

## Glaciers: Ecosystem Services Imperiled by Climate Change



The North Cascades between Snoqualmie Pass and the Canadian border host approximately 750 glaciers, including more than 300 glaciers within the boundaries of North Cascades National Park. Many glaciers in the range have disappeared over the past 40 years, and all glaciers have lost 30% of their volume since 1984. Glaciers have thinned by 15 meters across the range, with an annual average loss of more than one-half meter.

The importance of glaciers to the region is profound: water from these glaciers account for a significant portion of river flow in the summer, directly impacting hydroelectric energy generation, irrigation for farms across the state of Washington, drinking water for communities and perhaps most importantly, cold, clean water for anadromous fish species, including the iconic salmon and steelhead.

Above: Chickamin Glacier on Dome Peak—the largest glacier feeding the Stehekin River. Glacier Peak Wilderness Area. Photo by Tom Hammond

# NORTH CASCADES CONSERVATION COUNCIL

*The remnants  
of forest wilderness  
must be permitted  
to live:  
to remind us  
of who we are,  
where we are  
at this point  
in our evolution,  
how far  
we have come  
and how far  
we must go.*

—Brock Evans

[www.northcascades.org](http://www.northcascades.org)

## The North Cascades and the NCCC Story

Archeological evidence indicates that virtually every part of the range has been utilized by Indigenous People for more than 9,000 years. On the western slopes of the range, rainforest valleys rise to subalpine parkland and craggy summits flanked by hundreds of lakes and more than 700 glaciers. To the east, pine and meadow-clad ridges and valleys stretch for miles. The North Cascades is among the

most beautiful and diverse landscapes on Earth and they are one of the wildest places left in the lower 48 States.

Euro-American settlers arrived in the 1870s bringing with them farming, logging and mining. Soon much of the wild country was lost over the course of the Twentieth Century. Logging roads were pushed up many valleys, dams were built, and most of a once vast sea of ancient forest was cut down. →

### THE GREATER NORTH CASCADES ECOSYSTEM

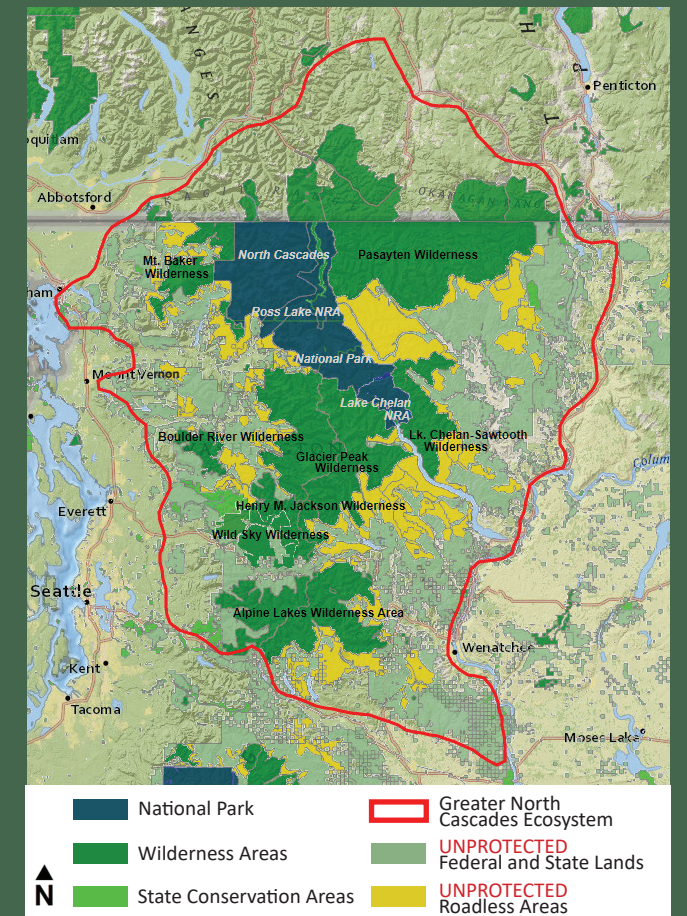


NCCC advocates for protection of the whole Greater North Cascades ecosystem

Above: Satellite view.

Cover photo: Unprotected ancient forest, Miller River lowlands, adjacent to Alpine Lakes Wilderness. Photo by Phil Fenner

### PROTECTED AND UNPROTECTED WILDLANDS IN THE NORTH CASCADES



Threats to unprotected areas include damaging timber sales, mining and road building. Preventing these are NCCC's priorities, preserving these lands for all to enjoy!

