



Guadalupe-Nipomo Dunes National Wildlife Refuge



Western Snowy Plover Docent Program School Activity Guide

First Edition
June 2002

Photo by Peter Knapp (used by permission)

Western Snowy Plover Docent Program

School Activity Manual

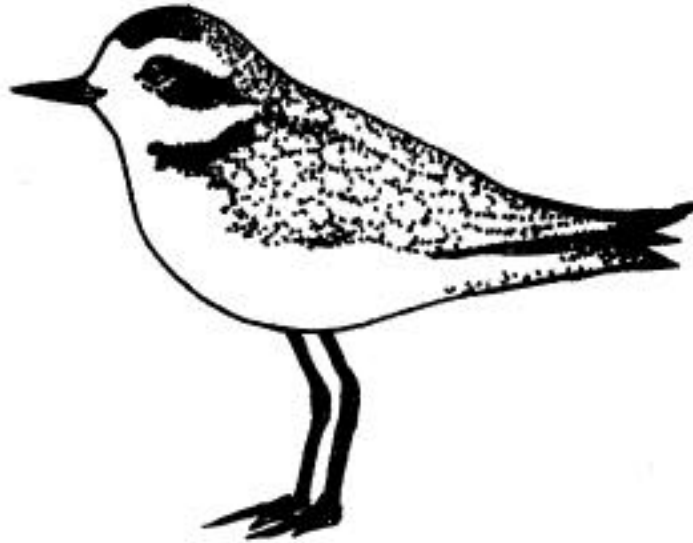


TABLE OF CONTENTS:

- 1) Introduction and Background
- 2) Habitat Lap Sit
- 3) Fast Food
- 4) Avian Olympics
- 5) Migration Headache
- 6) Enviro-Dilemmas
- 7) Activity Evaluation Cards

1) Introduction & Background

The coastal beach-dune ecosystem includes unique and increasingly rare habitats along the Pacific Coast. Several species are found in this system and no other. The Western Snowy Plover is one such species.

All wildlife has distinct habitat needs. Specialized species, like the Snowy Plover, have specific adaptations, and therefore live in only one or a few habitat types. Historically, Western Snowy Plovers nest on the beaches along the entire Pacific Coast. Habitat destruction is the *main cause* of the Pacific Coast Snowy Plover's decline. Habitat has been lost from development and recreational conflicts, and the introduction of non-native plant species.

Snowy Plovers lay their well-camouflaged eggs on bare ground in a nest made by scooping a depression in the sand. Newly hatched chicks are the size of a cotton ball and are very difficult to see. Their size and excellent camouflage make the Snowy Plover eggs and chicks extremely vulnerable to disturbance, which relates to nest abandonment, and adult/ chick separation. The nesting season of the Western Snowy Plover is from mid-March to mid-September and coincides with the season of greatest human use on beaches of the west coast. Human activity—walking, jogging, running pets (particularly off leash), horseback riding, off-road vehicle use, kite flying, use of fireworks and beach raking with heavy equipment—is a key factor in the ongoing decline in the Snowy Plover coastal breeding sites that still remain.

When a population reaches extremely low numbers, it becomes vulnerable to even the smallest losses. Therefore, natural predation is intensified in its effect. Human activity, including littering and feeding wildlife (such as gulls and raccoons), concentrates the number and activity of natural predators in the Snowy Plover habitat. Dogs and feral cats are exotic predators that are extremely efficient in their predation of Snowy Plover adults and chicks.

In this area, symbolic fencing has been installed in an effort to help the public be aware of the presence of the Snowy Plover and direct the public away from nesting sites. Informing the public as to importance and to the need of this restriction of the use of the beach is paramount to the public's adhering to the restrictions. Docents are being trained to provide a bridge of contact between the public and the policy of protecting the Snowy Plover. Literature is being produced and distributed to inform a larger audience. Interpreters will play an important part in public education as they help groups of individuals understand the Snowy Plover's plight and the role that humans take.

