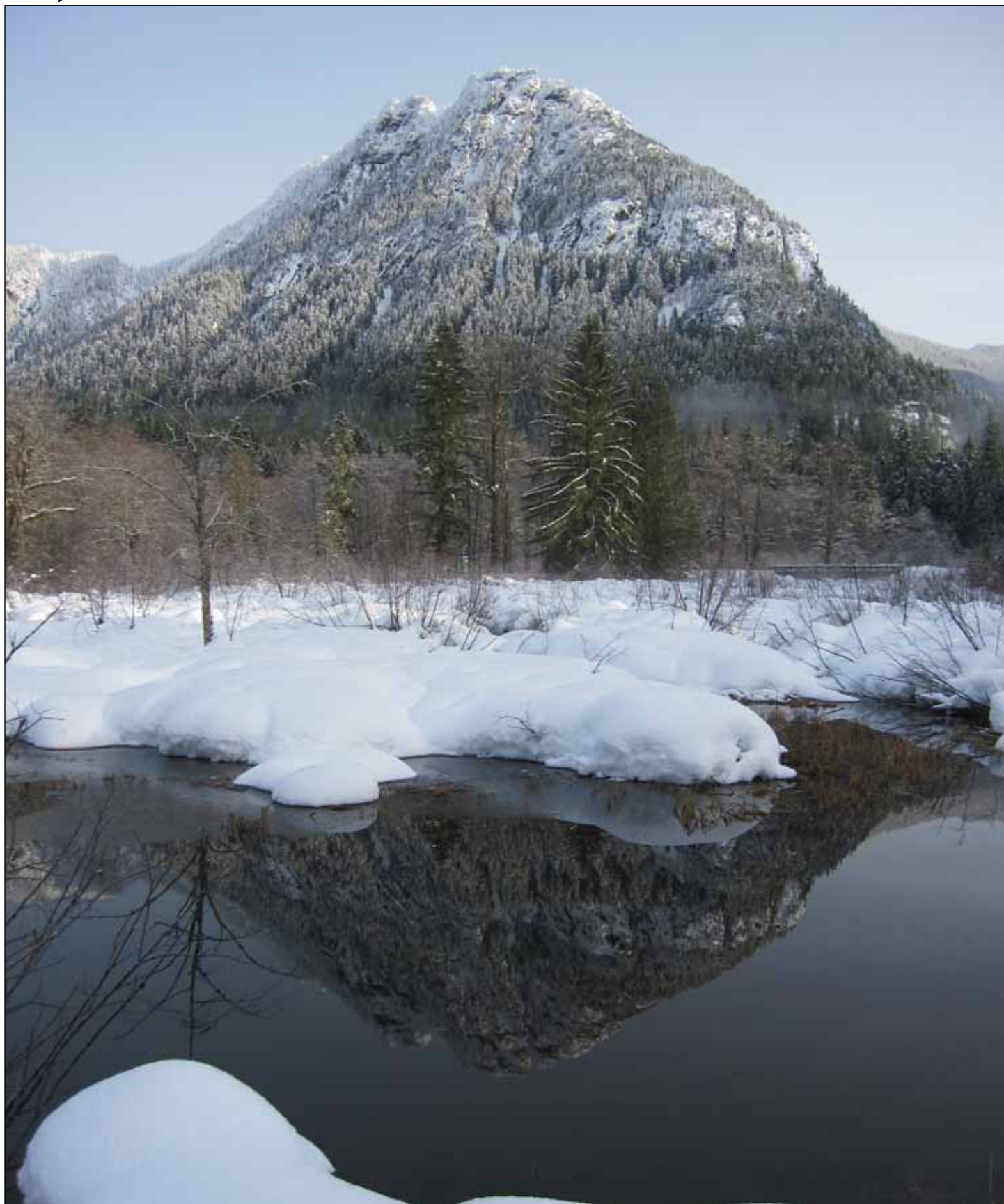


THE WILD CASCADES

THE JOURNAL OF THE NORTH CASCADES CONSERVATION COUNCIL

WINTER 2013



THE WILD CASCADES ■ Winter 2013

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COVER: Stillaguamish Peak and valley forests reflected in wetlands of the South Fork Stilly headwaters.. — TOM HAMMOND PHOTO

The Wild Cascades

Journal of the North Cascades Conservation Council

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THE NORTH CASCADES

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

Over the past half century NCCC 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 W.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.

NCCC 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: Living Lightly/Student \$10; Individual \$30; Family \$50; Sustaining \$100.

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Founded in 1957
SEATTLE, WASHINGTON

The President's Report

Winter 2013

The board of directors of North Cascades Conservation Council is an experienced cast of characters who are great to work with. Through the work of board members and other volunteers, NCCC advocacy can make important contributions to decisions affecting our public lands in the North Cascades. In this issue of *TWC*, read about how NCCC helped improve the National Forest component of the flawed Yakima Plan; how we're helping to lay out new hiking trails at Reiter State Forest; and how we helped save trees along the proposed re-route of the Suiattle River Road. Part of the fun of working on these cutting-edge issues is the exhilarating outdoor recreation we experience by visiting these places while we work to protect them. If you are interested in getting involved, please contact us at ncccinfo@northcascades.org.

At the NCCC board meeting in January 2013, we voted to add Thom Schroeder to the board. Thom works at REI headquarters on marketing, catalog printing and photography, and he biked up the Suiattle River Road with NCCC board members last spring. Thom is particularly interested in ways he can contribute his writing, photography, design and publishing interests, so he will be joining our *TWC* team (the Editorial Committee). Welcome aboard, Thom!

Mike Town has resigned from the board due to his many time commitments opening up a new school and his work in D.C. for the National Science Foundation. Nonetheless, I am confident that he will still be working with NCCC as a non-board volunteer, as Mike remains engaged in DNR's Reiter process, the Cascades Wild campaign, and the ongoing advocacy of Friends of Wild Sky. We are grateful to Mike for contributing his time, energy and campaign expertise to NCCC over the years.

The board has also voted to replace our two Interim Co-Secretaries (Phil Fenner and Marc Bardsley) with one Secretary, Marc. Thanks to Marc for his willingness to serve, and for diligently preparing minutes of the past year's board meetings. I asked Phil Fenner to remain on the Excom as an at-large member, and we thank Phil for his continued dedication to maintaining our website, blog, e-newsletters and email listservs. We also re-appointed Athena Pangan Hammond as Assistant Treasurer. Thanks to Athena for ably serving in that role since last March, learning the ropes from our longtime Treasurer, Tom Brucker.

Karl F. Forsgaard
Karl Forsgaard

NCCC board members bring skills, passion to their work

Part Four in an ongoing series highlighting our newer (and, now and then, longtime) board members.

Welcome new board member Thom Schroeder

Thom Schroeder is a climber and photographer set on exploring the whole remoteness of the North Cascades. It is this spectacular and incomprehensible wilderness that draws him—camera in hand—to climb through cloud-filled valleys up to brilliant, icy summits. While progressing as a climber, Thom similarly progressed as a photographer, from 35-millimeter to medium-format film and onto digital to—just recently—realizing a grand-scale project of capturing the silence of the more remote and wild places within the North Cascades on large-format film. It is for this very reason—the silence and wildness that beckons—that he seeks with as much passion as with his photography to protect this most special wilderness of the North Cascades.



—KATIE KENNER PHOTO

New FS appeal process proposed

Reprinted with permission from the Fall 2012 newsletter, Forest Service Employees for Environmental Ethics

In August, the Forest Service published a draft proposal that will substantially alter the way in which organizations and individuals are able to appeal agency decisions. At the heart of the proposal is the broadening of an objection process that was adopted amidst great controversy during George W. Bush's administration.

At issue is when an objection must be filed and who may file one, and the risk of limiting public input into environmental decisions.

The proposed change comes in response to the 2012 omnibus appropriations package passed by Congress at the end of last year, which included a legislative rider directing the Forest Service to revise the long-standing administrative

appeals process. Congress has instructed that the Forest Service must utilize a pre-decisional objection for all proposed actions requiring an environmental analysis or environmental impact statement.

Congress first introduced the objection process, which happens before the final decision is made on a project, in 2003, as part of the Healthy Forests Restoration Act. At the time, it was intended to be used only with post-fire timber harvest and fuel reduction projects.

Unlike the administrative appeals process, in which an appeal is filed after a final decision has been made, the draft proposal requires that objections be filed earlier, while the decision is in draft form. It would also limit objections to those who provide comments during the official period, and allow objections based only on the substance of those comments.

