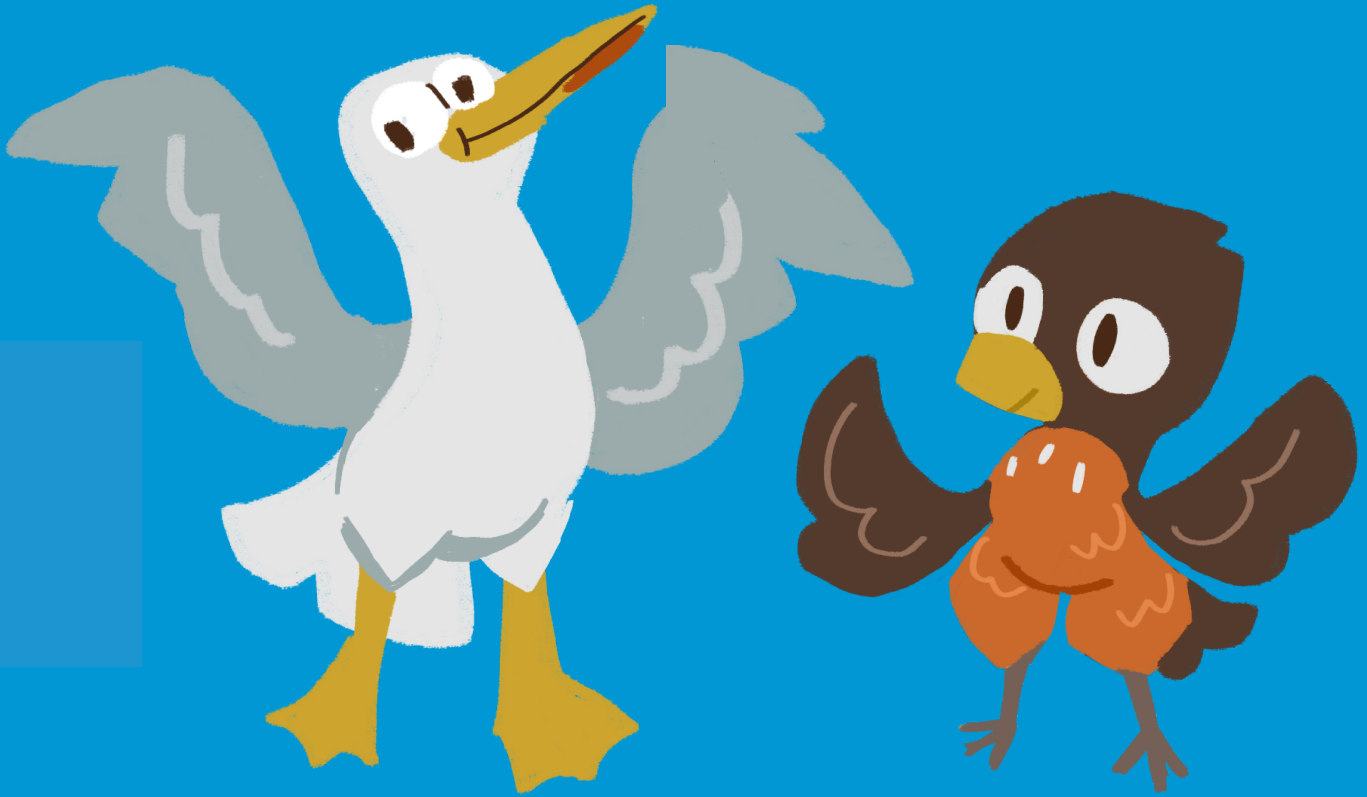


JUNIOR REFUGE RANGER



U.S. Fish & Wildlife Service

PARKER RIVER NATIONAL WILDLIFE REFUGE

This book belongs to: _____

Parker River National Wildlife Refuge Junior Ranger Refuge Program

Parker River National Wildlife Refuge lies on the north shore of Massachusetts. Most of the refuge is on Plum Island, a barrier island made up of sand dunes and salt marshes. Staff have a big job caring for the plants, wildlife, and habitats found here, and they need your help! As a Junior Refuge Ranger, you will learn about the importance of habitat conservation, the plants and animals who call Parker River home, and how we can all do our part protecting the refuge now and in the future.

