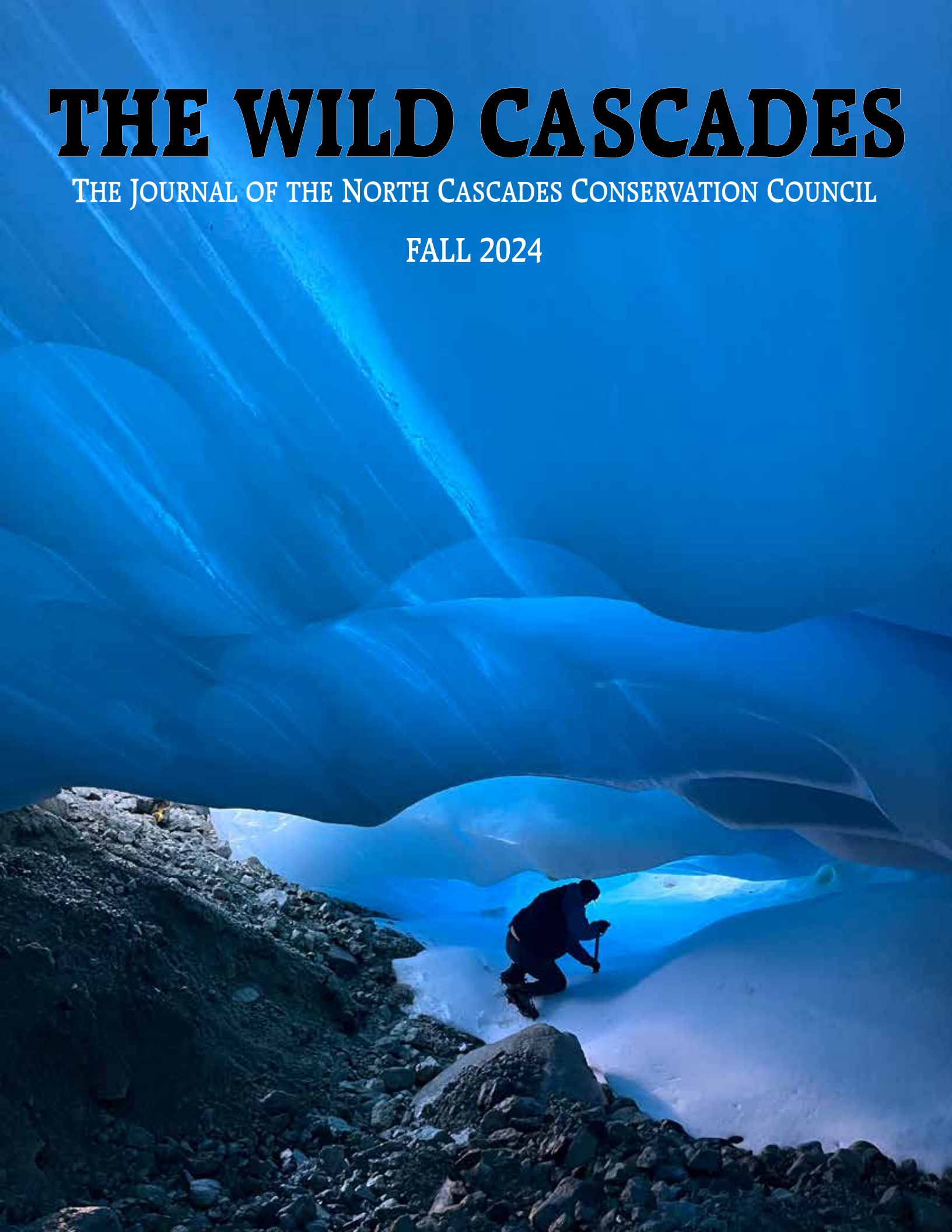


# THE WILD CASCADES

THE JOURNAL OF THE NORTH CASCADES CONSERVATION COUNCIL

FALL 2024



## THE WILD CASCADES ■ Fall 2024

- [3 President's report — Phil Fenner](#)
- [4 N3C Actions: July to October 2024](#)
- [6 Inspiring the next generation of environmental stewards at North Cascades Institute — Bec Detrich, NCI Executive Director](#)
- [8 NCI Fall Gathering event well attended — Phil Fenner](#)  
[\*Mountaineering: The Freedom of the Hills\* — Reviewed by Ed Henderson](#)
- [9 Grim Northwest Forest Plan amendment coming soon — Jim Scarborough](#)
- [10 Introducing new Policy Advisor Hayden Wyatt](#)
- [11 E-Bike Pilot Study not compliant with Travel Management Rule — Thom Peters and Karl Forsgaard](#)
- [12 N3C in court to stop logging of irreplaceable state forest — Stephen Kropp \(LFDC\), Phil Fenner, Jim Scarborough](#)
- [13 Why Stilly Revisited threatens down-slope communities — Roger Nichols, USFS geologist \(ret.\)](#)
- [14 Proposed North Cascades National Monument: Protecting one of America's wildest ecosystems — Michael Kellett](#)
- [15 Highlights of N3C letter regarding Future Status and Activity on the Monte Cristo CERCLA Route](#)
- [16 Risky removal: A landslide blocks access to a dam we could otherwise do without — Phil Fenner](#)
- [17 Skagit Hydropower Project update: When push comes to shove, the tough get going — David Fluharty](#)
- [18 The Wilderness Writings of Howard Zahniser — Reviewed by David Fluharty](#)
- [19 Sahale Arm revegetation](#)
- [20 Reflections from the 2024 North Cascade Glacier Climate Project Field Season — Mauri Pelto and project participants](#)
- [23 N3C membership application](#)

COVER: The beautiful, tragic final stages as a glacier melts away in the ice caves that transected the former Ice Worm Glacier. —PHOTO COURTESY GLACIER BLOG

### The Wild Cascades

*Journal of the North Cascades Conservation Council*

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*The Wild Cascades* Editor

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North Cascades Conservation Council  
PO Box 95980, University Station, Seattle, WA 98145-2980

THE NORTH CASCADES CONSERVATION COUNCIL was formed in 1957 "To protect and preserve the North Cascades' scenic, scientific, recreational, educational, wildlife, and wilderness values." Continuing this mission, N3C keeps government officials, environmental organizations, and the general public informed about issues affecting the North Cascades Ecosystem. Action is pursued through administrative, legal, and public participation channels to protect the lands, waters, plants and wildlife.

Over the last six decades N3C has led or participated in campaigns to create the North Cascades National Park Complex, Glacier Peak Wilderness, and other units of the National Wilderness System from the William O. Douglas Wilderness north to the Alpine Lakes Wilderness, the Henry M. Jackson Wilderness, the Chelan-Sawtooth Wilderness, the Wild Sky Wilderness and others. Among its most dramatic victories has been working with British Columbia allies to block the raising of Ross Dam, which would have drowned Big Beaver Valley.

N3C is supported by member dues and private donations. These contributions support the full range of the Council's activities, including publication of *The Wild Cascades*. As a 501(c)(3) organization, all contributions are fully tax deductible to the extent allowed by law. Membership dues for one year are: \$10 (Living Lightly) to \$100.

*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.*

North Cascades  
Conservation Council  
P.O. Box 95980  
University Station  
Seattle, WA 98145-2980

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



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**Founded in 1957**  
**SEATTLE, WASHINGTON**

## PRESIDENT'S REPORT FALL 2024

We probably all have our favorite Fall hikes. It may be the best time of year to get out into the North Cascades—post-bugs and pre-snow, with dashes of orange and yellow spicing up the scene. This is “larch madness” time, too, though, and the reports and photos of bright yellow against deep blue skies and lakes are drawing huge crowds to delicate meadows near the crest. Personally, I keep a short list of little-known places so I can enjoy the scenery without the crowd scene. But crowds in the high country, especially at a few “hot spots” are becoming a chronic feature of our landscape, it seems.

