



Lava Beds National Monument Habitats

Overview

Students will identify essential components of a habitat and presence of habitat & bird species at Lava Beds National Monument.

California Science Standards

Grade 3: 3.b.c.d.-L.S.

Grade 4: 3.b.-L.S.

Grade 7: 7.c.-I&E

Oregon Science Standards

Grade 4: 2L.1

Grade 5: 1L.1

Grade 6: 2L.1

National Standards

Content Standard A:

Science as Inquiry

Content Standard C:

Life Sciences

Materials Included

- * Student Journal
- * Binoculars-optional
- * Clipboards
- * Lava Beds National Monument maps
- * Bird focus cards
- * *Common Birds of Lava Beds NM* PowerPoint

Materials Needed

- * Colored pencils

Activity Time

Preparation: 20 min.

Activity Time: 40 min.

Best Season

All Seasons

Vocabulary

- * Habitat

Grade Level: 3rd-8th (O.S.S 4th-6th) (C.S.S: 3rd-7th)

Learner Objectives

Student will:

- Define “habitat” in a biological context
- List the four essential components of a habitat
- Identify habitat components at Lava Beds National Monument

Background Information

Birds, like all animals, rely on a habitat to survive. A habitat is described as an animal’s natural environment providing food, water, shelter, and space. These four components are essential to an animal’s survival. Some birds need wetlands and marshes; others inhabit conifer forests or meadows. A bird’s adaptations enable it to thrive in specific habitats. An example at Lava Beds National Monument is the Red-breasted Sapsucker. The large bill of the Red-breasted Sapsucker is extremely well adapted to create small holes in conifer trees creating sap wells, which the species feeds from and maintains throughout the year. Biologists and birders often use habitats as an indication of where to find specific bird species and what species to expect in an area.

Four common habitats of Lava Beds National Monument are ponderosa pine forests, sagebrush steppe, western juniper woodlands, and marsh areas around Tule Lake. Birds are found in all of them. Learning about the habitats can aid in the identification and conservation of specific bird species. Since the Klamath Basin Birding Trail at Lava Beds National Monument extends throughout all four habitat types, it provides access to identify and observe an array of local birds.

Taking students on a hike at Lava Beds National Monument is a good way to teach about the local habitats and birds found in them. To prepare students see *Using Field Guides* as a warm-up lesson plan. The in class portion of the student journal focuses on the habitat requirements of the common birds of Lava Beds National Monument found in the *Common Birds of Lava Beds NM PowerPoint*. The student journal to be completed at Lava Beds National Monument has students identifying habitat components and identifying birds species seen in a habitat.

Lesson Plan

Vocabulary

Continued...

- * Ponderosa Pine Forest
- * Sagebrush Steppe
- * Western Juniper Woodlands

Getting Ready!

1. Read background information.
2. Determine two sites at Lava Beds National Monument for the field activity with two different habitat types.
3. Copy enough *Student Journal: Lava Beds National Monument Habitats* sheets.

Discuss!

1. Let students know that in this investigation, they will go on a field trip to Lava Beds National Monument. But first they need to “warm up” their habitat skills.
2. Ask students what people need in order to survive. What do wildlife such as birds need to survive? You may receive answers like seeds, mice in fields, nests, etc.
3. Explain to students that each bird has a habitat where it lives and gathers all of the things it needs to survive.
4. Ask students if they know what a “habitat” is?
5. Ask students if they can list the four things birds need in their habitat in order to survive. Write them on the board. *Birds need in their habitat: Food, water, shelter, and space. Do you think you could survive through a blizzard or rain storm without any shelter?*
6. Explain that these components may be limiting and at times are not available to birds as a result of competition, human interference, and/or extreme weather.
7. Explain to students that there are four primary habitat types found at Lava Beds National Monument: ponderosa pine forests, sagebrush steppe, western juniper burshlands, and marsh areas. Discuss with students, that some birds are generalists and can live in all habitat types. Other birds are habitat obligates and can live in only one habitat. Whether a generalist or habitat obligate, each bird needs to find all four habitat components to survive.
8. Explain to students that you will now review the common birds of Lava Beds National Monument and the habitats where these birds live.
9. Give each student a focus bird ID card and the in class Student

Habitat Components

- * **Food:** to obtain energy
- * **Water:** to stay healthy and hydrated
- * **Shelter:** to protect from weather or predators
- * **Space:** to gather the other three resources, reproduce, raise their young, and defend their territory

What is a habitat?

