

U.S. Fish and Wildlife Service

Junior Birder Activity Booklet

*Chincoteague National
Wildlife Refuge*

Ages 11 through 13



Chincoteague National Wildlife Refuge was established in 1943 by the U.S. Fish and Wildlife Service with monies from the sale of Federal Duck Stamps. The refuge was set aside primarily to protect migratory birds, with emphasis on the greater snow goose; however, the refuge has expanded its mission to: conserve native plants and wildlife; protect threatened and endangered species; and, provide people with educational, interpretive, and recreational programs.

Chincoteague National Wildlife Refuge is one of more than 520 refuges in the National Wildlife Refuge System—the most extensive network of lands and waters in the world that is set aside specifically for fish, wildlife and plants. President Theodore Roosevelt designated the first national wildlife refuge, a tiny sanctuary in the State of Florida called Pelican Island, in 1903. Since then, the refuge system has expanded to include refuges that range in size from a half of an acre to millions of acres!



How to Earn Your Patch:

After you complete the activities in this booklet, return to the Chincoteague Refuge Visitor Center. A staff member or volunteer will review your answers with you, sign your booklet, and award you a patch. Please bring your booklet into the visitor center no later than one hour before closing time to receive your patch.

Note to adult companions: This is a family activity. Your assistance is needed; however, please allow the youths to answer the questions in their own words.

Unique Characters

What makes a bird a bird? Is it because it can fly? Well, bats can fly and they're mammals! Is it because they lay eggs? Some fish lay eggs. So, what is so special about birds?

Did you know that birds evolved from reptiles 160 million years ago?

They share many features. Both animals lay eggs, have similar types of skull and ear bones, and have scales covering parts of their bodies. As birds evolved, their scales became flatter and longer, eventually turning into feathers.

Birds are the only animals in the world with feathers. They have two main types of feathers: contour feathers, which cover the body, wing, and tail; and the underlying down feathers, which keep the bird warm.



While feathers are growing, they are a living tissue complete with blood supply. When they are done growing, the feather dies but will remain. The stem, or shaft, of the feather is made of keratin, the same material our fingernails are made of.

Birds need to be strong but light enough to be able to fly. To reduce their weight, birds have partially hollow bones. Many of their bones are fused, or joined together, to increase the strength of their skeleton.

Birds do not have teeth. Instead of heavy teeth, birds have a gizzard. The gizzard is a specialized muscle in the stomach. Birds use their gizzard in the same way other animals use their teeth; it grinds up food.

Mindful of Migration

If you are visiting Chincoteague Refuge during autumn, you will probably see thousands of ducks and geese. But if you are visiting the refuge in the summertime, you might only see a handful of waterfowl. Where have the waterfowl gone? Many birds have both summer and winter homes. Each year they make the same round trip flight, or migration, from one home to the other.



Why would they make this long and dangerous trip every year? Most North American birds migrate south for the winter to follow warmer weather and abundant food supplies and return north to nest when spring has sprung.

Chincoteague National Wildlife Refuge is located on the Atlantic Flyway, a common route for migrating birds. More than three hundred and twenty species of birds use the refuge as a stopover to rest and eat during their long journeys.

Refuge biologists keep track of the bird species using the refuge. This information is used to follow trends or patterns in bird populations and to change the refuge's management practices if necessary. Study the waterfowl and shorebird surveys below. Choose one species from each survey and graph when those two birds are at the refuge on the next page. Answer the questions that follow.