We have some very good news for this Fall that I'd like to announce. We've contracted with a 4th-year law student to serve as a Policy Advisor for our legal efforts going forward. You'll read more about Hayden Wyatt in this issue, and please celebrate with us. As the Forest Service moves ahead with multiple “landscape-scale” logging projects that largely short-circuit the National Environmental Policy Act, we are left with no other option than litigation in several of these cases on both sides of the Cascade crest, and having a Policy Advisor to assist us will be a huge advantage. If you'd like to contribute to that effort specifically to offset the costs involved, you can simply donate to N3C online and put in the memo area that it's “for Policy Advisor.” Thank you in advance for your help, and a hearty welcome aboard to Hayden.

A first for me this Fall was to take a tour of ongoing “restoration” logging in the S. Fork Stillaguamish watershed, led by the new Darrington District Ranger, Camden Bruner. I was accompanied by two retired USFS scientists, N3C members who oppose a similar project proposed for the N. Fork of the Stillaguamish, and wanted to see what was being done on the S. Fk. as a preview of what's proposed to the north. It was a fascinating look at the extremes the Forest Service is going to now to allow them to log in maturing forests under the guise of restoration. My tour partners have written about these projects in this issue and will write more after future tours. My first impression of the new Ranger was positive, a breath of fresh air for that District, certainly. He is also committed to keeping the Monte Cristo track closed to the public, which was very encouraging to hear.

So, N3C has a few challenges and opportunities as we head into the wet season! Speaking of which, did I mention how soaked we all got on that tour?

Phil Fenner

[philf@northcascades.org](mailto:philf@northcascades.org)



# N3C Actions

JULY to OCTOBER  
2024

*Advocacy carried out by  
dedicated N3C volunteers  
in the last four months to  
protect and preserve the  
North Cascades lands,  
waters, plants and wildlife.*



## DEFENDING WILD AREAS AGAINST DAMAGING INDUSTRIAL USES

**Why it matters:** resource extraction — mining, logging, hydropower — is the most harmful use of public land. N3C strives to save what remains wild, mitigate what's been lost, and restore what's been damaged.

- ☒ Signed agreement with new Policy Advisor Hayden Wyatt, whose contract policy research will give us much-needed help sorting out various threats to unprotected wild areas and responding in a timely, effective manner. *See page 10.*
- ☒ Attended 19 meetings related to the FERC/Seattle City Light (SCL) Skagit Hydropower Project Relicensing, including the Comprehensive Table, the NGO Caucus and other direct meetings lasting up to a full day. *See page 17.*
- ☒ Attended Seattle City Light tour of Newhalem hydro project, which SCL proposes removing. *See page 17.*
- ☒ Signed on to N3C member's letter of concern re: continued problems with the Yakima Plan to Washington Department of Ecology's Office of the Columbia River.



## ESTABLISHING, EXPANDING AND PROTECTING WILDERNESS AREAS

**Why it matters:** federal land designation as Wilderness and Park is the gold standard of ecosystem protection, precluding most damaging industrial and commercial exploitation.

- ☒ Wrote Darrington District Ranger Camden Bruner objecting to planned repair of the first bridge on Monte Cristo track, which would keep the track open through Inventoried Roadless Area after mine waste repository monitoring (its sole purpose) is complete. *See page 15.*

### ***Join our N3C Facebook page!***

*We're up to 718 followers and growing. Help us build our clout by friending us and then recommending our page to your friends concerned about preserving the North Cascades.*

*622 people  
like this*







## PROTECTING ANCIENT AND LEGACY FORESTS AND PROMOTING RESPONSIBLE FOREST MANAGEMENT

**Why it matters:** *like real estate, they're just not making ancient forest anymore. We seek to restore watersheds and fisheries damaged from decades of heavy logging and road building and protect significant forests from degradation.*

- ☒ Joined Legacy Forest Defense Coalition as co-litigants on "Stilly Revisited" Washington Department of Natural Resources sale. *See page 12.*
- ☒ Toured S. Fk. Stillaguamish logging project sites with retired USFS hydrologists, hosted by Darrington District Ranger Bruner and Timber Sale Administrator James Iverson.
- ☒ Signed on to Washington Wild letter to Gov. Inslee supporting 12,000 acres of proposed Trust Land Transfer acres by the Washington State Dept. of Natural Resources.
- ☒ Resubmitted support letter to Washington Department of Natural Resources for Beckler River TLT, after discovering our original letter missing in DNR's TLT online archive.
- ☒ Signed on to John Muir Project letter urging Biden administration to do more to protect old growth nationwide, by prohibiting sale and removal of trees for lumber or biomass from any such forest and ensure that the protections are permanent.



## PROMOTING ENVIRONMENTALLY SOUND RECREATION IN WILD AREAS

**Why it matters:** *balancing access with economics and Wilderness preservation, we evaluate motorized use and places where it needs to be limited to reduce land impacts and recurring road repair costs.*

- ☒ Attended Fall Gathering at the North Cascades Institute Environmental Learning Center on Diablo Lake, with NCI board members, staff, donors and friends. *See page 8.*
- ☒ Signed on to letter opposing e-Bike Pilot Project in Okanogan-Wenatchee National Forest. Allowing e-bikes on "all" non-motorized trails currently open to human-powered bicycles would flip those trails into the motorized category, and it is contrary to the site-specific analysis required by NEPA and the Travel Management Rule. *See page 11.*
- ☒ Reported "mudding" activity (motorized destruction of the environment as a form of entertainment) on NE flank of Lookout Mountain to Mt. Baker District Ranger Neff.



## PROTECTING WILDLIFE AND WILDLIFE HABITAT

**Why it matters:** *From microscopic fungi to top predators, the wilderness ecosystem's living members are interdependent, so keeping viable populations of each species is essential to preserve the ecosystem for future generations.*

- ☒ Signed on to Defenders of Wildlife letter opposing new weaker Endangered Species Act rules.

### Want to take actions that protect the North Cascades?

Join the N3C board.  
Contact Phil Fenner for details at  
[philf@northcascades.org](mailto:philf@northcascades.org)

- ☒ Submitted comment letter opposing logging of the Buckhorn Project on the Colville National Forest, which proposed "emergency" logging to prevent a hypothetical future wildfire, and paying for project by selling logs cut, all without public input.
- ☒ Call with the Environmental Protection Information Center (EPIC) to discuss strategy to make effective use of limited comment period on NW Forest Plan (NWFP) revisions now pending and also the Old Growth Amendment to it, both of which are poised to reduce protections that have held back logging since the Clinton-era NWFP went into effect.

# Inspiring the next generation of environmental stewards at North Cascades Institute

By Bec Detrich, NCI Executive Director



*N3C's Mission Statement includes education as a key value of conservation in the North Cascades. The last time the Seattle City Light Skagit River hydropower project was relicensed N3C supported the then-innovative idea that the North Cascades Environmental Learning Center (ELC) be established as part of the required mitigation for the continuing impacts of the dams in the City Light Settlement Package Agreement. And*

*who better to operate it than North Cascades Institute (NCI)? It was pure simpatico at the time and has been a shining example of interagency cooperation between NCI and the National Park Service since then. N3C fully supports the continuation of NCI's role as operator of the ELC into the next license period, as one of the foundational mitigations for the impacts of the hydro project.*

“I've learned that I can care for nature, and it can care for me too.” —Diego, NCI Youth Leadership Adventure participant

As the leader of the North Cascades Institute (NCI), I feel immense gratitude to guide an organization whose mission is to inspire environmental stewardship through transformative experiences in nature. This past summer, 75 high school students, including Diego, had the opportunity to connect with the stunning North Cascades through our Youth Leadership Adventures (YLA) program. YLA provides students the chance to embark on backcountry and canoe-camping trips in the North Cascades. Immersed in this gla-



cially carved landscape, participants build leadership skills, form inclusive communities, and learn about climate science and solutions. The program not only fosters a deep appreciation for the environment but also equips young people with the confidence and skills to enjoy and protect the outdoors for years to come.