It is human nature to care about that which we have knowledge of. Understanding is the child of education.

Adapted from US Fish and Wildlife Service Western Snowy Plover Pacific Coast Population Draft Recovery Plan and the Guadalupe-Nipomo Dunes Western Snowy Plover Docent Program Training Manual.

2) Habitat Lap Sit

People and other animals share some basic needs. Every animal needs a place in which to live. The environment in which an animal lives is called a *habitat*. An animal's habitat includes food, water, shelter, and space in an arrangement appropriate to the animal's needs.

- Questions—What kind of *habitat* does the Snowy Plover require? What is its food? Is its water (no, not sea water)? What does it use for shelter? Does it require a close colony, or does it like to be spread out away from other Snowy Plovers?
- Activity—When the students identify the individual components for the Snowy Plover habitat, begin to assign a component to each child. Assign a habitat component, either food, water, shelter, or space to every child. Instruct them to stand in a circle.

All life in a community, or habitat, is *interrelated*—each affected and dependant upon the other. These interrelationships and interdependencies are important to the life within that habitat.

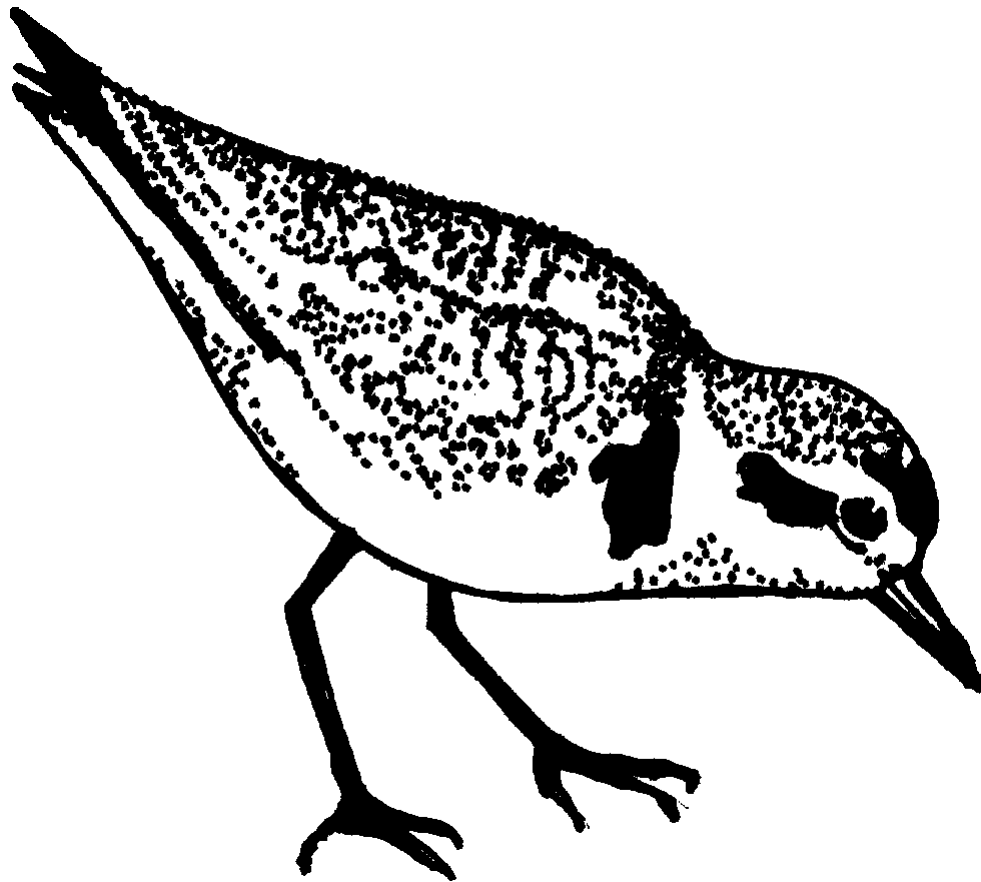
- Activity—Instruct the circle of children to move in close with one another. Ask the group to turn to the right and take another step inward, so that the group is now very close together and each child is facing the back of the head of the child in front of them. Now, ask them to slowly sit down upon the person's lap immediately behind them (the person in front will be sitting on their lap). Ask them to observe how all the components of a habitat support and depend on one another.

