



NOAA FISHERIES

West Coast Region

Audience

General public, elementary school, middle school

Required Materials

- Painters tape, chalk, rope or other media to create the outline of a 39' gray whale
- A measuring tape
- [Top Ten Marine Litter Items](#)
- A box filled with the items in the table on Pg 3

Optional Materials

- [Marine debris posters and fact sheets](#)
- Necropsy photos, Pg 4
- [Sea Stewards Handbook](#)

Background Reading

- [Garbage found in stomach of dead whale on West Seattle beach](#)
- [Large Whale Entanglement](#)
- [Plastic, pants found in dead whale](#)

Gray Whale Marine Debris Activity

Overview

In this activity, participants will examine the stomach contents of a gray whale that stranded on Arroyo Beach in West Seattle on April 14, 2010. The whale had a surprising amount of human debris in its stomach, including a golf ball, plastic bags, small towels, surgical gloves, plastic, and duct tape.

Learning objectives

Participants will learn:

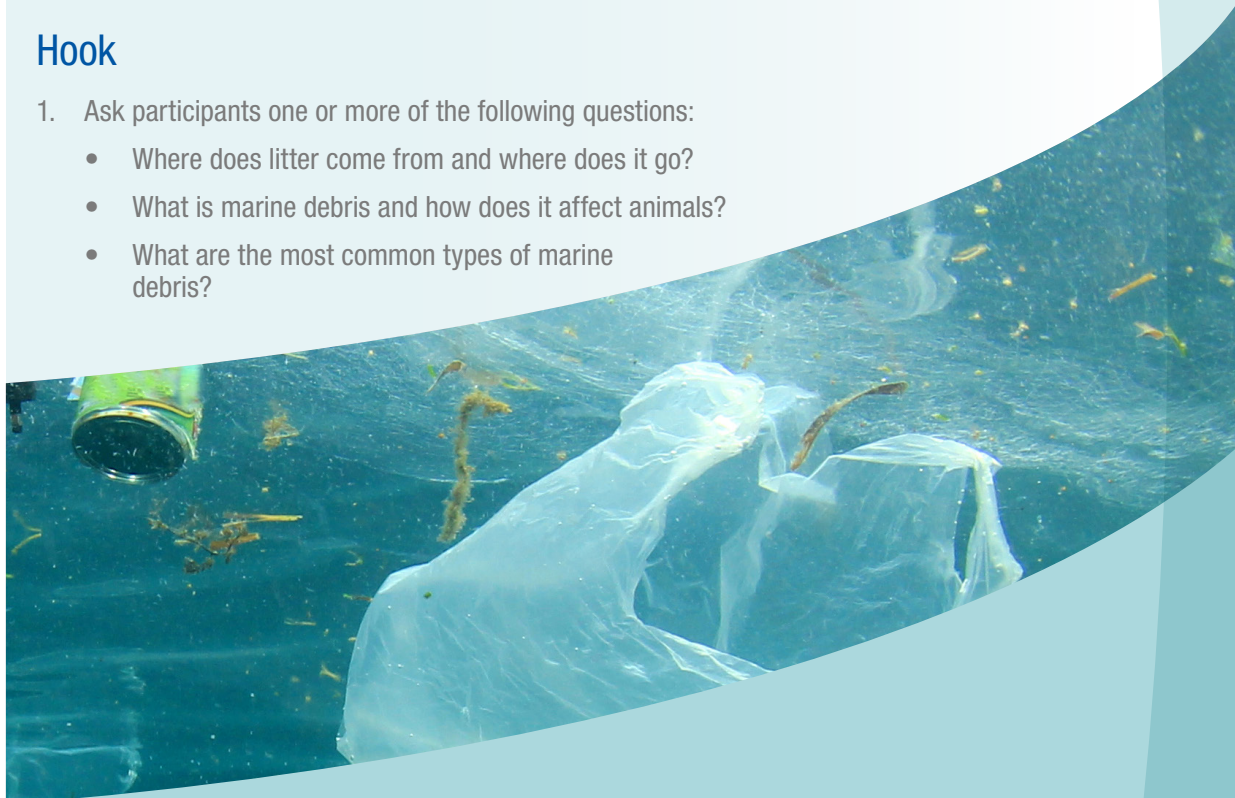
- The most common sources of marine debris.
- How marine debris affected a specific gray whale.
- How individuals can be part of the marine debris solution.

Preparation

1. Print the [Top Ten Marine Debris Litter Items](#) on a large piece of paper or create a display board with the same information and real life examples (e.g., straws, cups, plastic bags, etc).
2. Place all of the items listed on Pages 3 in a box.

Hook

1. Ask participants one or more of the following questions:
 - Where does litter come from and where does it go?
 - What is marine debris and how does it affect animals?
 - What are the most common types of marine debris?





Vocabulary

Marine debris—Any human-made object that ends up in the marine environment such as straws, soda bottles, plastic grocery bags, etc.

Necropsy—An autopsy performed on an animal.

Forestomach—The stomach in cetaceans is composed of four compartments: forestomach, main stomach, connecting chambers, and pyloric stomach. The forestomach is a dilation of the esophagus and is lined with layers of flattened cells. It acts as a holding chamber and is not a true stomach.

Learn More

- [Entanglement of Marine Life](#)
- [Gray Whale Information](#)
- [Marine Debris Program](#)
- [Talking Trash and Taking Action](#)

Additional Resources

For additional marine science activities and lesson plans, please visit:

<http://go.usa.gov/xv6ut>.

Questions or Comments?

For questions or comments about this activity, please email:

wcr.education@noaa.gov.

2. Show the marine debris display board.
3. Tell participants that about 8 million tons of debris enter the ocean each year.
4. Ask participants to imagine the impact of this marine debris.