Objections to be filed during draft process, not post-draft comment period

Other changes being considered during the ongoing proposed rulemaking would limit the length of written objections and the methods for providing legal notice to the public of proposed actions.

Congress and the Forest Service believe that this change will result in greater public participation throughout the environmental review process thereby streamlining and expediting agency decision-making. Detractors are concerned that the changes will limit the public's involvement and oversight of agency decisions, ultimately leading to more litigation.

Editor's note: NCCC is concerned about the proposed changes outlined in this article, as they will limit what we know about USFS projects, when we know, and how we can appeal. We encourage members to contact members of congress to express your concern.

Hopes for a new Alpine Lakes bill

By Rick McGuire



Senator Patty Murray and Congressman Dave Reichert announce introduction of the Alpine Lakes Wilderness additions bill on the banks of the Middle Fork Snoqualmie River in 2009. —TOM O'KEEFE PHOTO

NCCC and other groups working to protect the forests of the Pratt River valley and adjacent areas in the Middle Fork Snoqualmie valley are pleased about the re-introduction of the “Murray – Reichert – DelBene” bill to add 22,000 acres to the Alpine Lakes Wilderness and designate a part of the Middle Fork as a Wild & Scenic river. Changes in Congressional district boundaries have somewhat complicated the situation for this bill. The areas that the bill would protect were formerly within Dave Reichert’s eighth district, but now fall within the first Congressional district, along with just about everything else on the western slopes of the Cascades from I-90 all the way to the Canadian border.

Newly elected first district Congressman Suzan DelBene is a conservation supporter, and she and Reichert jointly re-introduced the bill in the House on January 24, 2013. Senator Patty Murray re-introduced it in the Senate the same

day. Reichert’s continued sponsorship is important since it makes it a bipartisan bill. Besides having constituents who use and care about the area, Reichert has a strong personal interest in the area and wants to establish a conservation legacy by seeing the bill through. The bill will also be a strong conservation start for DelBene. Senator Murray has a long record of conservation accomplishments, and made sure that the Wild Sky Wilderness, enacted in 2008, included extensive areas of lowland forests and salmon streams.

A lot of work has gone into the bill, which enjoys widespread support and little opposition. Supporters hope to see it through, and realize the long-held goal of protecting the extensive old-growth and naturally regenerated, mature second-growth forests of the Pratt River valley, once threatened by a large timber sale. Look for updates in future editions of *The Wild Cascades*.



Beaverpond in Pratt River valley. —KEVIN GERAGHTY PHOTO

Taylor-Goodrich, new NOCA superintendent

As we bid farewell to Chip Jenkins, the now former superintendent of the North Cascades National Park Service Complex (see pages 8-9), NCCC also welcomes newly appointed superintendent Karen Taylor-Goodrich.



According to a January 30, 2013 National Park Services press release, Superintendent Taylor-Goodrich has been the superintendent at Sequoia and Kings Canyon Na-

tional Parks in California for the last three years, and will transition to her new duties at North Cascades in March.

Taylor-Goodrich previously served as the Associate Director for Visitor and Resource Protection in the National Park Service headquarters office in Washington, D.C., and has more than 30 years of experience directing a wide variety of operational programs at Yosemite National Park (California) and Grand Canyon National Park (Arizona), Lake Roosevelt National Recreation Area (Washington), Cumberland Island National Seashore (Georgia), and National Capital Parks-East (Washington, D.C. and Maryland).

Her extensive international work experience includes advancing protected area management projects in Tanzania, sister park agreements in Cambodia and China, a trans-boundary wilderness management agreement between Mexico, Canada and the U.S., and international government manager forums for several World Wilderness Congress agendas. Taylor-Goodrich received a Bachelor of Science degree in geography from Portland State University in Portland, Oregon, with additional graduate work in natural resources management.

In accepting the position, Taylor-Goodrich said, “I’m excited about the many opportunities and challenges the North Cascades Complex presents. Returning to work and live in the Pacific Northwest has been a long-time goal, and I look forward to working closely with the park staff, local communities, park partners, and our interagency and Canadian colleagues to protect and conserve this very special region.”



Suiattle River Road EA decision

By Ed Henderson

In the spring of 2011, NCCC sued the Federal Highway Administration (FHWA) and the Mount Baker Snoqualmie National Forest (MBSNF) to halt the immediate reconstruction and rerouting of the upper Suiattle River Road. The suit was necessary because the government had failed to conduct legally required analysis of options. There had been some analysis of earlier washouts of the road, but no analysis whatsoever of the environmental impacts of reroutes around the newest, biggest washouts. The suit succeeded, FHWA and MBSNF cancelled plans for construction and agreed to prepare an Environmental Assessment (EA) covering all of the planned reroutes. At that point the court declared the suit moot. [See page 16, *The Wild Cascades*, Spring 2011.]

The Suiattle is one of the great free-flowing wilderness rivers on the western slope of the North Cascades. It wraps around from the northeast and to north of the Glacier Peak Wilderness then flows west to its confluence with the Sauk River. The Suiattle River Road follows the river for more than 23 miles from Highway 530 north of Darrington to the Sulphur Creek

trailhead and campground deep in the valley. The winter floods of 2003 and 2006 washed out the road at seven locations and closed it at milepost 12.5.

In preparation for an EA, the FHWA and MBSNF conducted an open house at the Darrington Ranger District Office on September 15, 2011. NCCC representatives attended this meeting. NCCC subsequently submitted comments on many issues to be addressed in the EA.

FHWA released the 162-page EA on March 16, 2012. The EA alternatives: A, the ubiquitous No Action Alternative; B, reopen the entire road to the terminus at Sulphur Creek milepost 23.2; and C, open the road to the Green Mountain Road, FS 2680, at milepost 19. NCCC submitted extensive comments on the proposed repairs and reroutes at each washout. Ultimately we supported Alternative C with modifications, which would have reopened most of the road, including automobile access to Buck Creek Campground and the Green Mountain trailhead, while leaving the uppermost 3.9 miles of the Suiattle road unrepaired to serve as new miles of river-

The John Edwards Grove
— ED HENDERSON PHOTO

side trail for hiking and biking. [See page 5, *The Wild Cascades*, Spring 2012.]

On March 24, 2012, Kevin Geraghty, Marc Bardsley and I walked the road from the gate at milepost 12.5, washout #2, to washout #5 at milepost 14.4. We spent most of the time bushwhacking along the proposed reroute from Milepost 12.7 to 13.8 around washouts #3 and #4. The reroute follows abandoned Forest Service Road 2670 for about half the distance, then crosses a forest terrace above the river's flood plain wetlands before rejoining the existing road beyond washout #4. The last 1,650 feet of the reroute passes through a beautiful stand of mature forest. We named the woods the John Edwards Memorial Grove in honor of our friend and longtime NCCC board member who passed away two days later.

The NCCC board returned to the Suiattle River Road on April 15, 2012 with invited guests from the Mountaineers and Washington Trails Association (WTA). Most hiked the rerouted road route around

washouts #3 and #4 through the John Edwards Grove. Many board members then rode mountain bicycles on to the end of the road at milepost 23.2.

On August 9, 2012 the FHWA released an amended EA.

On November 8, 2012 the FHWA released a Decision Document and Finding of No Significant Impact (FONSI). Over 400 public comments had been received on the original EA with another 240 comments to the Amended EA. Not surprisingly Alternative B, repairing, rerouting and reopening the Suiattle River Road to motor vehicle access to the original terminus at milepost 23.2, was chosen as the Selected Alternative. Work is expected to start in 2013 and take two or three years to complete. And just what work is expected? The following is an abbreviated description.

- **Site #1, washout at milepost 6.0.** The road will be rerouted about 400 feet inland from the washout/slide area. The rerouted road will be about a half a mile long through second-growth timber on WA State Department of Natural Resources (DNR) land.
- **Site #2, washout at milepost 12.6.** This is the current end of motor vehicle access and the road is gated here. The road will be offset about 70 feet to the north away from the river. The reroute will be about 1250 feet long and will require the removal of approximately 1.2 acres of mature trees. Blasting will also be required to remove gneiss bedrock from the road prism.
- **Sites #3 and #4, two washouts at milepost 13.0 and 13.4.** The road will be relocated for about a mile from milepost 12.7 to 13.8. The new road will follow abandoned Forest Service Road 2670 for one half mile, then cross a forest terrace above the river's flood plain. The last 1,650 feet is through the mature forest of the John Edwards Grove. The FONSI estimates removal of 2 to 3 acres of mature trees. In response to comments by NCCC and others the road clearing width has been reduced from the 2010 design.
- **Site #5, washout at milepost 14.4.** 900 feet of the road will be relocated from between 60 to 125 feet back from the river. Approximately 1.5 acres of mature trees were removed here in 2006 and 2010. Some excavation will be required to bring the hillside down to the new road grade.
- **Site #6, washout at milepost 20.8.** The road will be cut back into the uphill

slope for about 250 feet. The uphill cut slope will be steepened from the current 35° to 1 horizontal to 1 vertical, i.e. a 45° slope. There will be no work at the toe of the downhill slope where the hillside is washed by Downey Creek where it flows into the Suiattle River.

