Rappahannock River Valley National Wildlife Refuge

Adventure Booklet

Upgrade your digital badge!

Presented by:

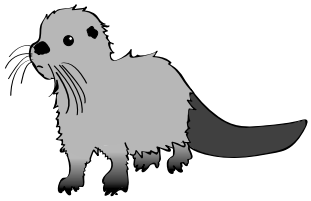
Junior Wildlife Ranger

This Book Belongs To:

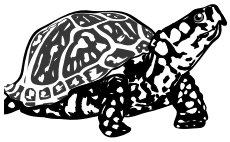
Welcome to Rappahannock River Valley National Wildlife Refuge! I am Eden the Bald Eagle, and my scientific name is Haliaeetus leucocephalus. I live at Wilna Pond in a nest high above in the trees, and I love to dive into the water to hunt for fish. I will be your guide to becoming a Junior Wildlife Ranger!

To earn your badge, you must **complete all of the activities for your age group** in this booklet.

Ages 4-7
Complete two of the six activities



Ages 8-10
Complete four of the six activities



Ages 11-13+
Complete all of the activities

Finished?

Show your booklet to a Staff Member or a Volunteer at the Visitor Center to receive a:

1) Digital Passport and Badge: Scan QR Code with the camera on your phone
2) Signed certificate
3) Rappahannock River Valley National Wildlife Refuge Badge

Visit multiple times to **upgrade** your **digital badge in your digital passport!**

You can also visit other participating sites to collect more badges and earn rewards.
For participating sites and more information, visit juniorwildliferanger.org

Wildlife Viewing Tips

Go to the observation deck or platform at Wilna or Port Royal to get an elevated view of the unit!

Stay low and quiet. Wildlife are easily scared by loud noises and quick movements.

Be respectful to wildlife by not feeding, harassing, or scaring them.

Rules and Safety

-Visitors must stay on designated roads and trails.
-Pets are not allowed.
-USFWS Staff members are available to help you Monday through Friday, 8AM-4:30PM!

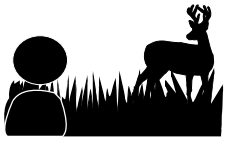
Leave No Trace

Trash your trash.

Take out what you bring in! Bring a reusable bag or use your pocket to store garbage in. Let's keep the refuge clean by not littering!

Leave what you find.

You might encounter plants or other natural items, but please leave them be: Rappahannock River Valley is their home. Do take pictures!



Respect plant and wildlife.

Wildlife can be unpredictable. Do not approach, scare, or feed them. Observe them from a distance.

Stay on the trails.

The trails are marked for your safety, as well as for the safety of wildlife and the resources they depend on.

Respect others.

Everyone wants to enjoy the refuge, so make sure your fun does not take away from anyone else's experience. For example, playing loud music on a trail might be disruptive for others and the wildlife.

Exploration

Which Refuge Site Will You Explore? (circle one)

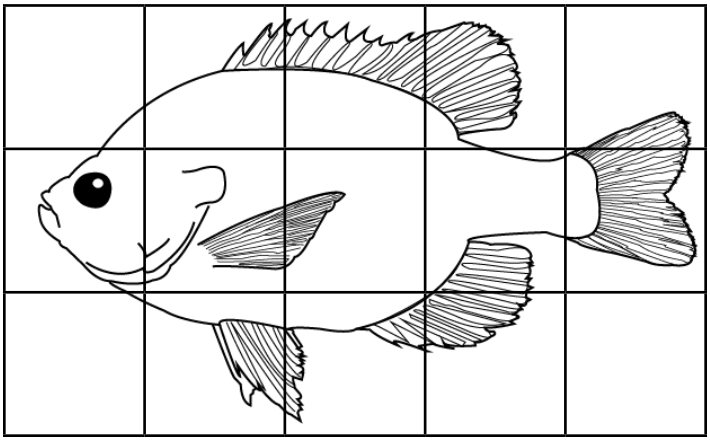
I will explore: Wilna Pond (Activity A) Port Royal (Activity B) Hutchinson (Activity C)

Now, complete the activity that matches with the area you are visiting!

