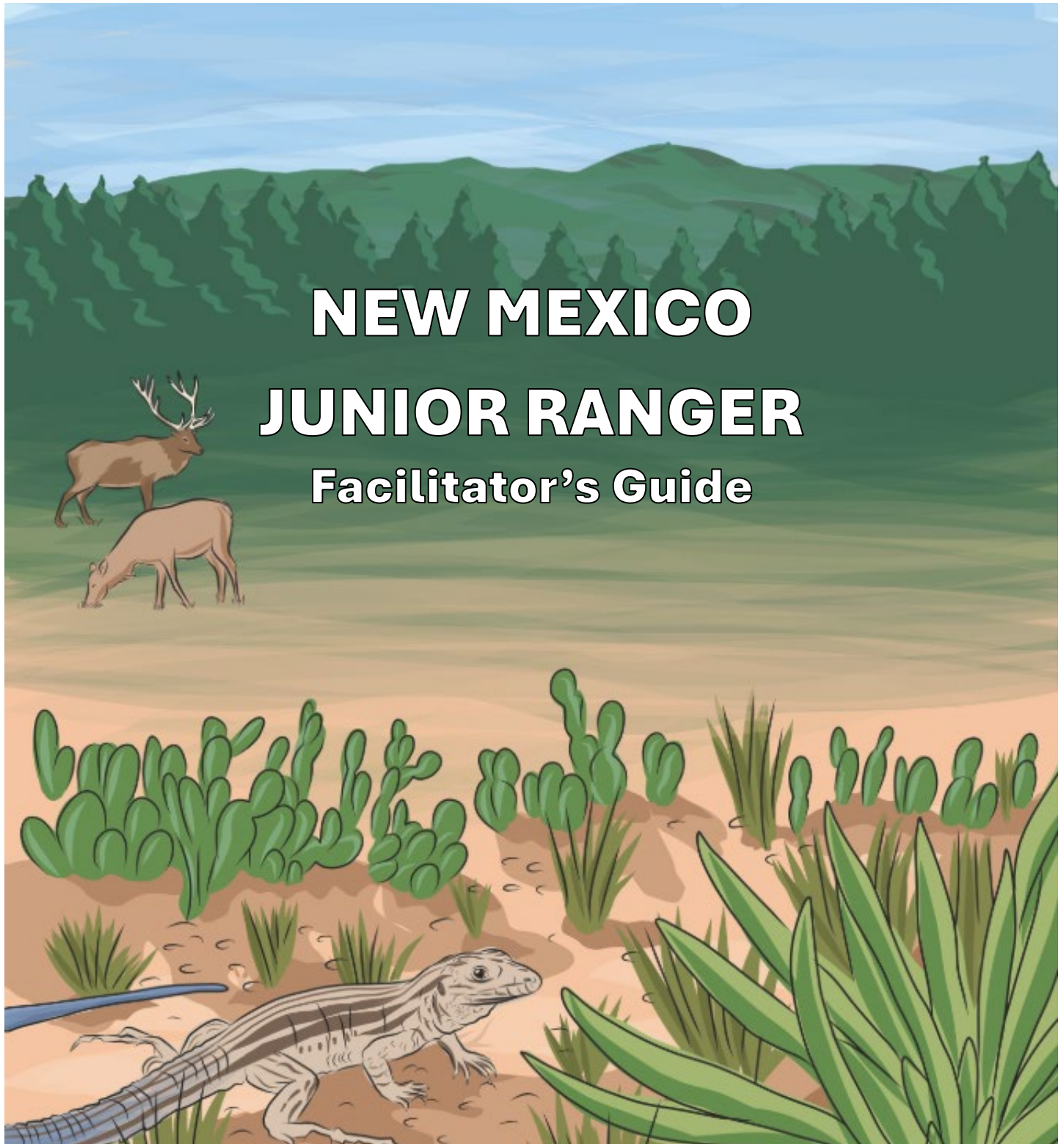




Forest Service
U.S. DEPARTMENT OF AGRICULTURE

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NEW MEXICO JUNIOR RANGER Facilitator's Guide

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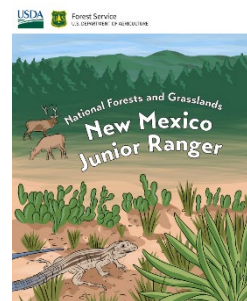
New Mexico Junior Ranger Facilitator’s Guide

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Introduction

This guide is a supplement to the New Mexico Junior Ranger Book. Forest Service staff, volunteers, and partners; classroom teachers; informal educators; and family members who work and/or spend time with young learners may find this guide helpful to supplement the book's activities. It is not intended to be comprehensive, but to give the user additional information about some of the elements (plant species, tools, etc.) and to provide a springboard for further exploration and inquiry.