- **Site #7, the Downey Creek delta and bridge.** The present embankment fill and culvert in the flood plain will be removed. A three-span approach bridge will be built to provide motor vehicle access to cross the existing Downey Creek Bridge.

While NCCC is disappointed that Alternative C with modification was not the selected Alternative, we believe NCCC made a positive impact, especially for the rerouted road between milepost 12.7 and 13.8.

- **Site #8, washed-out approach to the Sulphur Creek Bridge, milepost 22.9.** The washed-out approach will be repaired, a concrete-faced retaining wall built on the upstream side and about 100 cubic yards of riprap installed.

At all sites abandoned road segments will be ripped up, paving materials removed and replaced by topsoil and appropriate vegetation.

While NCCC is disappointed that Alternative C with modification was not the selected Alternative, we believe NCCC made a positive impact. This is particularly true for the rerouted road between milepost 12.7 and 13.8 around sites #3 and #4, where there has been a significant reduction of the clearing of mature trees. The FONSI stated that the proposed clear zone of 8 acres has been reduced to 6 acres. The FHWA also informed us that in response to public comments, FHWA had "tightened the footprint" of the re-route to cut fewer trees, and at milepost 12.6 had altered the alignment of the re-route "to avoid hitting many of the trees up there."

The decision to repair and reopen the road beyond the Green Mountain Road intersection at milepost 19.0 poses considerable risk. The loose sand and gravel hillside at milepost 20.8 is very unstable. While the slope has been stable for the

past five years, the toe is exposed to erosion by Downey Creek and the Suiattle River as they meander in their beds, threatening the entire slope and road. Also disturbance of the uphill slope by steepening increases the chance of raveling and surface slides. NCCC has called attention to these concerns in our comments. Additionally erosion and land sliding of the riverbank into the clear waters of Downey Creek and Suiattle River threaten one of the most productive spawning areas for endangered Chinook (King) salmon, the largest species of salmon. This reach of Downey Creek is where 40 percent of their spawning in the Suiattle system takes place. However with assurances from FHWA and MBSNF that there will be no disturbance in the river, the National Marine Fisheries Service has given their blessing to the proposed plan.

The decision to remove the embankment fill in the Downey Creek flood plain delta is an environmental plus. However, the erection of a three-span approach bridge is gambling nearly a million dollars that the road will remain open at site #6, milepost 20.8.

As the work progresses NCCC will diligently track the actions of FHWA and MBSNF in all aspects of the projects. Of particular concern are:

- The final design of the reroute between milepost 12.7 and 13.8. This should be carefully monitored to ensure the absolute minimum removal of mature trees consistent with a safe design.
- The possibility that reopening the road to milepost 23.2 will release a flood of pent-up demand into the west side of Glacier Peak Wilderness. The additional ten miles from the gate at milepost 12.5 has limited the number of hikers entering the Wilderness from Suiattle trailheads. This has led to recovery of the meadows around Image Lake and on Miners' Ridge. NCCC is concerned that too many visitors too quickly will damage this fragile environment. Phasing in the reopening of the road can ameliorate this. It should be possible to open the road to the Green Mountain intersection one year, and the last four miles a year or two later. This would take pressure off, and would make Buck Creek campground accessible for car camping and Green Mountain more easily reached by hikers. Should the crush of visitors into the Wilderness prove too great, a quota system could be initiated for sensitive destinations such as Image Lake, to limit the numbers to better reflect the carrying capacity of the area.

Farewell and best wishes, Chip Jenkins

By David Fluharty

Conner “Chip” Jenkins became Superintendent of North Cascades National Park Complex (NOCA) in April 2007. He arrived from Lewis and Clark National Historical Park, where he led the successful bicentennial of the Lewis and Clark expedition as well as the expansion of the historic part to multiple new sites around the Columbia River estuary.

Chip’s engaging and open personality brought a welcome change to communicating and planning in NOCA. NCCC has definitely enjoyed working with Chip on the Ross Lake General Management Plan, the Upper Stehekin Road Plan, and the Stehekin River Corridor General Management Plans, which required extensive analysis and honest decision-making for the long run. NCCC has been glad to see NOCA working toward long-term sustainability in resource management.

One of the most difficult and sensitive issues Chip inherited from his predecessor was fish stocking in high lakes of North Cascades. Outgoing Superintendent William Paleck tossed the hot-potato decision back to Congress despite extensive research supporting the decision to end the practice of introducing non-native trout into naturally fishless lakes.

Commitment to investment in young people, non-traditional users of the National Park system, long-term monitoring for management, and climate change are among the important issues that Chip Jenkins has quietly pushed forward. Ex-Superintendent Jenkins identifies as one of his most important legacies a fantastic Park, which he credits for successful planning and Park management.

As Chip Jenkins moves to deputy regional director for resource stewardship and planning for the NPS Pacific West Region, NCCC looks forward to maintaining a strong working relationship and to paying more attention to the long-term management investments needed in diversity and the external forcing caused by climate change.



NCCC’s Dave Fluharty and Chip Jenkins at Chip’s farewell party in Sedro Woolley, September 2012.
—PHILIP FENNER PHOTO

A sendoff from the Irate Birdwatcher’s ghost

It’s no secret that NCCC always has and likely always will look upon the North Cascade National Park as “our” Park. NCCC was right there for the gleam in the eye, conception and birth, childhood growing pains, adolescence, maturity....

It’s also no secret that NCCC has - how should we say this? - liked some NCNP superintendents better than others. Chip Jenkins will probably always rank near the top of that small select group who have been at

the helm of “our Park.” Not that we always agreed - that would be almost scary. But it would be hard to find anyone who would not agree that Chip Jenkins was always thoughtful, energetic, imaginative, and a leader who did his level best to make a great National Park even greater.

Chip is now moving on. NCCC wishes him all the best in his future endeavors, and we would like to say to him: Chip, you will be missed.

Chip Jenkins looks back

When NCCC asked Chip to reflect on his tenure as NOCA superintendent, here's what he had to say.

Shortly after I arrived at the park I worked with the park's leadership team to develop a strategic plan for the park. The goals we had for the park are:

- We manage the park's natural and cultural resources in unimpaired condition through scientifically informed stewardship, protection, research, restoration, education and public involvement.
- We actively welcome visitors to the North Cascades through a variety of appropriate educational and recreational experiences.
- We foster a diverse, well-trained staff that works collaboratively and efficiently in a safe, rewarding and respectful environment.
- We use innovative methods to help park staff, visitors and communities explore the meanings and significance of the North Cascades, inspire stewardship and foster engagement.
- We employ effective partnerships to accomplish our goals and build a constituency for the future.

While I think we made significant progress towards all of these goals, I am particularly proud of the work we did to actively welcome people to the park, inspire stewardship, and ensure scientifically informed stewardship.

Welcoming people and inspiring stewardship

As you know, the park was created by the work of citizen stewards. I believe its long-term preservation depends upon people continuing to know and be involved in the park. The Pathway for Youth and Citizen Stewards programs engaged many new people.

Pathways for Youth. With key partners at the North Cascades Institute (NCI) and the Student Conservation Association (SCA), we created the North Cascades Pathways For Youth framework. Through the program, approximately 200 diverse youth spend summers participating in leadership development, internships and entry-level employment opportunities. Through NCI's leadership, NCI and park staff and I, along with about 70 of these

youth, also participate in a three-day Youth Leadership Summit at the Environmental Learning Center. We just held our third annual Youth Summit in November! Two terrific videos on the Pathway program and the Youth Leadership Conference can be found on YouTube. Enter "Pathways for Youth – North Cascades Park" and "Youth Leadership Conference – North Cascades Institute" in your search engine to view them.

Citizen Stewards. I hired Mike Brondi to fill a new position, Volunteer and Youth Program Manager. Through his partnership, many people at the park and key partners have grown the number of park volunteers from about 300 when I started in 2007 to over 850 in 2012.