Activity A: Wilna Pond Fishing Fun

There are many species of fish in Wilna Pond: Largemouth bass (Micropterus salmoides), Bluegill Sunfish (Lepomis macrochirus), Flier (Centrarchus macropterus), Yellow bullhead catfish (Ameiurus natalis), and American eel (Anguilla rostrata). You may also see turtles, ducks, great blue herons, snakes, and more!

Can you help draw the fish in the box on the right?



This is a picture of a Bluegill Sunfish, it's scientific name is Lepomis macrochirus.
Fun fact: Male Bluegill Sunfish or "sunnies" build nests for female sunnies to lay their eggs in.

Did you know? You can fish at Wilna Pond!

Here are some important rules to remember if you go fishing here:

1. Clean up your equipment (bobbers, hooks, fishing lines, etc) when finished.
2. Do not use other species found at Wilna Pond as bait. Bring your own bait.
3. Only take the fish that you are allowed to take.
4. Your sinker must be lead-free to fish at Wilna Pond.

Exploration

Activity B: Port Royal Animal Spotting

Port Royal protects critical **floodplain** habitats. **Floodplains** are located near bodies of water like streams and rivers that are prone to flooding, especially when there's heavy rain.

While at Port Royal, use your senses to observe the **floodplain** around you.

What do you see?_____

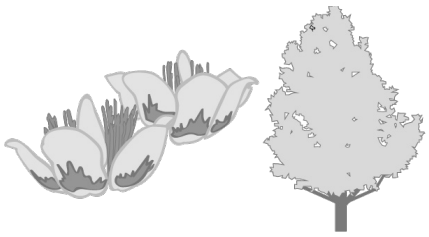
What do you hear? _____

What do you smell? _____

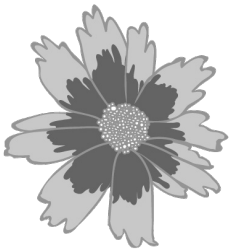
What do you feel?_____

Now that you have practiced using your senses for observation, try to use your senses and spot these animals or plants that live in Port Royal.

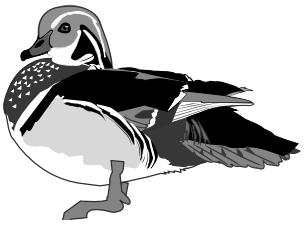
Don't worry if you can't find all of them: some are shy and like to hide!
Check them off when you find them!



Tulip Tree ☐

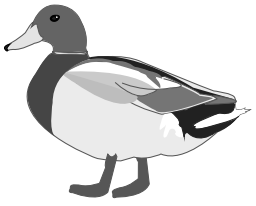


Tickseed ☐

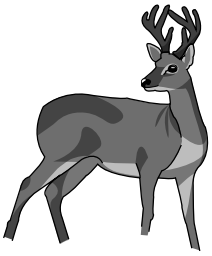


Wood Duck ☐

Great Blue Heron ☐



Mallard Duck ☐



White-Tailed Deer ☐

Exploration

Activity C: Wildlife Bingo at Hutchinson

Hutchinson is home to many plants, animals, and habitats. How many can you spot?

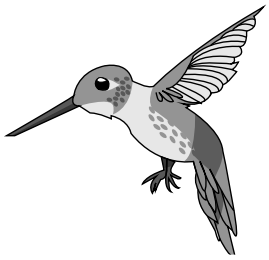
Try to get a bingo!

Grassland A dry, open, habitat covered with grass.	**Forest** A habitat with many trees and shrubs.	**Native Species** Species that originally lived and existed in a particular ecosystem or habitat. One example is the White-tailed Deer.
Marsh A habitat with low and wet land often filled with many tall grasses.	**Invasive Species** An animal or plant that does not originally belong in the area where it has settled. Invasive species crowd out other species. One example is the Blue Catfish.	**River** A larger flow of water that empties into the ocean, sea, or lake.
Raptor Raptors are predatory birds, which means they hunt and eat other animals.	**Creek** A smaller flow of water than a river. Creeks can flow into a river.	**Wetland** A habitat where a shallow level of water covers the soil. Marshes and swamps are types of wetlands!