To earn the **Junior Ranger Badge & Certificate:**

- If you are **7 or under:** complete any **2 pages**
- **8–10 years old:** complete any **3 pages**
- **Over 10 years old:** complete any **4 pages**



How to pick up your **Junior Ranger Badge:**

When you have completed your Junior Refuge Ranger book, bring it to a staff member or volunteer at the Parker River visitor center to take the Junior Ranger Pledge and receive your badges and certificate.

Activity Checklist

- Activity 1: Mini Field Guide
- Activity 2: My favorite memory
- Activity 3: Connect the dots
- Activity 4: Homes & habitats
- Activity 5: Beach Bingo
- Activity 6: On the job
- Activity 7: Bug hunt
- Activity 8: Changing landscapes
- Activity 9: Nature Sense
- Activity 10: Refuge Ranger Ready
- Activity 11: Tell a friend

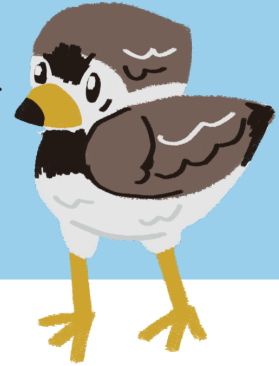


Tell your friends! The Junior Refuge Ranger activity book can be completed with a friend or family member. Make sure everyone has their own copy.

Words to Know

As you work through the activities, keep an eye out for **this symbol**. It highlights words you might need to know to complete one of the activities.

- Salt marsh: a grassy coastal area regularly flooded by tides, home to many creatures
- Riparian: the area along a wetland, stream, or river
- Erosion: wearing away of sand, rock, or other material
- Crustacean: aquatic animals with hard shells like lobsters and crabs
- Migration: seasonal movement of animals from one place to another
- Habitat: the natural home of a plant or animal
- Wildlife: wild animals that live in a particular habitat
- Restoration: the act of returning a habitat to its former state



Junior Refuge Ranger 101

The first lesson for all refuge rangers is understanding how to leave no trace while enjoying the outdoors. You can learn more about how to be a good steward below, and remember that USFWS staff members are always happy to answer any questions you have about how to responsibly enjoy your national wildlife refuge.

Carry In, Carry Out

Leave only footprints!
Help keep the refuge clean by taking back out any trash, gear, or personal items that you brought on your trip.

Stay on the Trail

Trails are marked to keep you and the wildlife who live here safe. Follow all refuge signs and stay in designated areas.

Leave Pets at Home

We love our pets, but at the refuge they can frighten wildlife and damage resources they depend on. Make other plans for your pets.

Give Wildlife Space

No one likes feeling smooshed. Wildlife need room, so observe them from a distance. Do not approach, scare, touch, or feed them.

Take Only Photos

You might encounter cool plants, rocks, bones, or other natural items, but please leave them be. Parker River is their home!

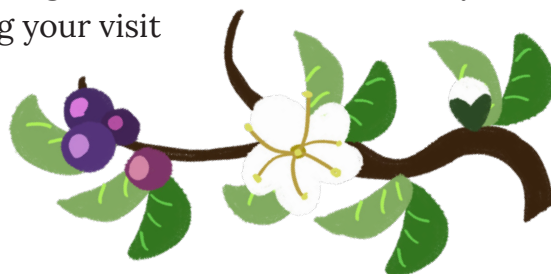
Be Kind to Others

Many different people visit Parker River. Please be kind, and be sure your fun does not take away from anyone else's experience.

Activity 1: Mini Field Guide

The plants, animals, and landscape at Parker River NWR change with the seasons. Create your own field guide below by describing species you see during your visit. You can update this when you come back each season!

