



Migration Life Cycle

Overview: In this activity, students will discover the life cycle of a snow goose through discussion and an interactive migration activity. Students will also learn about wetland habitats.

Science Content Standards Correlations: pg 5-6

Activity Adapted From: Migration Headache, Project WILD Aquatic

Grade: 2

Key Concepts: Animals have predictable life cycles. A snow goose's life cycle includes migration. Snow geese depend on wetland habitats throughout their life cycle.

Objectives:

Students will be able to:

- describe the life cycle of a snow goose
- name the four things that wetland habitats provide for snow geese
- name threats that are facing wetlands

Possible Locations:

- Wetlands Walk on the first loop just after passing auto tour road where trail splits right to go to stop 3, straight or left to the short cut
- "park and stretch" areas on auto tour

Materials Provided by the Refuge:

- snow goose mount
- photo of a snow goose
- 10 nesting grounds bases
- 10 wintering grounds bases

Time Frame for Conducting this Activity (25 minutes)

Set Up (10 minutes)

Snow Goose Migration Introduction (10 minutes)

- human life cycle example
- background on snow geese
- migration with emphasis on snow geese
- wetland habitats

Migration Life Cycle (10 minutes)

- explain activity
- simulation

Discussion (5 minutes)

- threats to wetlands
- snow goose life cycle

How this Activity Relates to the Refuge's Resources

What are the Refuge's resources?

- significant wildlife habitat
- endangered species
- migratory birds
- resident wildlife

What makes it necessary to manage the resources?

- Wildlife may eat or become entangled in trash such as balloons, fishing line and Styrofoam peanuts.
- Loss of wetland habitats for wildlife due to development, such as landfills, buildings, agriculture land, roads, etc makes it more difficult for wildlife to find food, water, shelter and space.

What can students do to help?

Refuge staff acquire and preserve wetland habitat, but we need your help!

- be responsible for your own trash
- reduce, reuse and recycle, decreasing the need for landfills
- never dump anything down storm drains – pollution can contaminate and destroy wildlife habitat
- adopt a wetland or an endangered species
- only take your dog to place they are permitted and keep it on a leash
- keep your cat inside your house; they catch birds
- teach others what you have learned about habitats and endangered species

Supporting Information About This Activity

Life Cycle

- The life cycle is a continuous sequence of changes an organism (human, wildlife, plant...) goes through during its life time.
- Life cycle of a snow goose: hatch in May in nesting habitat – fly at about 47 days of age – in the fall you're ready to migrate south – follow your parents to wintering habitat – follow parents back to nesting habitat (continue this pattern for three years) – find a mate on your third trip back to the nesting grounds that will be your mate for life – have goslings and continue your life cycle

Migratory Birds

- The Pacific Flyway is the West Coast's major migration route; it is used by migratory birds during their flights between breeding grounds in the north and wintering grounds in the south.
 - In the spring, birds migrate to breeding grounds in the north where there is less competition for food and space and where short summers promote huge insect blooms that provide ample quantities of food.
 - In the fall, birds migrate to wintering grounds in the south, seeking better weather conditions and greater quantities of food than can be found in the Northern Hemisphere in winter.
 - Since these two regions are often thousands of miles apart, migratory birds need wetland habitats to provide them with food and rest in between.
- The primary threats to migratory birds are the disappearance and degradation of wetlands.
 - Agriculture and industry are reducing the availability of natural wetlands.
 - Nonpoint source pollution, caused by pesticides, freeway runoff, and dumping in storm drains, has taken its toll.
 - Natural limiting factors also affect migratory birds; predators, weather, disease, fire and drought take their toll.

Snow Geese

- One of the most visible and abundant migratory waterfowl that winters in the wetlands of the Sacramento Valley.
- Snow geese are white with black wing tips. They have pink bills with a black grinning patch that looks like black lipstick. They also have pink legs.
- Immature birds have a dark bill and are mottled with brownish gray.
- The dark phase, once considered a separate species called the "Blue Goose," has bluish-gray upperparts, brownish under parts, and a white head and neck.
- Breed in northern Canada, Alaska and the northeastern tip of Russia on Wrangle Island, and winters in the United States and further south.
- Build scrape nests for eggs. They scrape the ground with their bills to make a small indentation then line it with plant materials and down feathers.
- Mainly eat plant materials that are found in shallow water and on land. When wintering in the south, they tend to feed in flocks where they feed on left-over grain in fields and food found in wetlands.

Prior to Activity (10 minutes)

- Set up Migration Life Cycle field for the activity (directions below), if not already done.

Wrangle Island
Nesting Grounds

Sacramento Valley
Wintering Grounds

- Choose the number of bases so you have one for every three students at the nesting grounds and one less at the wintering grounds. If you have one or two extra students, they can get on a base with a group of three.
- Set up the bases at each end of the field. The bases are labeled according to the grounds.

- Keep the extra bases with you – you will need them later.
- Note the students are not allowed to touch the snow goose mount, the oils on their fingers damages the feathers, plus the poor guy would get pretty roughed up if all the students that visit the Refuge touched him.

How to Lead This Activity by Following the “Do, Read, Ask” Teaching Format

Snow Goose Migration Introduction (10 minutes)

Do

Have students sit down in front of you.

Ask

? A life cycle is a string of changes something goes through during its life time. That something could be a human, an animal or a plant. Can anyone tell me what the human life cycle is?

(Birth – infancy – childhood – adolescence – adulthood – old age) *You can help them through this by asking what stage of the life cycle they are in compared to you.*

Read

“Well wildlife have similar life cycles. Today we’re going to look at the life cycle of a snow goose. A large part of that life cycle is migration, so we’re going to learn about that as well.