Maya, another YLA participant, shared her reflections: *"I am most impacted by the confidence I found on this trip. I am so much more grateful for everything I took for granted. I know this new perspective will continue to help me grow as a person and pursue new experiences, especially out in nature."*

This summer, we organized six 9-day and three 5-day trips for high schoolers from Whatcom and Skagit Counties, as well as Seattle. Our participants come from diverse backgrounds, including first-generation immigrants and youth from rural communities. Many would not be able to attend without the scholarships provided by North Cascades Institute, made possible through the generosity of individual donors who understand the life-changing impact of these experiences.

Since 1986, NCI has connected people of all ages and backgrounds with the breathtaking beauty and diverse ecosystems of the North Cascades. While we initially began with adult field programs, we

expanded our reach to younger students in 1990 with the launch of Mountain School at Newhalem Campground.

In 2005, we opened the North Cascades Environmental Learning Center, in partnership with the National Park Service and the City of Seattle. This award-winning campus, located on the shores of Diablo Lake in North Cascades National Park, enables us to engage more people than ever before through a variety of programs, including school and youth programs, family camps, boat tours, natural history and art retreats, as well as conferences and group retreats. If you've joined us for a program in the past, we'd love to welcome you back. In fact, we've just added deeply discounted November Base Camp "Learning & Lodging" opportunities and invite you to come stay with us and experience this extraordinary ecosystem this fall!

The North Cascades Environmental Learning Center was born from the last federal license negotiations for the Upper Skagit Hydropower Project. Thanks to strong support from groups like N3C, education was included as a key element of mitigation efforts. As a result, tens of thousands of participants have connected with the North Cascades through programs at the Learning Center. As we look ahead to the next license period, we greatly appreciate N3C's ongoing support in

ensuring that education and the Learning Center continue to serve as vital investments in our region.

Over the years, we've made it a priority to reach younger generations—the future caretakers of these landscapes. We're particularly focused on connecting students who have not traditionally had access to, or felt comfortable in, public lands like North Cascades National Park, Mt. Baker-Snoqualmie National Forest, and Okanogan-Wenatchee National Forest.

While we've always believed that connecting youth with nature benefits the planet and conservation efforts, it's increasingly clear that these experiences profoundly benefit the kids themselves. Research shows that outdoor education has a positive impact on physical health, mental and emotional well-being, social development, critical thinking and academic learning.

Teachers frequently tell us that outdoor programs foster a sense of community, cooperation, and respect for both the environment and each other. Following Mountain School, many teachers report seeing improvements in students' teamwork, respect for peers and awareness of the environmental impact of their actions.

As one local teacher shared, *"My students gain a deep respect for each other, learning to cooperate and support one another. They now see themselves as stewards of the environment and take that responsibility seriously. I have great hope for the future of our planet, thanks to their time spent with you."*

At the North Cascades Institute, we believe our work is more important now than ever. It is deeply meaningful to provide opportunities for people of all ages, especially young people, to connect with the natural world. It's inspiring to see kids realize that they are not only powerful stewards of nature but also of their communities. Thank you, N3C, for your continued support and for investing in the future stewards of this special place.

*Photos courtesy of NCI.*



# NCI Fall Gathering event well attended

By Phil Fenner

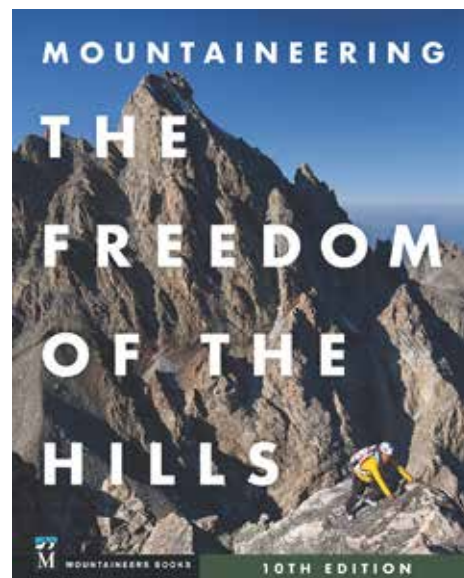


It didn't feel much like Fall yet. Smoke was still hovering low and the temps were high up in the North Cascades on the weekend of September 7-8, when N3C was invited to attend North Cascades Institute's "Fall Gathering" at the Environmental Learning Center on Diablo Lake. A group of NCI board members, staff, donors and friends of the Institute including N3C's President were hosted for a social hour, dinner and spectacular presentation by North Cascades National Park biologist Roger Christophersen about the wildlife

of the Park. NCI's Executive Director Bec Detrich spoke about how NCI had managed to continue operations despite the fires and the tragic loss of their chef to an accident, and continue to fulfill their mission of delivering "transformative experiences in nature." City Light was spilling water over Diablo dam the next morning, with a mist cloud that mingled with the smoke clouds, for great dramatic effect. N3C salutes the ongoing efforts of NCI, and is committed to supporting them. We urge you to, as well. Visit [ncascades.org](http://ncascades.org)



PHIL FENNER PHOTOS



## BOOK REVIEW

### *Mountaineering: The Freedom of the Hills*

10<sup>th</sup> edition  
Eric Linxweiler, Editor

Reviewed by Ed Henderson

Mountaineer Books has released the 10th edition of the iconic *Mountaineering: The Freedom of the Hills*. A handsome tome of 624 pages, *Freedom* has detailed descriptions and diagrams of everything from basic knots to the organization of remote expeditions. Since the first edition in 1960, it has been revised and updated every six or seven years; constant revisions are necessitated by evolving climbing techniques and new equipment. The 10th edition reflects our changing culture with contributions by a wide diversity of individuals.

*Freedom* has always focused on safe and responsible recreation in the wild places. This edition devotes a chapter to Protecting the Outdoors, emphasizing low-impact, Leave no Trace practices and encouraging stewardship and advocacy for the protection of the wild places.

*Freedom* came together in 1960, when the volunteer teachers of the Mountain-

CONTINUED NEXT PAGE



# Grim Northwest Forest Plan amendment coming soon

By Jim Scarborough

A federal advisory committee (FAC) tasked with providing recommendations to the U.S. Forest Service for amendment of the Northwest Forest Plan is now wrapping up its work. A draft environmental impact statement is expected from the Forest Service prior to the end of 2024 and perhaps before you receive this issue of *The Wild Cascades*. This will set the stage for highly significant and worrisome changes to the Northwest Forest Plan, which in the North Cascades has served as the main protector of old growth and mature forests across all of the Mount Baker-Snoqualmie National Forest and a sizable portion of the Okanogan-Wenatchee National Forest for the past three decades.

Although the original Northwest Forest Plan was compelled primarily by the listing of the Northern Spotted Owl under the Endangered Species Act, the plan's revision process has not been shy about its intent to elevate rural economies to at least equal footing with the ecological integrity of our national forests. This of course translates to increased logging

and greater industrial exploitation of older forest stands. Whereas the original Northwest Forest Plan prohibits logging of stands greater than 80 years old in areas zoned as Late Successional Reserve, the amended plan is expected to raise this age limit to 120 years, thus opening up many thousands of acres of fully functioning, natural forest to the bulldozer and chainsaw.

Every aspect of this amendment process has been centered around

devising ad hoc rationalizations and euphemistic terminology for increased timber extraction. The FAC, despite including a fair diversity of "stakeholders" (or, in Forest Service jargon, "partners," to distinguish them from other individuals and groups that the agency thinks should just butt out), has been remarkable for its embrace of groupthink. The FAC deploys public fear of wildfire and purportedly unhealthy forests to promote the twin mythologies of "firewising" and "restoration" for the unstated end goal of increased commercialization. The Northwest elites serving on the FAC are as convinced of the

benevolence of more sawlogs being hauled off our national forests as West Virginians and Kentuckians are of more coal mines. It's a cultural thing. A money thing.

