



# CASCADE-SISKIYOU NATIONAL MONUMENT

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## Monumental Geography

### ACTIVITY OVERVIEW

#### *Can You Find It?*

This activity asks students to study the CSNM poster and answer related questions about the area's geography. Students will use the poster to become familiar with the mountain ranges, peaks, trails, and other special features in the CSNM. They will also learn about special management areas within the CSNM, and the agency that manages the Monument. This activity is a great prelude to a field trip. **CSNM posters** are available free of charge from the Medford District BLM. Call 541-618-2359 for additional information.

#### MATERIALS

- **Provided Teacher Background Information**
- **CSNM Posters**
- **Activity Handouts**

#### TIME

45-60 Minutes

#### **IMPORTANT NOTE**

The Monument poster does not distinguish between public and private land. Please let students know that not all of the land within the Monument boundary is actually part of the Monument. A substantial amount of land within the boundary is private property and is not managed as part of the Monument. For additional information on why this is the case, please visit our website at:  
<http://www.or.blm.gov/csnm/matrix.htm>.

#### ACTIVITY STEPS

1. Provide one poster for each group of 3 or 4 students. Use information from the **Teacher Background** to provide students with an overview of the area's geology. Note that the Monument is comprised of three mountain ranges: the Cascades, the Klamath, and the Siskiyou.
2. Allow each group approximately 30 minutes to study the poster and complete the activity questions. The students will have to use every aspect of the poster (including the text) to find the answers to their questions.
3. Discuss the answers as a group.

# **TEACHER BACKGROUND**

## ***Geology of the Cascade-Siskiyou National Monument***

### **A Geologic Jumble**

Geological processes, beginning deep in the Earth, shaped the topography of Cascade-Siskiyou National Monument (CSNM) over millions of years. The Cascades, Klamath, and the Siskiyou mountain ranges converge in the CSNM, creating a geologic jumble of some of the oldest and newest rocks known in Oregon. The Monument's complex geology has greatly influenced the region's ecology.

### **The Cascade Mountains**

The Cascade Mountains are the only active volcanic chain in the contiguous United States. The Cascades run from Mt. Baker near the Washington-Canada border to Mt. Lassen in northern California. Geologists separate the range into the Western Cascades and the High Cascades. The Western Cascades are an older, deeply eroded volcanic range lying west of the more recent snow-covered High Cascade range.

The majority of the Monument lies in the Western Cascades. This part of the range began to form 40 million years ago with a series of volcanic eruptions. The Western Cascades are made up almost entirely of deformed and altered volcanic flows and fragmented (or pyroclastic) rocks that have been heavily dissected by erosion. Landslides, rockslides, and glaciers were very influential in creating the land forms found on the Western Cascade slopes. The only evidence of the many volcanoes that gave birth to the Western Cascades are occasional remnants of volcanic plugs, such as Pilot Rock, that mark former vents. Soda Mountain, Porcupine Mountain, and Rosebud Mountain are all part of the Western Cascades.

The High Cascades began erupting only four million years ago and continue to this day. The High Cascades, including Mt. McLoughlin just north of the Monument and Mt. Shasta to the south, are active volcanoes still building up the mountain range. The primary rock type is basalt (an igneous rock). The High Cascades comprise over half of the Monument above Highway 66. Chinquapin and Little Chinquapin Mountains are High Cascade peaks within the Monument.

### **The Klamath Mountains**

The Klamath Mountains are steep, rugged mountains consisting of metamorphic and igneous rocks that formed in an oceanic setting and subsequently collided with the North American continent about 150 million years ago. Complexly folded and faulted rocks are bounded by belts of sparsely vegetated bands of serpentine. Rocks, including igneous, metamorphic, and sedimentary types, are very diverse and interspersed. The Klamath Mountains were formed, in part, by the rotation and westward movement of what was once the northern Sierra Nevada Mountains. Other rock types, including limestone and serpentine, formed under the ocean floor, were uplifted, and attached to the continent. Still other rocks formed from the melting and subsequent uplift caused by the sinking of the Pacific plate under the North American plate.

## **TEACHER BACKGROUND *CONTINUED***

### ***Geology of the Cascade-Siskiyou National Monument***

The Klamath Mountains are irregular and do not form well defined ranges. Most of the short ranges which do occur in the Klamaths run east-west, an unusual characteristic for mountains in North America.

#### **The Siskiyou Mountains**

The Siskiyou Mountains are one the east-west running ranges that make up the Klamath Mountains. Oregon's oldest known rocks (425 million years old) are found in the Siskiyou Mountains. The Siskiyou Crest is a span of tall peaks beginning in the vicinity of Pilot Rock and Mount Ashland and continuing westward and then south for approximately 70 miles. The soils of this regions are as diverse as the underlying geology. The rocks vary in composition from granitics (igneous rocks) to the metamorphosed peridotites (serpentine). The Siskiyou Mountains were not heavily glaciated in the last ice age and served as a refuge for species whose habitat disappeared under tons of continental ice.

# *Can You Find It?*

## **Cascade-Siskiyou National Monument**



### **HINTS**

- North is toward the top of the map.
- All of the answers are on the map somewhere. Be sure to read the text.

**1.** What are the names of the three main bodies of water? After the name, write which direction the lake or reservoir is from Soda Mt.

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**2.** Do you see two smaller reservoirs? What are their names?

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**3.** What trail crosses through the Monument? How many times does it cross through?

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**4.** Which direction is Ashland from the Monument?

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**5.** What agency manages the Monument?

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**6.** What United States Department oversees the managing agency?

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**7.** What highway runs through the top half of the Monument?

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**8.** What two mountains do you see in the Monument above the same highway?

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**9.** Did you know that these two mountains are part of the High Cascades? What other mountain range do you see labeled on the map?

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**10.** What range is Mt. Ashland part of?

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**11.** Locate Pilot Rock. Pilot Rock is a volcanic plug nearly 40 million years old in the Western Cascades. What three other mountains do you see in the Monument between Pilot Rock and the highway from question seven? (These are all part of the Western Cascades as well.)

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**12.** What four regions are the plant communities found in the Monument associated with?

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**13.** What two flowers are identified on the poster? Can you say their names out loud?

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**14.** Where do you think you would find the Lily?

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**15.** Can you name the two Research Natural Areas?

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**16.** When was the Monument designated?

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Do you think it is important to have special areas like the Monument? What purpose does the Monument serve?

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