An animal will be affected if any of the components of habitat are missing or are significantly affected so that the arrangement for that animal or others like it close by are no longer suitable.

- Activity—Tell the group of lap-sitting children that the Snowy Plover is losing a component of its habitat—choose food, water, space, or shelter, and create a realistic scenario. Ask the children who were assigned that component to remove themselves from the circle. This should cause a dramatic change in the circle's configuration, and the group will fall. After all the laughing has subsided, have them again stand in a circle.
- Questions—What would have happened if another component had been taken away? What if only 1 or 2 of a single component was removed, would the circle still fall (they may want to try it to see)? If the habitat “falls” what happens to the animals that live there?

The Western Snowy Plover is a species that is *threatened*, meaning its numbers are declining steadily. The Snowy Plover is considered an *indicator species*, meaning that its presence in its preferred habitat is a sign that the habitat and the other life in that community are healthy.

- Questions— If the Snowy Plover's numbers are declining, what does that say about its habitat? Why do we care if a little shore bird is disappearing? Do we share the Snowy Plover habitat? Now that you understand what makes up a habitat, and a Snowy Plover's habitat, what do you think are some of the things that are affecting the components of this habitat and making this circle begin to fall?



3) Fast Food

The Snowy Plover is a threatened species, meaning its numbers are declining. Loss of *habitat*, intrusion of human activity, and increased *predation* are some major reasons for their decline. Unfortunately, the Snowy Plover nests along the coastline from May to November—a prime beach time for humans.

-
- Questions—(on the beach) What kinds of things do you like to do when you come to the beach? What other activities do you see people enjoying here? If the group does not come up with all the factors listed below, help them to recognize that they do occur on this beach:
 - Ball or Frisbee playing, walking
 - Dogs—on or off leash
 - Fishing
 - Off-Road Vehicles
 - Horseback riding
 - Kite-Flying
 - Fireworks
 - Picnicking

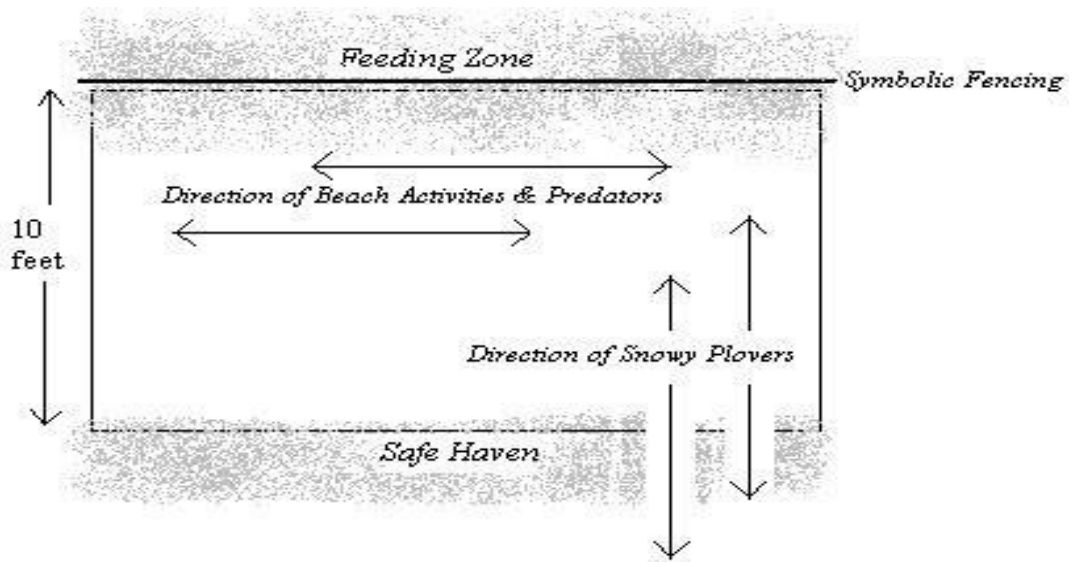
Activity—Divide the group into two. One group will represent Snowy Plovers; ask this group to begin to search for as many small pebbles as will fit in their hands. The other group will represent beach activities; ask them to act out the activity assigned to them.