Spring



Summer

Fall

Winter



Activity 2: My favorite memory

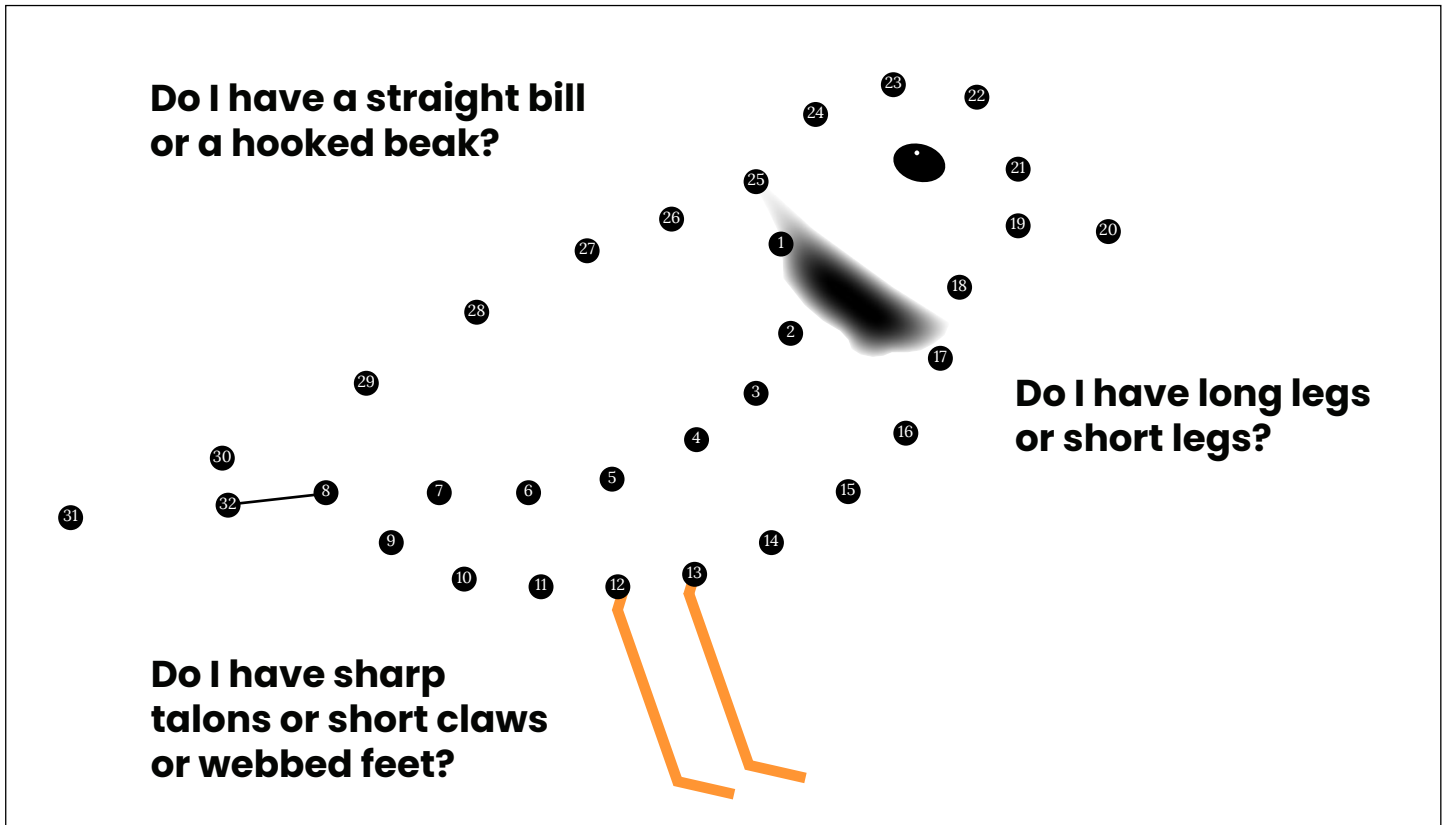
Are you an artist? A poet? A cartoonist? A writer? Use the space below to highlight your favorite activity or experience at Parker River NWR. Think about the **plants, animals**, and **habitats** you learned about today. Was there a surprising or interesting thing that you did or saw?