For each activity, there is a section containing:

- **Background** - a short summary of the activity.
- **Vocabulary** - defining words that may be unfamiliar to young learners.
- **A Closer Look** - providing additional information.
- **Extension** - optional questions and/or activities to prompt further exploration and learning.

What is a Junior Ranger Book?

Junior ranger books are activity books for people to learn about public lands.

The *National Forests and Grasslands New Mexico Junior Ranger* book is designed with elementary-middle schoolers as the target audience, but it can be used by all ages.

How to Facilitate the Junior Ranger Book

First and always foremost: The goal of this book is for all the users to have fun and be successful!

With these goals in mind, feel free to modify the instructions as appropriate for the age and ability of the youth you are with. There is no single right way to use junior ranger books; they can be done as a standalone experience or integrated into a larger program.

- **Step 1 – Introduce the Junior Ranger Book** - Introduce the book by going to the first page and talking through the steps to become a junior ranger.
 - If you are working with youth as part of a class, summer camp, after school program, etc., carve out time in the schedule to work on the junior ranger book. You can use the book as a reward after other work is completed or set up a lesson that specifically ties to one or more of the activities.

- **Step 2 – Review the Book** - After the junior ranger book is complete, spend time reviewing the activities.
 - If time is limited, or you are working with a group, you can have the junior rangers identify their favorite page or share one thing they learned.
- **Step 3 – Take the Pledge** - Address this important step in becoming a junior ranger by letting the junior ranger know they will be taking a pledge and then discussing what a pledge is.
 - “To officially become a junior ranger, we are going to take a pledge.”
 - Youth may make connections to the Pledge of Allegiance and state pledge. Older Students may be familiar with the Hippocratic Oath.
 - Ask the junior ranger to “Stand up tall, raise your right hand and repeat after me...” When reciting the pledge, speak slowly, pausing after every 3-7 words at the natural breaks, for the junior ranger to repeat the words of the pledge. Younger kids may need more frequent pauses.
- **Step 4 – Sign the Pledge Page** - Have the **junior ranger sign** the last page of the book. Then **you sign below as the witness**, and **offer congratulations**, “Congratulations, you are officially a junior ranger!”
 - If you have additional items like buttons or stickers, you can share those with the junior ranger.

“Welcome!” Page

Background

This page invites junior rangers into the book and explains the steps to become a junior ranger. As with all the pages, feel free adapt the instructions for your specific set of circumstances.

Vocabulary

- **Community** (noun) - a group of people in the same area who live or work together. A community can also be a group of living things, like plants and animals.
- **Symbol** (noun) - a visual representation of an idea or thing. For example, the pine tree has been a symbol of the Forest Service since 1905. Today, you can find it on uniforms and on signs in the forest.



A Closer Look: State Symbols

In the book, junior rangers are invited to find certain state symbols for New Mexico.

- State Reptile - whiptail lizard (cover page)
- State Tree - piñon pine (Helpful Plants activity and pledge page)
- State Mammal - black bear (The Real Smokey Bear activity and back page)
- State Flower - yucca flower (Life of the Yucca Moth activity and pledge page)
- State Gem – turquoise - eyes and hat band of carved Smokey figure (The Real Smokey Bear), turquoise bracelet (pledge page)

Extensions

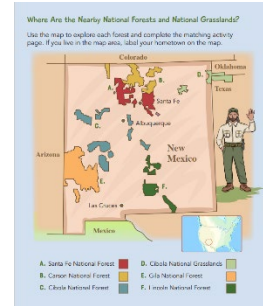
- Research additional state symbols. What are the other symbols in New Mexico? Why were they selected?
- The Zia sun symbol on the yellow T-shirt (Welcome! page) was used with permission from the Pueblo of Zia. What is the history of the Zia sun symbol?

New Mexico Map Activity

Background

The activity introduces the national forests in New Mexico and national grasslands in New Mexico, Oklahoma, and western Texas.