Trash left on the beaches attracts crows, seagulls and other predators that will, once in the area, search out Snowy Plover chicks and eggs.

- Questions—Which of these activities (represented by the children) produce trash? Do people always pick up their trash from the beach?
- Activity—Select a few of the beach activity group to “leave trash”. Those will now represent predators.

Even though nesting occurs up the beach in the dry sand, Snowy Plovers will feed on the insects found on washed up seaweed nearer the water.

- Activity—Create a “playing field” on the beach by drawing in the sand or by creating boundaries with items found at the beach. See diagram below.



Ask the Beach Activity group to watch along the sidelines for just a moment, then instruct the Snowy Plover group to drop their collected stones in the Feeding Zone, then line up on the Safe Haven. Explain that the stones represent the Snowy Plover’s food. Ask the Snowy Plover group to begin “feeding” by moving along the playing field and collecting stones. Allow several minutes until their hands are once again full. Explain that the Snowy Plovers need a lot of food to have the energy to raise and feed their chicks. Full hands of stones represent full bellies and healthy Snowy Plovers.

Snowy Plovers will fly or run when disturbed and can become weakened by continual disturbance. They will abandon their nests with eggs or chicks if disturbed frequently. Tiny *camouflaged* eggs and chicks are vulnerable to being stepped on, driven over by ORV’s, and are easy targets for dogs that are allowed to wander off leash.

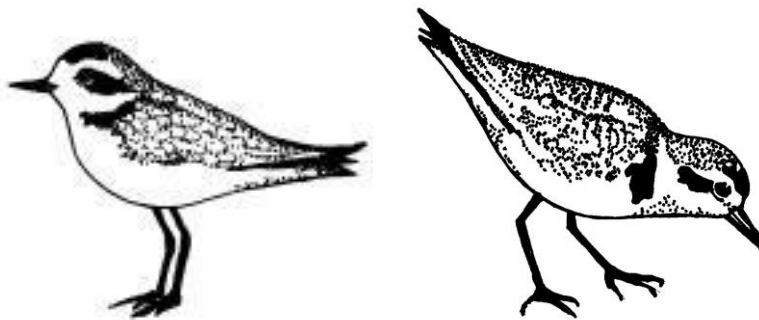
- Activity—Ask the Snowy Plover group to again distribute their stones in the Feeding Zone then line up in Safe Haven. Explain now when the Snowy Plovers begin to feed, the beach is going to be shared by many other activities. Tell the Snowy Plovers that when an activity crosses their path, they must run back to Safe Haven, then begin again to head for the Feeding Zone. If a Beach Activity touches them, they have been killed. Beach Activity people MAY NOT chase the Snowy Plovers, only move across the playing field, but may move quickly or slowly. Let the Snowy Plovers begin “feeding”, then call out the Beach Activity people to walk across the playing field a few at a time as they act out their activity. ORV’s, horseback riding, predators, and dogs may wander into the Safe Haven—but, again, they may not chase the Snowy Plovers only walk in a straight

line across the playing field. Allow all the Beach Activity group to pass at least once before calling the round to an end.

-
- Questions—Did any Snowy Plovers get a handful of stones—remember the stones represent food, and a full hand represents a full belly? What will happen to the Snowy Plovers and their chicks if they don't get enough food? How do the Snowy Plovers feel? Are you more tired or more anxious after this round than after the first? During the game we only allowed a few Beach Activities at a time, and didn't allow the Activities to chase the Snowy Plovers, but do you think that that is realistic? Why?

