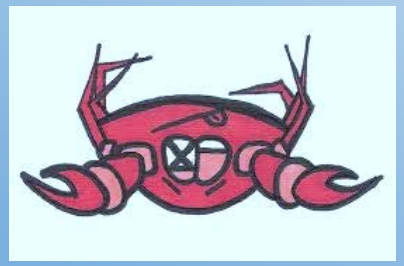
HUMANS VS. CRABS

http://www.yorkblog.com/biz/2013/07/21/rough-winte-makes-way-for-healthy-summer-in-crab-populations/

http://www.mesa.edu.au/mangroves/mangroves07.asp

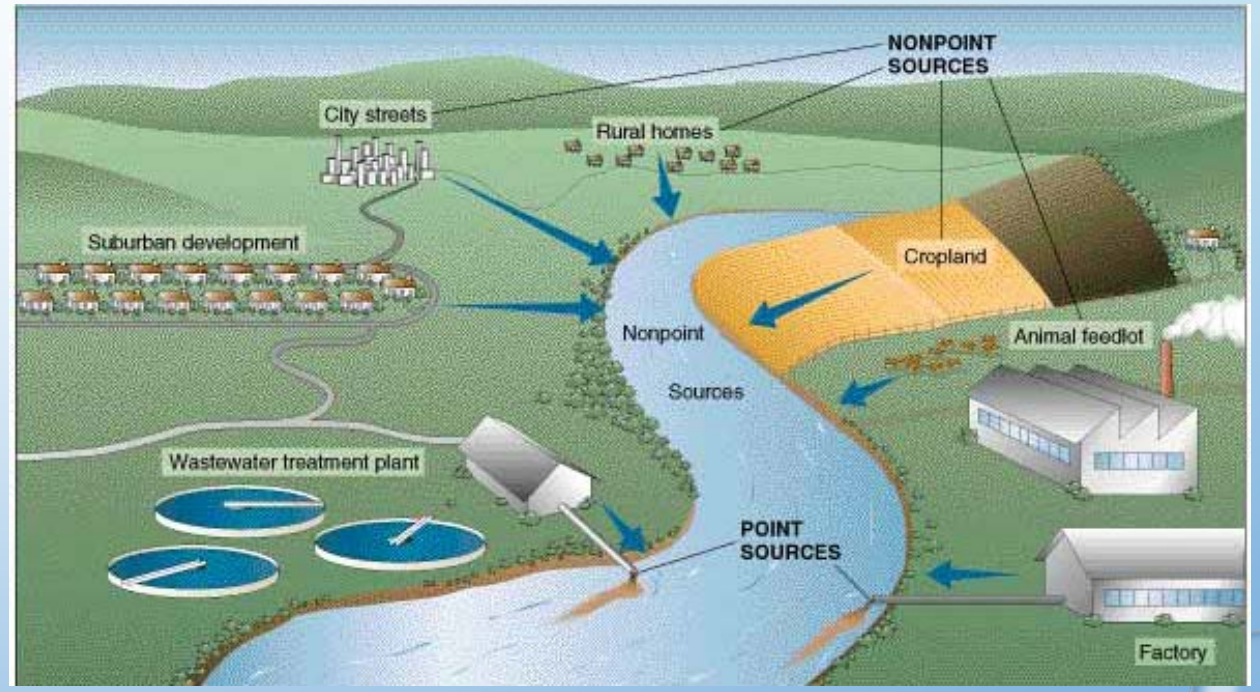
http://ocean.nationalgeographic.com/ocean/critical-issues-marine-pollution/

http://smartercharger.com/2013/04/auto-industry-air-pollution/



POLLUTION

- DEFINITION
- POINT VS. NON-POINT SOURCE POLLUTION
- POLLUTION CAN LEAD TO MASS FISH KILLS AND UNSANITARY WATER
- NO FISH → NO MONEY FOR FISHERMAN
- ESTUARIES HELP FILTER THE POLLUTION OUT OF THE WATER SO IT DOESN'T GO OUT TO SEA, BUT IT EFFECTS ORGANISMS LIKE CRABS IN THE PROCESS