“We have a lot to discover today so let’s get started!”

Ask

? We’ll start with a basic question - what are migratory birds?

(Birds that spend their summer in one area and winter in another.)

? Do you think snow geese are migratory birds?

(Yes, because they spend their summer up north and their winter here in the Sacramento Valley and other areas across the United States.)

Read

“The snow geese use the Pacific Flyway, which is the major flyway here on the West Coast. Flyways are like highways in the sky that birds follow. So imagine I-5 up in the sky with birds driving along it.”

Ask

? Why do you think snow geese, and other birds, migrate?

(In the spring, birds migrate to breeding grounds in the north where there is more food and space. In the fall, birds migrate to wintering grounds in the south, seeking better weather conditions.)

Read

“There are a lot of snow geese that winter in the Sacramento Valley. Huge flocks of them can be seen flying through the sky and blanketing the fields in white.”

Do

Point out the different parts of the snow goose as you talk about its features.

Read

“Snow geese are white with black wing tips. They have pink bills with a black grinning patch that looks like black lipstick. They also have pink legs.”

Ask

? We already know snow geese winter here and in other parts of the United States, but can anyone guess where snow geese go in the spring to nest?

(Snow Geese nest in Canada, Alaska and the northeastern tip of Russia on Wrangle Island.)

Migration Life Cycle (10 minutes)

Read

“OK, we’re going to become snow geese, learn about their life cycle and discover obstacles they face during migration.

“Each base, at either end of the field, provides an area of suitable habitat for a family of three geese. ***If you have extra snow geese some families can have more than one gosling.*

“You are snow geese starting at Wrangle Island in Russia, which are your nesting grounds. At the other end are your wintering grounds in the Sacramento Valley.

“Remember, each base can only be used by a family of three snow geese.

“I need you snow geese to fly to your nesting habitat with three geese on each nest. Now fly to your nests.”

Do

Walk through the nests and assign the parents and the gosling.

Read

“On each nest, two of you are parents and one of you is the gosling.

“The goslings are at the beginning of their life cycle. Your parents came up to Wrangle Island in the spring and made a scrape nest on the ground to lay four eggs and your mother sat on the eggs for about 24 days. When you and your siblings hatched in May you were able to follow your parents around and find your own food, you also already had downy feathers to keep you warm. You are ready to fly around 47 days.

“I know what you’re thinking – where are my siblings? Sorry, but they were lost to predators such as the arctic fox, but you were able to avoid those pesky foxes and survive.

“It’s fall now, the goslings have moved on to the next stage in their life cycle – they’re immatures (adolescent). Your parents are ready to lead you south to the wintering grounds. When I give the signal, walk to a habitat base in the Sacramento Valley. Flap your wings to show you are flying swiftly to your destination. When you reach the base with the rest of your family, you have

migrated successfully. If there isn’t a base left come stand by me. You will have another chance to get back in the game as a newly hatched chick when conditions are better.”

Do

Give the signal and have the snow geese fly to the wintering grounds. If there is a quarrel over a base have a goose from each family play rock-paper-scissors once to see who gets the nest.

Read

“Unfortunately, some of the wetlands in the Sacramento Valley have been filled-in to build houses on, so some of the snow geese weren’t able to survive the winter due to loss of habitat.

“For those of you goslings who survived the winter, you will make this trip three times with your parents before you are ready for the next stage of your life cycle – adulthood. So before you go back to the nesting grounds you’re going to want to find a mate - one of the other single geese.”

Do

Have the goslings pair up. If there is one left out, they can stay with their family still.

Read

“When I give the signal I want all of the pairs of snow geese to fly to Wrangle Island and find a nest. Only two geese can be on one nest and you have to stay with your pair. Any pairs that don’t find a nest come stand by me.”

Do

Place a couple more bases or take a couple away in the nesting grounds, so that there will only be a couple of pairs that don’t successfully migrate. This depends on how many pairs you have waiting to migrate.

Give the signal and have the snow geese fly to the nesting grounds. If there is a quarrel over a base have a goose from each pair play rock-paper-scissors once to see who gets the nest.

Read

“Unfortunately, not all of the snow geese were able to successfully migrate due to an oil spill that contaminated the wetland habitat. You have only a small amount of wetland habitat left for the remaining snow geese.

“However, the snow geese that did successfully migrate are ready to have goslings.”

Do

Send the snow geese that have been on the sidelines over to the nesting grounds – one gosling per base (or more if all nests already have one).

Read

“OK we’re going to migrate once more to the Sacramento Valley; lucky for you, concerned citizens have learned how important wetlands are and donated land to the Sacramento National Wildlife Refuge, so your wintering habitat has expanded. On my signal migrate as a family to the wintering grounds.”

Do

Make sure there are enough bases for each family in the wintering grounds.

Give the signal for students to migrate to their wintering grounds.

Discussion (5 minutes)

Ask

? During the activity some of you weren’t able to successfully migrate due to loss of habitat. What are some human activities that cause habitat loss?

(Draining and filling in wetlands for farm land, burning agriculture fields to get rid of waste, road construction, housing and business development, garbage dumps; dumping of pollutants, oil spills into waterways; tossing of trash into wetlands.)

? However, some of you were able to successfully migrate. What was the life cycle that the goslings went through?

(Egg – gosling – immature – adulthood/parenthood)

? What is one reason wildlife refuges exist?

(Refuges help protect migratory birds.)

? How can you help protect snow geese?

(Be responsible for your own trash, don’t put pollutants down storm drains; educate others about the importance of wetlands; etc.)

Do

If you’re the last group to use this activity gather all the materials and bring them into the visitor center or to the Refuge staff member that was helping your group. Thank you!