An open question is how and whether an amended Northwest Forest Plan will stand up when tested in court, which will inevitably follow its adoption and implementation. How does increased roading and logging in older forest stands, including designated critical habitat, square with the viability of the ever-dwindling Northern Spotted Owl population? Perhaps of even greater salience, particularly in the legal arena, how would an amended plan affect the unique habitat needs of the Marbled Murrelet? No doubt, the Forest Service, its loyal FAC, and their timber industry allies hope to overwhelm federal judges with a firehose of euphemisms and tales of frightening fire events that only they have the wisdom to keep at bay. NCCC, among the very few to still resist the growing clamor to exploit our national forests for near-term profit, will do what we can to allow the light of truth to shine through.

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*Raising the age limit to 120 years opens acres to the bulldozer and chainsaw.*

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## Freedom CONTINUED FROM PREVIOUS PAGE

eers climbing course found it necessary to gather and organize the notes and instructions they were using to teach the techniques and skills needed in the mountains. As chief editor, Harvey Manning led a committee of seven members and drew upon the knowledge and skills of many others. The initial printing was limited to 5,000 copies. Now nearly a million copies are in circulation.

The triumph of *Freedom* is its expression of the Northwest mountaineering culture that binds so many of us together. Its financial success laid the foundation of Mountaineer Books. With the strength

of that foundation Mountaineer Books was able to publish books of interest to its readers that were not attractive to commercial publishers. Building on success of *Freedom*, in 1964 Harvey Manning, leading light of N3C, his muse awakened, wrote *The North Cascades* with photographs by Tom Miller and maps by Dee Molenaar. Then in 1965 he wrote, *The Wild Cascades, Forgotten Parkland*, an exhibition format volume published by the Sierra Club. These important books were made possible by the success of *Freedom* and were instrumental in raising awareness of the North Cascades leading

to the establishment of the National Park.

The 10th edition of *Freedom* is a celebration of the Pacific Northwest community of responsible recreationists who safely enjoy and work to protect the outdoor environment. If you climb, hike, scramble or just sit by the fireside and dream, *Freedom 10* should be on your bookshelf.

# Introducing new Policy Advisor Hayden Wyatt



I am writing to express my excitement about joining North Cascades Conservation Council as a Policy Advisor. Joining N3C marks the culmination of my journey through law school and the beginning of an exciting new chapter in direct advocacy. I deeply admire N3C's long and storied history of championing the forests of

Washington, and I am eager to contribute to this important work.

Growing up during the summers in Grand Teton National Park instilled in me a deep appreciation for the wild places of the western United States. It was an idyllic childhood, yet I learned early on that even national parks must be held accountable to

conservation principles.

From a young age, I became a passionate environmentalist, dedicating my energy towards preserving our natural treasures. Before attending law school, I worked for Search and Rescue in Yosemite National Park. After four wonderful seasons, I knew moving on to law school was the right choice.

Since embarking on my legal education, my commitment to defending the forests of the Pacific Northwest has only deepened. I have had the privilege of serving as a legal intern at Central Oregon Landwatch, Crag Law Center, Karl G. Anuta, and Cascade Wildlands. Throughout these experiences, my work has focused on forest law and water law. Currently, I am a clinical student at Earthrise Law Center, where I continue to hone my skills.

Now as I begin work for N3C, I am excited to bring my knowledge and experience to the North Cascades. I want to share a sincere thank you to N3C's Board of Directors for bringing me on, and I look forward to meeting members over the course of my work.



*Mount Shuksan, from Winchester Mountain lookout. —ERIN NASH PHOTO*

# E-Bike Pilot Study not compliant with Travel Management Rule

By Thom Peters, condensed from a comment letter by Karl Forsgaard

Several months ago, Okano-gan-Wenatchee National Forest (OWNF) and selected stakeholders participated in an E-Bike Pilot Study. Included in the meetings were topics such as whether motorized e-bikes should be allowed on “all” non-motorized trails open to human-powered bicycles.

OWNF is putting the cart before the e-bike, so to speak, since it is not yet compliant with the Travel Management Rule.

The following excerpts are from a 15-page comment letter to OWNF, signed by eight organizations:

Alpine Lakes Protection Society  
Conservation Northwest  
Kittitas Audubon Society  
North Cascades Conservation Council  
North Central Washington Audubon Society  
Sierra Club  
Spring Trust for Trails and Washington Wild

- In May 2024, our organizations were invited to participate in an E-Bike Pilot Study exploring integration of e-bikes on to non-motorized “natural surface” trails of OWNF. The invitations were sent by TREAD, a Wenatchee based non-profit organization, for four workshop meetings and e-bike riding demos held in May and June in Chelan, Wenatchee, Leavenworth and the Methow Valley, with OWNF personnel participating to make presentations and answer questions at these meetings. The meetings were not announced to the public.
- The E-Bike Pilot Study (and the e-bike industry “toolkit” on which it was based) promotes the assertion that “Class 1” e-bikes are the same as human-powered bicycles. They are not. E-bikes are motorized, they are significantly different from ordinary

bicycles and need to be managed to reflect these differences.

- The user group category “Class 1 E-Bike” was used as a category separate from the category of “Motorized” (4-wheel, ATV, dirt bike), implying that e-bikes are not motorized.
- The Forest Service, TREAD and other participants need to ensure that the E-Bike Pilot Study and communications around it do not cause members of the public to form the mistaken belief that e-bike use is authorized on OWNF non-motorized trails.
- Because e-bike riders are already allowed to ride more than a thousand miles of motorized trails on OWNF lands, they should not be viewed as lacking opportunities for their recreation. In contrast, only a small percentage of OWNF trails outside Wilderness are non-motorized, and we need to protect those non-motorized resources.
- Under the Travel Management Rule, each National Forest designates which roads (and trails) are open to what classes of motor vehicles, including off-road vehicles such as motorcycles, 4x4s (jeeps), all-terrain vehicles (ATVs), and e-bikes. Each National Forest publishes these designations in a Motor Vehicle Use Map (MVUM).
- We oppose the suggestion to allow motorized e-bikes on “all” non-motorized trails currently open to human-powered bicycles, which would flip all of those trails from the non-motorized category into the motorized category, because it is contrary to the site-specific analysis required by the National Environmental Policy Act (NEPA) and the Travel Management Rule.
- Among the 154 National Forests, OWNF is a national outlier on Travel Management. OWNF is one of only

three National Forests in the United States that have still not published their MVUM, ie, OWNF has still not completed the four-year process required by the 2005 Travel Management Rule and is non-compliant with the Rule.

- OWNF still needs to complete its Travel Management process and release its MVUM before OWNF can modify the status quo of motorized trail use designations.
- Years ago, the Forest Service said it could not commit any additional funding or personnel for monitoring, enforcement, or restoration of damaged areas if motorized vehicles travel off-road. We are concerned about agency capacity to deal with the illegal and harmful off-road riding. We need law enforcement’s presence out on the land, but the Forest Service is already stretched thin.
- For all of the above reasons, we strongly urge OWNF to use its E-Bike Pilot Study as an opportunity for OWNF to complete its long-delayed Travel Management process, publish its MVUM, and attain compliance with the Travel Management Rule. Please focus on opportunities to safeguard Wilderness and non-motorized resources and to secure important wildlife and landscape values.

*Thanks to Karl Forsgaard (a past president of N3C) for his expertise in formulating the comment letter.*





LEGACY FOREST DEFENSE COALITION OF WASHINGTON PHOTO

## N3C in court to stop logging of irreplaceable state forest

Stephen Kropp (LFDC), Phil Fenner, Jim Scarborough

N3C has partnered with the reliably smart and tenacious Legacy Forest Defense Coalition (LFDC) as co-litigants in a lawsuit to halt the malodorous “Stilly Revisited” timber sale on state forestland. This sale is located above the banks of the North Fork Stillaguamish River, just downstream of the 2014 Oso landslide. Not only would Stilly Revisited fragment and destroy one of the very few remaining stands of old growth forest in the Puget lowlands, it is located on slopes that are even steeper (and closer to the river) than those that failed in 2014 and sent a torrent of mud and debris which killed 43 people.

