

North Cascades National Park

Lake Chelan National Recreation Area

Ross Lake National Recreation Area

National Park Service
U.S. Department of the Interior



MOUNTAIN GOAT

Oreamnos americanus

CASCADES EXPLORER

PROGRAM

AGES

12+

PUBLIC LAND
STEWARDSHIP





this booklet's theme:

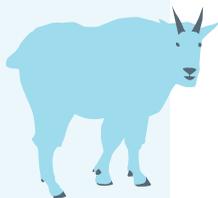
PUBLIC LAND STEWARDSHIP

If you could see one animal found in North Cascades National Park during your visit, which would it be?

The National Park Service cares for special places saved by the American people so that all may experience our national heritage. National Parks are public lands which belong to all of us. These places mean something different for everyone – recreation opportunities, wilderness experiences, living classrooms, laboratories for science and research, natural and cultural history, or career opportunities. Learn about North Cascades National Park, become a Cascades Explorer, a public land steward, and help the National Park Service preserve and protect this unique place!

Why did you choose this animal?

What area of the park should you visit to find this animal?



Cascades Explorer Totem

Mountain Goat
Oreamnos americanus



Hi!

I am a mountain goat. I am related to goats, sheep, and even cows! I am an herbivore; I eat mosses, lichens, and other kinds of vegetation. I have a unique niche in the North Cascades.

I live high in the alpine zone in remote, rugged areas. I grow a double layer of fur to keep me warm during the harsh, unforgiving North Cascade winter. I am a natural, skilled climber. My hooves have two toes, each with a rough pad on the bottom, which allow me to grip rocky ledges and help me to balance on uneven terrain. I am powerful and nimble, balancing on rocky cliffs which my predators cannot reach. Should a predator venture too close, I can jump 12 feet in one bound! Males (billies), females (nannies), and young goats (kids) live in groups as large as 20 animals. Billies and nannies grow long beards and horns. Kids are born on rocky ledges and must learn quickly how to survive in an unpredictable landscape.

Much of my life remains a mystery because I live in places which are difficult for most people to access.

Mountain Goats are quite skilled at balancing on rocky ledges and can fit all four hooves on rocks as small as 2" by 6", the same size as this dashed-line box.



What is a totem?

A totem is an animal, plant, or natural object that is meaningful to people living in the area where it can be found.

A totem can be an important cultural symbol for a group of people or an individual. Many indigenous people believe that each person has a totem from nature which acts as a spirit guide and protector for that person. There are totem poles throughout the Pacific Northwest with carvings of each tribe's totems.

How are YOU like a mountain goat?

Choose your own totem!



HOW TO BECOME A CASCADES EXPLORER



There are two different types of activities within this booklet. Some are specific to a region in the park complex while others you can do wherever you are visiting! To receive an official Cascades Explorer patch, badge and certificate, *please complete at least 1 PLACE-BASED ACTIVITY and 5 GENERAL ACTIVITIES.* *

CHOOSE 1

HOZOMEEN and ROSS LAKE	<input type="checkbox"/>	<input type="checkbox"/>
NEWHALEM and HIGHWAY 20	<input type="checkbox"/>	<input type="checkbox"/>
STEHEKIN and LAKE CHELAN	<input type="checkbox"/>	<input type="checkbox"/>

Note: Each place has two activities to choose from

ONLY HERE FOR A SHORT VISIT?

If you do not have enough time to finish all the activities in your Cascades Explorer booklet, please come back and visit soon!

We also have 3 Junior Ranger booklets, each with their own theme and totem animal. Come back with your friends and family and try all our activities!

CHOOSE 5

Learn about the North Cascades	1	<input type="checkbox"/>
Save the Snags!	2	<input type="checkbox"/>
Sounds of the North Cascades	3	<input type="checkbox"/>
Who am I?	4	<input type="checkbox"/>
Return to Wildness	5	<input type="checkbox"/>
Wilderness Survival 101	6	<input type="checkbox"/>
Site Survey Part I	7	<input type="checkbox"/>
Site Survey Part II	8	<input type="checkbox"/>
Field Notes	9	<input type="checkbox"/>
Climate Friendly Parks	10	<input type="checkbox"/>