Note: There is a supplemental map activity available online for the Cibola National Grasslands.



Vocabulary

- **National forest** (noun) – A forest that is protected by law and managed by the U.S. Department of Agriculture’s Forest Service, an agency that is part of the federal government.
- **National grassland** (noun) – A grassland that is protected by law and managed by the U.S. Department of Agriculture’s Forest Service, an agency that is part of the federal government.

A Closer Look: Maps in the Forest Service

Maps are important in national forests and national grasslands. They are an important tool to keep people from getting lost, to share where things are located, and to understand spatial relationships.

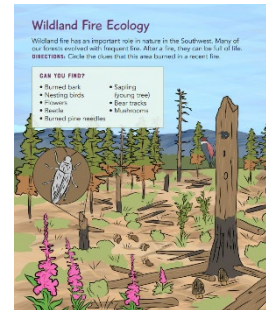
Extensions

- Imagine you are a map maker. Draw a mental map of a special place, like your school, a park, or your neighborhood.
- The national forests and grasslands are the homelands to different Tribes and Pueblo nations. Many communities continue to be connected to these places and care for these lands. Research these homelands and draw them on the map.

Wildland Fire Ecology Activity

Background

This activity introduces the concept of fire ecology in the Southwestern United States. Although this activity is designed to be representative of a forest in New Mexico or Arizona, there are significant differences in fire ecology throughout the region (e.g., desert grassland, piñon-juniper woodlands, alpine meadow, etc.).



Vocabulary

- **Ecology** (noun) – The study of relationships between animals and plants and their environment.
- **Nesting** (adjective) – A bird (or other animal) that is caring for eggs or young birds in a nest.

A Closer Look: Fire Ecology

Fire can transform an area in many ways. Areas may become more open and new nutrients are introduced to the soil. Learn more about some of the other changes that might be seen after a fire.

- **Burned bark** – Burned bark can be a sign of recent fire activity. As trees age, some species, like **ponderosa pine** (*Pinus ponderosa*) develop thick bark that helps to make them more resistant to fire.
- **Nesting birds** – Standing dead trees, called **snags**, provide important nest sites for cavity-nesting birds. **Lewis's woodpeckers** (*Melanerpes lewis*) is one of the birds who use snags to raise their chicks.
- **Flowers** – There are many plants that come back after a fire. **Fireweed** (*Chamaenerion angustifolium*) is a bright pink wildflower. It is a common plant in areas that have recently burned.
- **Beetle** - Some species of beetles are attracted to recently burned forests to lay eggs, including metallic wood borers (family Buprestidae). The insects that arrive after a fire can be a good food source for **insectivores** (insect-eating animals).
- **Burned pine needles** – Pine needles burn during a fire. You can often tell how far flames traveled up a tree by looking at which are burned and which are still green.
- **Sapling** – A sapling is a young tree. In parts of the western United States, aspen trees are some of the first trees to return after a fire. **Aspen** (*Populus tremuloides*) mainly grow from established roots, rather than from seeds. This adaptation helps

to make them resilient to fire, because they can grow back from the roots after they have burned. New plant growth after a fire can be a good food source for **herbivores** (plant-eating animals).

- **Bear tracks** – A moderate-intensity fire can clear parts of the forest floor, making it easier for wildlife to travel through.
- **Mushrooms** – Certain mushroom species are “fire-loving,” emerging after a fire, including types of **morel mushrooms** (*Morchella spp.*).

Extension

Research fire ecology in a different ecosystem. It could be in a desert grassland, an alpine meadow, or somewhere else. How are things similar and how are they different?

Helpful Plants Activity

Background

Plants have many uses. They can be used as food, medicine, material for building, material for art, and more. This activity introduces three plants that are native to the Southwestern United States and a use for each of them. These plants have many uses beyond what is listed in the junior ranger book and facilitator's guide.



Vocabulary

- **Respectfully** (adverb) – Doing something with respect or treating someone or something with care.
- **Purpose** (noun) – A reason or use.
- **Expert** (noun) – Someone who has special knowledge or skill.
- **Compound** (noun) – A mixture of different elements.