An old growth assessment conducted by the Department of Natural Resources (DNR) found that much of the forest that would be destroyed if Stilly Revisited is implemented has never been logged, and includes scattered old growth trees that predate 1850. Certain areas were “high graded” in the early 1900s, which means they

were selectively logged, leaving many of the then-smaller trees behind. DNR core samples reveal that those younger conifers are now between 130 to 165 years old. The old growth assessment further revealed that “many of the trees ... have attained heights that rival or exceed the old growth remnants.” DNR nevertheless decided to target these stands for logging after determining that the number of large old growth trees are at densities of less than 7 trees per acre. This is despite the fact that many of the younger red cedar and western hemlock in these units are well over a century old. This is clearly old growth, by almost any definition, but DNR as a rule only protects old growth forests if 80% or more of the overhead canopy is occupied by trees that pre-date 1850.

In early spring of 2024, DNR abruptly withdrew Stilly Revisited and five other proposed sales which threatened older forests in the western half of our state. This move followed DNR’s

loss in court on yet another sale of this sort in Jefferson County. The agency’s legal defeat came about when Judge Brandon Mack found that the sale was contrary to DNR’s own general silvicultural strategy policy, which has a goal of achieving functional older forest structures across 10 to 15 percent of state forestland acreage in western Washington within 70 to 100 years. In his order, the judge wrote that “DNR does not provide a rational basis for not following its own policy.” However, by summer, Stilly Revisited and numerous other contentious sales were back on the chopping block. Subsequently, the reliably rubber-stamping Board of Natural Resources approved Stilly Revisited for auction. LFDC and N3C soon after filed a Notice of Appeal in Snohomish County Superior Court.

Currently, a stipulated stay of activity for Stilly Revisited is in place, pending resolution in the trial court. LFDC and

# Logging the N. Fk. Stilly threatens down-slope communities

By Roger Nichols, LEG WA & OR, USFS geologist (ret.)

How does the proposed N. Fk. Stillaguamish project threaten communities?

- The valley bottoms below 2500 feet on both forks of the Stillaguamish River are covered with glacial soils. These soils weaken with changes in surface water after logging. Soil strength is reduced by 50% and is dramatically weakened by toe slope erosion. Erosion takes place by both channel head cutting and bank failure.
- This area is subject to convergence zone weather patterns and precipitation events like the infamous "Pineapple Express" Atmospheric Rivers that can deliver 5" of rain in a single day.
- Note all the riprap you see along the Mountain Loop Highway above Verlot along the S. Fk. Stillaguamish, placed by Snohomish County. There are concerns about the road in the upper Silverton Area. It's very likely the Highway will be washed

out there as a direct result of ongoing large-scale timber thinning upstream during the S. Fk. Stilly timber cutting and a storm event is likely within 4-8 years.

- Deer Creek in the N. Fk Stilly Deer Creek planning area suffered total bank collapse of riparian zones and channel bank head cutting after the 1983 storm. Banks less than 35% slope were flattened to just 15% by soil flow and head cutting occurred in the channel. Salmon fish passage was lost due to channel scour from rock falls to water falls.
- Downstream, the S. Fk. Stilly-Robe area west of Verlot will again be a flood deposition and erosion zone. On the N. Fk. Stilly, the area from Oso downstream to the mouth of the S. Fk. Stilly at Arlington is likely to be affected the same way.
- The National Landslide Preparedness Act of 2021, sponsored by our Congressional Delegation, is the result of the Oso landslide.

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N3C had earlier filed a motion for a preliminary injunction of the timber sale's implementation to at least temporarily spare the old forest while the case was being heard. Sierra Pacific Industries, DNR's contracted purchaser of Stilly Revisited, proposed the stipulated stay, agreeing not to take any actions pursuant to their contract until two weeks after the Superior Court's final order. All parties, including DNR, concurred. LFDC and N3C then withdrew the motion for a preliminary injunction. As such, the rare Stillaguamish Valley forest that DNR has consigned to industrial demolition through its Stilly Revisited sale will remain standing until a hearing on the merits, scheduled for this coming February.

DNR and lame-duck Lands Commissioner Hilary Franz, under increasing pressure from the interested public

and an array of county governments to cease the agency's liquidation of the few remaining legacy forests remaining on state forestlands, have predictably opted instead to double down. Vast quantities of objectionable sales in structurally mature forests have been recently proposed by DNR and approved by the pliable Board of Natural Resources (with the exception of Superintendent of Public Instruction Chris Reykdal, the first voting member in modern memory to express skepticism about DNR's machinations). DNR appears to be trying to flood the system to bust through LFDC's multiple and heroic legal challenges. N3C's work to protect State Forests has largely been via a more gradual Trust Land Transfer process, but we're delighted to assist in LFDC's urgent work to stop this imminent timber sale on State land.

## North Fork Stilly Timber Sale Planning Area

One can expect a rain on snow or an atmospheric river event to occur in the next 4-8 years which will magnify channel bank erosion, next order channel to flush and additional main stem head cutting. The downstream sediment loading and transport was a problem during the last storm event for the mouth of Deer Creek, Oso and it blocked the mouth of the South Fork Stillaguamish at Arlington.

## South Fork Stillaguamish "Restoration" Timber Sale

We plan to use drone photography to document the current secondary stream conditions and impacts to the mainstem of the S. Fork downstream. The main risks are due to headward cutting by streams into the Ice Age glacial lake sediments there and the resulting potential lack of future access to the Mountain Loop Highway.

As recently as 2010 the area around Silverton and downstream of it was hit by a major storm, and the road fills along the MtnLoop Highway were collapsing. By overlaying the streams where logging is occurring now onto a map of the hazard areas, one can easily envision how a rain-on-snow event and/or an atmospheric river will greatly increase channel erosion and headward cutting, and result in loss of access to the MtnLoop Hwy.

We can expect additional increases in stream temperature, fish habitat loss, impacts to listed species, and water quality degradation from the logging underway and planned for the next 20 years in the S. Fk.

Please also note that the USDA Forest Service did not do a Hydraulic Cumulative Effect study for either the overall timber sale area or specific sales.

CONTINUED ON PAGE 15



# *Proposed North Cascades National Monument:* **Protecting one of America's wildest ecosystems**

By Michael Kellett, Executive Director, RESTORE: The North Woods



*Golden larches in the heart of the Golden Horn zone, the largest blank spot on the map of protected areas in the North Cascades. —PHIL FENNER PHOTO*

The spectacular array of ancient forests, majestic peaks, and sparkling rivers of the North Cascades Ecosystem—headlined by North Cascades National Park—is one of America's premier natural wonders. Expansive undisturbed conifer forests of mature fir, pine, cedar, spruce, and hemlock comprise one of America's most significant climate refuges, storing massive amounts of carbon and moderating temperature. A mix of rainforest and dry forest supports extraordinary biodiversity and connectivity with Canadian ecosystems. The ecoregion encompasses millions of acres of critical habitat for endangered wildlife, such as the grizzly bear, gray wolf, wolverine, Canada lynx, and several species of salmon and trout.

Much of this remarkable ecosystem is protected in the national park complex and twelve wilderness areas. However, there are substantial islands of national forest land which have superlative natural values, but are unprotected. These forests are increasingly threatened by intensive logging, mining, and other harmful activities.

The boundaries of North Cascades

National Park were a political compromise that left many vital landscapes out. Conservationists have long called for expanding the park or creating a new national monument to protect these areas. Although these past proposals were unsuccessful, the need for expanded protection has never been more urgent.

A new proposal advocates the creation of a 4-million-acre North Cascades National Monument—almost twice the size of Yellowstone National Park. This monument would build on the existing national park and wildernesses by permanently protecting vulnerable lands in the Mount Baker-Snoqualmie and Okanogan-Wenatchee national forests from resource extraction and industrial development.

N3C supports national monument designation as a way to solve several problems at once. A monument would preserve old-growth forests and allow previously logged forests to recover and become future old-growth. Intact natural ecosystems would provide wildland habitats for imperiled wildlife. World-class recreation would be safeguarded and continue to

support the economies of local rural communities. Indigenous sacred and cultural sites would be preserved and traditional access by tribal members for customary uses would be ensured. Logging would only be allowed in limited areas close to communities where necessary to facilitate wildfire control.

