

Osprey Game, Role-playing Field Activity

An Adaptation of Project WILD's "How Many Bears Can Live in this Forest?"
Created by the Staff at the Pelotes Island Nature Preserve, Jacksonville, Florida
<http://pelotes.jea.com/>

Grade Level: All Levels

Subject: Science, Language Arts

Duration: 30 Minutes

Materials: One set of Fish Cards*, Bandana, Bandana with feather, 35 Sea Grape leaves (nests/home base). (Do not let students pick leaves).

FL State Sunshine Standards:

Objectives:

- Students will discover how difficult it is to survive as an osprey
- Students will learn that the osprey diet consists only of fish
- Students will understand that some ospreys have a difficult time surviving due to man-made obstacles

The osprey, a fish hawk, was at one time a common sight along rivers and shores, but pesticides, hunting, and loss of habitat have reduced its number to the point where it is now protected throughout Florida. The purpose of this game is to give the players a better understanding and appreciation for the life and struggles of this unique and rare bird. It will also show them the role man plays in this struggle. The players, in effect, become ospreys and compete with man for their living space, see the effects of eating contaminated food, and deal with other man-made obstacles. By offering these students a better appreciation and understanding of the osprey, we also give them a chance to brighten the osprey's future. The first step in preserving something is realizing that you can lose it.

Background:

FLIGHT AND HUNTING: Ospreys are fish hawks that have brown and white markings on their feathers. They can soar on wind currents, but most of their flight is active (with wings flapping). Ospreys hunt alone, flying over the water looking for fish, then plunging in feet-first, and grabbing the fish with powerful talons (claws.) Ospreys need to catch about 1-3 fish a day. A father osprey, which must fish for 2-3 babies and a mate, has to catch 6-8 fish a day. Ospreys are specially built to be fish-hunters. The bottoms of their feet have many short spines, which help them to hang onto a slimy fish. Many birds have three toes and a thumb, but the osprey can turn his third toe around, so he can have an extra-strong grip with two fingers and two thumbs. Ospreys have extremely sharp talons and a strong hooked beak for tearing fish into bite-sized pieces. They also have oily feathers that help keep them dry when they splash into the water.

NESTING and RAISING BABIES: Ospreys like to make their nests in dead trees because there are no leaves to get in the way of their wings. It is also harder for predators (dangerous carnivorous animals) to climb a dead tree without the osprey seeing it. Many ospreys build nests on power poles when there aren't enough dead trees around. Ospreys are able to mate (have babies) at 3 years of age. When a male is ready to court (date) a female, he performs the

“Sky Dance” by flying around with a fresh caught fish or nesting material. Ospreys mate for life, and mated pairs come back to the same nest year after year. If the pair has no nest, they both collect sticks and grasses. Sometimes they also pick up plastic bags and fishing line (which can kill the babies). Year after year, ospreys make their nests bigger and stronger. An osprey nest can weigh up to 1000 pounds, but it is not very deep inside and probably could not hold a person. Florida ospreys stay in Florida year round and lay their eggs between December and February. (North of Florida, ospreys migrate south each year.) The eggs are about the same size as a chicken’s egg, and are cream-colored with spots. Both parents sit on the eggs. The female does most of the sitting, while the male feeds her. Ospreys usually lay 3 eggs. When there isn’t much food, the smallest baby often does not survive. Ten to fifteen days before fledging (flying) the young ospreys practice flapping their wings. They jump up and down in the nest until a wind gust carries them over the edge on their first flight. Osprey parents will fly past the nest with a fish and drop it into the water to help the babies catch their first fish. Young ospreys begin to hunt 2-3 days after fledging, but the parents still bring them fish for a few weeks.

HISTORY AND FUTURE: Man has caused some problems for the ospreys. Fertilizers and other pollution can run off the land and into the water and kill the fish (this means the ospreys won’t have enough fish to eat.) Timber harvesting (cutting down trees) makes it harder for them to find a place for their nests. Cutting down trees in the rain forest destroys the ospreys’ wintering grounds (where they stay in the winter if they migrated south). Some ospreys get shot even though it is against the law to hunt them. People also put some dangerous chemicals into the environment, like the pesticide, DDT. Fish soak up DDT from the water. Since ospreys only eat fish, they get a lot of this DDT. This hurts them in two ways. First, it makes their eggshells thin, so the eggs crack when the mother sits on them. Second, since DDT impregnated eggshells don’t let much air through, the baby may not be able to breathe inside the shell. In the 1970’s, after people stopped using DDT, many more osprey babies survived. Today, these fish hawks are a “threatened species” (protected by law) in Florida. Now, people are trying NOT to pollute the water, NOT to shoot ospreys, and NOT to leave fishing line out for them to get tangled in.

Interesting Fact: Girl ospreys are bigger than boy ospreys.

Resources:

Poole, Allen. Ospreys: A Natural and Unnatural History. Cambridge: Cambridge University Press., 1989.

Terres, John K. The Audubon Society Encyclopedia of N. American Birds. New York: Alfred A. Knopf, Inc., 1987.

Suggested Procedure:

SETTING UP THE GAME:

1. Select one student to play an osprey that has been accidentally shot by careless hunters. This works well if you try to find students who like to hunt. Discuss how most hunters are very careful to hunt only what is in season and what is legal. However, a careless hunter shot this osprey. It is illegal to shoot any type of raptor (bird of prey). An osprey that is shot and recovers may not be able to fly well, so the students must hop around on one leg when hunting.
2. Select another student to play an osprey that has become tangled in fishing line. Discuss how most fisherman are very careful and remove any tangled lines from the water, trees, and shrubs. However, this osprey was injured when a careless fisherman did not remove his tangled line. The line became wrapped around the bird’s head, blinding it. This student

must hunt with his or her eyes closed. Be sure to have an adult helper lead the child around so that the student is not injured!

