Pacific Sea nettle (Chrysaora fuscescens)

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The Pacific Sea nettle

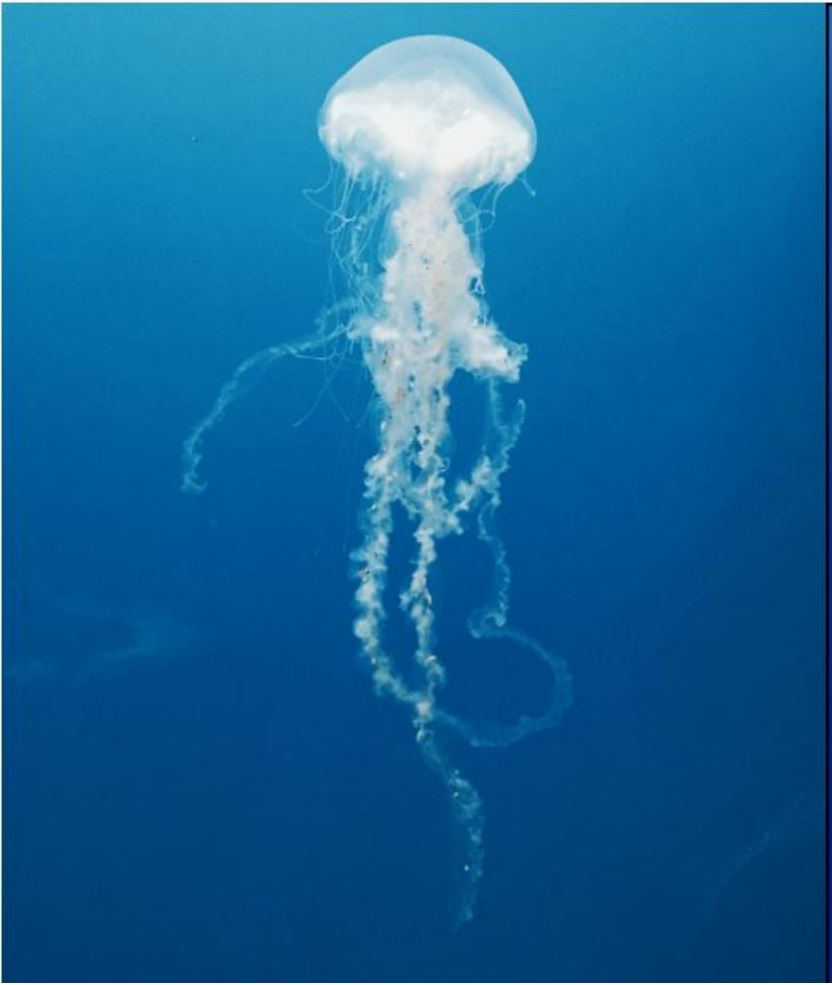
- The Pacific sea nettle is a species of jellyfish that is commonly found in the waters of the Pacific Ocean, ranging from Alaska to Southern California.
- They are known for their distinctive bell-shaped body, which can measure up to 3 feet in diameter, and their long, trailing tentacles that can reach up to 20 feet in length.
- The Pacific sea nettle's bell is typically brown or reddish-brown in color, with a distinct golden-brown cross shape in the center.
- Their tentacles are lined with thousands of tiny, stinging cells called nematocysts, which they use to capture prey and defend themselves from predators.
- feed on zooplankton and other jellies
- Preyed upon by sea turtles and fish