The creation of a magnificent North Cascades National Monument is not an impossible dream. National monuments are designated by the President under the Antiquities Act or by Congress through legislation. In this time of political polarization, it is not easy to expand public land protection. Yet, there is still remarkably broad and deep public support for national monuments and parks. Conservationists have organized this support to persuade presidents Obama and Biden or Congress to establish more than two dozen national monuments since 2011.

Climate change, biodiversity loss, and their impacts on people continue to intensify. In response, countries around the world—including the United States—have set a goal of strong, permanent protection for 30 per cent of the Earth's lands and waters by 2030 (also known as "30x30"). Only about 12% of U.S. lands have this protection. The approach of the 30x30 deadline has encouraged a growing grassroots movement to work for the creation of new national parks and monuments across America. A campaign for a North Cascades National Monument could be a key part of this movement.

North Cascades National Park, which many people now take for granted, took many years of effort by dedicated conservationists before it was finally established. This generation of conservationists has a rare opportunity to build on their remarkable legacy with a campaign for a new national monument. There has never been a better time to launch it.



# N3C weighs in again on Monte Cristo CERCLA Route

In 2009 the Forest Service obtained consent from the Secretary of Agriculture to build a low-grade track through an Inventoried Roadless Area (IRA) exclusively for a mine waste remediation project in the Monte Cristo area where an old County roadmine had long-since washed out, funded by CERCLA, aka "Superfund". The track is no longer being used by the Forest Service for its sole purpose, and N3C is remaining vigilant to assure the integrity of the NRA is restored.

In July 2024, N3C sent the following letter to Darrington District Ranger Camden Bruner underscoring our continuing interest in the CERCLA (aka "Superfund") mine remediation in the Monte Cristo townsite and the associate route that was built through an Inventoried Roadless Area (IRA) and marbled murrelet nesting habitat to facilitate access for construction equipment access and subsequent mine waste repository monitoring.

No monitoring has taken place since 2020 and the CERCLA route has not been kept open. It is reported that the

route is impassable due to downed timber and debris derby flows. One of the log stringers at the first bridge, in from the Mountain Loop Highway, has been crushed by a large falling tree.

On June 3rd, we received an email from Joe Gibbens, P.E., the USDA Forest Service Region 6 Site Coordinator for the CERCLA cleanup. Mr. Gibbens stated that the fifth year of ground water sampling of the test wells at the Repository will not be carried out. It was delayed by travel restriction imposed by the COVID 19 Pandemic, and has now been canceled. The email further states that all future monitoring and inspections required will be carried out by personnel hiking in on foot. In addition, the Gibbens email states that the damaged log stringer at the first bridge will be replaced although the route will not be cleared, and no motor vehicle use is contemplated.

We are concerned about the future status of the route and the Forest Service's stated desire to keep it drivable and available for emergency services. Use of this route is not permitted for

any use other than the CERCLA mine clean-up under Agriculture Secretary Vilsack's Removal Action Memo (RAM) order or under the 2001 Roadless Rule at 36 CFR 294.12(b)(2). Why is the damaged log stringer at the first bridge being replaced rather than removed or simply allowed to rot? The log stringer bridges were built as temporary structures with an expected life span of 15 years. They are now 11 years old and have served their purpose. The bridges should be removed as promised by the RAM and the Mount Baker Snoqualmie National Forest Supervisor's letter to the Sierra Club or at least allowed to revert to nature and restore integrity to the IRA.

N3C notes and objects to the access creep if the Darrington Ranger District attempts to add motor vehicle access for emergency services to justify maintaining continued drivability of the CERCLA route. Motor vehicle access to the Monte Cristo area via the CERCLA route in response to emergencies is neither legal, practical nor workable in a timely fashion. The exception to the Roadless Rule was granted for the sole and exclusive purpose of the CERCLA mining clean-up. Attempts to justify other uses, however laudatory, are the camel's nose under the tent flap and will lead to other requests for illegal motor vehicle access.

N3C will vigorously oppose any endeavor to allow other motor vehicle access other than that authorized for the CERCLA clean-up. Reopening the road will only encourage unlawful access by those who will tear down the gate for access into Monte Cristo. In the past, the USFS has lacked the capacity to enforce road closures, when gates are destroyed for private access.

Thank you for your attention to these questions. N3C remains committed to the restoration of the roadless integrity of the IRA and maintenance of the backcountry wilderness character of the Monte Cristo townsite. We look forward to participating in the cooperative effort to resolve the issues of access to this area.

## Logging N. Fk. Stilly CONTINUED FROM PAGE 13

### ***IT'S A MUST-WATCH!***

Geologist Myron Cook shows how another Oso landslide could happen — the same types of glacial deposits underlie the Stilly timber sales. [www.youtube.com/watch?v=uHaXfwuJo-c](https://www.youtube.com/watch?v=uHaXfwuJo-c)



## *Risky removal*

# A landslide blocks access to a dam we could otherwise do without

By Phil Fenner



PHIL FENNER PHOTO

N3C was invited to attend a Seattle City Light (SCL) tour of the old Newhalem Creek hydro project in September. Newhalem Creek was their very first dam in the Skagit watershed, begun over 100 years ago, and is now obsolete. It powered the SCL work camp at Newhalem and the building

of Gorge powerhouse. I accepted their invitation and was warned in advance that I'd have to cross a slide area to get to the dam site so I should wear appropriate footwear. I envisioned a culvert blowout like so many others on logging roads in the western Cascades. Little did I expect to wish I'd

brought a hard hat, too. An NPS staffer loaned me his, but I still felt nervous as I scrambled over boulders and loose scree.

The slide is immense, and almost entirely above the road, so it probably was triggered or enlarged by the road cutting into an unstable slope. Luckily for all present, no more rocks fell as we crossed the approximately 200-foot wide slide below a high scarp about 250-feet high, with a hanging headwall looming above it.

Although only a tiny dam removal project compared to the ones on the Elwha and Kalmath Rivers, all dam removals are good for the environment, so if a dam is obsolete and other risks of removing it are minor, N3C favors dam removals. Work for Newhalem Creek dam removal is in 30% design phase now, so sets of plans are available from SCL's contractor HDR and we obtained a copy on the tour. The earliest they told us that removal could commence would be summer 2026.

Stabilizing that landslide enough to drive heavy equipment across it to haul out all the dam materials will be the biggest challenge, and the biggest risk. There are also engineered reinforcements at the base of the old roadbed, now buried by the slide.

N3C has requested copies of the planning documents for rebuilding the road across the landslide and will comment further at that time. When we look at this landslide we're reminded of the inherent risks of cutting roads into steep slopes in this area. City Light has proposed cutting a new road into the very steep slope between Ross Dam and SR20 as a way to truck fish into and out of Ross reservoir as part of their fish passage proposal. A

CONTINUED ON PAGE 17



# *Skagit Hydropower Project update*

## **When push comes to shove, the tough get going**

By David Fluharty

Seattle City Light (SCL) is driving hard to get a Settlement Agreement among the multiple tribal, state, local agencies and NGO organizations. These parties have been involved since 2018 in studies and planning for how to operate the Skagit River Hydropower Project (Ross, Diablo and Gorge Dams) for the next 50 years under a federal license issued by the Federal Energy Regulatory Commission (FERC). As you can imagine it is complex issue fraught with different perspectives among the so-called “license participants”. It is also a convoluted and confusing process where tribal treaty rights and sovereignty are front and center, public agencies are enforcing their regulatory responsibilities, and NGOs like North Cascades Conservation Council (N3C) are pursuing their organizational interests. Among the NGOs, N3C persists in pursuing mitigation of the project to protect, maintain and restore the greater river ecosystem in the Skagit Valley.

Get out your crystal ball and predict how this will all turn out. Oh, and don't forget, what happens in the Upper Skagit north of the border with Canada doesn't come under the purview of any of the license participants. Even though you might think that Canadian First Nations, Provincial and

national government entities as well as the public would be key parties—but they are largely being ignored.