Welcoming people to the North Cascades. Among the many projects and programs that have made the park more welcoming to people are these highlights:

- Partnership with Seattle City Light and NCI led to presence of Park Rangers on the Skagit Boat Tours on Diablo Lake
- Partnership with concession in Stehekin led to purchase and use of new "heritage" style buses and presence of Park Rangers to lead the tours to Rainbow Falls
- Rehabilitation of the front country campgrounds along Highway 20; Parent Map magazine identified Colonial Creek Campground as one of the best places to take kids camping in the State of Washington
- New Junior Ranger Program is aimed at helping families visit and explore the park; the program recently received an award from the National Association for Interpretation
- A wide range of accessibility improvements, including the new winter dock in Stehekin; ensuring accessible restrooms throughout the park; installing assisted-listening devices and open captioning on the exhibits and films in the Visitor Centers; making trails to Rainbow Falls in Stehekin and Happy Creek on Highway 20 accessible.

Ensuring scientifically informed stewardship

I believe having the best available scientific information is critically important to us. We focused tremendous effort

on finalizing a comprehensive ecological inventory program and have now transitioned the program into a long-term and sustainable monitoring program. Together with the other parks in our network (Mount Rainier, Olympic, San Juan Island, Ebey's Landing, Lewis and Clark) this is the largest inventory and monitoring program in terms of number of protocols and amount of data collected. This inventory and monitoring program is serving as the basis for a wide range of work, including scientific research, supporting education programs, planning and management. To view videos on the program, visit <http://nwparkscience.org/video> (I'm in the first one, "Taking the Pulse of National Parks"). Find the Inventory and Monitoring Program at <http://science.nature.nps.gov/im/units/nccn/>

The challenges ahead

Our greatest challenge is aligning the work we do to make sure we focus on the highest priorities at the time of large decrease in purchase power.

Several factors have reduced our purchase power. Labor costs have increased (e.g. medical insurance premiums, pay, training and equipment requirements, etc), energy have risen (e.g. fuel for vehicles and boats, utilities for buildings, etc), and our budget has decreased the last two years. To address this and how the park could still focus on our goals, we had MBA consultants work with us to develop a business plan. (Find the plan at <http://www.nps.gov/noca/parkmgmt/planning.htm>) Inside this useful document, you will find financial projections and primary cost drivers, along with recent accomplishments and our goals for the near term. NCCC members might be especially interested in the section that describes the 10-to-1 leverage of working with North Cascades Institute.

Thanks to an outstanding staff

All of our accomplishments are the result of very skilled, motivated, and professional park employees coming together around common goals in order to do high-quality work to support the park. I was exceptionally fortunate to be able to work with such outstanding public servants.



Mine remediation: *What's so unusual about the unusual?*

By Chuck Carpenter
Co-Executive Director, Holden Village

Excerpted and reprinted from the Holden Village Voice, Fall 2012

For Holden Villagers the uncommon or surprising is expected and not at all unusual. For this reason, it is no surprise to us when speaking of the mine remediation project, no matter who you talk with, to hear them say, "This is a very unusual project." These words are somewhat reassuring to us who take it as a compliment to be called "unusual."

Normally, a federally mandated cleanup project is conducted so that after site studies have been completed, the decision is made and then the entire design is en-

gineered before implementation. Finally, with all documents in hand, the work is conducted.

Not so with this project. Because the construction season at Holden Village is short, the decision was made in 2010 to begin preparatory work well before the final design was complete. This "unusual" approach was intended to expedite the overall project and limit the length of impact on Holden Village. This process has taken some extra cooperation, been difficult at times, but it has worked very well for the Village. For that we are appreciative.

It now appears the time has come that the two parallel tracks – early works and

the legal process – will merge during 2013. The work crews have completed most of the early works now as the official process is catching up. Early works projects, which are now or will be soon completed, include:

- Village bypass road with bridge (completed in 2012)
- Staging areas with offices established
- Road to the ballpark re-established
- Gravel pits established south of tailings pile 3, another west of the 10-mile bridge
- Rock quarry site established east of 10-mile bridge

- Concrete bulkheads poured in ventilator and main portals, effectively closing off the mine
- Barge dock constructed in Lucerne (March-April 2013)
- Upgrades to the road including 23 turnouts

During the two summers of early works (2011-2012), we have also had the unusual experience of blending mine construction workers with regular guests at Holden Village. In the summer of 2012 the Village housed and fed 60-80 construction workers while running a very full program. The mantra of “One Village” has continued to encourage us as we all have lived together and worked through the many challenges of this remote setting. We thank everyone for their positive work in welcoming these new Villagers.

Learning the lingo of mine remediation

In January 2012, the official document describing the mine remediation project (Record of Decision – ROD) was issued. This document outlines specifically what Rio Tinto should design for the remedy and designates the benchmarks or criteria that will ensure that the remedy is successful. Rio Tinto is identified as the Potentially Responsible Party (PRP), wholly fiscally responsible for the project. Typically, the next step in the process under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) involves the PRP either consenting to the ROD (Consent Decree) or being ordered to do the project (Unilateral Administrative Order). Because Rio Tinto has some disagreement in the second part of the plan they asked for the latter. This summer the Unilateral Administrative Order (UAO) was issued to Rio Tinto. Currently, Rio Tinto has the remedial design somewhere between 30 to 60 percent complete. They intend to submit 90 percent of the design by early 2013, seeking overall approval by summer 2013.

Looking ahead to 2013

I am going to make it very clear right now that we don't have it all figured out; we only know that we are boldly moving forward. Even with very talented people in the U.S. Forest Service, the Environmental Protection Agency and the Washington Department of Ecology on one hand, and Rio Tinto on the other, and of course our own Holden Village staff: Be reassured, we'll put our faith in God.

Having said this, what follows is the best-case scenario for the mine remedia-

tion project in 2013. Some of the projects were slated for 2012 but were not accomplished; it is not yet clear how this will affect the entire schedule. Plans for the 2013 season include:

- Rerouting a portion of Railroad Creek.
- Constructing a concrete bed for Copper Creek between tailings piles 1 and 2.
- Quarry blasting, production and stockpiling of materials.
- Construction of a temporary village garage and garbology area.
- Demolition of the steel mill structure.
- Construction of the working platform on which the barrier wall excavation will take place in 2014.

All of the above projects have been or will soon be approved. They constitute a full schedule with 120-150 construction workers. Meanwhile the goal is for the entire remediation design to be approved by early summer. This will enable the bulk of the very disruptive projects to be accomplished in 2014, finishing in 2015. These include:

- Construction of underground barrier wall from tailings pile 2 westward past the vehicle bridge.
- Stabilizing the toe (lower edge) of the tailings piles to prevent a blowout.
- Re-grading, capping and seeding the tailings piles.
- Construction of a water treatment plant

At the same time this work is happening on the mining site, we are planning many projects to begin next summer for Holden Village.

Village improvement projects

As the mine remediation work gets fully under way, we are planning many projects for the Village. Our strategy is to do the most disruptive projects first:

- Trenching projects: Replace overhead electrical lines with underground lines, replacement of water mains, installing fire suppression, lawn irrigation pipes and communication wiring.
- Excavating projects: Repair the hotel basement foundation; replacing grease trap on the sewer line outside the hotel.
- Roofing projects: Replace metal roofing on Lodges 1, 2, 3 and 6 (4 is being completed in the fall of 2012), Narnia, Village Center and Koinonia.
- Lead paint abatement: Remove lead paint from various locations.
- Lodge porch rehabilitation: Replace logs, railings and floors where needed.
- Lodge rehabilitation.
- Foot bridge replacement. Current foot-bridge will be reinforced or replaced to support utility pipes crossing the creek.
- Begin upgrades to the chalets.
- Lawns and garden rehabilitation after excavation has taken place.

***TWC Editor's note:** Rehabilitation projects for the Village will adhere to the terms of its special-use permit from the U.S. Forest Service, which requires that it retain the original, “industrial” look of its mining era. Plans are being developed by an architectural firm with substantial experience working with government regulation of historic sites.*



—PHILIP FENNER PHOTOS, ABOVE AND OPPOSITE

Corvid's eye

*A treetop view of north Mt. Baker
Snoqualmie National Forest*



It goes without saying that the western slopes of the North Cascades are no place for a fair weather bird; no place for a bird of sun-soaked steppe, nor casual loiterer of suburban suet feeders. The deep and dark woods of the northern reaches of Mount Baker-Snoqualmie National Forest demand a hardy constitution and industrious character among avian types struggling to make do above and within a remorseless canopy. Some, like the wren and thrush, survive by way of a shy and retiring disposition, barely noticeable when not engaged in full-throated singing to defend diminutive territories from their own intruding cousins. The corvid, on the other hand, has no interest in circumspection or secrecy, opting instead for unvarnished commentary on much that he surveys in his daily rounds, regardless of whether such utterances abrade refined ears. Juiced on a bottomless reservoir of curiosity and mischief, the corvid misses little, and thus is a reliable source of (more or less) accurate information from the vantage of soaring conifer boughs.

