Science, Service, Stewardship

Gray Whale Stranding & Marine Debris

Ocean Literacy Principle: #6 Humans and the Environment:

What human impacts influence gray whale habitat and what are some of the sources of litter entering Puget Sound?

Space requirements:

Table for display board:

*6-10ft. long

Ground space:

* Pop-up banner
* Blue tarp
*Outline of whale, 39 ft long

Outdoor tips:

- Secure banner with a string, so won't blow over
- Put rubber bands around brochures so don't blow away
- Use tape to prevent brochure stands from falling over
- Bring towel to wipe off table if raining
- Weights for tarp

Target Audience: Outreach event, all ages

Purpose: Share the stranding story of the gray whale with marine debris found in its stomach. Make people aware that marine debris can enter our watersheds and oceans in a variety of ways and this is an invisible problem if it accumulates on the ocean floor. Inspire folks how they can help. Prevent litter in the first place, but also to help clean up on land and on our beaches. Remind them that the marine debris affects other animals besides gray whales.

Stranding Background: On April 14, 2010 a male, 39' gray whale live stranded on Arroyo Beach in West Seattle and died shortly after. NOAA Stranding coordinator responded and coordinated efforts to move the whale to a secure location where Cascadia Research Collective, Washington Department of Fish and Wildlife, and volunteers from Highline Community College performed a necropsy where marine debris (98% algae and 2% anthropogenic debris) was discovered in this animals fore-stomach. The cause of death was unknown, but the debris most likely came from the Salish Sea.

What You Will Need:

- ☐ Table cloth with NOAA logo runner
- ☐ NOAA pop-up banner (string/rope to secure if windy)
- ☐ Display board with Gray whale/marine debris content
- ☐ Outreach brochures (SOS WHALe, Marine Debris, The Whale Trail, etc.)
- ☐ Outreach SWAG (pencils and/or stickers)
- ☐ Blue plastic tarp and 4 weights
- ☐ Bag of mock essential marine debris items (sweat pant, golf ball, etc.) if you can collect real marine debris prior to an event, even better.
- ☐ 5-6 clipboards with laminated stranding photo and itemized stomach contents (three-ring binders with background on stranding/contents)
- ☐ 2 plastic display holders (directions/questions to put on tarp)
- ☐ 1-2 measuring tapes
- ☐ Sidewalk chalk for whale outline (39 ft long)
- ☐ Plastic gray whale model with baleen (poster of whales or Salish Sea)
- ☐ Outreach tub: Duct tape, blue painters tape, rubber bands, weights, string, business cards (stranding network), dry erase/vis-à-vis/regular
- ☐ Activity sheet or handouts

Science, Service, Stewardship

Link to:

- Puget Sound Partnership: Action Agenda (pollution)
- Ocean Literacy Principle
- NOAA's Marine Debris Program

Messages:

- Put waste in its place
- Catch that trash, prevent going down storm drains
- Reduce waste and items we use only once

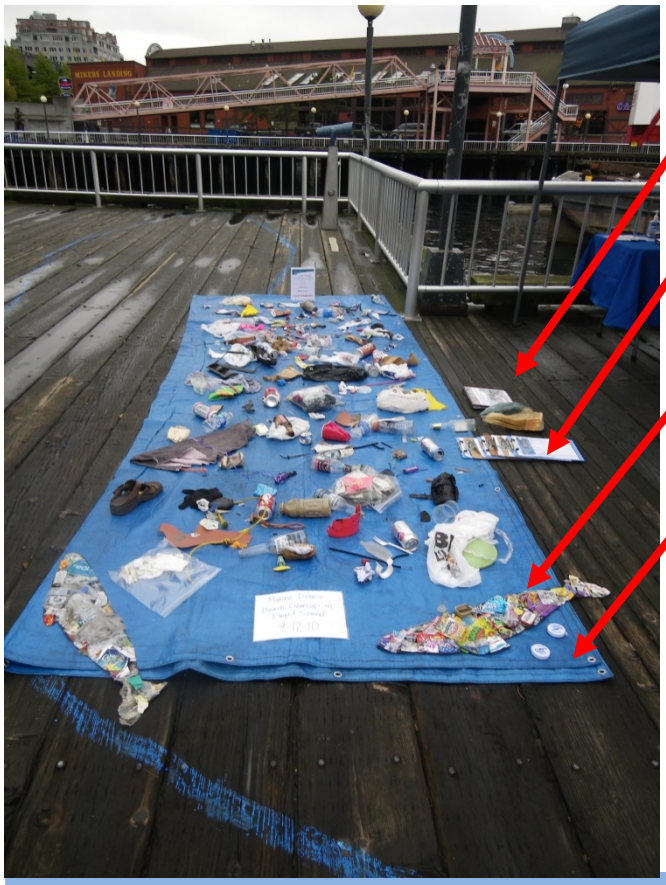
Set up at Event:

- ☐ Table: Place table cloth and NOAA runner on table, put up display board, erect banner next to table, arrange brochures, & SWAG.
- ☐ Marine Debris Tarp: Lay out tarp so that your audience can walk around 2-3 sides of it. Place weights on each corner and on debris that could easily fly away (plastic bags, paper items). Where you will stand; place the clipboards, whale model, and baleen.
- ☐ Outline of Whale: First measure the length of the whale, 39 ft. Ask if you can draw a chalk outline on ground (if indoors, ask if you can use tape on the floor to either mark the two ends or outline). Place the plastic display sign at one end with 2-3 measuring tapes.