Symbolic Fencing is a way to help the Snowy Plovers regain their habitat. The fencing protects the dry sand areas that are used by the Snowy Plovers for nesting. Symbolic fencing does not keep people out, but informs and reminds them that they are sharing their beach habitat with wildlife that has a right to be here also. Keeping dogs on leash, and picking up trash and taking it away from the beach are also ways to help.

- Activity—Establish “Symbolic Fencing” just outside the Feeding Zone (see diagram). Set up Snowy Plovers and Beach Activities for another round, but this time, have the Beach Activities stay outside the “Symbolic Fencing”. All other rules still apply. Send the occasional Beach Activity through the playing field to represent those who do not observe the fencing. Send all Beach Activities through at least once before ending the game
-
- Questions—How many Snowy Plovers got a handful of stones this time? Was it easier to feed during this round? Why? What about the Activities that still came through the playing field? How did you feel about that? Beach Activities—were you able to still perform your activities outside the Symbolic Fencing? Is it possible for everybody to share the beach?



Adapted from activities found in the [Piping Plover Activity Manual](#)

4) Avian Olympics

Birds are amazing animals. They are capable of incredible feats of physical ability and endurance. The Ruby-Throated Hummingbird can flap its wings 120 times per second. Most songbirds can flap their wings about 12 to 16 times per second. **(need specific info on Snowy Plover)**

- Activity—Ask the group to spread out to give some “Wing-Flapping Room”. Tell the group that they are going to flap their arms/wings as fast as they can for 10 seconds. Ask that each person keep count of how many times they flap (demonstrate how to count each flap). Let the group flap for ten seconds, then ask who had the greatest number of flaps in that time period.

The Snowy Plover is a *migratory* bird, which means it flies from one area to another seasonally. Sometimes migratory birds relocate over great distances.

- Questions—How far is it from here to Mexico? How long does it take to drive, fly in a plane? How far is it to Canada? How long would it take to travel there? Now, how far is it from Canada to Mexico? Would it be a long trip? If you had to walk, could you do it?

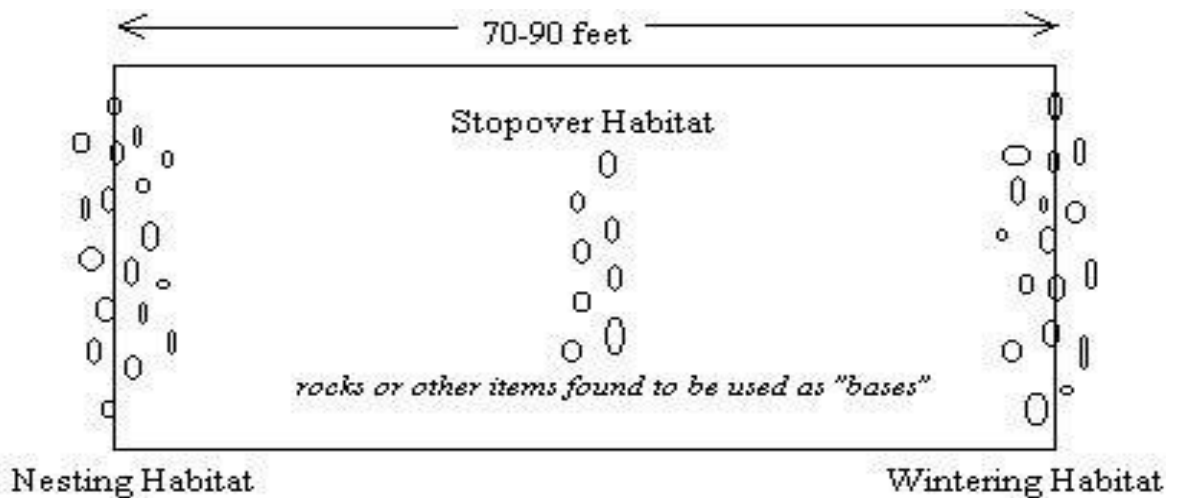
Some migratory birds fly the entire trip non-stop. The Golden Plover, a Snowy Plover relative, flies non-stop for 48 hours as it migrates from Nova Scotia to South America. **(need specific info about Snowy Plover)**