So it happens the corvid is now trying his wing in a new medium. Rather than merely croaking his observations from on high, often uselessly falling upon the ears of nothing more significant than a

distracted squirrel, the clever corvid will begin exploring the marvels of the printed page. Although his opinion of bumbling hominids is, shall we say, somewhat less than favorable, the corvid is unreservedly impressed with their prowess for communication. Never too proud to study and emulate others' formulae for success, whether in locating a choice carcass or delivering the word to the startled masses, the corvid shall embark on a semi-regular column for *The Wild Cascades*. Said column will report the findings of non-linear, haphazard travel through our northern forest – mostly in the Mount Baker and Darrington ranger districts (the corvid's home turf), but sometimes farther afield. Expect news of Forest Service shenanigans by way of bulldozer and chainsaw, as well as desecrations inflicted by unenlightened civilians. Expect also tales of natural calamity and, perhaps most importantly, rediscoveries of profound beauty.

The corvid (temporarily minding his manners here) is delighted to make your acquaintance and looks forward to sharing a number of his future encounters in our grand North Cascades: a place of such regal and spellbinding qualities as would seem mythic, were it not in fact real. More to come.

Updates

NCCC Actions will return in our spring 2013 issue.

“Tribute to Harvey Manning” now online

“A Tribute to Harvey Manning,” a 12-minute film shot during the statue dedication for Harvey Manning in 2009, can now be found on the NCCC blog or on the web at <http://tinyurl.com/bfkaz7q>.

Find favorite *Wild Cascades* articles on our new index

Thanks to NCCC board member Phil Fenner for creating a searchable index of past issues of *The Wild Cascades* (2001 – 2012) that lets you search by author or article title. Find the index at www.northcascades.org/magazine.html

Reiter update

By Mike Town

The Reiter Foothills Forest process initiated by the state Department of Natural Resources (DNR) in 2008 has reached a new phase. A State Environmental Policy Act (SEPA) process to develop and plan new non-motorized trails will soon be developed. In this process over 1000 acres of state forest land near Wallace Falls State Park will be evaluated for hiking, mountain biking and equestrian trails. The SEPA process will address environmental impacts associated with the location and the building of trails, bridges and other

trail components. It should be concluded by early summer.

NCCC is excited about the possibility of designing a trail to connect the upper Wallace Falls trail to May Creek. Another possible trail will lead along the seven cascades of May Creek to some interesting historic mining ruins. Both trails will begin at the new trail head recently acquired by Snohomish County Parks Department which is located east of Wallace Falls State Park.

NCCC board members have been actively ground truthing the location of the new trails and will be assisting the DNR in future construction of the trail system. If you'd like to participate, please contact NCCC at ncccinfo@northcascades.org

Meanwhile the motorized trails at Reiter are also being constructed and will be open to some demonstration riding over five various weekends this spring.

Sustainable national forest roads

By Ed Henderson

On September 26, 2012, representatives of NCCC attended a gathering at REI in Seattle sponsored by the Washington Trails Association (WTA) and the Mount Baker Snoqualmie National Forest (MBSNF). The meeting began with a surprisingly candid admission by the Forest Service. "The road system was built to get the cut out [cutting down the trees and hauling them away!], not to provide access for recreation!" Now that the trees are gone, so is most of the money. Since the 1990s, the maintenance budget for roads in the Forest Service's NW Region 6 has been reduced by over 80 percent from \$90 to \$17 million—and those dollars buy much less than they once did.

There is a huge, multi billion-dollar national backlog in deferred maintenance on the National Forest roads. The lack of maintenance is exacerbating environmental damage caused by erosion, blocked culverts, and landslides, to say nothing of denying motor vehicle access for recreation. MBSNF is working on a study called "Sustainable Roads", which builds on its Minimum Roads Analysis published in 2009. Sustainable Roads is expected out by 2015.

MBSNF envisions reducing the current 2,500 miles of road to about 1,500 miles. Mileage open to passenger cars will be re-

duced even more. Many roads will only be maintained for high clearance four-wheel drive vehicles. This standard cost only \$750 per mile as opposed to \$1,750 per mile for cars. At the REI presentation there was much talk about the hard choices ahead, but none were named.

The Sustainable Roads Study presents both a challenge and an opportunity. While everyone agrees that the many dead-end spur roads that lead nowhere should be closed and decommissioned, nobody is quite sure just which and where these roads are. NCCC is compiling an inventory of roads on the forest using MBSNF's Motor Vehicle Use Maps (MVUM) from the Minimum Roads Analysis, the MBSNF ROAD CORE report and the INFRA database. Many of these reports are out-of-date and many roads will require ground truthing to insure accuracy. Once the inventory is complete, it will be overlain with recreational destinations.

After the low-hanging fruit of dead-end spur roads is eliminated, a comprehensive inventory of the roads on the forest can facilitate a cost-benefit analysis of the remainder, to help determine which should be kept and which decommissioned.

When considering whether or not a given road should be retained, the first

question is: Just what does this road provide access to? How important is that? Are there other means to reach the same destinations? How much road will be restored to traffic, i.e. how much driving will replace walking? How large a population of potential users will benefit? The second question will be: just what will it cost to keep that road open?

With the changing weather patterns and the increased probability of devastating floods, maintenance becomes an increasingly important consideration. It makes no sense to throw good money after bad and have an expensive repair washout again next year. Some proposed fixes can be very poorly designed and will, even if not washed out by flood, require exorbitant maintenance cost to keep open. Others are merely waiting for the next flood to leave. This evaluation will require clear, not wishful, thinking.

NCCC is responding to the challenge and preparing to take advantage of the opportunity to lobby for the responsible decommissioning of unnecessary and environmentally damaging roads. This will be balanced with the desire to maintain motor vehicle access to popular recreational destinations.

Yakima Plan blunders on

By Karl Forsgaard

In January 2013, significant events transpired in the campaign of the U.S. Bureau of Reclamation and State Department of Ecology to construct two new dams in the Yakima Basin, including a dam that would drown and destroy more than 1,000 acres of ancient forest at Bumping Lake, and establish two new National Recreation Areas for off-road vehicles (ORVs). Events included conclusion of meetings on the lands component of the Yakima Plan, and introduction of State legislation to fund early implementation items.

Attempts to fix flawed Yakima Plan lands elements

The dam proponents wrapped up their so-called “Ross process” of conservation organization meetings conducted by a professional facilitator (Ross Strategic) funded by BuRec and Ecology.

The “Ross process” gathered input (including considerable constructive criticism) on the dam proponents’ proposal for motorized National Recreation Areas (NRAs) in the Upper Yakima, Teanaway, Manastash and Taneum basins of Okanogan-Wenatchee National Forest (OWNF), north and south of I-90 in Kittitas County. As previously reported in the Spring 2012 and Summer/Fall 2012 issues of *TWC*, the NRA proposal would legislatively dedicate 41,000 acres to “backcountry motorized” use, i.e., off-road motorcycles, ATVs and 4x4s on trails, and snowmobiles traveling cross-country.

Yakima irrigation districts and groups seeking a Federal/State acquisition of 46,000 acres of privately owned forest land in the Teanaway basin continue to support the Yakima Plan. But within the conservation community it remains highly controversial. Of the 29 organizations who signed letters in March 2012 about the NRAs, none has become a supporter of the Yakima Plan.¹

Four of the dam proponents were so-called “sponsors” of the Ross process (American Rivers, National Wildlife Federation, Trout Unlimited and TWS). In response to the controversy they created, and based on the input received in the Ross process, these dam proponents say they will propose “changes and refinements” to the NRA Proposal in the Yakima



Motorcycle ruts in mud on South Fork Taneum Trail. —KARL FORSGAARD PHOTO

Workgroup’s Lands Subcommittee, as well as a recommendation to add seats on the Subcommittee for motorized and non-motorized recreation, grazing, and hunting/fishing. The proposed “changes and refinements” include some improvements that NCCC recommended, but overall the Ross process did not “fix” the defects, and the NRA Proposal is still a bad idea and a bad precedent. NCCC’s input was constructively trying to help make it less bad.