A habitat is an environment normally occupied by an animal. Just like we have a home to go to, animals such as birds have one too. In an animal's habitat there are four essential components they need in order to survive— food, water, shelter, space. In Lava Beds National Monument, there are several kinds of habitats each with different populations of birds. You can find ponderosa pine forest, sagebrush steppe, western juniper woodlands, and marsh habitats.

Lesson Plan

Journal.

10. Show *Common Birds Power Point* and have students write down information about their focus bird. Older students can use field guides for additional information about their bird. (see *Using Bird Field Guides* lesson plan).

Investigate!

1. Let students know they will be going to Lava Beds National Monument to identify birds and to search for habitat components.
2. Define an area to search.
3. Have students identify types of food, water, shelter and space and if they would find their focus bird in that area.
4. At the site, ask students to identify other birds seen or heard.
5. After searching the area(s) have students share information about the habitat quality for their species (compare with birds detected).
6. Direct students to the second habitat type. Use data sheet two and repeat steps 2-6.
7. Discuss the differences between the two habitats and whether their focus bird could live in either one of them.

Follow-up!

Ask students 2-3 questions to re-cap lesson (see right panel).

Suggested Questions

What is a habitat?

What are the four components of a habitat?

What kinds of habitats are found in Lava Beds National Park?

Where would you find habitat for your focus bird species?

Fledglings!



Have older (6th-8th) students map the area and identify where each habitat component of their species is located on the map.

Lava Beds NM Map!

Give students a map of Lava Beds National Monument and have them color code habitat types at each site. For example, color western juniper woodlands green, blue for marsh areas, and so on.

Lava Beds National Monument Trails

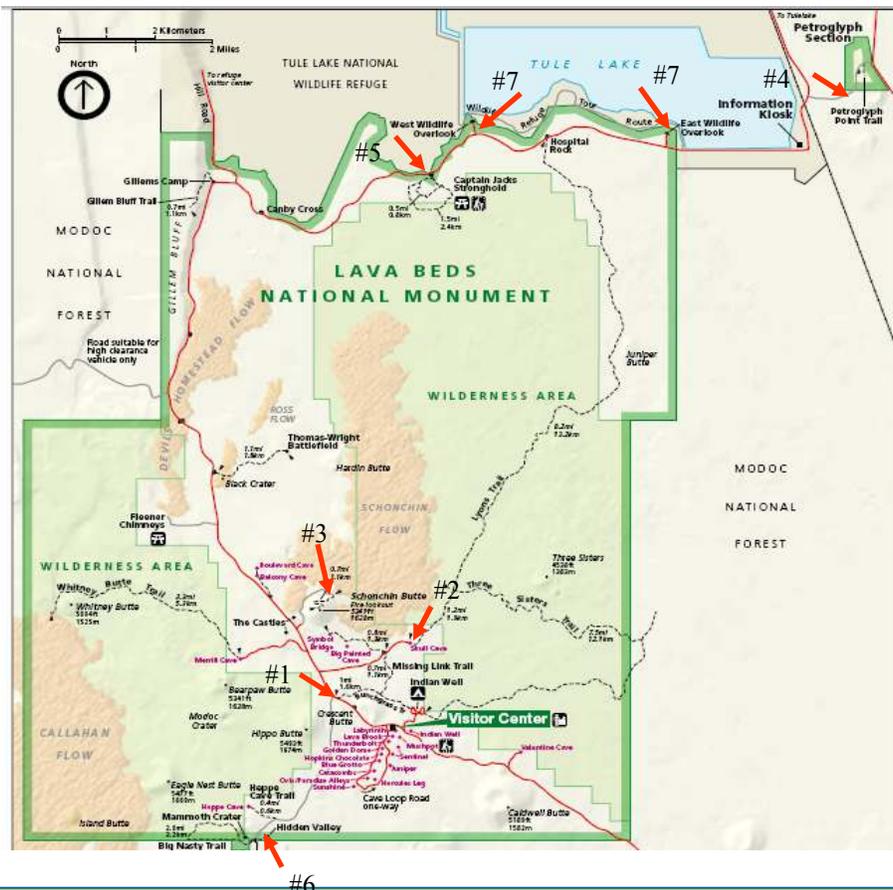
1. **Bunchgrass Trail**
Habitat: Western juniper woodland
Birds: Spotted Towhee, Lazuli Bunting,
2. **Lyons Trail**
Habitat: Western juniper woodland
Birds: California Towhee, American Robin, Western Scrub Jay
3. **Schonchin Butte Trail**
Habitat: Old growth western juniper woodland
Birds: Common Raven, Pinyon Jay
4. **Petroglyph Point Trail**
Habitat: Sagebrush steppe
Birds: Brewer's Sparrow, Sage Thrasher, Cliff Swallow
5. **Captain Jack's Stronghold**
Habitat: Sagebrush steppe
Birds: Northern Harrier, Californian Quail, Western Kingbird
6. **Hidden Valley**
Habitat: Ponderosa pine forest
Birds: Red-breasted Sapsucker, Harry Woodpecker
7. **West and East End Wildlife View Points**
Habitat: Marsh
Birds: Yellow-headed Blackbird, Canada Goose, Snow Goose