Total Activities Completed

ages 3 - 5

Pacific
Treefrog



**EXPLORATION OF THE
NATURAL WORLD**

ages 5 - 8

Black Bear



BIODIVERSITY

ages 8 - 11

Raven



**CULTURAL
AWARENESS**

ages 12+

Mountain
Goat

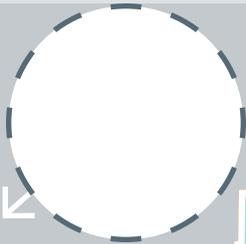


**PUBLIC LAND
STEWARDSHIP**



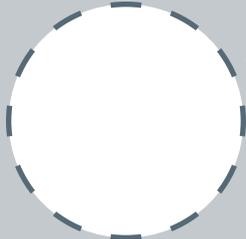
Where am I in North Cascades National Park?

North Cascades National Park Service Complex is a *complex* place. There are three different areas within the park complex: **Ross Lake** National Recreation Area, **Lake Chelan** National Recreation Area, and **North Cascades** National Park. The National Park Service manages each designated area differently. *Label the three areas of the park complex. Then circle the areas you have visited!*



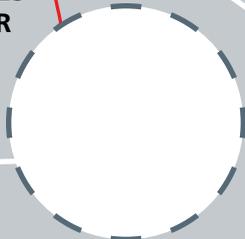
GLACIER PUBLIC SERVICE CENTER

85 miles from park boundary

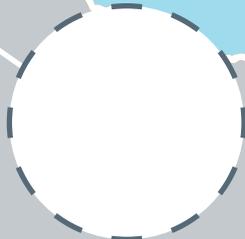


NORTH CASCADES VISITOR CENTER
NEWHALEM

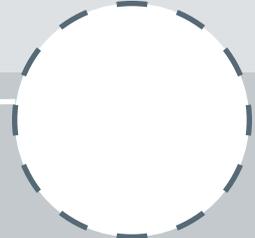
45 miles from park boundary



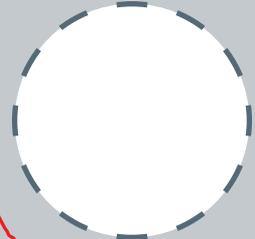
HEADQUARTERS & INFORMATION CENTER
SEDRO-WOOLLEY



WILDERNESS INFORMATION CENTER
MARBLEMOUNT



HOZOMEEN



GOLDEN WEST VISITOR CENTER
STEHEKIN



Complete this activity if you are visiting these locations :

Newhalem and North Cascades Highway



Located in the Ross Lake National Recreation Area, Newhalem is a community on the edge of the wilderness in the upper Skagit Valley. Its rich cultural and natural history makes it a fascinating place to visit and a unique area to protect. Native American archeological sites have been found in the area and illustrate a long-standing and dynamic human relationship with the land.

Have you ever visited a place and wondered what it might have looked like 10, 20, 50, or 100 years ago? Some changes to a landscape are more permanent than others. Imagine you are visiting this area before Seattle City Light constructed three dams along the mighty Skagit River.

We all depend on electricity in our daily lives. The three dams along the Skagit River provide the residents of Seattle with around 25% of the power they use each day.

***** Put the above photographs of the construction of Diablo Dam in order. Label them from start to finish from 1 to 5. Then answer the questions below.

Without these dams, how would the residents of Seattle get power?

Make a list of some of the things you need electricity for.

What are some of the benefits of building a dam?

What are some drawbacks of building a dam?



What's in a Name?

The National Park Service strives to preserve and protect sites of historical significance. The park archeologist for North Cascades National Park has uncovered stories buried beneath the earth and written across the landscape. Many of the place names tell the stories of people who have lived and explored the jagged terrain of the North Cascades for thousands of years. There are many places that still maintain their Native American names, as well as places that have been named by explorers, mountaineers, miners, and homesteaders.

Many place names in North Cascades National Park are derived from the Native American language Lushootseed. Take some time to learn the origins of names in the Newhalem area.

** Choose at least two of the places listed below and write why you think it was given that name. If it is a Lushootseed name, find the translation as well.*

Place Names

Definition or Meaning

NEWHALEM

DEVIL'S ELBOW

MISKAIWHU

SKAGIT

CHOPPING BLOCK

STETATTLE

SOURDOUGH MOUNTAIN

DESOLATION

TERROR

Write your name here.

What does your name mean? .