Express yourself below!

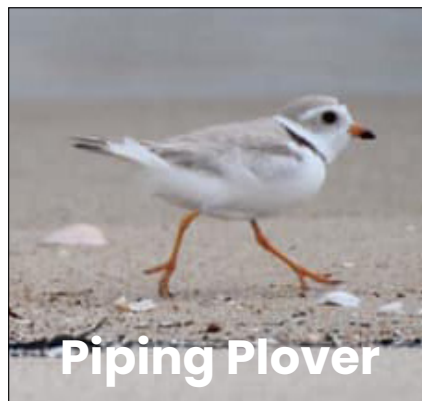


Activity 3: Connecting the dots

Follow the numbers and **connect the dots** to discover who is hidden below! Then, **answer the questions** to match the animal with the correct image below. Use the questions to help you find the right identity. You can learn more about this particular animal by checking out the exhibits located inside the visitor center.



I am a fearsome hunter!
I have powerful legs with sharp talons that I use to catch small mammals and birds. I am an early bird.



I am small but mighty! I have long legs to dig nests in the sand and chase intruders. I use my short bill to catch insects and crustaceans.



I am a master fisher! I use my long, curved neck and my sharp, hooked beak to catch fish underwater. My webbed feet help me swim.

Overview: Homes & Habitats

As you explore the refuge, notice how the landscape changes from place to place. These different habitats provide water, food, shelter, and other resources that suit different plants and animals. Below is a quick overview of some of the habitat types, species, and other features you can find in each area.



Habitat Descriptions

- **Salt marsh:** spongy wetlands between the ocean and the mainland that flood and drain with the tides. They provide habitat to shorebirds, fish, crustaceans, and salt-tolerant plants.
- **Mudflat:** wide, muddy areas created by the ocean meeting a river and exposed at low tide. They provide habitat for shorebirds, and protect the salt marsh from erosion.
- **Wetland:** area where water covers the land some or all of the year. They provide habitat to many plants, insects, birds, and mammals, and can help reduce flooding by absorbing water.
- **Cranberry bog:** made up of freshwater wetlands, moss, sand, and shrubs in low areas formed long ago by glaciers. They provide habitat to voles, salamanders, toads, and more!
- **Dune:** mounds of sand formed by the wind. Plants growing on the dunes are adapted to have root systems that can withstand winds and shifting sand.
- **Beach:** coastal habitat made of sand, crushed stones, and shells brought by the waves.
- **Maritime forest:** shoreline forests made up of shrubs, trees, and other plants that can withstand wind, flooding, and salty ocean air.

Activity 4: Homes & Habitats

Now that you've learned about some of the habitats that Parker River NWR protects, see if you can put your knowledge to the test in the field! Keep an eye out for different plants and animals, and see if you can come up with reasons why they might call that particular habitat home.

Choose one of the locations below to start your adventure

- **Salt Pannes Observation Area**
- **Hellcat Interpretive Trail**
- **Bill Forward Bird Blind**
- **Pines Trail**

Now, fill in the blanks below!

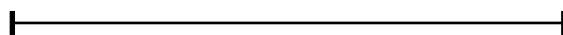
Hint: check out page # if you need help figuring out which habitat you are visiting.

Habitat Journal

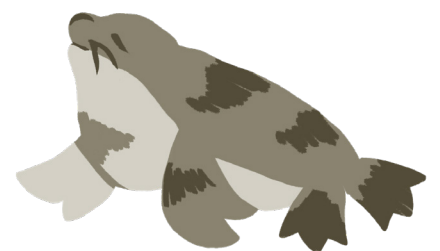
I chose to explore _____ during my trip. This spot interested me because _____.

When I look around I see _____, _____, and _____ . This makes me think I am in a _____ habitat.

One cool plant or animal I saw in this habitat looked like _____.



Remember this habitat is a home!
Don't forget to give wildlife space
and stay on the trails.



