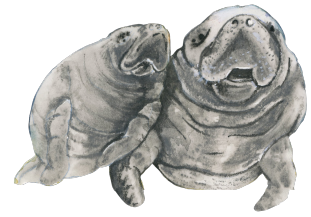




## Manatee Tracker

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[www.conservationtales.com/manatees](http://www.conservationtales.com/manatees)



Manatees are marine mammals that live in shallow oceans. Until 2016, manatees were listed as an endangered species, so scientists have been monitoring the species. One way scientists study the animals is to collect data about the animals' movement. Knowing how manatees move through their habitat can help researchers plan ways to protect the environment needed by manatees. In this activity, you will use real data about manatee movements to answer your own questions about manatees.

**Link** – You will use data from the Manatee [MapnTracker](http://www.manatee-mapntracker.com) website.

### Objectives:

- I can write testable questions for a scientific inquiry.
- I can use data to understand the movement of a manatee.
- I can compare data from different manatees to find patterns.
- I can make inferences based on patterns in evidence.

**Driving Question:** You can write a question to guide your inquiry about manatees. A driving question is the question you will try to answer using data. Some examples might include...

*How far does a manatee travel in a day? In a week?*

*Do male and female manatees travel different distances?*

**Driving Question:** Write your Driving Question in this space below.

**Prediction:** In this box, write a Prediction about what you think the answer your driving question will be:

## Manatee Tracking

Manatees can be tracked and monitored using satellite tracking buoys. The image at the right shows a manatee with one of these buoys. The buoy has a transmitter that sends signals to a satellite to report the manatee's position every time the buoy's antenna is above the surface.



Manatee with a tracking buoy.

Divers who swim near manatees are required to avoid contact with manatees with tracking buoys. This is because tracking buoys are usually used with animals that have sick or injured. When the animal is well enough to be released, a tracking buoy is attached to the manatee's tail with a cable. The buoy lets scientist check on the manatee to see how it is doing. The buoy is left on the animal's tail no more than a year. The buoy is removed when the animal shows that it is healthy enough to survive on its own.

In this inquiry, you will use data recorded by tracking manatees released in two different areas of Florida. The website linked on page 1 has a few "tagged" manatees that have active buoys. If you click on the name of one of these animals, you will find a map with yellow numbered flags showing where the manatee has been sighted.

The website has other data from "untagged" manatees. For these animals, you will not see a map. But if you click "Field Notes," you will find several notes written by a scientist or volunteer who found the animal, recorded some notes about location and activity, and entered the data into the database.

### Your Manatee Tracking Inquiry

Think about the Driving Question you wrote and make a plan for how many manatees you will include in your inquiry. Have your teacher or parent check your plan and approve it.

Then click on the manatees' names on the MapnTracker site. Record the locations where the animal was seen in the data table found on the next page. You can zoom in the map to see locations, or you find locations listed in Field Notes on a map of Florida you can find online. You can use that map to estimate distances.

Then answer the questions on page 4 to find patterns in the data and answer your Driving Question.

## Manatee Tracking Data Table

Your name \_\_\_\_\_ Date \_\_\_\_\_

Your driving question: \_\_\_\_\_

Manatee's name	Sex (M/F)	Flag # or Field Note date	Location	Distance Traveled (estimate)

**\*Note:** Print as many copies of this table as needed, OR create your own table to include the data you need to answer your driving question.

## **Finding Patterns and Making Inferences**

After you collect data from the manatee trackers, look at the data to see if there are any patterns you can see in the movement of manatees. The patterns you look for should be related to your Driving Question.

1. Write any patterns you think you can see in the data you collected.
2. Discuss the patterns you see with your classmates. How do their patterns differ from yours?
3. Suggest some reasons why you saw the patterns you saw. Do you think the patterns are influenced by weather, time of year, habitat, or other factors? Why do you think this?
4. Based on what you learned about the size of the area used by a manatee, how much space do you think scientists and governments should protect for manatees?