This Update is intended to inform you about some of the daunting quandaries facing the N3C Board as the process moves toward achieving a Settlement Agreement that all parties can sign off on—especially those parties with tribal rights or agency conditioning authority invested in them by virtue of federal or state laws. If all parties can sign off on a Settlement Agreement that makes for smoother going before FERC which has the final say in granting or not granting a license under its authorities.

While SCL is driving toward consensus on a Settlement Agreement, you might be surprised to learn that in accordance with FERC procedures SCL has already submitted a Preliminary License Application and a Final License Application (FLA). That sounds pretty complete, doesn't it? Well those documents represent what SCL believes that it would be required to do under existing FERC regulations to obtain a license to continue to operate the Skagit Project for the next 50 years. FERC has already responded that the FLA is incomplete to fully inform and justify FERC accepting it as sufficient for the granting of a license and inadequate to allow FERC to perform its required environmental impact assessment under the National Environmental Policy Act (NEPA). Indeed, other license participants including N3C object to the positions taken by SCL as fulfilling its obligations. At best, the FLA is a starting point for negotiation of the Settlement Agreement. The Settlement Agreement is important because it is an umbrella under which SCL and the license participants can come to agreement about important issues before submitting it to FERC. This allows for inclusion of some mitigation measures that are critical issues for some license

participants but that FERC might not require. Prospectively, the back and forth among parties helps to construct a package of on license and off license agreements that is more satisfactory to all and is less likely to result in legal challenges under FERC jurisdiction or in federal courts. No one will emerge with everything they want but they can live with the result.

Returning to N3C's quandaries is painful. While there are many elements of the proposed Settlement Agreement on the table which N3C can support, there remain poison pills that, based on N3C prior positions and principles, we cannot support. Does N3C hold its nose and sign on or do we take a principled stance and represent those concerns to FERC and hope that we can prevail in what FERC decides? A big hang up for an organization that protects wilderness values and environmental /ecosystem integrity is that the Settlement Agreement has been agreed without a full environmental impact assessment of alternatives of proposed actions in an Environmental Impact Statement for all to consider. Some of the actions that are the core of the Settlement Agreement have significant and irreversible environmental impacts. Signing on to a Settlement Agreement where these impacts are not identified and ignored is not an appealing prospect and it limits N3C's ability to challenge the actions in the FERC process.

Remember your crystal ball. For what length of time is it calibrated and accurate? It is hard to know. However, looking forward with earth system models of climate change we can be fairly certain that the North Cascades ecosystems will take a battering with changes in the patterns of precipitation, the seasonal temperatures, goodbye to glaciers. All these changes will impact the ecosystem—especially

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### **Risky removal**

CONTINUED FROM PAGE 16

landslide occurred in that vicinity on their old “haul road” up to Ross dam from Diablo Lake just 10 years ago now, blocking that road. Could the same thing happen if they cut a new road up above it to get to SR20?

We see the slide on Newhalem Creek as a clear example of why roads should not be cut into steep slopes in the Skagit gneiss formation, the same rock type that crops out at Ross dam.

CONTINUED ON PAGE 19



## BOOK REVIEW

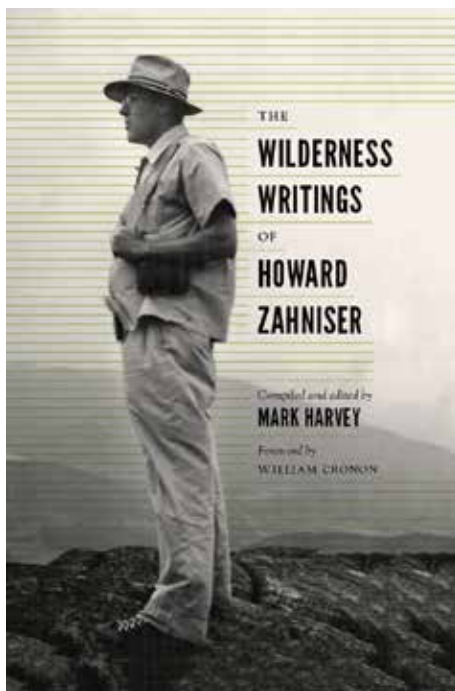
### *The Wilderness Writings of Howard Zahniser*

Edited by Mark W. T. Harvey with a foreword by William Cronon

Reviewed by David Fluharty

When I first saw this book on the shelf at the University Book Store in Seattle, I thought it was a brand new book on an individual whose name I have long heard mentioned among Wilderness advocates in reverential terms. Mardy Murie, Polly Dyer, Dave Brower, and Grant McConnell—former N3C board members who introduced me to conservation, spoke fondly of “Zhanie” based on their personal associations with him in the long fight to pass the Wilderness Act of 1964. Who was this quasi-legendary person? I wanted to find out why a person with roots in the eastern U.S. could dedicate his most productive years to pass legislation to save wildlands that were mostly in the West. I must admit, I learned a lot about the eastern establishment, the wilderness lands in the New York state’s 2.5 million-acre Forest Reserve and much more by reading this book.

Zahniser was born in 1906 in a deeply religious family of multiple ministers in rural Pennsylvania. He was exposed to wildlife and their habitats by a school teacher who introduced him to Junior Audubon Society in the fifth grade. He attended Greenville College graduating with majors in history and English. After a decade of serving as what we would now call a communications specialist in the Department of Commerce he obtained a position with the Bureau of Biological Survey, which later became the part of the Fish and Wildlife Service. By the middle 1940s Zahniser had been employed in federal agencies as a writer, broadcaster, and editor. However, when Robert Sterling Yard’s position as editor of the Living Wilderness came open at The Wilderness Society, Zahniser was interested. In 1945 he was hired by The Wilderness Society as both Executive Director and



Editor of the Living Wilderness with its luminary-filled governing council of Robert Marshall, Aldo Leopold, Harvey Broome, Benton MacKaye and others. He also joined the ranks of conservation leaders like Devereux Butcher of the National Parks and Conservation Association as well as writer activists Bernard and Avis DeVoto and Wallace Stegner in opposition to rampant destruction of wildlands and dam development on western rivers in advocating for wildlands protection in the form of parks and Wilderness protections.

Zahniser is best known for his tireless leadership for passage of legislation to protect remaining wilderness lands as Wilderness. Starting in 1956, right after conservation forces won the Echo Park victory, Zahniser led a relentless pursuit of Congressional protections for Wilderness. After some 66 revisions to the draft text, 18 Congressional hearings and over

16,000 pages of testimony, Congress did pass the Wilderness Act of 1964 – just four months after Zahniser died at the age of 58. The Wilderness Act of 1964 gave immediate protection to 9.1 million acres of statutory Wilderness. Today Wilderness designation has been accorded to over 111 million acres in areas of National Forests, National Parks, National Wildlife Refuges and Bureau of Land Management. Still, as readers of *The Wild Cascades* are aware, there is a lot of unprotected Wilderness in roadless area reserves and other eligible areas.

Mark Harvey, the foremost scholar and chronicler of Zahniser’s life and contributions to conservation has researched and located representative examples of his subject’s nature and Wilderness advocacy writing. The *Wilderness Writings of Howard Zahniser* tracks Zahniser’s life and work. It consists of seven chapters: The Makings of a Nature Writer, Transition to the Wilderness Society, Campaigning for Wilderness, Threats to Wild Lands, The Campaign for the Wilderness Bill, The Last Hurdle, and Testimonies.