Complete this activity if you are visiting:

Hozomeen and Ross Lake

Hozomeen is a unique corner of North Cascades National Park. Here, the National Park Service (NPS) and British Columbia Parks (BC Parks) have joined together in the spirit of protecting this special place.

Hozomeen is accessible by boat, foot, or car. It is a gateway to some of the wildest places in North Cascades National Park.

Many people embark on the journey to Hozomeen for the wonderful recreation opportunities available in this remote area.

Obelisk #72

Hozomeen Mountain

Snag or Nurse Log

Springboard Scars on a Trunk

BC Parks Ranger

Chittenden Bridge

The Game Cabin

Plaque at International Point Boat Launch

Raeburn Mountain

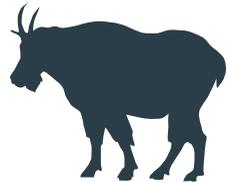
Border Swath

NPS Ranger

Hozomeen Lake

For this activity, explore the area and try to find as many of Hozomeen's historic and current elements as possible.

Each time you find something, put an **X** in the square. See if you can find them all!



How has Hozomeen been affected by changes in land use and recreation?

The original plans for Ross Dam called for an additional 120 feet to be built onto the 540 foot structure. This phase of construction never occurred, due in large part to protests from citizens of the U.S. and Canada who were concerned with the impact of further flooding of the Skagit Valley.

A treaty was passed in 1984 that maintains the current height of Ross Dam until the year 2064, at which time the debate may continue.



** Choose two interest groups from the list below, and take positions on this issue. Write a few sentences to express your point of view. Remember, issues such as these rarely have simple solutions.*

INTEREST GROUPS	
<i>Electric company</i>	_____
<i>People using electricity</i>	_____
<i>Bull trout</i>	_____
<i>Elk</i>	_____
<i>Wolves</i>	_____
<i>Western Redcedar</i>	_____
<i>Recreationist</i>	_____
<i>Wilderness Advocates</i>	_____
<i>Biologists</i>	_____
<i>Politicians</i>	_____

NEW WORDS! A **recreationist** is someone who enjoys spending time outdoors. A **biologist** is someone who studies the animal and plant life of a region or place.

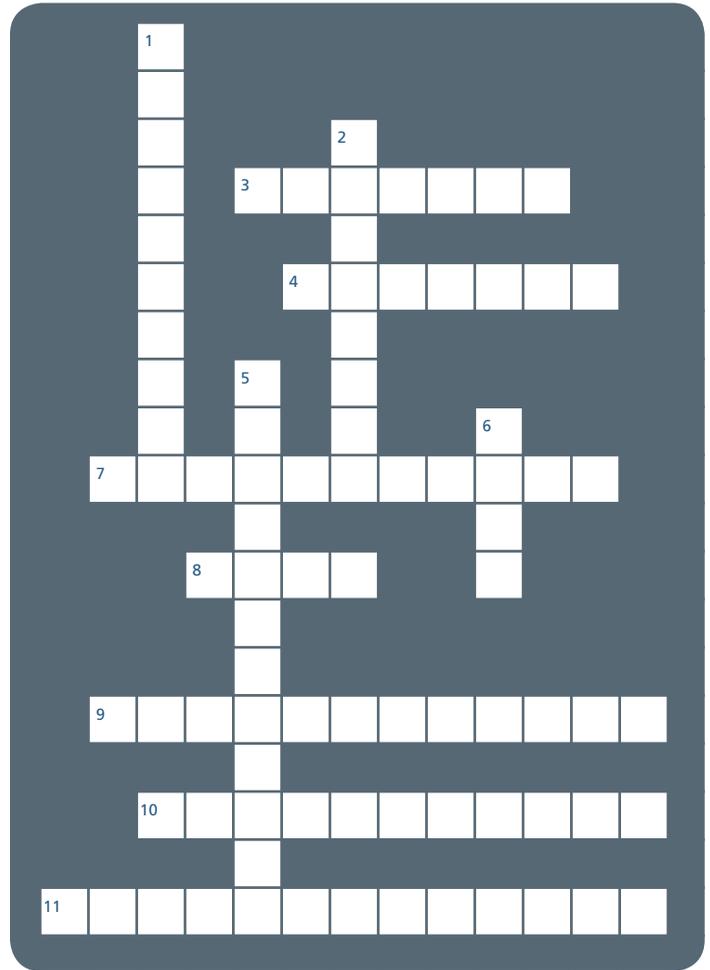
What is the translation of the Lushootseed word Hozomeen?