Habitats

Activity 1: Which Habitats Do You See?

From forests to grasslands and wetlands, Rappahannock River Valley NWR protects many **habitats**. **Habitats** provide water, shelter, and food for the hundreds of wildlife and plant species that call them home.



Each species has adapted to live in its **habitat**. **Adaptations** are traits or skills that help them survive. For example, hummingbirds have long thin beaks so they can drink nectar from flowers. In contrast, the sharp beak of an eagle helps them catch prey like fish.

Take one of the hikes below at the Unit you are visiting.

Wilna Unit: Wilna Creek Trail (0.5 miles)
Hutchinson Unit: Magruder Loop (.17 miles including loop)
Port Royal: Choose your own path or find the viewing platform that overlooks Roy's Run

Can you figure out which **habitat** you are walking in?

I think this a _____ habitat because I saw _____

_____

Sample: I think this is a forest habitat because I saw many trees, shrubs, and leaves.

I spotted _____(animal or plant)! One cool adaptation this species has is...

_____

_____

Sample: I spotted a rose! One cool adaptation is that this plant has thorns, which protect it from being eaten by other animals.

Need some help?

Forests have many trees, bushes, and shrubs.

Grasslands are dry, open areas covered with grasses.

Wetlands have shallow water coverage such as **swamps** or **marshes**. Many species thrive here, especially ducks, herons, and other birds.

My favorite **habitat** is a wetland because there are plenty of fish as well as places for me to breed, nest, and hide. Without wetlands, I would not be able to survive.

Birds

Activity 2: Take Flight! The Birds of the Refuge

208 species of birds rely upon the wetlands, forests, and grasslands of Rappahannock River Valley National Wildlife Refuge. As a result, Rappahannock River Valley is designated as an **Important Bird Area** as of 2007. **Important Bird Areas** and the birds that live in them are legally protected.

Can you spot these birds at the refuge? Observe one of the birds closely to answer the questions below.

In which habitat did you spot the bird? _____

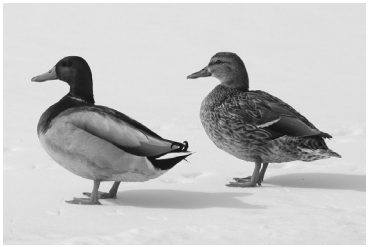
Can you compare the size of the bird to another object? _____

What were some colors you saw on the bird? _____

Bird Checklist:

Red Bellied Woodpecker
(Melanerpes carolinus)

Great Blue Heron
(Ardea herodias)



Mallard
(Anas platyrhynchos)

Common Yellowthroat
(Geothlypis trichas)

Turkey Vulture
(Cathartes aura)

Bald Eagle
(Haliaeetus leucocephalus)

Controlled Burning

Activity 3: Controlled Burning

Did you know that Rappahannock River Valley's grasslands are purposefully burned each year? Many other wildlife refuges perform **controlled burns** as well! Why do you think **controlled burning** is important for the health of grasslands?

Hint: think about how fire can benefit birds, seeds, tall grasses, shelter, predators, pollinators, etc.

Controlled burning adds nutrients and minerals to the soil. It removes dead plants, weeds, and some invasive species, and it keeps plant growth controlled at a low height. **Controlled burning** is carried out by people specialized to do so, and should never be done by someone who has no experience!
Many species benefit from a **controlled burn**.

Little Bluestem
(Schizachyrium scoparium)

I benefit from **controlled burns** because in order to release seeds, I need the fire to help melt my exterior that protects new seeds. I also grow better in nutrient-rich soil. You won't see me after a **controlled burn** though, but try again in a few months!

I benefit because the growth of new grass and shrubs after a **controlled burn** allows me to hide from predators.