What if there aren't any birds?

If there are few birds present at the field trip site, have students brainstorm possible reasons for the lack of birds. Reasons might include weather, new development, time of day, or disturbance (including you!). Recording when there are no birds can provide valuable information and help students recognize patterns.



Photo by NPS



Four Habitats Types

Ponderosa Pine Forest:
A dense growth of ponderosa pine trees often at high elevations.

Sagebrush Steppe:
A dry environment characterized by the sagebrush, shrubs, and bunchgrasses.

Western Juniper Woodland:
Dry areas on mountain slopes and high plateau's.

Marsh Area:
Lowland area where there is an excess of water such as a marsh or swap.

Lava Beds National Monument Habitats

Four Habitats Types

1. Ponderosa Pine Forests: Are found at the southern end of Lava Beds National Monument near Mammoth Crater. Ponderosa pine forests are found at elevations starting at 5,000 feet. Environmental and plant diversity are both high in ponderosa pine forests. Bird species that are found in the ponderosa pine forests include several different species of woodpecker, Sharp-shinned Hawk and Northern Goshawk. Plant diversity is also high, western juniper, aspen, and lodgepole pine are found growing in ponderosa pine forests. The climate conditions here tend to be fairly mild and dry.

2. Sagebrush Steppe: Sagebrush steppe habitats are found in dry flats and plains, rolling hills, and rocky slopes with low precipitation and an arid environment. Sagebrush communities are dominated by perennial grasses and have a patchy distribution due to natural fire occurrence. At Lava Beds National Monument the big or mountain sagebrush and bunchgrass are the dominant plant species. Heavy grazing and fire suppression has degraded sagebrush steppe and has led to encroachment of western juniper and invasive annual grasses, as well as the loss of sagebrush obligate species such as the Greater Sage Grouse and Pronghorn Antelope.

3. Western Juniper Woodlands: Western juniper woodlands at Lava Beds National Monument are found on the mountain slopes and high plateaus. Western junipers provide food and shelter for several different species of birds including: Townsend's Solitaire, American Robin, Steller's Jay, and Western Scrub Jay. These birds also help spread western juniper seeds. The climate conditions of western juniper woodlands tend to be characterized by long, dry summers, and cold winters with little precipitation.

4. Marsh Areas: These areas are found along the edge of Tule Lake. Marsh areas are characterized by season or continual flooding and water adapted plants. Plant species found along marsh areas include sedges, bulrushes (including tule), spikeweed, rushes, cattails, and floating vegetation. Marshes have soils with high mineral contents and provide important ecosystem functions. Marsh habitats act as a filter for sediments and toxins improving water quality; recharge aquifers; store water; reduce flood severity. Tule Lake is an ideal habitat for the American White Pelican and several species of water fowl including Canada and Snow Goose.