Complete this activity if you are visiting these locations :
Stehekin and Lake Chelan

Tucked away at the head of Lake Chelan and surrounded by mountains, the Stehekin Valley is a remote area that can be reached by boat, plane, or trail. No roads connect Stehekin to the outside world. The National Park Service preserves and protects unique cultural sites in the Stehekin Valley – the Old Stehekin School, Buckner Orchard, and Golden West Visitor Center.

ACROSS

- 3.** This family started an apple orchard in the Stehekin Valley in the early 1900s.
- 4.** This natural phenomenon runs the irrigation ditch hand dug by the Buckner family.
- 7.** A luxury that residents of Stehekin lived without until 1964.
- 8.** This resource was used to fuel the ferry from Chelan before gasoline.
- 9.** This trail runs from Mexico to British Columbia and passes through the Stehekin Valley.
- 10.** The meaning of the word Stehekin.
- 11.** A tree that disperses some of its seeds in normal conditions and others at high temperatures.



DOWN

- 1.** A bird that depends on old-growth forest for its survival.
- 2.** A peak with an NPS radio tower on it.
- 5.** Area within an ecosystem which support unique flora.
- 6.** A process that forests of the Stehekin valley depend on for their natural life cycle.

In 1921, residents of Stehekin gathered together to build the one-room, log schoolhouse, now known as the Old Stehekin School. In less than a week, most of the building was completed. This was where Stehekin children grades K-8th went to school until 1988, when a new school was built nearby. The Old Stehekin School is now a registered national historic building. Although it is no longer in use, visitors can still step inside the Old Stehekin School for a glimpse into the past.

Imagine you have moved to Stehekin with your family and have just finished your first day of school.

** Write a postcard to a friend about your experience. Describe what it's like to go to school in a one-room schoolhouse with only 10-15 other students of different ages and grade levels. Draw a Stehekin-style stamp on your postcard!*

Greetings from
STEH EKIN

ACTIVITY

1

Learn about the North Cascades

Find out why North Cascades National Park is such a special place!

Attend a ranger program or interview a ranger.



#1 Attend a Program

Type of program:

Something I would teach my friends and family if I were a ranger:

#2 Interview a Ranger

What is your job at North Cascades?

What do you think is the most important reason to protect this place?

Scientific research is conducted throughout North Cascades National Park to find evidence of animals like the Marbled Murrelet and the Spotted Owl that depend on mature forests for their survival.

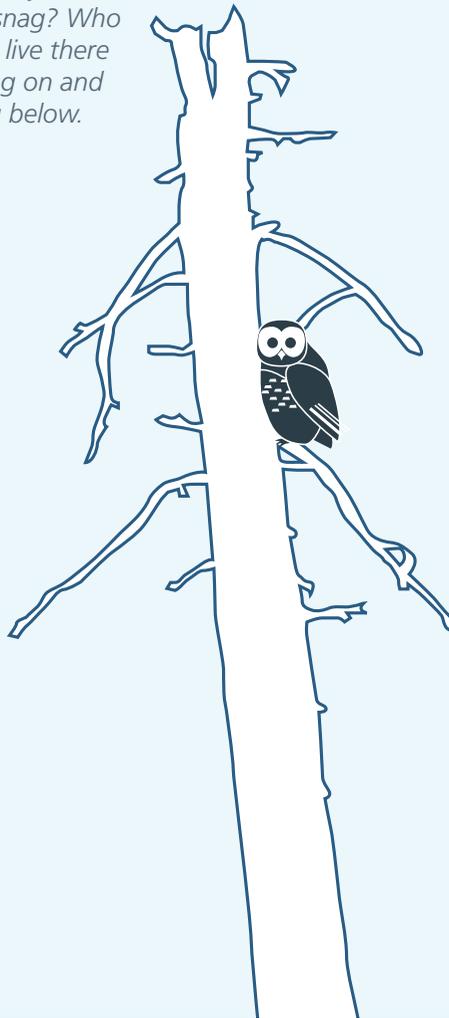
ACTIVITY

2

Save the Snags!