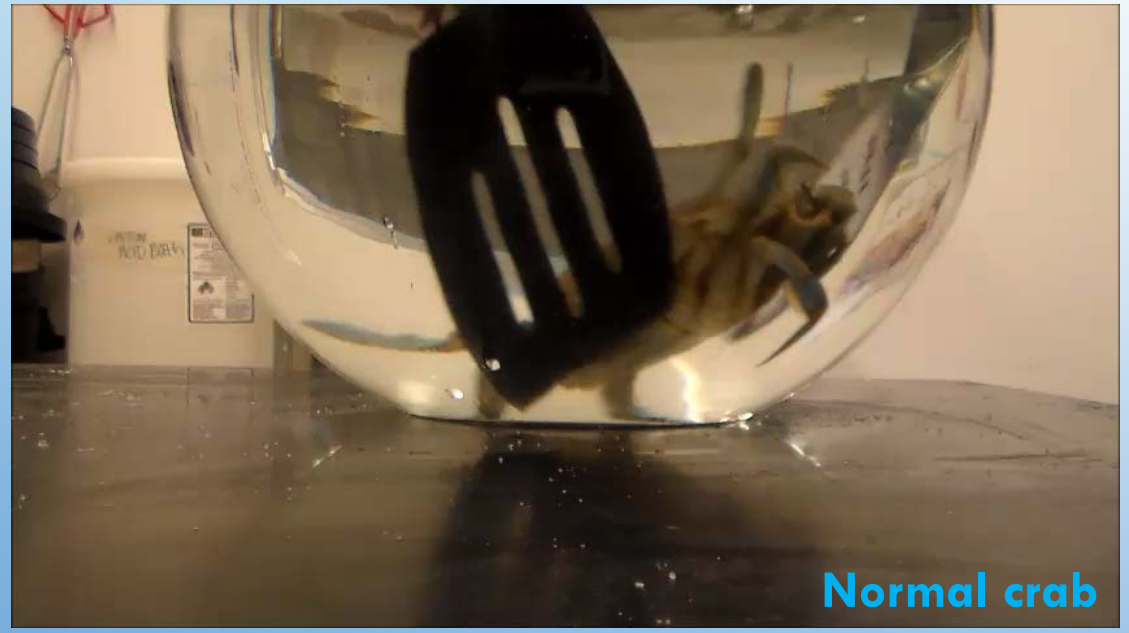


EXPERIMENT

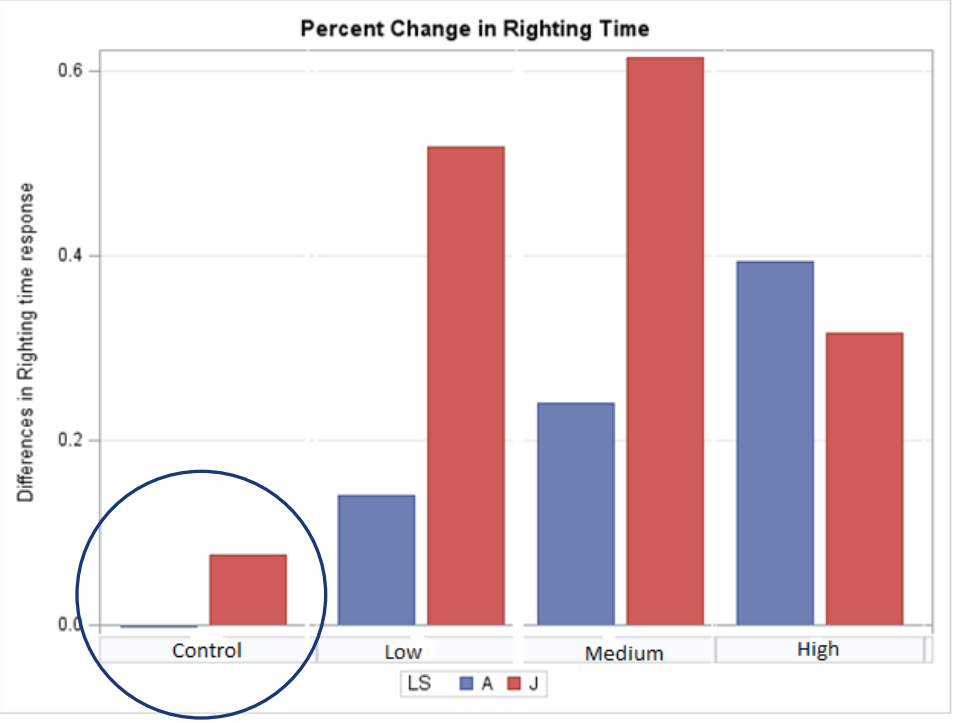
- QUESTION #1: IF A CRABS IS EXPOSED TO PESTICIDE MORE THAN ONCE, WILL THEY GET SICKER?
  - HYPOTHESIS: CRABS WILL RESPOND NEGATIVELY TO MORE PESTICIDE.
- QUESTION#2: DO CRABS KNOW WHEN PESTICIDES ARE AROUND?
  - HYPOTHESIS: CRABS WILL TRY TO AVOID AREAS WHEN PESTICIDES ARE PRESENT
- QUESTION #3: CAN CRABS FIND FOOD AND AVOID PREDATORS AFTER THEY ARE EXPOSED TO PESTICIDES?
  - HYPOTHESIS: CRABS WILL NOT BE ABLE TO LOCATE THEY FOOD AND AVOID PREDATORS AFTER THEY ARE EXPOSED TO PESTICIDES.

PROCEDURE

- FLIPPED THE CRABS TO MEASURE ABILITY TO RESPOND AND REACT
  - MEASURED TIME IT TOOK UNTIL THE CRAB WAS ABLE TO FLIP ITSELF BACK OVER.



