

# 5

## FORAGING

### MODULE 5 | Investigating Rangeland Systems and Practices

#### SKILL LEVEL

Middle School: Grades 6, 7, 8

#### KEY TERMS

Grasslands, native plants, foraging

#### EDUCATION STANDARDS

##### SD Science:

- MS-LS1-6\*

##### NGSS:

- MS-LS1-5\*
- MS-LS1-6\*

\*Peripherally related.

#### TIME NEEDED

Activity 1: 40-50 min

Activity 2: 10-15 min

#### MATERIAL LIST

- Chalkboard or whiteboard
- Print items in Appendices
- Computer w/ projector
- Materials listed for each activity

#### ACKNOWLEDGEMENTS



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#### EXPECTED LEARNER OUTCOMES

##### OBJECTIVE 1

Students will learn about the Native American historic uses of rangeland plants.

##### OBJECTIVE 2

Students will learn what rangelands plants are edible and can be foraged.



Figure 1. A grassland provides us with food in many forms – from beef that we eat to sunflowers.

## BACKGROUND

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The gathering or “foraging” of wild plants on grasslands has been practiced for centuries in North America. Native Americans relied on rangeland plants as a major food source, along with wild game such as buffalo, antelope, and deer. The gathering of plants such as berries, fruits, roots, and other edible parts was often the Native American women’s job, while the men hunted. The connection between hunting and gathering for Native Americans is not simply done to make a living, these activities are “a religion and way of life.”

The knowledge of traditional uses for plants has been passed down from generation to generation. It is a knowledge base that continues to grow today. Typically, a use for a plant is determined through observation and testing; sometimes, Native Americans have learned of plant use through visions, dreams, or gifts from a spirit guardian (NPS). A medicine woman or man carefully tests the properties of a plant.

Native Americans believed that living close to the Earth required an intimate understanding of plants – they use plants for social and religious ceremonies, they consume plants in a prayerful manner, and spirits are thanked for providing plants (NPS).

South Dakota rangelands are a paradise for edible plants. In this bonus module, 12 plants will be discussed that can commonly be foraged across rangelands in the Northern Great Plains. Several of these plants are also culturally significant to the Lakota people.

The Lakota people consisted of seven tribes who were known as warriors and buffalo hunters (rosebudsiouxtribe-nsn.gov). Found in the upper Mississippi region in the late 16<sup>th</sup> and early 17<sup>th</sup> centuries there were approximately 20,000 Lakota in the mid 18<sup>th</sup> century. Today, there are about 70,000 Lakota people, and about one-third still speak their ancestral language (rosebudsiouxtribe-nsn.gov).

## VOCABULARY

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**GRASSLAND:** Dominated by grasses, they have different names like “prairie” and “meadow.” Grasslands occur on all continents except Antarctica.

**NATIVE PLANTS:** A plant that occurs naturally in the environment – it is part of the balance of nature.

**FORAGING:** The act of searching for food; getting food from a place.

## ACTIVITY #1: RANGELANDS PROVIDE FOOD

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ESTIMATED TIME: 40-50 MIN

### Materials

- PowerPoint Presentation “SARE\_Foraging”
- Handouts #1 – Foraging Plants (1 per student)
- Plants:
  - Either refer to the “Grassland Plants – South Dakota and the Northern Great Plains” book or utilize plant mounts, if they have been provided for the following species:
    - Wild rose
    - Cudweed sage
    - Russian olive
    - Indian breadroot
    - Sunflower
    - Juniper
    - Prickly pear
    - Groundplum milkvetch
    - Chokecherry
    - Buffaloberry
    - Yucca
- Foraging supplies:
  - Small plates, napkins, cups
  - Thermos to make teas
  - Edible items (If you can go out to the range and forage these items, awesome! If not, most of these items you can find on Amazon.):
    - Rose hip tea
    - Sage leaf tea
    - Olive leaf tea or Russian olives
    - Sunflower flour or bites
    - Juniper (E. redcedar) berries
    - Prickly pear syrup
    - Wild plum jelly
    - Chokecherry jelly
    - Buffaloberry jelly
    - Yucca soap
    - Must pick/forage:
      - Russian olives
      - Ground plums
      - Indian breadroot
    - Other:
      - Crackers or pretzels to dip

## Foraging Supplies



Figure 2. Examples of the different foraging supplies. Note: you can buy most of these off Amazon.