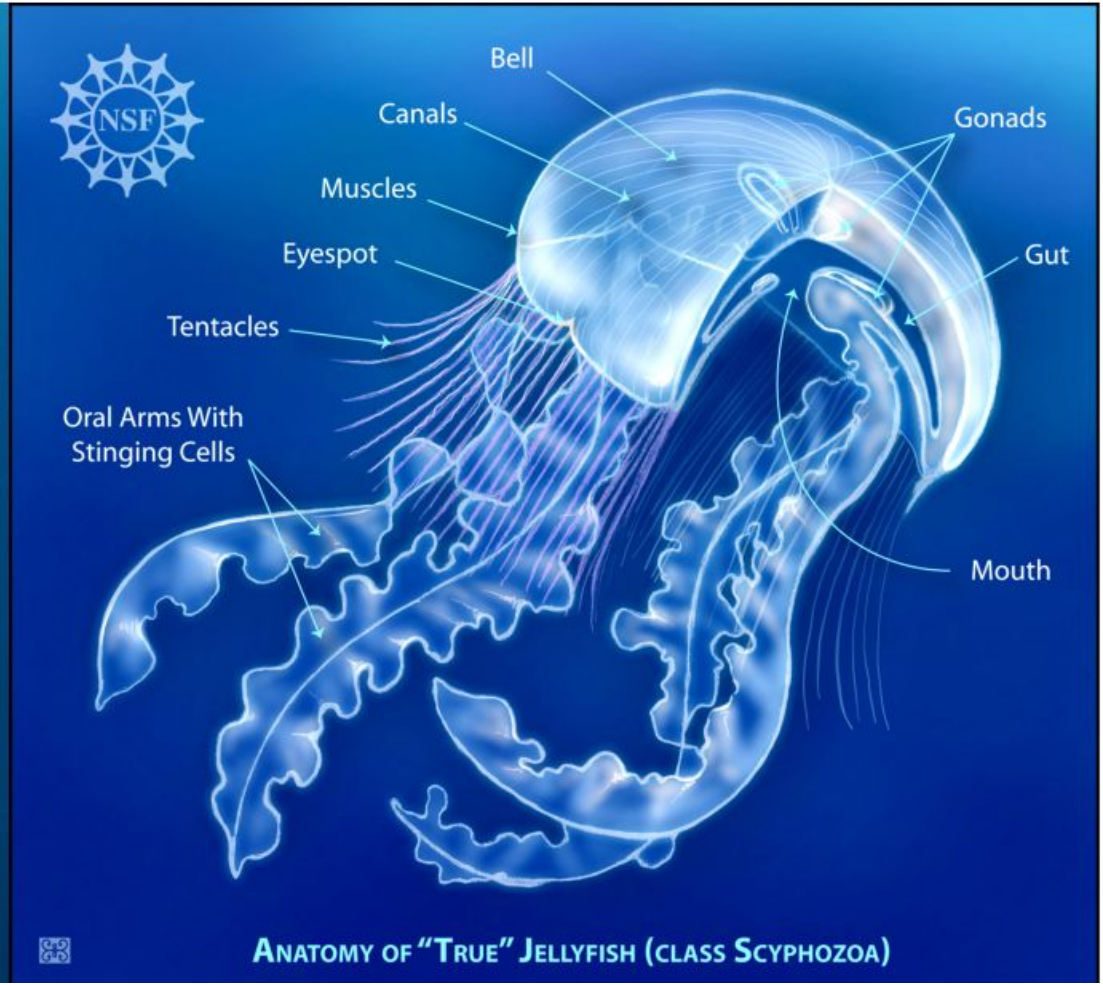
Fun Facts:

- **climate change is good for these jellyfish, the warming waters and pollution is taking out it's predators causing jellyfish blooms (increase in population)**
- **crabs will attach themselves to the body of these jellyfish and use them as transportation to the shore**

Five hypothesis

1) chemical compounds of vinegar react with nematocysts to keep them from firing and stop the release of more venom.
    a) Based on research testing various chemicals of jellyfish stings
2) Light conditions can trigger strobilation in sea nettles
    a) Based on research testing preferred temperature and salinity for sea nettle reproduction
3) The size of the medusae affects the rates of predation as well as the prey chosen
    a) Based on research on sea nettles role in an ecosystem
4) The bell pulsation cycle does not rely on the bell diameter
    a) Based on research observing sea nettle swimming movements
5) The season has an affect on sea nettle distribution
    a) Based on research on sea nettle distribution based on temperature and salinity of water




NSF
Bell
Canals
Gonads
Muscles
Eyespot
Gut
Tentacles
Oral Arms With
Stinging Cells
Mouth
ANATOMY OF "TRUE" JELLYFISH (CLASS SCYPHOZOA)

The hypothesis we selected

The hypothesis that made the most sense was that light conditions can trigger strobilation in sea nettles.

Background

Strobilation is the stage of the jellyfish life cycle in which the polyps reproduce asexually

The research design

To test the selected hypothesis it would be a repeated measurement design through observation

Polyps would be taken from different locations in which they reside

Each would be kept in separate tanks, each with the same temperature, salinity and feeding

The independent variable would be the lighting conditions

- To isolate this variable it would have to be in a room with the tanks only source of light being the selected light condition

Control would be data collected from field data

- The field data might be errored depending on the season of study

The dependent variable would be the rate and efficiency that the polyps complete strobalition

They would be observed over the span of a few days

There would a second experimental unit, in which all the variables are the same except for group of polyps to ensure the data of the first

Resulting polyps might be evaluated for health

Research ethics associated with your research design

- Reason for experiment: addition knowledge on sea nettle, ecosystem, and possibly benefits for humans too
- No harm to the jellyfish (fed properly and kept in adequate conditions)
- Transferred safely
- permission/consent from state/property owners of bodies of water in which they are being collected
- Follow all federal, state and local governmental regulations when collecting the jellyfish
- Documented and reported
- References properly cited in APA format