The sponsors’ proposed “changes and refinements” to the public lands designations include:

- The name of the two areas would be changed from NRAs to NCRAs (National Conservation and Recreation Areas).
- Boundary changes would delete the northwestern portion of each NCRA, and shift the boundaries south and east (which reduces the amount of Snoqualmie Pass Adaptive Management Area lands included in the proposed NCRAs).
- The authorizing legislation would set up “a multi-stakeholder process to develop the management plan” for each NCRA “that lays out the recreational zoning,” i.e., which sites would have motorized recreation, and which would not, would be determined after Congress creates the NCRAs.
- The proponents added an express acknowledgement that the land managers have authority to close routes and areas to motorized use where it is causing adverse ecological impacts and/or use conflicts (per the Nixon-Carter Executive Orders on ORV use of federal lands, codified as the Travel Management rule).
- Express acknowledgement of the need to fund monitoring and enforcement every year after the NCRAs are created.
- The dam proponents “realize that there will be those groups who remain fundamentally opposed” to what they are doing (which is better than being in denial about the existence of that opposition). We encouraged the dam proponents to continue constructive engagement with those who oppose the Yakima Plan.

In the Ross meetings, NCCC also advocated that the proposed NCRAs should be consistent with the Sierra Club/NCCC/ALPS map of recommended Wilderness and other land designations submitted to the OWNF Forest Plan Revision process in September 2011. The areas proposed as Wilderness on this map would be open to the many types of recreation allowed in Wilderness, including hiking, horseback riding, fishing, hunting, camping, backpacking, climbing, bird-watching (or observing any plants, animals, minerals), snowshoeing and skiing. The areas proposed as “Roadless, Non-motorized” on this map would be open to all of those uses, and could also be open to mountain biking on specified trails. The areas pro-

posed as “Roadless, Other” on this map would be open to all of those uses, and could also be open to motorized recreation including motorcycles and ATVs on specified trails, 4x4s on specified “4WD” routes, and snowmobiles in specified areas and routes. It remains to be seen whether the dam proponents will advocate for land protections within the proposed NCRAs that are more consistent with the Sierra Club/NCCC/ALPS map of recommended Wilderness and other land designations.

As many organizations said throughout 2012, the NRA Proposal in the Yakima Plan process undermines the ongoing National Forest processes (OWNF Forest Plan Revision and OWNF Travel Management) and poses numerous threats to the ecosystem, watersheds, and non-motorized recreational opportunities. This is true of the re-dubbed NCRA Proposal as well as the original January 2012 NRA Proposal. Designation of motorized and non-motorized routes and areas should be moved out of the Yakima Plan and into the existing National Forest regulatory process, where it belongs.

At the start of the Ross process, one of the dam proponents admitted that from an ecosystem perspective, it would be “untenable” to maintain the current levels of off-road vehicle use on these lands, let alone increase those levels, i.e., ORV use levels need to be reduced in the NCRAs. Unfortunately, after the four-month Ross process, the dam proponents have still not articulated how they would go about providing for reduced levels of ORV use on those lands. Instead, their proposed NCRA management plan stakeholder-process description contains much language that seems to capitulate to ORV use on the former hiker-horse trails of these roadless areas. Furthermore, the Yakima Plan’s Final EIS says that the purpose of the “National Recreation” designation is to “attract more users.”

NCCC believes we have a better chance to reduce current levels of ORV use if we keep these designation decisions in the National Forest administrative processes, rather than putting a National Recreation label on them in a statute passed by Congress with a subsequent multi-stakeholder process that will draw ORV users out in force, due to the National Recreation label. By making the stakes so much higher for ORV users, the National Recreation label helps them to mobilize and fight for every foot of trail open to ORVs. Consequently, those in our community who want to reduce current levels of ORV use are being



set up for failure by the proposed NCRA legislation.

As the Ross process concludes, it is worth reiterating the process defects we reported in the Summer/Fall *TWC*. Several important discussion topics proposed by NCCC were deemed by the BuRec-funded facilitator to be “outside of the scope of this process,” and thus “will not be discussed” and “I will not be considering them as I assist the Workgroup.” These banned topics included the lack of opportunity for public comment on the NRA proposal; reasons for leaving ORV designations in the National Forest planning processes; ways that ORV designations in the Yakima Plan would set a bad precedent and negatively impact future lands protection efforts in Washington and nationally; risks of negative changes during the legislative process; and policy reasons for opposing statutory mandates for ORV use in lands legislation. In addition, the facilitator took all discussion of a new Bumping Lake dam off the table, even though two mentions of Bumping Lake popped up in the summary distributed at the final meeting. Banning those topics from the Ross process precluded a full discussion, and the conservation community still needs to have that discussion.

Yakima Plan makes run for State funding

The dam proponents and Governor Inslee, who is making new dams the first centerpiece of his grow-the-economy platform, also launched State legislation

Motorcycles on South Fork Taneum Trail.

—KARL FORSGAARD PHOTO

at hearings in the House Capital Budget Committee and Agriculture & Natural Resources Committee, lobbying for millions of dollars as a down payment on the Yakima Plan’s current estimated price tag of \$5 billion.

The State Legislature is now considering bills (HB 1088 and 1089) for capital budget expenditures of \$23 million this year for “Early Action” items in the Yakima Plan. Some of these budget items such as water conservation measures, Kachess inactive storage, and the Keechelus-to-Kachess water storage pipeline might be supportable after EIS review, while others such as geologic investigations for the new dams might be opposed by NCCC, Sierra Club and the other opponents of the Bumping and Wymer dams. In January 2013, Sierra Club and Friends of Bumping Lake testified before the House Agriculture and Natural Resources Committee against HB 1196, Ecology’s request bill to have the Legislature rubberstamp the Yakima Plan, including new dams and new ORV problems on National Forest lands. On January 24, newly elected Governor Inslee made a similar bill (HB 1414) the first executive request legislation of his administration, and called it the “Yakima River Basin Water, Jobs and Fish” bill.

Also in January 2013, NCCC signed onto Sierra Club testimony before the Capital

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Yakima Plan blunders on

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Budget Committee on HB 1088 and 1089, opposing new dam study funding and calling for an audit of the Columbia River basin water supply development account to determine whether future expenditures from this account are warranted and have a positive benefit/cost ratio. In its 2012 report the Green Scissors Campaign, a national coalition, identified both the proposed Bumping and Wymer dams as wasteful government projects that should not be funded in the federal budget.

BuRec did a federal benefit/cost analysis on two versions of a Wymer dam back in 2008. The most “favorable” alternative showed a (losing) benefit/cost ratio of 0.31. Bumping has not had a benefit/cost analysis done since about 40 years ago, and that was on a different size dam. Despite Wymer’s extremely unfavorable economics and the lack of updated Bumping analysis, Governor Gregoire and Ecology resurrected both projects. Now BuRec has calculated “benefits” on the entire Yakima Plan. They have tallied over \$7 billion dollars of alleged fish “benefits” (by plugging in what people might voluntarily pay to have more salmon) so that they can offset the Yakima Plan costs which run over \$5 billion (of which the costs of the two dams

are over \$1.5 billion and growing).

In November, the U.S. Fish & Wildlife Service designated Critical Habitat for the Northern Spotted Owl under the Endangered Species Act, including ancient forest at the shoreline of Bumping Lake – which would be inundated and destroyed if the proposed new dam is built.

While battling against the worst elements of the Yakima Plan, NCCC continues to advocate for a new OWN Forest Plan and OWN Travel Management Plan that are consistent with the Sierra Club/NCCC/ALPS map of recommended Wilderness and other land designations, followed by Congressional enactment of those Wildernesses, including the ancient forest of Bumping Lake as well as places outside the Yakima Basin like the North Fork Entiat, Mad River, Chelan-Sawtooth, Liberty Bell and Golden Horn roadless areas.

What you can do:

Send Governor Inslee a strong message:

- Support water conservation and water banking in the Yakima basin.
- Oppose new money-losing dams in the Yakima Basin.

- Oppose new off-road vehicle designations in the Okanogan-Wenatchee National Forest outside of the existing National Forest planning process.
- Support Wilderness protection for roadless areas in the Yakima Basin, including the ancient forest surrounding the existing Bumping Lake.