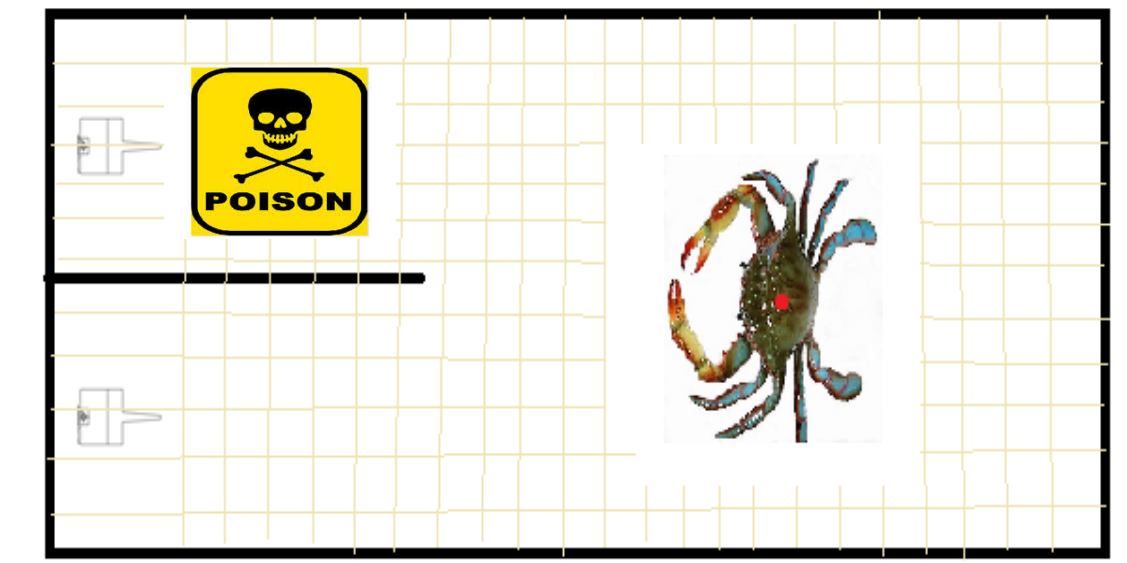
CAN CRABS SURVIVE ON BUG JUICE?



Blue bars are juvenile crabs
Red bars are adult crabs

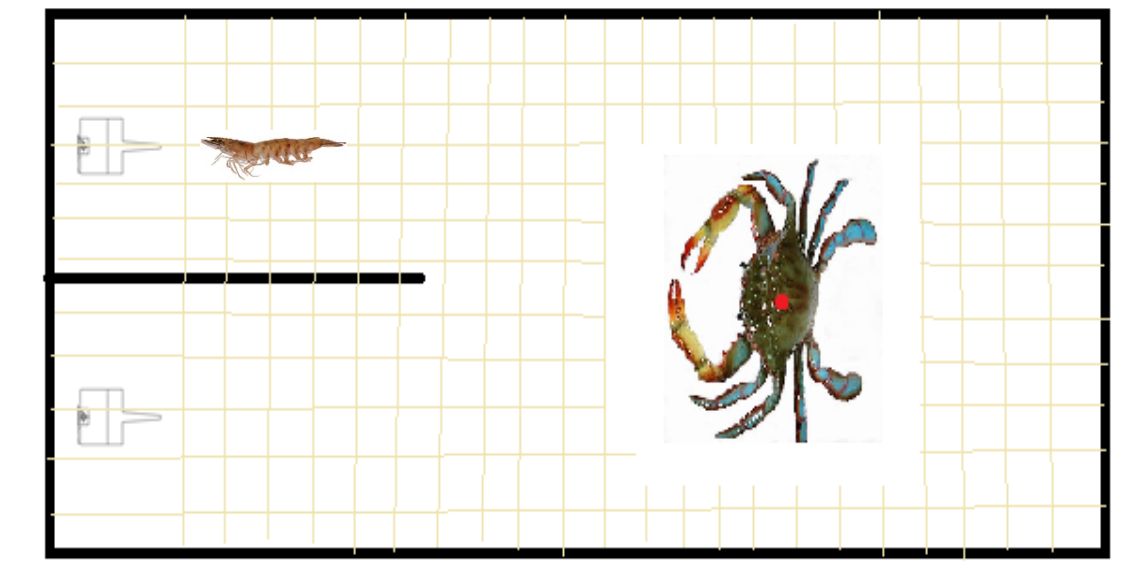
- CRABS WERE EXPOSED TO LOW, MEDIUM AND HIGH LEVELS OF PESTICIDES
- **CONCLUSION:**
  - CRABS THAT ARE EXPOSED TO PESTICIDES TAKE LONGER TO FLIP THEMSELVES BACK OVER
- WHY DO WE CARE???

EXPERIMENT 2



- WILL THEY SWIM AWAY FROM THE PESTICIDE??

EXPERIMENT 3



- CAN THEY FIND THE FOOD AFTER THEY HAVE BEEN EXPOSED TO A PESTICIDE??

HOW CAN WE HELP??

All Drains Lead To The Ocean.