



Oil Operation

Audience

Activity designed for ages 8 years old and up.

Goal

Students will understand how oil spills affect certain species and what we can do to help.

Objective

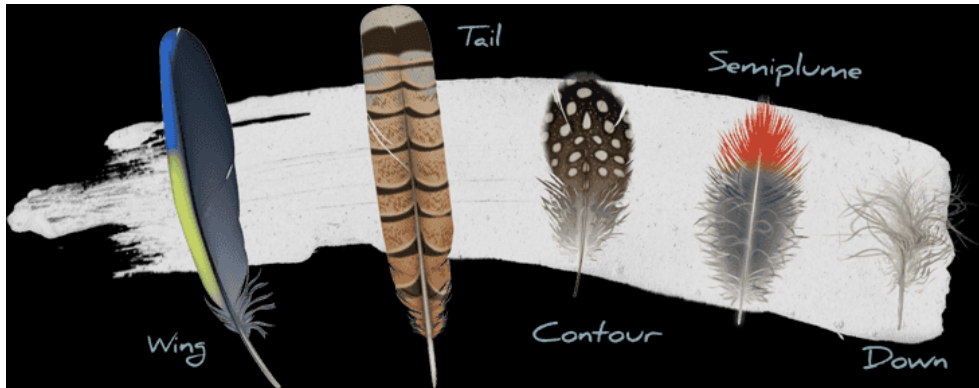
- To demonstrate the effects of oil on a bird's feathers.
- To discuss different ways humans might be able to help remove oil.

Conservation Message

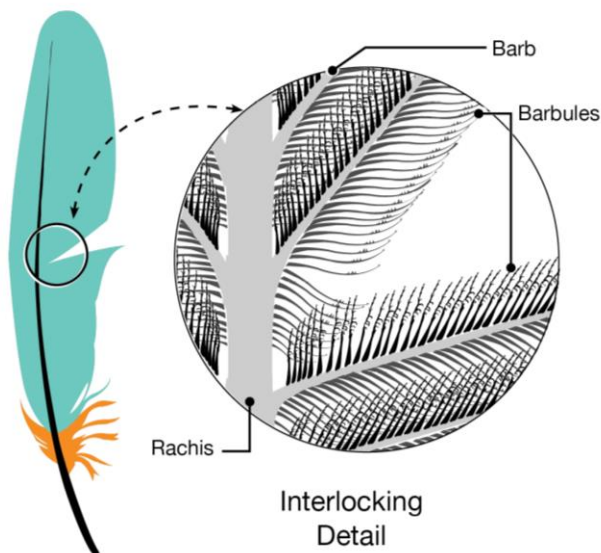
Oil spills are unfortunately a common topic in news headlines. While we mostly hear about oil spills in associated with oceans, freshwater oil spills happen more frequently. Freshwater oil spills not only disturb animals that live in streams, rivers and lakes but human health is also at risk. Birds are one of the most common species affected. When their feathers get covered in oil, they are not able fly, sometimes not able to move at all. Luckily, we have found ways to help clean the birds' feathers and release them back into the wild! By supporting zoos, aquariums and local wildlife rehabilitation facilities you are helping animals affected by oils spills.

Background Information

All birds rely heavily on having clean feathers. Feathers help keep birds dry, they aid in insulation and they are a major part of flight. There are different types of feathers that all serve a purpose for the bird. The wing and tail feathers are flight feathers that help brings get up in flight, contour feathers help keep the birds dry, semiplume and down feathers help trap body heat to keep them warm.



All types of feathers are made of lightweight material called keratin just like our fingernails. Birds keep their feathers tidy by “zipping up” the barbules with their beaks, this is called preening. The feather barbules work like Velcro.



When oil sticks to a bird's feathers, it causes them to mat and separate, impairing waterproofing and exposing the animal's sensitive skin. Sadly, many birds that get oil on their feathers do not make it. Many institutions across the country have found ways to help ducks, geese, grebes, herons, loons, pelicans and egrets that have been affected by oil spills, just like the Tulsa Zoo!

Let's discover what most wildlife rehabilitators do to help these birds but remember this is a skill that is done professionals. Do not attempt to use any of these methods on a live bird at home.

Materials Needed

- Observations Sheet
- 4 feathers from a craft supply store
- Vegetable Oil
- 5 large-medium sized bowls

- Hand Soap
- Laundry Detergent
- Dish Soap
- Water
- Paper
- Pencil/Pen

Length of Activity

30 minutes

Procedure

- Fill bowls 2/3 full of water.
- In one bowl, pour 1/2 to 1/4 cup of oil. The oil should cover the entire surface of the water in a thin layer.
- Label the four remain bowls 1 through 4.
- Dissolve a tablespoon of cleaning solution into each bowl.
 - Bowl 1 - Water (No soap added.)
 - Bowl 2 - Hand Soap
 - Bowl 3 - Laundry Detergent
 - Bowl 4 - Dish Soap
- Make a hypothesis or educated guess about which cleaning solution will clean the feather the best. Record your hypothesis on the Observations Sheet.
- Dip your feathers into the oil bowl. What happens to the feather with oil on them? Are they still able to be “zipped” back together? How would the oil affect an alive bird?
- Using the solution in Bowl 1 try and wash off a feather. Write down your observations.
- Repeat procedure with Bowls 2 – 4.

Extensions

- Can you come up with a cleaning solution that works better than one of the above?
- Does using a tool, like a sponge or comb, help clean the feather better?
- What happens to other types of animal coverings if they get covered in oil? Try fur or hair.

Observations

Hypothesis: Which type of cleaning solution will clean the feather best?

Observations

Bowl 1	
Bowl 2	
Bowl 3	
Bowl 4	

Was my hypothesis correct? (Circle one)

Yes

No