William Cronan, professor and editor of the Weyerhaeuser Classics Series of the University of Washington Press, expresses the importance of this book in his eloquent Foreword:

*These essays enable us to trace the evolution of Zahniser’s thinking at the same time that we see how his life-long devotion to wild nature—sacred to him both for its own sake and for what it offered humanity—enabled him to write so compellingly. It is time at last for those who have experienced the beautiful places protected by the Wilderness Act to experi-*

CONTINUED ON PAGE 19

## Skagit hydropower

CONTINUED FROM PAGE 17

the sensitive aquatic ecosystems. Will measures to operate the Skagit Project to achieve fisheries objectives simply prolong the ultimate demise of existing or introduced fish? How should we think of the river as a system that has already been highly altered from its estuaries to its headwaters to produce farmed food, dairy, flowers, living space and hydroelectric benefits? The watershed is not pristine but it retains ecosystem values and vistas appreciated by many. In fifty years, what will the river look like? Will we act now to protect and restore the river ecosystem or will we continue to alter its wild and scenic remnants? What are acceptable trade-offs? What role should N3C play in determining the cost/benefits of public expenditures for actions taken versus risks of failure to act? To what extent should N3C defer to the positions of other parties on Settlement Agreement actions? Now is the time to hold fast to N3C principles and positions.

Your thoughts? Write us at “[ncccin-fo@northcascades.org](mailto:ncccin-fo@northcascades.org)”

## Sahale Arm revegetation



Wilderness ranger Winnie Hsieh leading National Park Service retirees and volunteers in replanting a social trail to Sahale Arm on a misty day in October. Plants raised in the Margaret and Joe Miller Greenhouse at the NPS offices in Marblemount reached Sahale Arm in backpacks—not helicopters. The NPS greenhouse, you may remember, started as an N3C experiment. Joe and Margaret proved it could be done!  
S—ANNE BASYE PHOTO

## Wilderness writings

CONTINUED FROM PAGE 18

*ence as well the eloquence and moral passion of the man who wrote it.*

Jamie Williams, president of The Wilderness Society in 2014 wrote, “His powerful words speak to the enduring value of wilderness to our nation—as much today as they did then.”

I highly recommend this book to those who formally study the evolution of conservation policy in the United States, to readers of nature writing and natural history and to people just wanting a fascinating book to read at their leisure.



Fall foliage on the way to Sahale Arm. —ANNE BASYE PHOTO



# Reflections from the 2024 North Cascade Glacier Climate Project Field Season

By Mauri Peltó and project participants

Adapted from the blog, “From a Glaciers Perspective,” [glacierchange.blog](https://glacierchange.blog)



*Mauri Peltó peers into the melting terminus of the Lower Curtis Glacier. ALL PHOTOS COURTESY [GLACIERCHANGE.BLOG](https://glacierchange.blog)*

**T**he winter season of 2023/24 yielded a low snowpack across the North Cascades—the third lowest snowpack of this period, with 2005 and 2015 being lower....

The main melt season for the glaciers is June-September and this year the average temperature was 18.3 C, which is 1.3 C above the long-term mean. This was the fourth year in a row above 18 C and thus the fourth consecutive year of large glacier mass balance losses. The cumulative impact is glacier recession, thinning, loss of a number of glacier and overall steeper/dirtier ice.

Annual mass balance is the difference between the mass of snow and ice accumulation on the glacier and the ablation of snow and ice on

the glacier during a year. The data is reported in the average change across the glacier in water equivalent thickness.

We conducted detailed field work on eight glaciers. All eight glaciers had a negative balance exceeding 1.3 m w.e., with an average of -2.09 m w.e., equivalent to at ~2.25 m of glacier thinning. The loss during the last four years is unprecedented with 8 m of average thickness lost from 2021-2024. This is greater than the entire decade of loss for 1984-1993, 1994-2003 or 2004-2013. The acceleration of loss continues even as the glaciers lose their highest melting terminus regions. This is an indication that none of the glaciers are approaching equilibrium. The cumulative mean mass balance loss has been -28.89 m w.e., ~33 m in thickness. This represents the loss of ~40% of volume of the glaciers

we have observed, 1% loss per year overall but over 2% per year in the last decade.

There are 31 active glaciers across the North Cascades that we observed since the 1980s that have now disappeared.

The 2024 field season was our 41st, from the glaciers' perspective it was the fourth consecutive year of exceptional mass loss, leading to thinning, retreat and glacier loss. Below are reflections on each from our field team and field partners.

## Mauri Peltó

Climate change has led to increased glacier melting on all of the glaciers we have observed. A combined 70+ years of field experience that Ben, Jill and I have provides a context that is crucial. The increased melt is apparent in the streams flowing across the sur-





*Measuring runoff below Sholes Glacier and in the basin of former Ice Worm Glacier.*

face very few meters carrying meltwater to the rivers and then the sea. This summer we saw the beauty of the final stages of decay of a glacier melting away in the ice caves that transected the former Ice Worm Glacier. The cave started at the top of the glacier and continued right to the bottom, by next summer that too will be gone. The colors and atmosphere in the cave were spell binding. The landscape remains beautiful, but is losing the glaciers that are a powerful, beautiful and dynamic part of this landscape.

### **Katie Hovind**

Nestled along Ptarmigan Ridge, overlooking Kulshan's glacier-flanked slopes, was our longest campsite of the field season. Unzipping my tent to an increasingly familiar skyline four mornings in a row, I found myself developing a relationship with this place. I noticed patterns and changes alike, discovering not just the place but a sense of home in it. We followed transects across the Sholes, probing up and down the glacier; we explored a collapsed ice cave near its terminus, blue ice towering over me, ancient wisdom frozen in the dripping layers I ran my hands along; we took water measurements from the stream it feeds, pausing for a break next to the

fresh melt as I sketched the textures of rock and snow and ice. We commuted across it twice to the Rainbow Glacier, a trek familiarizing me with the Sholes' sweeping slopes and views; and we screwed an ice auger deeper than we could see, dropping stakes 3-4 feet below the surface. 19 days later, I returned to the coordinates of those four stakes, which were now all exposed, one sticking up to just over 3 feet above the surface. Reeling as I walked across the glacier I'd gotten to know, the near-incomprehensible volume of loss I saw. A feeling of belonging is so integral to caring. And then comes the question of how to transmit that connection, to spread to others the same sense of responsibility to protect a place? Being lucky enough to experience even a handful of days taking in just a small degree of the Sholes' nuances, I felt deeply just how wrong and quick the melt is. But from the outside looking in, without any prior reference points, the severity of the glacier shrinking could be overlooked. Through these comparison photos, I hope to share just a glimpse, beauty and grief and all, of what it means to understand and love a glacier.

### **Emma Murray**

Just a few minutes into our hike from camp to the Easton glacier, Science Director Mauri Peltó pointed out the rock that marked the spot where he put his crampons on in 1990. Looking up the valley, the ice felt SO far away.



*For each melting glacier, Emma Murray created flags that "are both white-flag surrenders to all the melting we cannot stop and blowing-in-the-wind prayers for us all to act in the ways we can."*

### **Cal Waichler**

This season I ask what it means to be a voice for glaciers. How can I transmit my gratitude that I can stand on this earth, breathe glaciers' breezes, seep in icy blue and alpenglow rose, pop alpine huckleberries in my mouth, and notice the shrinking snow and dissolving ice, while also alerting people to their vulnerabilities? Glaciers are a throughline in my explorations and art. I am so utterly enchanted by them. The awe and creative inspiration they bring to my life is a great gift. As a voice for shrinking glaciers, what stories can I share that will enchant other people with them? What will make us care enough to enact climate change mitigation and adaptation, and vote for climate leaders?

CONTINUED ON PAGE 22





## Glaciers CONTINUED FROM PAGE 21

### Ben Pelto

Disappearing glaciers remind me of grandparents—I'm saddened by their decline, yet deeply grateful for the time I still have with them. This year, being in the field was especially meaningful, surrounded by an incredible

group of people, just experiencing the mountains and soaking it all in. What I find hardest about glaciers vanishing is not just the loss of ice, but the disappearance of their dynamism and beauty from the landscape. These ancient giants bring a sense of magic and

power to the mountains, and it breaks my heart to think that my children or grandchildren might never witness them as I have.



*Probing snow pack depth on Lower Curtis Glacier. The 12 foot segmented steel probe cannot penetrate the icy surface from the previous summer.*

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*View of Mount Baker from Winchester Mountain lookout. —ERIN NASH PHOTO*