- Activity—Ask the group again to give themselves some “Wing-Flapping Room”, and tell them that this time they are going to see who can flap the longest. Explain that they must flap—not slowly move their arms up and down—because they must be able to stay in flight. Begin timing the group and give the final time for the longest Flapper.
-
- Questions—Could you continue to flap your arms for more than an hour? More than a day? Can any human do what birds do?

5) Migration Headache

Some migratory birds, such as the Snowy Plover, require stopover habitats in order to complete their migration. Because migrating birds travel hundreds or thousands of miles between nesting and wintering grounds, resting and feeding sites, or stopover habitats are crucial. Snowy Plovers require a wetland habitat for their breeding, stopover, and wintering habitats.

- Questions—Remember the components for a habitat? What do the Snowy Plovers need in their habitat to survive?
-
- Activity—Divide the group into groups of 3 or 4. Have each person in that group look for a “Migratory Marker”—a rock, shell, or piece of seaweed that is large enough to stand on. While the groups are looking, set up the “playing field”. See diagram below.



Have the students all stand at one end of the playing field. Explain that each student represents hundreds of Snowy Plovers, and that they are going to migrate from their Wintering Habitat to their Nesting Habitat. On the way, each must land on a Stopover Habitat marker. At your signal, each migrating flock of Snowy Plovers must begin migrating between these suitable habitats. In order for the flock to survive, they must have one foot on a habitat marker. Have them walk through the first migration, however, they may move more quickly on subsequent migrations—have them move through back to Wintering Habitat.

Over the past 150 years, migratory bird populations have been threatened by the alteration of habitats. The disappearance and degradation of wetlands are a major threat

to the survival of migratory water birds, including the Snowy Plover. Wetland habitats are usually found in low, fertile plains along watercourses, and are historically valued for conversion to farmland and settlement for human habitation. Pollution, through insecticides and herbicides for example, has also taken a direct toll by killing the birds that ingest food sources that have absorbed harmful pollutants, or by reducing the amount of available food.

- Activity—Tell the group that a developer has received a permit to drain a wetland to build a mall, and remove a couple of markers from the Stopover Habitat. Have the group begin migration. The flocks that do not have a place to Stopover must wait on the sidelines (they may be appointed helpers to remove Habitat markers). Then tell the group that an oil refinery near the shore has had a small spill, and that there is not only oil, but heavy, noisy equipment and workmen on the beaches of the Nesting Habitat—remove markers from that area. Migrate again to the Nesting Habitat. Ask those children representing flocks that could not find suitable Nesting Habitat to wait at the sidelines. Continue migration using any of the scenarios below—or come up with your own:
 - a drought in the Pacific Northwest has severely depleted the wetlands in the Wintering Habitat
 - a farmer uses pesticide on his crop near the Stopover Habitat and poisons the water by accident
 - California State Parks have decided to extend the ORV access in the Nesting Habitat
 -
- Question—Farming, development, recreation, and oil drilling and refining are important activities for humans, but what is the impact to migratory birds? How do you feel about this?

6) Enviro-Dilemmas

The environment, and all the life that is dependant upon it—including us—is facing some tough dilemmas. As human populations grow, more land is needed to support that increase, often at the expense of other species. The Snowy Plover is only one example of an animal whose very existence is being threatened—not by over-hunting, not by pollution, but simply because its habitat is being compromised by humans. There are no easy answers.

