Sea Turtle Monitoring

Overview

Research Contact: Erika Santacruz Lopez (Grupo Tortuguero)

Research Location(s):

- La Gringa, Punta Arena, Glendale Field Station, South of Villa Bahia*
    - *Specific area to be chosen by Grupo Tortuguero close to day of research

Supplies:

**Check with Field Research Manager to determine if students will be eating dinner in the field or returning to field station for dinner.*

- All Supplies on **General Field Research Supplies Check List** (see above)
- Ocean Discovery Sea Turtle Morphometrics Datasheets (50)
- Clipboards + pencils (8)
- Latex Gloves
    - Medium (1 box), Large (1 box), XL (1 box)
- Beach umbrellas (9)
- Water jugs (6)
- Crazy creeks (as many as we have)
- Lifejackets (4)
- To go dinners + utensils + napkins (1/person)*
- Trash bags (3)*

Research History and Objective:

Students will participate in an ongoing turtle monitoring program run by Grupo Tortuguero.

Sea turtles have been monitored by community scientists in Bahia since 1980 (Antonio Resendiz and Co. but the community began to be more involved around 1998-2000). Grupo Tortuguero has been in existence since 2018, some of the people who are now part of the group started with Antonio as children and grew up working on this project. Ocean Discovery Institute has been involved in sea turtle research since 2004.

Bahía de los Àngeles is a small-scale coastal gillnet fishery. Coastal gillnet fisheries are one of the most common forms of fishing throughout the world. A gillnet is a wall of netting that hangs in the water column, typically made of monofilament. Mesh sizes of the gillnet are designed to allow fish to get their head through but not their body. The fish's gills then get caught in the mesh as the fish tries to back out of the net.
Unfortunately, this type of fishing has high rates of bycatch (shark spp., turtle spp., fish spp., etc.). Bycatch is when other marine species, which aren't the fisherman's target species, are caught in the gillnets.

Sea turtles are one species that have been subject to bycatch over the years. Turtles need to come to the surface every few minutes to breathe, but when they get caught in gillnets, they are unable to surface and can die.

In the past, Ocean Discovery has worked with several scientists to study ways to reduce sea turtle bycatch from gillnet fishing, including the use of sensory-based deterrents. Sensory-based deterrents attempt to help an animal use its senses (sight, hearing, smell, taste, or touch) to locate a net and be able to avoid it. Ocean Discovery students and their scientist mentors have tested visual deterrents (attaching shark shapes – a natural predator or sea turtles and

lights to nets so animals can see them) and acoustic deterrents (attaching speakers to nets so animals can hear them). These types of sensory deterrents were all effective in reducing the number of sea turtles caught.

Timing:

Time	Activity
2:50 – 3:00PM	**Gear Check** ☐ Everyone check batteries on headlamps/flashlights.
3:00 – 3:20PM	**Drive to Research location**
3:20 – 3:30PM	**Park & Unload Vans**
3:30 – 3:40PM	**Set up beach area** ☐ Set up umbrellas ☐ Stage supplies under umbrellas ☐ Fill water bottles. ☐ Gather research supplies.
3:40 – 3:50PM	**Greet Grupo Tortuguero** ☐ Trip Lead: o Determine if students can do introductions vs. volunteers are busy with a sea turtle. o Check if students will be able to accompany fishermen out to check nets. o Confirm number of students and adults per trip. ☐ If appropriate have each student do a personal greeting.
3:50 – 4:00PM	**Review research methods with community researchers** ☐ Review research groups ☐ Review Research Methods below.
4:00PM – ?	**Collect Data** ☐ Eat dinner at will. ☐ Use Decision Tree below to determine when to return to field station.
?	**Goodbye to Grupo Tortuguero** ☐ All students shake hands and say thank you.
?	**Clean Up Research Gear** ☐ Take down umbrellas. ☐ Pack away dinner materials. o Offer leftovers to community members. ☐ Do supply sweep.
?	**Load Vans** ☐ Load all gear. ☐ Students return home in the vehicles they came in.
?	**Return to Field Station**
?	**Research Reset** ☐ Staff: o Return all gear to storage. o Check out with trip lead.

Research Methods

1. **Morphometrics**
    - Maximum number of people around a turtle is FOUR (including one Grupo Tortuguero person).
    - Assign roles:
        - Turtle Intake Card:
            - Records information on laminated card provided by Grupo Tortuguero.
            - See example Turtle Intake Card below.
        - Photographer:
            - Takes photos of:
                - Completed Turtle Intake Card near head of turtle
                - Overhead shot of turtle with the completed Turtle Intake Card visable.
        - Morphometrics helper:
            - If Grupo Tortuguero volunteer feels it is appropriate, students may help take some measurements.
            - Emphasize the importance of precise measurements.
        - Materials person:
            - Hands supplies over as needed.
            - Stands to the back of the group.

2. **Data Collection**
    - Data Recorders (all students but two) work alongside a Grupo Tortuguero volunteer to record morphometric data.
        - Each student recieves a clipboard, pencil and "Ocean Discovery Sea Turtle Morphometrics" data sheet.
        - Record measurements from Morphometrics team.
            - All students are recording the same data.
            - Collect completed datasheets.
        - Grupo Tortugero volunteer records on a separate data sheet for Grupo Tortugero data collection.
    - Capture/Recapture persons (2) – (stands to the back of the group) - checks turtle tag number for whether this turtle has been captured before and shares data with the group.
        - Set up map of Baja (pin to posterboard and set on the easel).
        - If data is available show past locations of turtle using map and pins.

3. **Barnacle Removal**
    - Students will help clean barnacles off turtles.

**Return to Field Station Decision Tree

- Consider returning to the field station early if:
    1. All students have experienced each role for 1-2 turtles:
        a. Morphometrics
        b. Barnacles
        c. Data Collection
    2. You have checked with Erica and she no longer needs the students help.