For this activity, find a snag and observe it for a few minutes. How many holes can you find? Who do you think drilled these holes? Are there any holes in the snag? Who could have created these holes and who might live there now? What plants and animals do you see living on and around it? Draw your observations on the snag below.



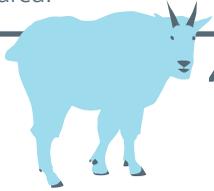
A **snag** is a dead tree that is still standing. Snags are an important element of an old-growth forest and provide food and shelter for many different plants, animals, and insects.

ACTIVITY

3

Sounds of the North Cascades

Just as a landscape is all the scenery you can see in a single view, a **soundscape** refers to all the sounds that can be heard in an area.



The *National Park Service Organic Act* mandates the preservation and/or restoration of natural resources within parks, including the acoustical environment (sounds). Many different sounds can be heard in North Cascades National Park. In order to understand the soundscapes of the North Cascades, researchers are using recording equipment to compile a list of all the sounds that can be heard in the park.

For this activity, you will create your own sound map to record the sounds you hear in North Cascades National Park. Choose a place to sit and listen for at least 5 minutes. The "X" in the center is where you are sitting. Each time you hear a sound, draw a symbol on your map. For example, you might draw wavy lines to represent the sound of moving water or a musical note for birdsong.



Water can be heard throughout North Cascades National Park. Can you think of another sound that can be heard in all parts? Is this sound natural or human-made?

A carnivore is an animal that eats meat. An herbivore is an animal that eats plants and vegetation. An omnivore eats both meat and vegetation. Little is known about the presence, distribution and relative abundance of mid-level forest carnivore populations in North Cascades National Park Service Complex. Concerns over declining populations of American marten (*Martes americana*), fisher (*Martes pennanti*), wolverine (*Gulo gulo*) and lynx (*Lynx canadensis*) have prompted the need to better understand their status and biogeography.

* For this activity, read the descriptions below of four forest carnivores and match each description with either: **Marten, Fisher, Wolverine, or Lynx.**



I depend on old-growth forests to survive. I was hunted close to extinction by trappers and am no longer found in the North Cascades. I am a skilled hunter and can even take down a small porcupine. I generally eat small rodents, rabbits, grouse, and other small animals.

I AM A: _____

I live in the most remote corners of North Cascades National Park and have thus become a symbol of wilderness. I can cover many miles in a short period of time, even across land that is covered by snow. I eat small mammals and the remains of dead animals. I have a very powerful set of jaws, which I use to eat frozen meat in the winter.

I AM A: _____

I am at home in the forest, where I can move with speed and ease on the forest floor or among branches and tree trunks. I use my keen sense of smell to find voles, bird eggs and nestlings, squirrels, insects, and dead animals. I need mature forests to survive.

I AM A: _____

I am listed as threatened in the lower 48 states. I try to avoid areas where there are people as I am very shy. I am found in remote areas of the North Cascades and am able to survive harsh winters with deep snow and extremely cold temperatures. The population of my species rises and falls in response to snowshoe hare populations, as hare are an important part of my diet.

I AM A: _____

North Cascades National Park is home to many wild creatures. The wolverine is truly a wilderness creature for it prefers areas devoid of human sounds and with little evidence of human activity. Biologists study wolverines in the park to learn about the health of the wilderness and its inhabitants.

ACTIVITY

5

Return to Wildness

The official definition of **Wilderness**, as stipulated in the **Wilderness Act** of 1964 is an area that is "untrammeled by man...". Untrammeled means that nature is unhindered or uninhabited by man. **Wilderness** is a place where "humans are visitors".



During your visit to North Cascades National Park, have you found areas that meet the needs of the wolverine as described above?

What other animals living in this park depend on wilderness for their survival?

Describe wilderness in your own words.

What do you think is the difference between wildness and wilderness?

How much of North Cascades National Park is designated Wilderness?
What is the name of the Wilderness area?

The wilderness can be a beautiful but unpredictable place, especially if you are unprepared. The weather can change rapidly, particularly at high elevations. In wilderness areas, it is also important to not leave a big impact on the landscape.

ACTIVITY

6

Wilderness Survival 101



* For the first part of this activity, pretend that you are planning a three-day trip into the backcountry. Create a list of essential items to bring on your journey. Remember to think about weather, appropriate clothing, first aid, and food.