A Closer Look: Uses of Plants

- **Common Name:** piñon, pinyon
Scientific Name: *Pinus edulis*
 - The piñon pine is a slow-growing tree species. It is a favorite tree for firewood because of its dense wood and nice smell. The nuts have many culinary uses, and are part of the diets of different animals, including deer, bear, pinon jays, and wild turkeys.
- **Common Names:** prickly pear, nopal, opuntia
Scientific Name: *Opuntia spp.*
 - There are many species of prickly pear cacti. Prickly pears are made of leaves or pads (called *nopal* in Spanish) and flowers that become fruit (called *tunas* in Spanish). The flowers range in colors from yellow to pale green, to pink and red, to purple. In addition to the uses listed in the book, there are medicinal uses of the prickly pear.
- **Common Names:** Yucca
Scientific Name: *Yucca spp.*
 - There are many yucca species in the Southwestern United States, including soaptree yucca and banana leaf yucca. The flowers and fruits of the yucca plant are edible and can be eaten fresh and dried. The leaves are stiff and fibrous, meaning full of fiber. The leaves are used in art, including weaving and basket-making.

Extension

Research other ways that these plants are used. What are some other plants that are common where you live? How can they be used and appreciated?

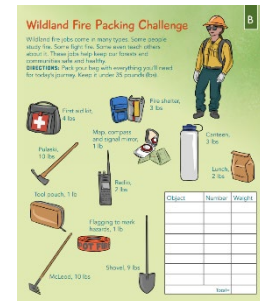
Wildland Fire Packing Challenge Activity

Background

This is a math activity that introduces different tools that are used by wildland firefighters.

Vocabulary

- **Wildland fire** (noun) – A fire in natural fuels (grasses, trees, etc.), rather than buildings or structures.
- **Wildland firefighter** (noun) – A firefighter whose job addresses wildland fire. Wildland firefighters work in teams called **fire crews**.
- **Hazard** (noun) – Something that is not safe.
- **Journey** (noun) – The experience of traveling from one place to another. In the activity book, it refers to the day of work in the field.



A Closer Look: Wildland Fire Tools

The tools and uniform components that wildland firefighters use are critical to their safety. Learn more about the tools featured in the book below.

- **First aid kit** - Used to treat minor injuries or illness and to treat bigger issues until more medical care can be provided.
- **Tool pouch** – Used to carry small repair tools, or electronics and electronics cords.
- **Flagging** – Brightly colored tape used by wildland firefighters and other Forest Service workers. There are different kinds of flagging, with different uses. Flagging can be used for navigation to mark routes, to mark trees and limbs for cutting, and to identify trees and/or areas that may be hazardous.
- **Radio** – A two-way communication tool. It is critical for sharing and receiving information with people.
- **Fire Shelter** – A shelter to protect wildland firefighters that is used as a last resort if there is no escape route available or no time to escape.
- **Lunch** – Food to eat during the day. A **Meal, Ready-to-Eat (MRE)**, is a pre-cooked food used when there isn't other food available. MREs are often carried in fire packs as a backup option, or for longer trips.
- **Map, map compass and signal mirror** – Important tools for knowing where you are and where you are going. They can be used to find landmarks and escape routes.
- **Canteen** – Also called a water bottle. A canteen carries water to stay hydrated. 4L (liters) of water is the minimum that is recommended for firefighters to carry.

- **Pulaski** – A multipurpose wildland fire tool, it has both a vertical axe blade and a horizontal adze blade. It is used to make fire breaks, and can dig soil and chop wood. It is also commonly used in trail construction.
- **McLeod** - A double-sided hand tool that has a rake on one side and a hoe-like blade on the other side. This tool is used to rake fire lines and for erosion control during trail restoration.
- **Shovel** - A tool with a large blade designed for scraping, digging, and cutting.

Extension

- Wildland Firefighter encompasses many different positions, including smokejumper, hotshot crew member, engine crew member, helicopter crew member, and hand crew member. What is one unique aspect of each of these positions?
- Research the uniform of a wildland firefighter. How is it similar or different from the uniform of a structural firefighter?

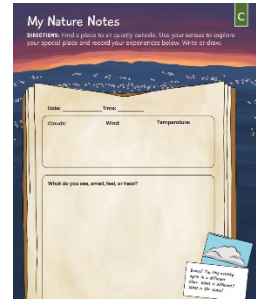
My Nature Notes Activity

Background

This is a nature journaling activity that is designed to record different experiences outdoors using the skill of observation.