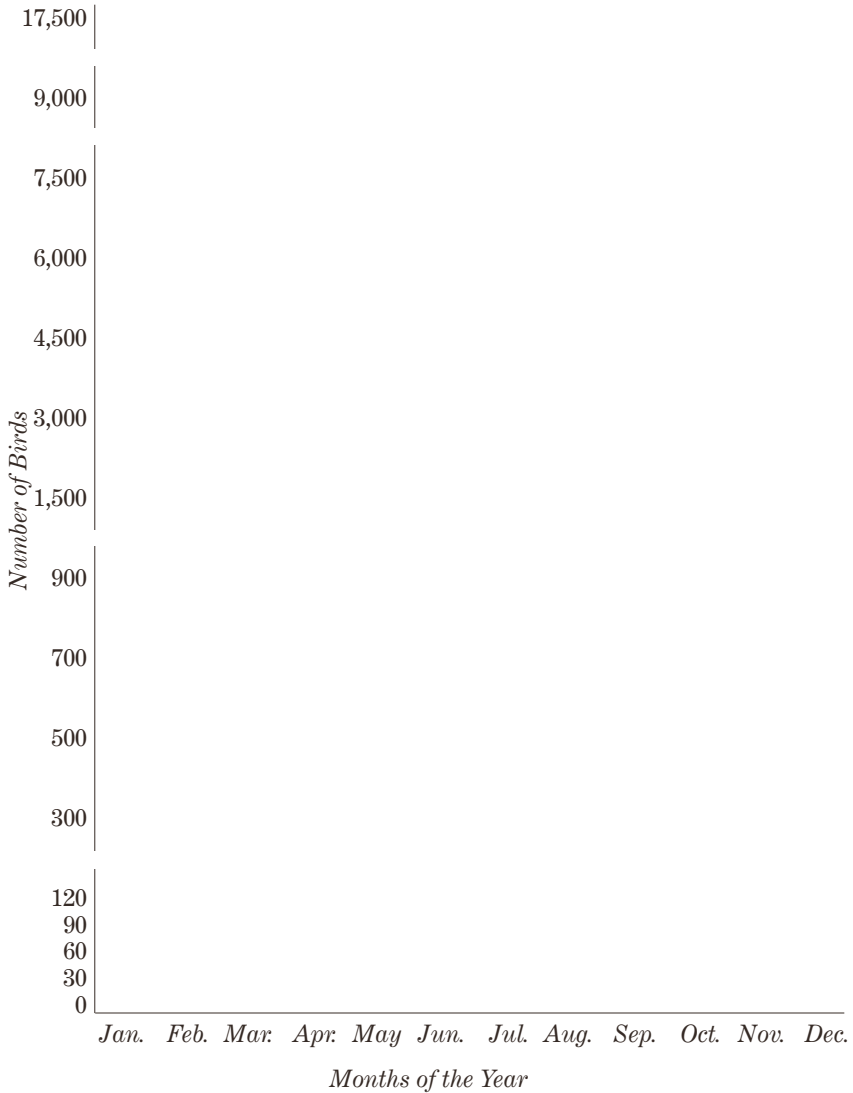
Chincoteague National Wildlife Refuge - Waterfowl Survey

	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Northern Pintail	7,684	640	440	11	0	0	0	1	36	1,500	5,338	4,158
American Black Duck	2,398	2,058	980	301	10	26	39	56	121	949	4,010	3,034
Snow Goose	7,605	449	488	7	1	0	1	1	1	8,029	17,440	9,498

Chincoteague National Wildlife Refuge - Shorebird Survey

	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May</i>	<i>Jun.</i>	<i>Jul.</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
Dunlin	357	848	526	806	6,663	4	0	0	0	99	2,356	427
Least Sandpiper	0	2	0	58	1,253	0	595	61	70	0	5	0
Piping Plover	0	0	30	60	66	90	90	80	30	0	0	0

Title: _____

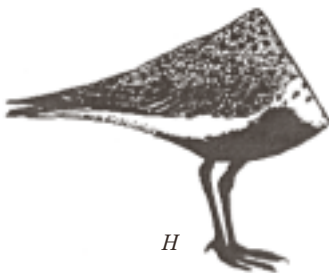
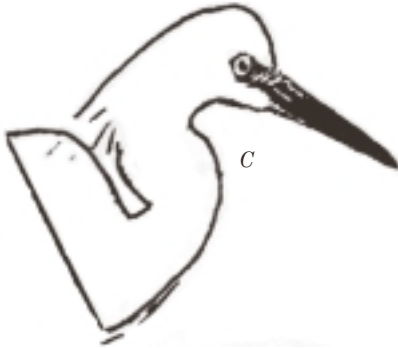


1. If waterfowl are at the refuge in the autumn and winter, where are they in the spring and summer?
2. Do you think some black ducks live here year round?
3. Do you think piping plovers breed here or simply stop to rest during their migration?
4. Do you think least sandpipers and dunlin breed here or simply stop to rest during their migration?

Build a Bird

All wildlife, including birds, are adapted to their habitat. The shape and color of their bodies are designed to help them feed, move, and hide from predators. Match each statement on the following page with the body part it describes. Then figure out what bird you've built from the bird bank below.

meadowlark, osprey, snowy egret, dunlin, mallard



1. I have a long neck with a strong, pointed beak adapted for spearing fish, crabs, and other marsh critters. _____

I have long legs with three-toed feet for wading through water. I use my bright yellow feet as bait to attract fish to eat. _____

What bird am I? _____

2. I have a long, wide, flat, filter-like beak that I use to pull up aquatic plants as I dip upside-down in water. _____

My legs are near the middle of my body and my feet are webbed to help me swim. _____