* Now that you are ready for your journey, learn more about how to be prepared by reading the three examples below of challenges that can arise during a visit to the backcountry. Choose one of the scenarios and write what you would do if you were in that situation. Remember to leave as little impact as possible.

- 1 You are camping in the backcountry with your family. While getting ready for a day hike, you notice a black bear in the vicinity and need to make sure your camp will not attract it while you are away.
- 2 You and a friend are hiking up Sahale Arm when your friend slips on a rock and breaks his/her wrist.
- 3 You are hiking with friends in the backcountry en route to the site you have reserved with a backcountry permit. Night is falling and you still have not reached camp.

WHO IS RESPONSIBLE FOR YOUR SAFETY IN THE WILDERNESS?

The Fisher, a mammal in the weasel family, depends on large tracts of wild areas for its survival. It is one of the many creatures that are no longer found in North Cascades National Park. While it is possible that animals will return to an area and establish a healthy population on their own, the NPS and other agencies often attempt to expedite this process with reintroduction projects, particularly in areas where it would be difficult for absent species to return naturally.

Part of a park biologist's job is to conduct site surveys to learn about the ecosystems within a park and decide if reintroduced animals could survive there. It can take many years to make a final decision. In the meantime, national parks are places where habitats, flora and fauna, and natural processes can thrive.



A female fisher taking her first steps into Olympic National Park January 28, 2008. Photo by Paul Bannick

Why introduce a species once it's gone?

Who should decide?

Hey Fisher, you should move back to the North Cascades! There's lots of great places to live.

I'd love to, but I think I need some help...



ACTIVITY

8

Site Survey Part II

Fishers are creatures of the forest and depend on a few important characteristics of a forest ecosystem in order to survive. They need large, old trees with cavities, as well as snags and down logs, which provide den and rest sites. Fishers also need a dense canopy, which is generally found in older forests.

- * *For this activity, choose an area to conduct your own site survey, using your powers of observation. Study the area and determine if it is suitable for a Fisher. Take notes in the space below to record your findings.*

The area I chose for my site survey:

Field notes and sketches:

- * *What is your conclusion? In the sentence below, circle whether or not you think the area you surveyed is suitable for Fisher and explain why.*

This site is suitable/not suitable for the Fisher because:

ACTIVITY

9

Field Notes



It can be fun to keep a field journal to record observations with notes and small sketches.

** For this activity, take some time to observe the natural phenomena of North Cascades National Park. Choose two different locations and record your findings from each place in the journal below. For example, you could choose a covered forest canopy and a stream bank.*

Decisions we make everyday impact the environment. At North Cascades National Park, we constantly strive to be better stewards of the environment. From composting, recycling, and carpooling to the scientific research we conduct for our resource management decisions, we try to find ways to reduce our carbon footprint.

You can be a steward of the environment, too! One way to start is by thinking about where you find the things you need to survive—food, water, and shelter. People rely on different sources of food, water, and shelter, depending on where they live. Remember, shelter could include a house, clothing, even sunscreen.

ACTIVITY	10
Climate Friendly Parks	



* In the columns below, list at least one example of each and write where it comes from. Circle the items from your list that come from local sources. Underline the items that have to travel the farthest to get to your house.

WATER	FOOD	SHELTER (house, clothing)
Ex: <u>Well water</u> from backyard	Ex: Bananas from Guatemala	Ex: <u>Sweater</u> , made in China

Choose at least one item from one of the columns above. If you could not find this item at a store, how could you get it from nature? What can you do at home or in your community to help the environment?

One person can make a difference. You have invested a lot of time and energy learning about North Cascades National Park and applying some of that information to your own life. *Now take some time to think about what you can do to help national parks, as well as the natural places in and around your own community. In the space provided below, create your own pledge which includes a minimum of five ways you can help. Circle two of the five that you would be willing to incorporate into your daily life.*

AS AN OFFICIAL CASCADES EXPLORER I PLEDGE TO:

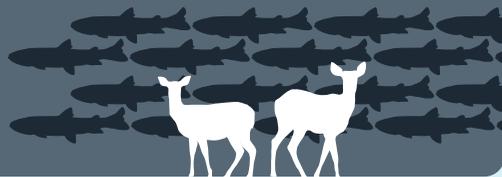


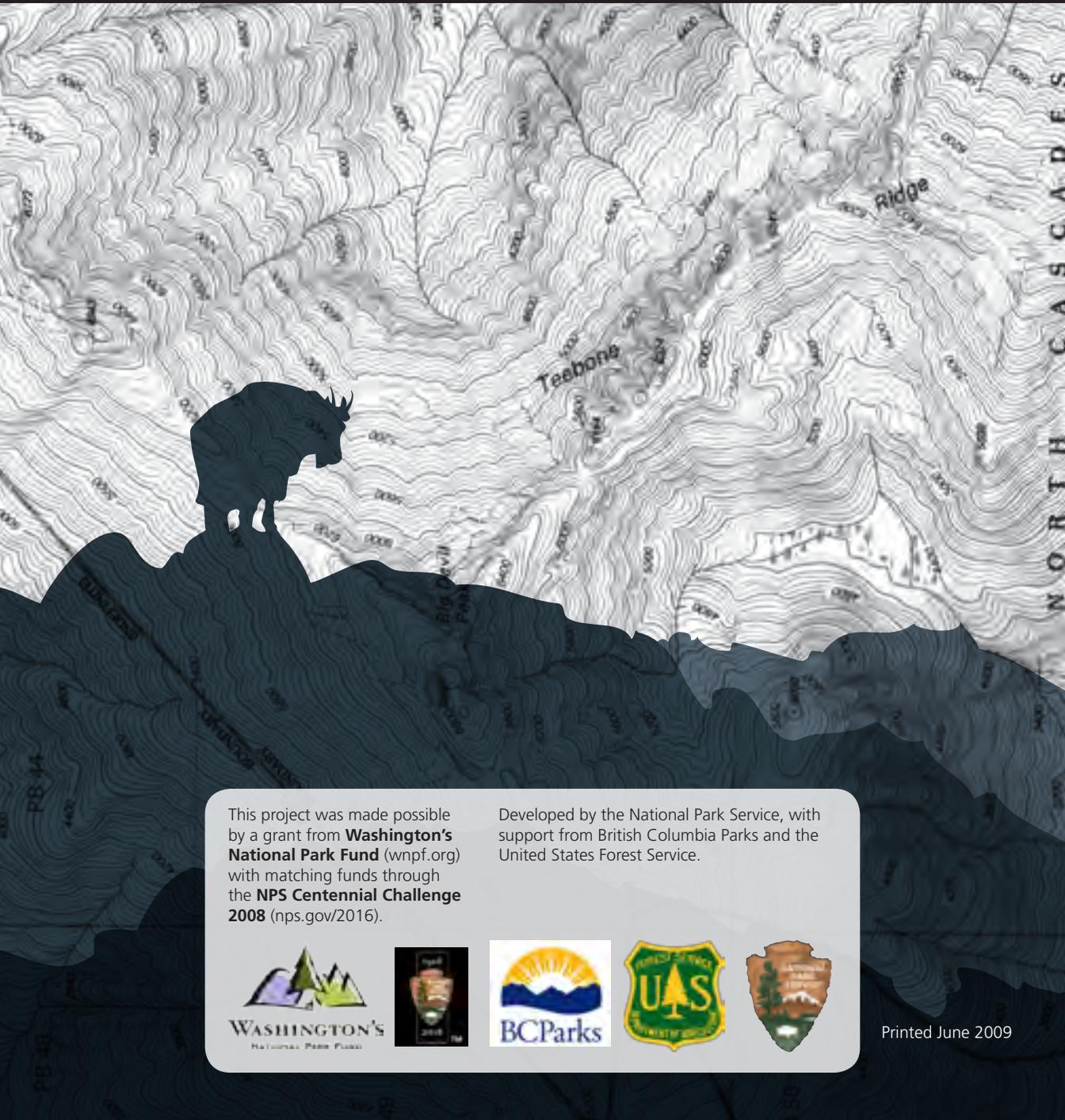
Cascades Explorer

Date

Park Ranger

Date





This project was made possible by a grant from **Washington's National Park Fund** (wnpf.org) with matching funds through the **NPS Centennial Challenge 2008** (nps.gov/2016).

Developed by the National Park Service, with support from British Columbia Parks and the United States Forest Service.