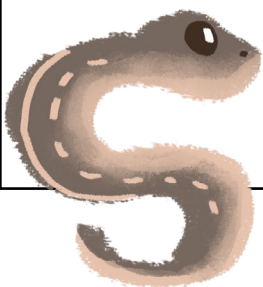
Activity 5: Beach Bingo

Most of Parker River NWR is on Plum Island, a barrier beach island. This unique landform was formed by glaciers over many years, and continues to be changed by the waves and tides.

Complete the boxes below as you enjoy the beach and the dune boardwalks, or by exploring the visitor center. Can you complete three in a row?



<p>Why are dune grass and beach grass important?</p>	<p>Describe or draw an animal that you see.</p>	<p>How does the moon impact the tides?</p>
<p>Describe or draw part of the landscape that interests you.</p>	<p>Free Space</p> <p>I am a good beach steward! I enjoyed the beach and dunes only from designated trails, boardwalks, and open areas.</p>	<p>How does wind affect the dunes and beach?</p>
<p>How does trash on the beach impact plants and wildlife?</p>	<p>What bird species might nest on the beach or in the dunes?</p>	<p>Describe or draw a plant that you see.</p>



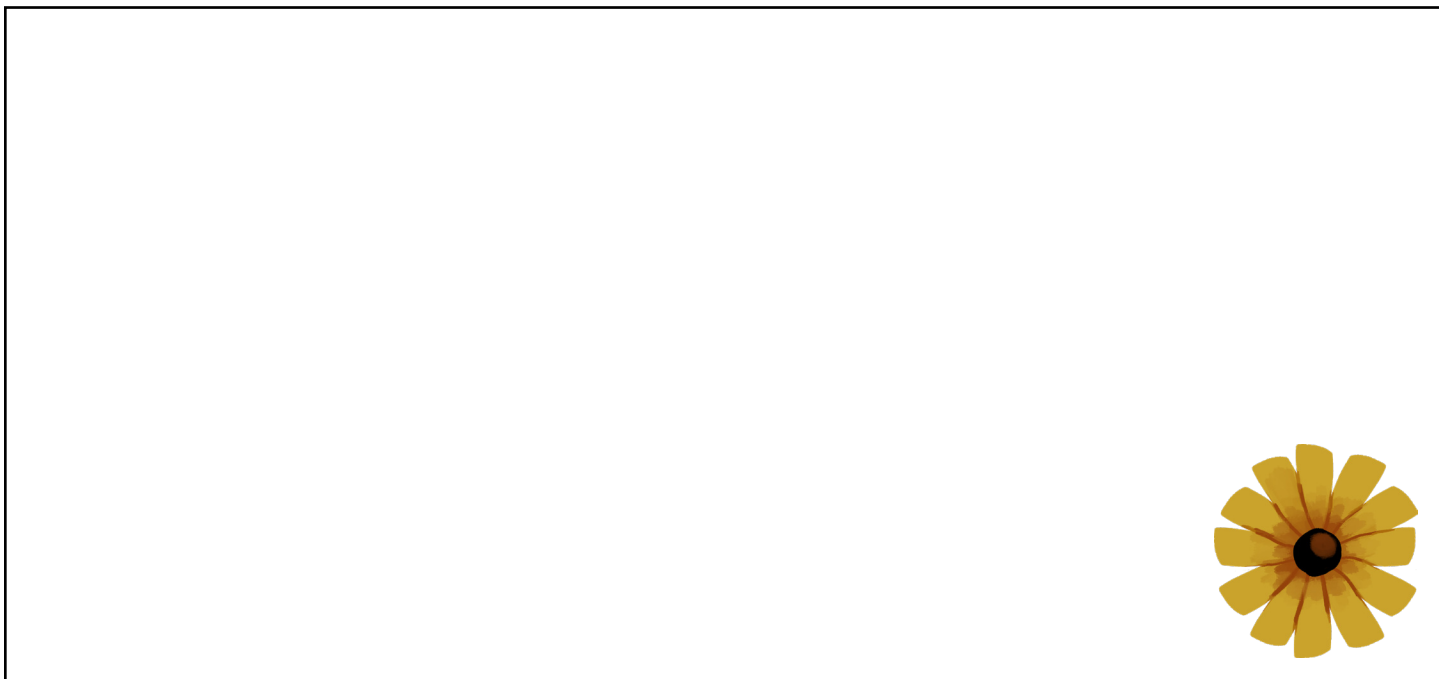
Activity 6: On the Job

One important member of the refuge team is a wildlife biologist. Wildlife biologists are scientists who study animals and their habitats. They collect information about changes in behavior and conditions to help improve conservation efforts. Sound like something you would enjoy?