Map by Conservation Biology Institute and NCCC.



As more people visited and fell in love with the North Cascades, pressure mounted for their protection for outdoor recreation and saving the thousands of species of flora and fauna that live here. In March 1957, the North Cascades Conservation Council was formed as an all-volunteer organization to save these Wilderness Alps from the accelerating onslaught of logging, roads, and mining. For over sixty years, the North Cascades Conservation Council (NCCC – aka N3C) has been at the forefront of protecting America’s “Wilderness Alps” – from the Columbia River to the border with Canada.

NCCC’s pivotal activism led to designation of the Glacier Peak Wilderness in 1960. Another great NCCC victory came in 1968 when Congress established North Cascades National Park and the Ross Lake and Lake Chelan National Recreation Areas, as well as the Pasayten Wilderness. NCCC played a leading role in the designation of new Wilderness Areas, including the Alpine Lakes and William O. Douglas Wilderness Areas. NCCC led campaigns to stop a planned open-pit copper mine near Glacier Peak and construction of High Ross dam on the upper Skagit River, both of which would have had devastating impacts on the natural environment.

Despite these victories, much of the biologically productive, species-rich low elevation valleys – the heart and soul of the North Cascades ecosystem – have been largely excluded from protection.

*Today, NCCC is working on many fronts. Our work takes on new importance in the wake of climate change and the opportunity to engage with a more diverse population in America, for example by advocacy to:*

- Designate new wilderness to permanently protect more roadless and key natural areas in the Cascades.
- Defend forests from damaging timber sales, protect ancient forests, remove abandoned and unnecessary logging and mining roads, and promote the re-wilding of our maturing second-growth forests.
- Support conservation of wildlife and keystone species, such as grizzly bear, wolf, red fox, marbled murrelet and fisher, whose populations have plummeted over the past 150 years.
- Promote sound recreational use and oppose off-road motorized recreation in wild areas which threatens fish and wildlife habitats, causes erosion, and shatters silence in the North Cascades.



*NCCC would like to acknowledge the North Cascade Range and adjacent areas as the ancestral homelands of Indigenous Peoples, First Nations, and all who have lived here for millennia and have stewarded this land since time immemorial.*

OUR MISSION STATEMENT

*To secure the protection and preservation of scenic, scientific, recreational, educational, wildlife and wilderness values of the North Cascades.*



Ancient forests are critical to the North Cascades ecosystem. Upper Suiattle River and Dakobed Range. Glacier Peak Wilderness Area. *Photo by Phil Zalesky*



Goat Rocks Wilderness. *Photo by David Fenner*

Membership Benefits

- As a member you will receive:
- *The Wild Cascades*, premier journal of the North Cascades and its people, places, and politics—lively and unafraid to challenge the status quo (3 issues/year).
  - Action Alerts, so YOU can take timely action to help preserve wildlands in the North Cascades.

NORTH CASCADES CONSERVATION COUNCIL

YES! I want to support North Cascades Conservation Council’s efforts of working on many fronts to establish new wilderness, defend our forests, support wildlife conservation and keystone species, and promote sound conservation recreational use. I want to be a part of the leadership of a vibrant grassroots network of advocates for protection of unique lands, waters, plant life, and wilderness of the North Cascades.

SUPPORT NCCC WITH A GENEROUS IRS TAX-DEDUCTIBLE CONTRIBUTION\* IN THE AMOUNT OF:

☐ \$10 Living lightly/student    ☐ \$30    ☐ \$50    ☐ \$100  
☐ \$250    ☐ \$500    ☐ \$1000    ☐ Other

Send your check or money order and this form to:

**NORTH CASCADES CONSERVATION COUNCIL**  
**PO BOX 95980, Seattle, WA 98145-2980**

Or make your contribution securely online through our website:  
[www.northcascades.org](http://www.northcascades.org).

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Name

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\*NCCC is a 501 (c)(3) organization. All donations are tax deductible to the extent of the law.

*“Nowhere do the Mountain masses and Peaks, present such strange, fantastic, dauntless, & startling outlines as here.”*

—Heinrick Küster, Swiss surveyor  
U.S. Boundary Survey, 1859

*The Southern Pickets rise more than a vertical mile above surrounding valleys. Northern Pickets seen at left. North Cascades National Park. Photo by Tom Hammond*