3. Match two ospreys as a mated pair. They must get enough food for three ospreys in order to keep their babies alive OR they must have at least one fish for each of their two babies. The mated pair share a nest and must tag-team to find food. One must be at the nest at all times or the babies may be attacked by a predator or die of exposure. The mated pair are the only ospreys in this game that may run.
4. Choose one student to be an eagle. Eagles are much larger than ospreys and often steal fish from them by beginning an aerial attack, which frightens the osprey into dropping its fish. In the game, this thievery will be represented by the eagle being allowed to take one fish from each nest during the game. After stealing from a nest, the eagle may never return to that nest again. The eagle may hunt or he can steal fish. The eagle may not run, only the mated pair of osprey can do this.

TO BEGIN: Place the sea grape leaves in a large circle on the ground. Students should choose one leaf to be their perch tree. Scatter the fish cards inside the circle. Students will walk out into the middle and collect one fish at a time. Each time they pick up one fish they must return it to their perch before collecting the next one. Discuss how ospreys are only able to catch one fish at a time in their rough talons. The eagle may only hunt or steal only one fish at a time as well. The mated pair may only collect one fish per turn, but they may run.

GOAL: Each bird player must collect enough fish to survive.

- RULES:**
1. Ospreys and the eagle must walk - with the exception of the mated pair of osprey; they may run.
 2. Ospreys and eagles may only collect one fish at a time.
 3. No one may steal, except for the eagle.

FINISHING THE GAME: After all of the fish cards have been collected (45 seconds-2 minutes), each player will take inventory of the fish cards he or she has collected.

1. Ask students to find any fish cards that say "ESCAPE". These are fish that got away. Collect the "ESCAPE" cards.
2. Have students check their fish cards for "DDT". Explain how some pesticides run off into the water and poison fish. When the osprey eats poisoned fish they may become sick or their eggs will become very thin. When the mother osprey sits on her eggs they will crack and the babies will die. If the mated pair has "DDT" fish cards, they lose one baby per card. If they have two or more "DDT" fish cards, all the young die. If any other osprey have a "DDT" fish card, ignore it, as the other osprey are all younger than three years old, and are not reproductively mature.
3. Have students check for "H" fish cards. "H" stands for loss of "habitat". Discuss how ospreys make their nests at the top of tall dead trees. What do most people do to dead trees? (Cut them down.) If we cut down all the dead trees, the osprey has no place to make his home. If a player has two or more "H" fish cards, he must turn them in. The osprey had to spend time looking for a new living-hunting ground, so he spent less time fishing.
4. One student will have a fish card with a "G" on it. This stands for "Gunshot". A careless hunter injured this osprey. This osprey loses all but the "G" card (the student is left with only one card).
5. Two students have a fish card with "LINE" on it. "LINE" stands for fishing line. These ospreys were injured when careless fisherman did not remove their tangled fishing lines

from the water. These students lose all but the “LINE” fish card (leaving them with only one card each).

- Now have students count all of their remaining fish cards, no matter what the letter/blank status. The number of fish cards required to complete the game varies based on the number of players. Do a quick survey by raise of hands
 - The top ¼ will be in the “**Fat and Happy**” group. They have more than enough fish to survive. They’ll all be 4-years-old next year, and old enough and healthy enough to find a mate.
 - The middle 50% will be in the “**Healthy**” group. They’re not as “fat and happy” as the other guys, but are certainly doing well.
 - The lower ¼ is in the “**Hungry**” group. (Remember, best not to kill the players.) Discuss who is in what group.
- Where did the eagles fall? (usually in the healthy group).
- Where did the injured ospreys fall and the parents? (usually in the hungry group).
- If the injured ospreys do better, did other ospreys help by giving them food? Congratulate the group on teamwork. How many of the ospreys in the hungry group are there because of something people did to them?

Skills: observation, classification, analysis, description, and listening.

WHAT WE LEARN: Some of the ospreys will always be hungry, and it is especially difficult for injured ospreys and mated pairs to get enough food. Students will see that the strongest are best able to compete successfully for enough fish to survive. Also, they will see that man-made obstacles are very dangerous to these beautiful birds.

Have each group (“Fat and Happy”, ”Healthy”, and “Hungry”) come up with one way we can help ospreys. Help them come to these suggestions:

We can pick up litter around waterways.

We can make sure we don’t leave fishing lines tangled in the water or shrubs.

We can not shoot animals that are illegal to hunt (like raptors).

We can not cut down dead trees, which provide the primary nesting spots.

We can put up poles for ospreys to nest on.

WHAT WE LEARN: Some ospreys have a difficult time surviving because of man-made obstacles. It is especially difficult for injured ospreys and mated pairs to get enough food. What can we do to protect these birds and help maintain their habitat?

- 1) Don’t illegally hunt them.
- 2) Don’t put trash and pollution in the water.
- 3) Use less pesticides.
- 4) Don’t cut down the dead trees they need for nesting and perching.

* Set of Fish Cards includes:

- 72 GOOD AND TASTY FISH (Fish species label)
- 24 FISH ESCAPE CARDS (Escape)
- 8 DDT PESTICIDE CARDS (DDT)
- 2 HABITAT DAMAGE CARDS
- 1 FISHING LINE CARD
- 1 GUN SHOT CARD

Total number of cards: 108 for about 25 players.