Follow the prompts below to try one technique used by wildlife biologists - observation!

Draw what you see

Find a spot where you can sit and observe the landscape around you. Draw a picture of what you see. Notice the shape of different plants, signs of wildlife, the sky overhead, the movement of water. Try to see how many details you can capture, then answer the questions below!



Location on the refuge: _____

Weather conditions: _____

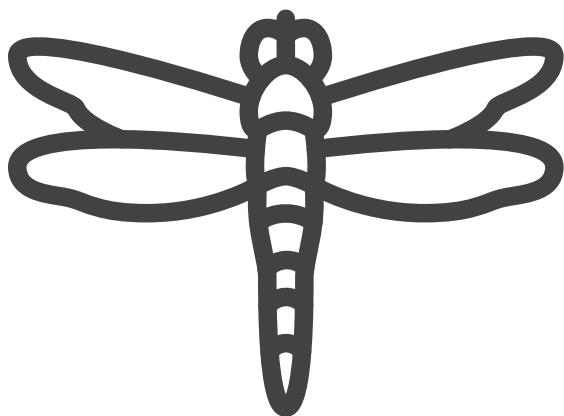
Wildlife spotted: _____

Signs of dens, nests, or tracks: _____

Sounds heard: _____

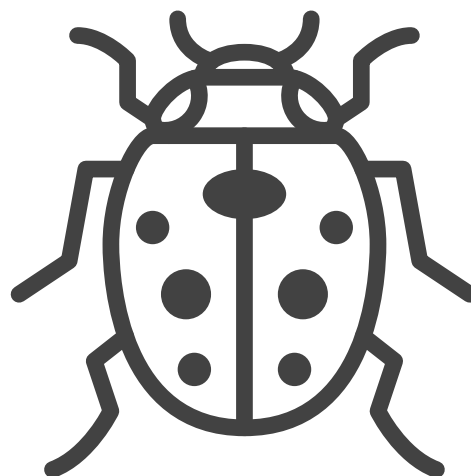
Activity 7: Bug Hunt

Look closely around the pollinator garden at the Parker River NWR visitor center and you'll notice tons of tiny helpers - bugs! Some bugs, like butterflies and bees, are pollinators. They help move pollen between flowers, which allows plants to create food that humans and animals eat to survive. Other bugs, like preying mantises and wasps, are predators. They hunt and eat pests that can harm plants, helping keep the garden healthy. Walk around the pollinator garden and see if you can spot one of the beneficial bugs below. Color in the bug you find.



Dragonfly

I am a predator - I eat pests including mosquitos!



Ladybug

I am a predator - I eat pests like aphids and mealy worms.



Butterfly

I am a pollinator. Pollen collects on my body when I drink nectar.



Bee

I am a pollinator. I collect pollen to feed my young and move it between plants.

Activity 8: Resilient Landscapes

Refuge biologists work with nature to help increase resiliency within the landscape. Resiliency means being able to survive and adapt to changes like sea level rise, severe storms, and droughts. Biologists study what happens in a healthy habitat, and then help create similar conditions in an area that is not as healthy to increase its resiliency. Check out the marsh restoration exhibit in the visitor center to get some ideas that might help you with the questions below.

Waves & Water

How might increasing the health of the salt marsh protect people and animals from storms?

Before	After

Plants & Animals

How do you think restoring native plants helps wildlife? Think about things like food and shelter.