Activity

1. Tell participants that On April 14, 2010 a male, 39' gray whale was found on a beach in West Seattle. The whale died shortly after.
2. Ask participants to name some ways that whales might die (e.g., old age, predators, ship strike, entanglement, lack of prey, marine debris, etc.).
3. Tell participants that volunteers performed a necropsy and found that 2% of the whale's forestomach was filled with marine debris.
4. Tell participants they will now mark out the length of the whale and see all of the items that were found in the whale's stomach.
5. Have a few participants mark out the length of the whale using the measuring tape. If time allows, have participants draw the complete outline of the whale.
6. Ask a few volunteers place the stomach contents (e.g., straws, golf ball, Capri Sun) in the whale's outline.

Discussion Questions

Lead a discussion using one or more of the following prompts:

1. What might it feel like to swim around with a stomach full of trash?
2. How might you inadvertently create marine debris?
3. What are some ways that you could get involved to make a difference?

Extensions

Marine Debris Mural

Ask participants to collect litter and use it to create a mural or other piece of art that inspires people to make change.

Waste Diary

Have participants keep a trash diary in which they record the number, type, and weight of the trash they generate. After participants have examined their waste production, have them identify ways to reduce it.

Pick Up and Report Marine Debris

Download the [Marine Debris Tracker](#) or [Litterati](#) app and take photos of litter that you find on the street or at the beach. Scientists use this data to learn about and educate the public about different sources of marine debris. After you've submitted your report, toss the trash into the appropriate bin.

Foreign material found in the stomach of a gray whale that stranded near West Seattle, WA on 14 April 2010

| Item | Length (cm) | Width (cm) | Item | Length (cm) | Width (cm) |
|--------------------------------|-------------|------------|---|-------------|------------|
| Duct tape | 41.7 | 10.0 | Plastic - Misc bag material | 23.9 | 13.4 |
| Duct tape | 25.8 | 5.1 | Plastic - Misc bag material | 31.0 | 13.7 |
| Electrical tape | 116.1 | 1.7 | Plastic - Misc bag material | 30.0 | 13.7 |
| Fabric - miscellaneous | 41.7 | 31.5 | Plastic - Misc bag material | 70.2 | 19.4 |
| Fabric - miscellaneous | 76.1 | 29.8 | Plastic - Misc bag material | 28.3 | 18.4 |
| Fabric - miscellaneous | 45.6 | 28.0 | Plastic - Misc bag material | 15.5 | 20.5 |
| Fabric - miscellaneous | 27.7 | 6.2 | Plastic - Misc bag material | 29.2 | 18.3 |
| Fabric - miscellaneous | 4.6 | 6.6 | Plastic - Misc bag material | 46.2 | 24.4 |
| Fabric - sock | 35.0 | 9.5 | Plastic - Misc bag material | 19.3 | 6.2 |
| Fabric - sweat pant leg | 95.0 | 23.7 | Plastic - Misc bag material | 57.9 | 27.7 |
| Fabric - towel | 20.3 | 13.7 | Plastic - Misc bag material | 73.7 | 36.2 |
| Fabric - towel | 52.9 | 18.0 | Plastic - Misc bag material | 58.2 | 39.1 |
| Fishing line | 115.3 | 0.05 | Plastic - Misc bag material | 73.6 | 24.4 |
| Golf ball | 4.5 | 4.5 | Plastic - Misc bag material | 101.9 | 21.6 |
| Green rope | 39 | 0.5 | Plastic - Misc bag material | 20.9 | 12.1 |
| Nylon braided rope | 99.4 | 0.8 | Plastic - Misc bag material | 29.0 | 9.9 |
| Plastic - red plastic cylinder | 13.5 | 3.8 | Plastic - Misc bag material | 11.5 | 2.4 |
| Plastic - black fragments | 16.6 | 8.5 | Plastic - red plastic stake | 12.8 | 1.5 |
| Plastic - CapriSun juice pack | 14.1 | 9.8 | Plastic - sandwich bag | 20.5 | 14.0 |
| Plastic - five a day bag | 41.0 | 28.5 | Plastic - ziplock bag | 17.5 | 16.4 |
| Plastic - grocery bag | 71.7 | 24.2 | Rubber band | 8.5 | 0.6 |
| Plastic - Misc bag material | 20.5 | 15.3 | Rubbery string | 54.8 | 0.1 |
| Plastic - Misc bag material | 6.0 | 2.5 | Surgical glove | 28.6 | 24.1 |
| Plastic - Misc bag material | 3.9 | 6.6 | Unknown shell-like material, possibly natural | 2.9 | 1.5 |
| Plastic - Misc bag material | 25.2 | 16.9 | | | |
| Plastic - Misc bag material | 20.0 | 14.0 | | | |
| Plastic - Misc bag material | 40.4 | 19.8 | | | |
| Plastic - Misc bag material | 31.0 | 18.4 | | | |
| Plastic - Misc bag material | 27.0 | 15.0 | | | |
| Plastic - Misc bag material | 47.0 | 17.2 | | | |
| Plastic - Misc bag material | 78.4 | 25.3 | | | |
| Plastic - Misc bag material | 65.4 | 25.4 | | | |
| Plastic - Misc bag material | 27.4 | 6.2 | | | |
| Plastic - Misc bag material | 20.7 | 15.0 | | | |
| Plastic - Misc bag material | 21.4 | 10.8 | | | |

Other statistics:

- Total plastic bag material: 420 g
- Total other plastics: 37 g
- Total fabrics: 836 g
- Total weight of all foreign material 1,443 g

Photos courtesy of Cascadia Research Collective



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