What bird am I? _____

3. I have a long bill with a slight downward droop at the tip adapted for probing the marsh mud or sand for small invertebrates (animals without a backbone). _____

I have skinny legs and feet with long toes adapted to help me stand in mud and wade through shallow water. _____

What bird am I? _____

4. I have a strong, short, hooked bill adapted for tearing apart fish. _____

I have strong, muscular legs for carrying off prey and feet equipped with talons and sharp, spiny projections that give extra grip on my slippery food. _____

What bird am I? _____

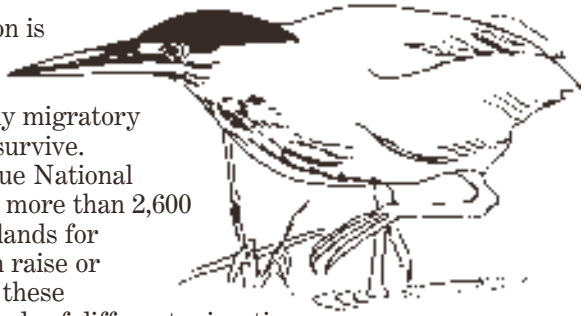
5. I have a stout, pointed bill adapted for picking insects off the ground. _____

I have short, thin legs with long, curved claws adapted for perching on vegetation. _____

What bird am I? _____

Wetland Waters

Understanding migration is important in order to properly manage the refuge's resources. Many migratory birds need wetlands to survive. Biologists atChincoteague National Wildlife Refuge created more than 2,600 acres of freshwater wetlands for migratory birds and can raise or lower the water level in these wetlands to meet the needs of different migrating birds.



Now that you know more about the migratory patterns and adaptations of birds, you are ready to determine an appropriate water level for certain birds. Walk the Freshwater Marsh Trail. Stop at the platform overlooking Snow Goose Pool; use the spotting scopes to observe the bird life. Think about why some birds would prefer more water than others.

What season are you visiting the refuge? Spring, Summer, Autumn, Winter

What kinds of birds do you see from the platform? i.e.: wading birds, shorebirds, waterfowl, etc.

Describe what the birds are doing and how they are doing it. i.e.: feeding, preening (cleaning), nesting, flying, resting, or fighting

Is the water level high or low? (Hint: Do you see exposed mud flats or a large pool of water?)

Why would refuge biologists raise or lower the water level in the marsh at various times throughout the year? (Does it have something to do with the kinds of birds migrating to or through this area? Is it important to know how those birds feed and move about?)



Habitat Detective

Habitat is an area that has enough food, water, shelter, and living space for a plant or animal. Chincoteague Refuge has four main types of habitat: beach, salt marsh, freshwater marsh, and forest. Choose one of the habitats to investigate and begin your fact-finding mission by answering the questions below.

1. Name any birds you see or hear.

2. What do the birds in this habitat eat?

3. Where do the birds in this habitat seek shelter?

4. Where do the birds in this habitat find drinking water?

With the facts you have gathered, draw a small map of the area including where a bird would find food, water, and shelter.

Who Am I? . . . Where Do I Live?

Use a field guide to identify the following birds and write down the habitat where they can be found. Some birds may be found in more than one habitat. With your new identification skills, go birdwatching!



Name: _____

Habitat: _____

Name: _____

Habitat: _____



Name: _____

Habitat: _____

Name: _____

Habitat: _____



Name: _____

Habitat: _____



Name: _____

Habitat: _____



Name: _____

Habitat: _____



Name: _____

Habitat: _____



Name: _____

Habitat: _____



Name: _____

Habitat: _____

Piping Plover Puzzler

The piping plover is a threatened shorebird. Under the Endangered Species Act, a threatened species is one that, without protection, could possibly become endangered and may become extinct. Predation, human disturbance, and loss of habitat to development are the primary causes of their decline.