Comments may be sent through the following website: <http://www.governor.wa.gov/contact/default.asp>

¹A March 11, 2012 letter detailing numerous substantive and procedural objections to the NRA Proposal was signed by these 26 organizations: Alpine Lakes Protection Society; Aqua Permanente; Center for Biological Diversity; CELP; El Sendero; Endangered Species Coalition; Federation of Western Outdoor Clubs; Friends of Bumping Lake; Friends of the Earth; Friends of the Teanaway; Friends of Wild Sky; Issaquah Alps Trails Club; Kittitas Audubon Society; Kittitas County Conservation Coalition; Mazamas; MidFORC; North Cascades Conservation Council; Olympic Forest Coalition; Seattle Audubon Society; Sierra Club; Washington Native Plant Society; Wenatchee Mountains Coalition; Western Lands Project; Western Watersheds Project; Wilderness Watch; and Wildlands CPR. A separate March 13, 2012 letter expressing similar concerns, including that the NRA Proposal “undermines” the National Forest planning processes, was signed by American Whitewater; The Mountaineers; and Washington Wild. None of these 29 organizations has become a supporter of the Yakima Plan.



Newly designated critical habitat for northern spotted owls at west end of Bumping Lake. —KARL FORSGAARD PHOTO



North Cascade Glacier Climate Project field report 2012

By Tom Hammond

This was the 29th field season for the North Cascade Glacier Climate Project (NCGCP). Long before “global warming” was part of the world lexicon, Professor Mauri Peltó was out gathering data. I am grateful to Mauri Peltó for inviting me on the North Cascade Glacier Climate Project field season. I’ve been evaluating glaciers with Mauri for nine years now, and have been able to pick and choose where and when I go. This year, I evaluated the Columbia and Easton Glaciers. As well we hiked out on the Deming Glacier, where one of the most impressive icefalls in the entire range resides. Athena and I did a remote survey of the Rainbow Glacier on the last day of the hydrologic calendar, September 30. I am also thankful for the desire, ability

and curiosity to take on these significant back-country travels. While these areas are incredibly beautiful and profound, they also demand perseverance, skill and a heightened level of situational awareness.

This year’s team consisted of Jill Peltó, Ben Peltó, principal investigator/founder Mauri Peltó and various visitors, including a film maker from Michigan, a student from WWU and a hydrologist on behalf of the Nooksack Tribe.

The NCGCP is the longest-running, most comprehensive glacier study of its kind in the world. Unlike many geologic studies that employ remote sensing, the NCGCP evaluates glaciers up close: approach hikes with heavy probes and gear for multi-night stays is the rule.

Crevasse offer a window into a glacier, and provide detailed information on annual layers of snow deposition from recent years.

—TOM HAMMOND PHOTO

The project continues to study the same eight glaciers across the range, selected to provide the best possible area coverage of the range, from North to South, wet West to dry East, and covering different slope aspects and varying types of glaciers (e.g. avalanche-fed versus “standard” accumulation zone). There is usually a ninth “wild-card” glacier evaluated on roughly a five year rotation—the Cache Glacier, the

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Glacier Climate Project

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Lyman Glacier, and even the avalanche fan at the base of Big Four fall in this rotation.

While spectacular, the effort is not glamorous—boots on ice for more than two weeks is hard, heavy and often hot work—literally more than 150 kilometers of full-pack hiking, and thousands of meters of elevation gain and loss. The project measures four key elements that go in to making a glacier:

- **Mass-balance:** Mass-balance directly measures whether a glacier is growing or shrinking and is usually expressed as thickness. Snow depth measurements are taken across many points on the glaciers. Called transects, these provide high-resolution, highly accurate mass-balance information. As well, crevasse strata are used to measure annual layers to further inform mass-balance.
- **Longitudinal profile:** measures the length of glaciers.
- **Stream-flow:** Both super-glacial streams and outlet from the entire glacier are measured. Note the role of super-glacial streams. In the cool morning, the glacier has several small trickles flowing across the surface. By afternoon, these flows become full-blown creeks, incising more than a meter deep into the ice; literally carving the glacier apart, especially at near the terminus.
- **Melt rate:** On hot sunny days snow and blue ice can melt more than 20 centimeters (eight inches) in a day.

Our glaciers have lost about 30 percent of their mass in the past three decades.

This year's initial data was very encouraging with a good snowpack, but the record heat and record dry spell through August and September resulted in most glaciers with zero mass balance (no gain, no loss).

Columbia Glacier

August 1-4

Zero mass balance for 2012.

Imagine visiting a beach in Hawaii that's covered in aluminum foil, and you get



the idea of what it's like to be on a glacier on a cloudless summer day. The radiation is intense. Exposed skin is burned in minutes—this is a place where hat and sunglasses are not optional. It was a hot, sweaty time with temps around 80 at the top of the glacier, which experiences very calm conditions thanks to the high crags surrounding it.

We saw very few animals, mostly birds and a few marmots. Close along Blanca Lake we saw large bullfrogs and other “forest frogs.” There were no live bugs, but the glacier was littered with dead bugs of all kinds, and Rosy Finches were out and about, like sandpipers on a beach, dining on the menu of frozen goodies.

The snowpack was impressive, with about 3 meters of snow on areas “normally” (as of the last three decades) melted out to blue ice. Mauri and I are recognizing that the avalanche fans feeding the glacier from Columbia Peak, and to a lesser extent Kyes Peak and Monte Cristo Peak, will likely be the last vestiges of the glacier in 100 years or so, as this glacier has a strong transverse component. That is, the traditional accumulation zone at the top of the glacier does not exist on the Columbia: in what Mauri describes as “Glacier disequilibrium,” the entire glacier is below the trim line and resides in the ablation zone, and what survives of the glacier will come from the “top of the sides.”

Northwest climbing legend Fred Beckey is not one easily given to superlatives, but he writes, the “basin containing Blanca

The Deming Glacier, below the Black Buttes, is less than 30 miles from the tidewater of Bellingham Bay. The waterfalls seen on the left and right sides of the glacier are about 200 feet high and provide good scale for this grand scene.

—TOM HAMMOND PHOTO

Lake and the Columbia Glacier is one of the most magnificent settings in the Cascade Range.” High praise indeed, especially considering these mountains barely reach 7,000 feet elevation. The praise is well-founded, such is the local relief. I am thankful and fortunate to be a part of this great lab of planetary science, the source of life-giving cold, clean water for all of us living here.

Rainbow and Sholes Glaciers

August 4-7

Mass-balance plus one-half meter for Rainbow, and zero/neutral for Sholes.

Lower Curtis Glacier

August 7-9

Lower Curtis Glacier approximately minus .5 meter mass balance (the glacier thinned by nearly two feet in 2012).

Easton Glacier

August 9-12

Mass-balance minus one meter.

I have avoided the Easton for the past

few years because it is one of the more unpleasant camps. When the wind isn't blowing, it's overrun by bugs, and when the wind is blowing, it makes being outside a chore. Try chasing socks that are blowing away while trying to start a stove after 9 hours climbing all over the stratovolcano! Plus the wind carries a scouring load of volcanic dust that coats everything with a fine, sharp grit. And of course the water source is on the stout side of being potable. The stream coming from the Easton is the color of concrete and not much lower in aggregate content.

When Mauri posted the field season schedule last Spring, I immediately noticed he mentioned "Easton+Deming." Hmm, to see the Deming Glacier/Icefall is a life-changing experience but to actually *be on the Deming...* sign me up!

The Easton Glacier has retreated more than 300 meters since 1990. Remember, this glacier terminus was 20 to 30 meters thick, so it's not just a third of a kilometer of length—think volume. The Deming Glacier has retreated one-half kilometer since 1990—something that should concern Nooksack and Bellingham residents alike, since that's where their drinking water and salmon habitat come from. 2012 has been a very warm and dry summer, and in the mountains moreso. While the lowlands spent June under overcast skies, it is apparent the glaciers of the high North Cascades were above much of that.

IceWorm (Hyas Creek), Daniels, Lynch Glaciers

August 13-16

Mass balance approximately positive .5 meter for all three glaciers.

This area, the southern and eastern reach of the project, usually shows the lowest snow amounts and thus a negative mass balance. This year is the exception, with more snow surviving in to late summer than other locations across the range.

The Ice Worm and Daniels Glaciers form the headwaters of the Cle Elum River, while the Lynch and Columbia Glaciers comprise the headwaters of the Skykomish River system. The importance of these glaciers to our region cannot be understated, so I urge everyone to keep conservation foremost in mind. Take seriously the need to reduce our carbon footprint and to advocate for protecting lands as Wilderness and National Park.