Activity:

1. Observations: Ask the audience what they see on the tarp (litter/trash). Ask them to find some of the different categories, like food related trash (wrappers, cups, etc.), fabric, plastic bags, or any other categories that stand out.
2. Connections: Then tell them that you found all of this debris from a local beach and the time frame you cleaned up that beach (Name of beach, 2 hours to collect). Next ask them to come up with 4-5 ways this litter could have ended up on a Puget Sound Beach (directly littered from someone on the beach, indirectly: litter can move (wind or water), even the dump/landfill where animals can transport it. If litter is anywhere in the upper watershed, if it rains that debris can go down storm drains, into streams or rivers and it all ends up in our oceans.)
3. Stranding connection: Ask the audience to turn around and estimate the length of the gray whale behind them. (Encourage using feet, arms, measuring tapes, or just to guess: 39 feet) If you have a large enough group, have them make a human chain. Next pull them back to the tarp and share the story of the stranded gray whale with marine debris in its stomach. Hand them a clipboard and see if they can find any of the items that were in the stomach of that whale compared to what you found ON the beach.
4. Messages: Remind them that everything on this tarp is NOT what was inside the whale. Ask if anyone knows how gray whales feed (Use gray whale toy model and baleen to describe the benthic foraging strategies of these whales), then restate. Gray whales do not come on beaches to feed, but the tides can come in and eventually it could end up on the bottom of the Sound. I like to say that this tarp is kind of like the tip of the iceberg, it is what we CAN see. Have the audience think of all the debris we can't see (Out of sight, out of mind), what larger problem does that pose?
5. Stewardship: Remind or inquire what we all can do to prevent pollution in our homes, school, & our community. Brainstorm campaign slogans they have heard to prevent pollution (Hoot, Hoot don't pollute! Leave a place cleaner than when you found it, etc.) And what they can do to help protect the habitat of gray whales, salmon, killer whales, turtles, etc.
6. Thank them for stopping by: I always like to put brochures or something in their hands as they walk away, to help remind them who NOAA is and what we are doing to promote Science, Service, and Stewardship.

Gray Whale Stranding & Marine Debris Outreach Display



Props: Plastic Gray whale model and baleen

Clipboards: Attach contents from whale and any other activities, or visuals you want to share with audience like stranding maps.

Example of a School Yard Clean-Up Art Project: Cut out of gray whale with candy wrappers glued to it (elementary level).

Measuring tape: Have kids estimate the length of the outline, ask why this important to know, explain that scientists collect a lot of data from stranded animals.

Items on the tarp: I do this different for different types of events. Beach clean ups, I have them search for some of the items on the list (duct tape, electrical tape, garbage bags, clothing) or I stage a few items and add debris from that area and have them make it a scavenger type hunt.

Ways to Adapt

Choose a similar species in your area, something that made the news.
Great to join with Beach Clean-ups
Put a rubber band around each person's hand, relate to pinnipeds
Use plastic model to demonstrate how Grays eat, then show them baleen.

Outdoor tips:

Secure pop-up banner with a rope
Rubber band around brochures
Use tape to hold brochure holders down
Bring towel to wipe wet items off (rain)
Weights for tarp and debris
Provide generous space for measuring whale
Fold tarp like research photo of debris

Gray Whale Stranding and Marine Debris

Foreign materials found in the stomach of the Arroyo Beach stranded gray whale near W. Seattle April 14, 2010
Photo and detailed list courtesy of Cascadia Research, Olympia, WA

Item	Length (cm)	Width (cm)	Depth/height (cm)	Weight (g)
duct tape	41.7	10	N/A	6 (total of both pieces)
duct tape	25.8	5.1		
electrical tape	116.1	1.7	N/A	7
green rope	39	0.5	N/A	74
nylon braided rope	99.4	0.8	N/A	11
fishing line	115.3	0.05	N/A	
rubber band	8.5	0.6	N/A	1
rubbery string	54.8	0.1	N/A	
surgical glove	28.6	24.1	N/A	7
fabric – miscellaneous (5)*	195.7	102.1		836
fabric – towels (2)*	73.2	31.7		
fabric - sock	35	9.5	N/A	
fabric - sweat pant leg	95	23.7		
golf ball	4.5	4.5	4.5	44
plastic - CapriSun juice pack	14.1	9.8	0.2	37
plastic - red plastic cylinder	13.5	3.8	4.4	
plastic - red plastic stake	12.8	1.5	N/A	
plastic - black fragments	16.6	8.5	N/A	
plastic - sandwich bag	20.5	14	N/A	
plastic - ziplock bag	17.5	16.4	N/A	
plastic - five a day bag	41	28.5	N/A	
plastic - grocery bag, misc. bags (31)*	1196.3	540.3	N/A	420
unknown shell-like material, possibly natural	2.9	1.5		
Total weight of all foreign material				1443 g (50.9 oz/3.2 lbs)

Why is this an “Invisible” Problem?
How can we help make a difference?