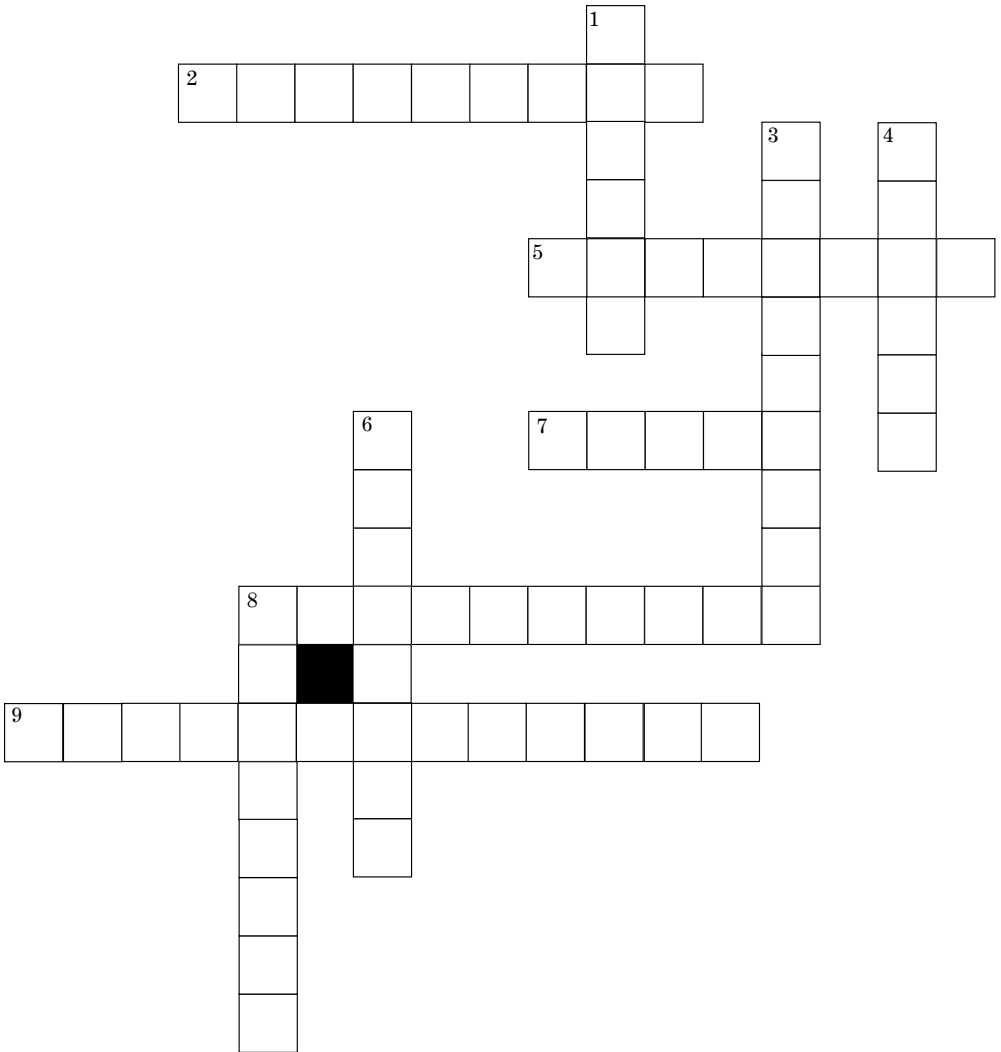
Complete the crossword puzzle to learn more about the piping plover and how the refuge helps to protect it.

Across

2. Fox, raccoons, and gulls are _____ of the piping plover's eggs and chicks.
5. Piping plover eggs and chicks can be easily crushed by over-sand _____ and people walking the beach.
7. _____ are posted in areas where the birds are nesting, warning people to keep away and respect the bird's breeding space.
8. Because nests and chicks blend in so well with their environment, humans can walk right by a nest without even knowing it. Sometimes, this _____ results in disaster.
9. Plovers feed by pecking into the wet sand or mud searching for small _____, such as fly larvae and beetles.

Down

1. An adult piping plover will fake a _____ wing to distract predators from its young.
3. Refuge staff construct an _____, made of wire and mesh, around a piping plover nest to keep predators out.
4. It takes approximately 30 days for a chick to _____, or learn how to fly.
6. Chincoteague Refuge restricts access to a portion of the beach called the Hook during piping plover breeding season. Other nesting birds benefit from this closure, such as black _____.
8. On the east coast of North America, piping plovers nest on beaches from Canada to North _____.



Junior Birder Trivia

*All answers can be found in this booklet.
To learn more about birds, attend one of
Chincoteague Refuge's many programs
or pick up a book and read more about
it.*



1. What is an invertebrate?
2. Do birds have teeth?
3. Name the two types of feathers.
4. What is habitat?
5. Why do birds migrate?
6. Name one predator of the piping plover, its eggs, or chicks.
7. When is Chincoteague National Wildlife Refuge's peak waterfowl season?
8. When are you most likely to see shorebirds at Chincoteague National Wildlife Refuge?
9. What does Chincoteague Refuge do to the freshwater wetlands to make them suitable for different bird species throughout the year?
10. What is the purpose of a National Wildlife Refuge?

This certifies that

has successfully completed the

Junior Birder Program

at

***Chincoteague National
Wildlife Refuge***

Signed

Date

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February 2001