Before	After

Activity 9: Nature Sense

Not all the plants and animals at Parker River NWR are easy to find using just your eyes. Some species may be hiding from predators, seeking shelter from the harsh ocean wind and waves, or simply small and shy. Follow the prompts below to see what you discover with different senses - complete any two for this activity.

Taking in the Landscape

Take a moment to be still and calm - you can stand, sit, kneel, lie down - whatever makes you comfortable. Let your body settle down and take a few big breaths. Now you're ready to use your senses!



Sight

Without moving your body, turn your head as far to the left as you can and slowly scan across the landscape to the right. What do you see?

Smell

Close your eyes and place your hands over your ears. Take a deep breath in through your nose. What do you smell?

Hearing

Stay as still as you can and close your eyes. Let your ears adjust to the sounds around you. What do you hear?

Touch

Place your hands, feet, or body on the ground below you. Let your body rest, or wiggle your fingers and toes. What do you feel?

Activity 10: Refuge Ranger Ready


Get the scoop on being a Junior Ranger by learning from someone already on the job. Talk to someone who works or volunteers at the refuge, and ask them the questions below or come up with one of your own. Then, answer a few questions about why you want to be a Junior Ranger.

Questions

1. What do you do at the refuge?


2. Why is the refuge important to you?

3. What is your favorite things about working at the refuge?



I want to be a Junior
Refuge Ranger because...

The refuge is special
to me because...



Activity 11: Tell a Friend

Help get the word out about all there is to offer - and protect - at Parker River NWR. Use the blank side to draw a picture of something you saw today, then use the lined side to share a message about your visit.

WHOOOOO needs
to learn more about
the refuge?



Greetings from Parker River National Wildlife Refuge

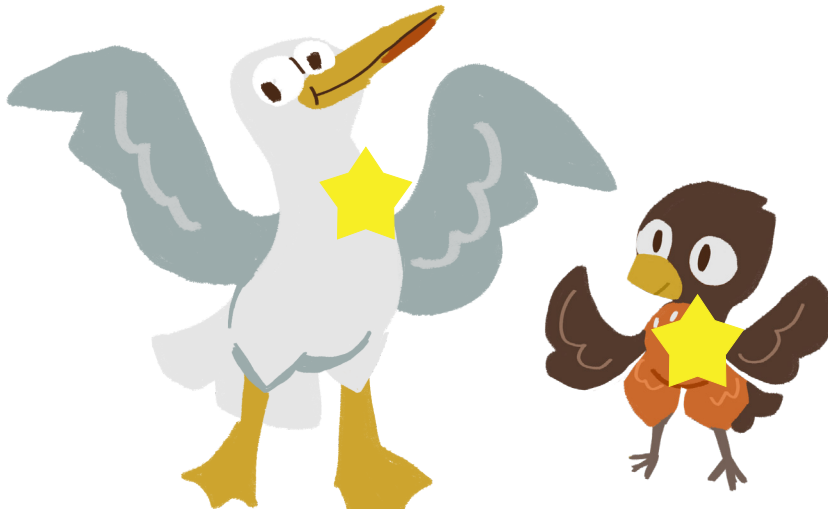
To: _____

Getting mail is
a real HOOT!



YOU'RE A JUNIOR REFUGE RANGER!

Congratulations! You've got what it takes to be a Junior Refuge Ranger. The final step is taking the Junior Refuge Ranger pledge that you will continue to protect and responsibly enjoy Parker River NWR and all YOUR national wildlife refuges.



Junior Refuge Ranger Pledge

I am proud to be a Parker River NWR Junior Refuge Ranger.
I promise to do my part keeping wildlife and habitats safe.
I promise to leave no trace and recreate responsibly during every visit.
I will share what I learn with my friends and family.
I will be kind to myself, to plants and wildlife, to land and water, and to other visitors.

Junior Refuge Ranger Signature

Date

Double check your booklet to make sure you have completed the right amount of activities for your age group. Then, present your booklet to a park ranger at Parker River NWR, or mail it to the address below to receive your certificate & Junior Refuge Ranger badge.

**Parker River National Wildlife Refuge
6 Plum Island Turnpike
Newburyport, MA 01950**