## Activity

1. Set up the foraging supplies, including all plant mounts and items to be tasted (Figure 3).
2. Ask students if they are familiar with any plants that can be eaten.
3. Start the PowerPoint presentation by explaining the background on Native American rangeland foraging (see Background Information).
4. Review the PowerPoint with the students.
  - a. Pass around the plant mounts for each plant as you discuss it (if available). Otherwise, point out the pictures in the PowerPoint presentation.
5. Give each student a copy of Handout #1 – Foraging Plants.
6. Have the students move around the room and work together to fill out the handout – filling in the value for livestock, wildlife, and foraging/Lakota importance.
  - a. After all items have been tasted, ask students what their favorite was and why – was it because it tasted good or was it because of its (livestock, wildlife, foraging) value?
7. Note: This Module provides a great opportunity to connect to material taught in the other modules.
  - a. Module 2: Plants. Connection: importance of having a large amount of biodiversity in a rangeland system, so that you can find lots of plants to forage from. Photosynthesis is the process by which these plants grow, and thus provide us with food as well as livestock that graze the plants.
  - b. Module 3: Animals. Connection: wildlife is incredibly important in rangelands and several of these plants provide food and shelter for different animals.
  - c. Module 4: Soil. Connection: specific plants prefer certain soil conditions – some like sandy soil, some like soil that is more “heavy” or that has more clay in it. Therefore you often see certain plants in a specific area!



Figure 3. Examples of the set up with the foraging supplies and the plants (or plant mounts).

## **ACTIVITY #2: CLASSROOM ASSESSMENT**

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**ESTIMATED TIME: 10-15 MIN**

**3-2-1 Format for Activity #1**

1. Have each student get out a piece of paper.
2. Ask students to write down:
  - a. 3 ideas that were presented
  - b. 2 examples of how they can use their knowledge of foraging
  - c. 1 unresolved area/“muddiest” point that they didn’t quite understand
3. Have students get into pairs and share their 3-2-1 with a partner.
4. Ask students to turn in their paper; read through them to gauge how well students understand Activities #1 and 2, paying particular attention to the 1 unresolved area/“muddiest” point to go over with the class again to clarify their learning.

# HANDOUT #1

## FORAGING PLANTS

Name: \_\_\_\_\_

Instructions: As you move around the room and discover the foraging value of the different rangeland plants, fill in the livestock value, wildlife value, and foraging value/Lakota importance for each species.

Also, write down if you would eat it again!!

Plant name	Livestock value	Wildlife value	Foraging value/Lakota importance	Eat again?! (Yes/No)
1. Prairie/wild rose	Fair to good value for cattle and sheep			
2. Silver sagebrush		Good cover/shelter, and food source – especially in winter		
3. Russian olive	Livestock won't eat it	Birds like the seeds		
4. Sunflower	Desirable for cattle early in the summer		Seeds can be eaten or turned into flour	
5. Easter redcedar		Birds like the berries; also provides nesting cover		
6. Pricklypear			Berries can be eaten, cactus body can be skinned to eat	
7. Groundplum milkvetch	Decreases with heavy grazing	Wildlife graze it; rodents like pods		
8. Wild plum			Plums can be eaten or used in jams/jellies	
9. Chokecherry	Leaves contain a toxic poison	Birds like the fruit		
10. Silver buffaloberry		Birds like the fruit	Fruit can be eaten or made into jellies/jams	
11. Breadroot scurfpea		Grazed by deer		
12. Yucca	Cattle generally won't eat it	Birds LOVE the fruit		



## REFERENCES

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