Turkey
(Meleagris gallopavo)

White-Tailed Deer
(Odocoileus virginianus)

Controlled burning makes way for fresh grass which I rely upon for food. When new grass grows, I have fresh and healthy food to eat. The grasses also supply cover and a soft place to sleep at night.

How does **controlled burning** benefit me?

Northern Bobwhite
(Colinus virginianus)

Biology

Activity 4: Be a Scientist!

A **biologist** studies living organisms like plants and animals. How? One technique **biologists** use is observation. **Biologists** observe wildlife by watching and recording their behavior. They notice when a new species arrives or when there is a decrease in habitat for wildlife. By collecting this information, **biologists** play a key role in conservation.

Now, it's your turn to be a **biologist**. While you're out exploring the refuge, take a short break and observe your surroundings. Draw a picture of the view you see. Once you are finished drawing, try to answer as many questions about your view as possible!

Questions:

Today's Date: _____

Location on the Refuge: _____

Weather Conditions? _____

What wildlife do you see? _____

Favorite animal or plant you saw so far? _____

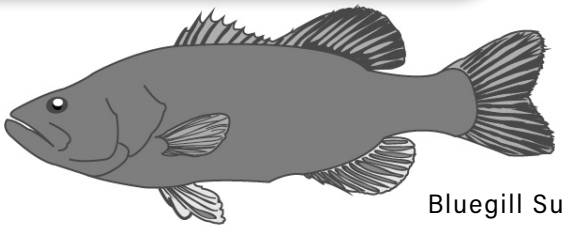
Favorite part of your adventure so far? _____

Pollution

Activity 5: Water Quality and Rappahannock River Valley

Water is home to many marine-life species such as fish, shellfish, and algae. Humans need it to survive too! Without water, there would be no life.
Water quality is how we measure how clean our water is.

I call the Rappahannock River my home. If the water quality suddenly worsened from **pollution**, I might be unable to move or breathe. **Pollutants** are contaminants that harm the environment.



Bluegill Sunfish
(Lepomis Macrochirus)

Litter/trash

Pesticides

Oil

Toxic Waste

Fertilizer

_____ It can be slick and greasy, and we use it for our cars. When it coats animals' fur or feathers, it causes them to die from cold or hot temperatures.

_____ While it does help with plant growth, it also contains high amounts of nitrates. If it gets into the water, it encourages too much plant growth and can use up oxygen levels that other marine life need to survive. Without healthy amounts of oxygen the water can become a dead zone which means nothing can survive there.

_____ It can be found in many places and unfortunately, could be consumed by marine life or marine life could get stuck in it. For example: Plastic, Balloons, beverage cans, food wrappers, etc.

_____ It can help get rid of the pests that consume the plants, but if it reaches the water, it can also greatly harm marine life.

_____ It can come from factories, and is usually filled with toxic chemicals that can pollute the water so badly that nothing can survive in it.

Protect, Save, and Not Waste

As a Junior Wildlife Ranger, you will protect our waters by keeping them clean. Can you think of three things you can do to protect, save, and not waste our waters? A few examples would be: picking up trash or taking shorter showers!

1. _____

2. _____

3. _____

Pollinators

Activity 6: Pollinators

A **pollinator** is an animal or bug that transfers pollen from flower to flower. When pollen reaches a new plant, it results in the growth of new flowers and plants. Pretty neat, huh?

Can you think of any examples of **pollinators**?

_____

_____

Why are **pollinators** so important? Without **pollinators**, we would not be able to grow or eat many kinds of fruits and vegetables.

Pollinators help keep plants healthy!

Today, **pollinators** face many threats like habitat loss, pesticides, diseases, invasive species, pollution, and climate change.

Now, go to the Wilna Unit and find the Wilna Lodge native plants and **pollinator** garden. Can you locate the **pollinator** hotel?

Look at the flower below called the Partridge Pea and see if you can identify the different parts using the checklist below. If you can, try to find it in the **pollinator** garden! These plants are usually visible during July-September, so you might have a harder time spotting it but don't fret.

Petals	Stem	Leaves
Stamen	Anther	

Partridge Pea Flower