- Activity—Read a Dilemma from one Dilemma card, or from the list below. Remind the group that there are no wrong or right answers, and encourage multiple answers. Realize that this exercise is to get the group to think creatively about the environment—do not answer for them! If the group doesn't have an answer to a Dilemma Card, simply tell them that, yes, that is a tough one, and go on to the next.
- - ❖ You are on a family picnic at the beach when you see members of another family leaving to go home without picking up their trash. It is clear the other family is going to leave litter all around.
 - ❖
 - ❖ Would you:
 - ❖
 - ✓ Move quickly, and ask them to pick up their trash before they leave?
 - ✓ Wait for them to leave, and pick up the trash for them?
 - ✓ Do nothing?
 - ✓ Do something else?
 - ❖ Your class is on a field trip to the beach. Although you know it is not a good idea to feed wild animals, your classmates are feeding a flock of gulls with potato chips.
 - ❖
 - ❖ Would you:
 - ✓ Tell them that feeding the gulls is harmful to the gulls and it unnaturally attracts them to the area, which may be a nesting area for Snowy Plovers and other birds that could be prey?
 - ✓ Tell your teacher to make them stop?
 - ✓ Tell a Ranger, docent, or other adult to make them stop?
 - ✓ Do nothing?
 - ✓ Do something else?

- ❖ You and your family are avid Off-Road enthusiasts. Several weekends during the summer are spent riding around in the dunes. You have found out that your favorite place to ride is being closed for the summer in an effort to protect the dune environment.



- ❖ Would you:



- ✓ Encourage your family to adhere to the new restrictions and find another place to ride your Off-Road Vehicles?
 - ✓ Ignore the symbolic fencing and closure signs and ride in your favorite spot anyway?
 - ✓ Write to the people or organization responsible for the closure and tell them how you feel, and encourage others who enjoy ORV's to do the same?
 - ✓ Do something else?

- ❖ Your family has just purchased a 10-acre beach property, and plans to build a dream home. One of the spots on the property is perfect for the location for the home—great ocean views, easy beach access, and privacy from public areas. However, you discover an active Snowy Plover nest site on that very location that is planned for the development of your home. The Snowy Plover is sensitive to disturbance—sometimes abandoning eggs or chicks, and is a protected species. They are selective in choosing their nesting habitats and will return to the same area year after year, thus repeating the cycle of disturbance every summer.



- ❖ Would you:



- ✓ Encourage your family to select another building site on the 10-acre property for the location of your home?
 - ✓ Encourage your family to sell the property?
 - ✓ Bulldoze the nesting site and begin building as soon as possible?
 - ✓ Invite photographers and conservationists to come and see “your Plovers”?
 - ✓ Do something else?

- ❖ You are taking a walk near the beach and come upon a young Snowy Plover chick. There is no sign of the chick's parents.

❖

❖ Would you:

❖

- ✓ Leave the chick where it is?
- ✓ Move the chick carefully to a more protected area?
- ✓ Take the chick home?
- ✓ Call a ranger, docent, or animal rescue as soon as you get home?
- ✓ Do something else?

- ❖ You and a friend are enjoying a hike through the dunes when you spot a nesting pair of Snowy Plovers. Before you realize what is happening, your friend throws a rock at the pair immediately killing one parent, and fatally wounding the other. An hour later, as you are leaving the dunes, a state wildlife officer approaches you and tells you that a pair of Snowy Plovers has been recently killed, and asks if you know anything about it.

❖

❖ Would you:

❖

- ✓ Deny any knowledge of the incident?
- ✓ Admit that your friend did it?
- ✓ Make up a story implicating someone else?
- ✓ Say nothing to the officer, but make an anonymous phone call later?
- ✓ Do something else?

Snowy Plover Activity Evaluation

date _____

Did you learn something new about Snowy Plovers?

yes; I learned this:

no

Did you enjoy completing the activities?

yes; I liked this part:

no

Were the activities easy to understand?

yes

no; I had trouble with this part:

What grade are you in?

Snowy Plover Activity Evaluation

date _____

Did you learn something new about Snowy Plovers?

yes; I learned this:

no

Did you enjoy completing the activities?

yes; I liked this part:

no

Were the activities easy to understand?

yes

no; I had trouble with this part:

What grade are you in?