Vocabulary

- **Observation** (noun) – A way of gathering information. It could be done by using your senses or by using tools.
- **Experience** (noun) – Something that someone has gone through.
- **Temperature** (noun) – How hot or cold something is. In some cases, temperature is measured on a definite scale like Fahrenheit or Celsius.



A Closer Look

Observation is an important skill. It is used in many different professional fields, such as art, science, medicine, and education.

Extensions

- Why might observation be an important skill in the Forest Service?
- Try this activity again in a different season, time of day, or location.

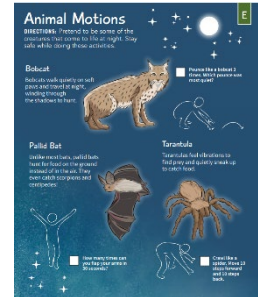
Animal Motions Activity

Background

The activity introduces various adaptations of nocturnal animals in New Mexico using movement.

Vocabulary

- **Nocturnal** (adjective) – being active at night.
- **Pallid** (adjective) – Pale. The pallid bat gets its name from the light yellow or cream-colored fur on its body.
- **Vibrations** (noun) – continuous quick, slight shaking movement.
- **Pounce** (verb) – to jump or swoop to catch prey.



A Closer Look: New Mexico’s Nocturnal Animals

These three nocturnal animals are all predators.

- **Common Name:** Bobcat, Wildcat
Scientific Name: *Lynx rufus*
 - Bobcats are a common school mascot! Bobcats are smaller than mountain lions, weighing only 15-25 pounds. They are solitary animals, which means that they don’t live with or travel in groups. They hunt small prey like rabbits, birds, snakes, and rodents.
- **Common Name:** Tarantula
Scientific Name: *Aphonopelma spp.*
 - Tarantulas are large, hairy spiders that hunt at night. They use the hairs on their body to detect vibrations in the air and the ground. Some of the hairs also offer protection. They do not stray far from their burrows, except for the male tarantulas during mating season.
- **Common Name:** Pallid Bat
Scientific Name: *Antrozous pallidus*
 - Pallid bats are one of more than 20 bat species in New Mexico. They roost in cliffs and buildings. They are unique because of the way that they catch prey. Whereas most bats catch prey in flight, the pallid bat will land to catch prey. They hunt prey including moths, beetles, and even centipedes and scorpions!

Extension

Research different behavioral and physical adaptations of these species, or other nocturnal species found in New Mexico. How do those adaptations help the species survive?

The Real Smokey Bear Activity

Background

The activity introduces the story of the real Smokey Bear through different local New Mexico connections. Before the living bear cub was found in the Capitan Fire in 1950, Smokey Bear was a popular advertising campaign that began in 1944. Smokey's message about personal responsibility with fire continues to be important. His purpose is to prevent unwanted, human-caused wildfires. Today, his catchphrase is, "Only You Can Prevent Wildfires."



Vocabulary

- **Fire Crew** (noun) – firefighters who work together as a team.
- **Milestone** (noun) – an important event in history or a person's life.
- **Tribute** (noun) – an act or a gift that honors a person or thing.

A Closer Look: Oral History

While we were developing this activity, we interviewed different community members and asked them to share an object that says something about their connection to the real Smokey Bear. Interviews of people can be an important type of research called "oral history." Oral history interviews are primary resources that share about first-hand experiences with an event or topic. Interviews are recorded, **transcribed** (written down, word-for-word), and **archived** (stored) for future generations to learn more.

Extension

- Interview an older family member or community member about a story that is important to them.
- Research about one of the Tribal and Pueblo wildland fire crews who worked on the fire where the real Smokey Bear was found: the Taos Pueblo Snowballs, or the Mescalero Red Hats.

Junior Ranger Pledge

Background

This is the Forest Service New Mexico Junior Ranger Pledge.

Vocabulary

- **Pledge** (noun) – a formal promise, commitment or vow.
- **Witness** (noun) – a person who sees an event. In the case of the junior ranger book, it is the person who sees the junior ranger take the pledge.



A Closer Look: Pledges

Forest Service employees take an Oath of Office when they begin a new job, as do all federal employees. What are other examples of oaths, pledges or vows?

Extension

Congratulations! You are now a junior ranger!

- Write your own junior ranger pledge.
- Think of ways that you can help a special place near you.