



# HOOKSETT DISKS: THE TALE OF TRAVELING TRASH



Blue Ocean Society for Marine Conservation  
143 Pleasant Street Portsmouth, NH 03801  
(603) 431-0260 | [info@blueoceansociety.org](mailto:info@blueoceansociety.org)

## *Welcome to Hooksett Disks: The Tale of Traveling Trash!*

This guide outlines how to conduct Blue Ocean Society for Marine Conservation's Hooksett Disk program in a remote classroom setting. Note: this guide is intended to provide a guideline for how to teach this in a remote classroom setting, please feel free to make any modifications necessary to make it useable for you.

In this guide you will find:

- **Background information** on Hooksett Disks, the 2011 spill, where they are still being found and how Blue Ocean is involved
- **Presentation procedures** outlining how to conduct our Hooksett Disk presentation in a remote classroom setting
- **Additional resources** you can use to enhance, modify, or supplement this presentation

### *Background*

**What are Hooksett Disks?** On March 6<sup>th</sup>, 2011 over 4 million Hooksett Disks were accidentally discharged from the wastewater treatment plant in Hooksett, NH into the Merrimack River. These disks are known as biofilm disks, they helped with water treatment by providing additional surface area for bacteria to grow on.

**The Cleanup.** Boaters and beachgoers began to find the disks along the Merrimack River recently after the spill. After about a month volunteers picked up hundreds of these disks during a beach cleanup in Provincetown, MA. The town of Hooksett partnered with Blue Ocean Society for Marine Conservation, ENPRO, and NH DES, as well as with local towns and organizations to encourage people to report where they were finding the disks.

**Tracking the Disks.** New Hampshire Coastal Protection Partnership created a Google Map to track reports of these disk shortly after the spill occurred. As months and years passed people continued to report disk sightings. By 2014, only three years after the spill, reports started coming in from England. Blue Ocean Society has now created a Hooksett Disk reporting program, if you see a disk you can submit your sighting! Follow [this link](#) and click on **+Report Disk Sighting(s)** to report your sighting!

**What are the impacts on the environment?** Hooksett disks aren't the only items being released in mass quantities. In 1992 a cargo ship container fell into the North Pacific releasing 28,000 rubber ducks and other bath toys into the ocean. Aside from mass releases of inorganic materials into the ocean trash that we release into the ocean, whether plastic bags or straws, can all have an impact as well. These plastic items break down from a combination of wave action and sun exposure that weaken the plastic, then becoming microplastics which are a huge problem in our marine environment. Wildlife can become entangled in the litter, or ingest it thinking that it is food.



## Hooksett Disk Presentation

Goal: Demonstrate how trash travels using real-world examples. Learn from these examples about how we can reduce pollution in the environment.

Supplies:

- Per student:
  - World map showing prevailing winds/currents
  - Merrimack River Watershed Map
- Slide show including video of Hooksett disks, sighting locations, information on traveling Legos and rubber ducks, examples of marine debris and impacts on wildlife and humans (Additional sources provided at end of lesson plan)

Time: ~40 minutes available

Grade Level: Middle school

Presentation Steps:

1. Introduction to the Hooksett disk incident
2. Ensure that students have maps and worksheet in front of them
3. Students mark location of disk spill (Hooksett, NH)
4. Discuss the Merrimack River:
  - a. Question for students: which direction will the river flow/where will it flow?
5. Discuss the world map
  - a. Prevailing currents
  - b. (add information relevant to previous lessons, e.g., salinity, water density, temperature, winds can all influence the direction of currents)
6. Have students watch on their own:
  - a. Video of disk modeling in first 3 months
7. If able to, show students slides discussing [reportdisks.org](http://reportdisks.org)
  - a. Reported sightings of disks across the world ([reportdisks.org](http://reportdisks.org)), early on and more recently
8. Using these sightings, students mark major actual locations on their map with a second color. Compare the actual sightings to their hypothesis and share the results.
9. **Written Discussion Follow Up Points:**
  - a. How did the disks travel?
    - i. Tides, currents, wind, waves
  - b. We tend to see disks more often at certain times. When do you think these are, and why?
    - i. Extreme high/low tides [full/new moon]
    - ii. Storm events
  - c. What else could travel?
    - i. Use example of rubber ducks and Legos, show maps if available
    - ii. Litter on the beach/roads/school yard
10. Presentation and conclusion:



- a. What are the potential problems with disks and other trash traveling?
  - i. Talk about marine debris and actual impacts
    1. Wildlife – entanglement/ingestion
    2. Spread of pollutants (that “hitchhike” on litter)
    3. Invasive species that hitch rides on pollution
- b. What can we do to reduce the impacts of marine debris?

### *Additional Reference Materials*

Story map of Hooksett Disks in NH:

<http://www.blueoceansociety.org/hooksett-disk-story-map/>

Moby Duck: Rubber duck spill in ocean

<https://www.npr.org/2011/03/29/134923863/moby-duck-when-28-800-bath-toys-are-lost-at-sea>

Legos in the ocean: still washing up on shore

<https://www.bbc.com/news/magazine-28367198>

Marine debris: impacts on animals

<https://marinedebris.noaa.gov/discover-issue/impacts>

<https://www.nationalgeographic.com.au/animals/how-did-sea-turtle-get-a-straw-up-its-nose.aspx>

<https://response.restoration.noaa.gov/about/media/how-marine-debris-impacting-marine-animals.html>

Invasive Species:

<https://www.maine.gov/dmr/science-research/species/invasives/greencrabs/index.html>

<https://www.maine.gov/dmr/science-research/species/invasives/asian-shore-crab.html>