In general, over the past 29 years, the glaciers of the North Cascades have seen 20 years of negative mass-balance, five years of positive mass-balance, and four



years of "break even" zero mass-balance. Keep in mind the loss years are typically measured in more than a meter, while the gain years are measured in fractions of a meter. Our glaciers have lost about 30 percent of their mass in the past three decades.

For more details, visit <http://www.nichols.edu/departments/glacier/>.

Deming icefall.

—TOM HAMMOND PHOTO

NCCC board member Tom Hammond has been invited by the Sierra Club to give a presentation on North Cascades glaciers at the REI in Alderwood Mall (Lynnwood) on Thursday, May 30th, from 7 to 8:30 p.m. Admission is free, but requires a reservation. Sign up at www.rei.com/Alderwood.

Cascade rambles: A day in the clay

By Rick McGuire



Claylands cedar. —
KELLY HEINTZ PHOTO

In the lower Middle Fork Snoqualmie valley, a large area of clay soils, the “Middle Fork Claylands,” are the site of interesting and unusual flora and fauna that sets them apart from most other areas in the Cascades. Last spring, long-time Middle Fork conservationist Mark Boyar and I set out for a day of exploration in the clay.

The Middle Fork claylands formed during the Ice Age, when the Puget Lobe of

the Cordilleran Ice Sheet dammed up the Middle Fork river, forming “periglacial” lakes behind the ice dam, with relatively still waters. This process took place a number of times as the Puget Lobe advanced and retreated. These lakes were filled by meltwater from the Puget Lobe and by the Middle Fork and its tributaries. Those waters carried substantial amounts of suspended fine clay sediments eroded by valley glaciers from higher up in the watershed.

As the water slowed to a nearly motionless state in the glacial lakes, the cloud

of tiny clay particles slowly settled out of suspension and settled on the lake bottoms, forming the clay deposits seen today. When the Puget Lobe made its final retreat, the moraine remained until the lake overtopped it, cutting a new channel for the Middle Fork and draining the lake and exposing the claybeds. This channel is occupied today by the Middle Fork, where the Middle Fork road follows the river past the Mine Creek recreation site, through the moraines and upstream to the claylands area.

Mark and I hoped to find the least brushy way to tour the appealing “near-old growth” clayland forests. Washington Commissioner of Public Lands Peter Goldmark had expressed an interest in seeing the forests, which he had protected with his designation of a greatly expanded Mt. Si Natural Resource Conservation Area (NRCA) of over 13,000 acres, and a Middle Fork NRCA of about 10,000 acres. These two NRCA’s now protect an extent of lowland forests unparalleled in the Cascades. Their designation was a monumental conservation achievement, deserving more attention than it received. When he visited, we wanted to be able to show Goldmark the most big old trees while avoiding the worst of the brush.

Size matters

The word clay is a generic term referring to soils of ultrafine particles. One primary defining soil element is particle size, ranging from large-sized sands and gravels to medium-sized silts and fine-sized clays. The actual particles can be formed from any number of different minerals.

Particle size is important because it determines how water and air move through the soil, and what will or will not want to grow there. Large sand and gravel particles have large spaces between them, allowing water to drain readily and air to reach the soil. Finer particles are packed together tightly, leaving little space for air and water. Thus clay soils are usually regarded as wet or heavy, or even “goopy,” since it takes a long time for water that falls on them to drain away. They hold much more water and nutrients than easily leached lighter soils, but make it hard for air to reach plant roots. In a high rainfall area like the Middle Fork, they never dry out – hence the often formidable brush. Plants and trees differ in their tolerances and preferences for heavier versus lighter

soils, and forests growing on clay are often quite different from those on better drained silty or sandy ground.

The near-total absence of Douglas firs means these claylands support a forest notably different from surrounding, non-clay areas. Douglas fir has been called the finest lumber tree in the world, with light, strong wood, not much inferior to cedar in decay resistance. It prefers well-drained

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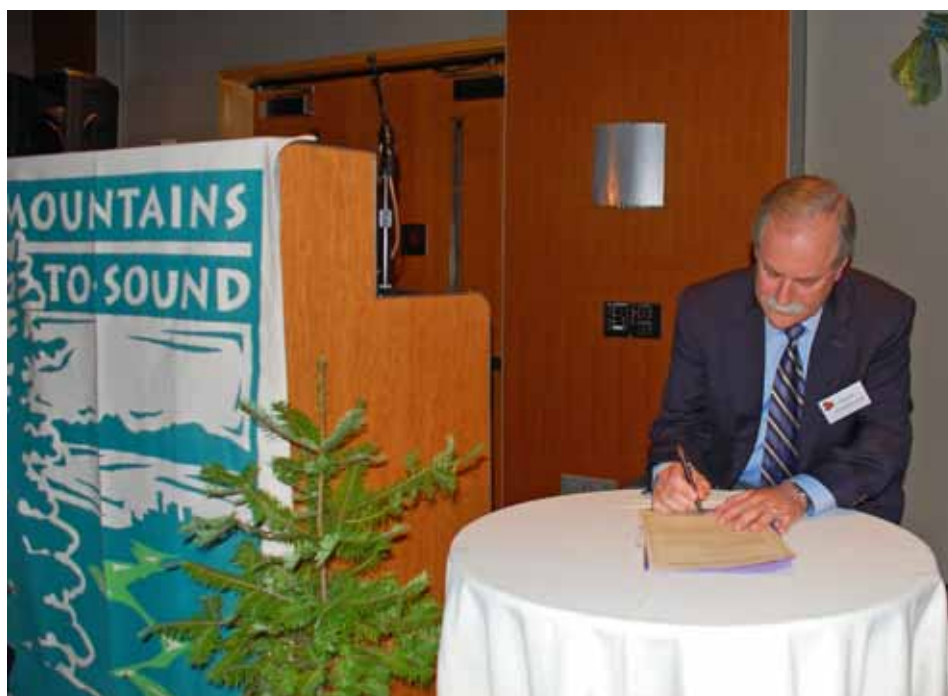
soils and has a distinct aversion to wet feet. Western hemlock, somewhat more tolerant of wet ground, also prefers good drainage and is uncommon on clay. Douglas fir and hemlock dominate almost all the lower-elevation forests of the western Cascades, including the

Middle Fork apart from the claylands. Since Douglas fir was by far the most valuable and sought-after tree during the early days of logging, its absence meant the claylands were largely bypassed. Thus substantial areas still support older, almost old-growth forests.

Stick to the ribs, avoid the gullies

These were the forests we set out to see as we started down a stretch of newly decommissioned road, boulder-hopping several creeks which seemed bigger now that they could no longer be driven over. Soon it was time to leave the roadbed and strike off into the newly preserved forests of the NRCA.

At first the going was easy, under tall Douglas firs and hemlocks, just above the clay bands. A familiar landmark, a TV set from the days when "Middle Fork archaeology" meant dating cars, appliances, and other detritus of industrial civilization, was just barely discernible as not capable of receiving UHF signals, marking its vintage as pre-1964. Happily, opportunities to practice the art are diminishing now that the Middle Fork valley is not the no man's land it was fifteen or more years ago, when widespread shooting, dumping and other nastiness kept many from enjoying its charms. Soon enough the Douglas firs were behind us, and we were



in the claylands. Crossing a small stream we could see some greenish-grey exposed clay. The salmonberries and devil's club were suddenly thicker. We were glad to be there before the leaves were out. Seeing where one's feet are stepping can make a surprising difference.

A basic rule of off-trail travel in the Cascades is to stay on ribs, ridges and other high ground, and avoid gullies and other low spots. This applies doubly in the claylands. For a select few, the claylands are love at first sight; for others, they are the prototypical Cascade brush hell. But even really bad brush almost always offers a way through. Expectations just need to be adjusted appropriately. One must constantly look ahead, think about the best route, stay under the heaviest timber, and trust your nose. On this day we followed our noses out along a rib where we began to see the kind of trees we had come here for. We passed a hemlock about three feet in diameter, one of the few to be found on the clay. About a decade earlier a hungry bear had torn off its bark all the way around except for a strip about ten inches wide. It looked as healthy and full of foliage as ever, despite its injuries.

Sitka spruce seems to tolerate clay particularly well, and soon we were among some remarkably tall ones, many with the big limbs that mark really old trees. There must have been little market for spruce back when the Middle Fork was first logged, with all the local mills set up for Douglas fir. There were spruce mills in Port Angeles, an uneconomically long way

Washington Lands Commissioner Peter Goldmark signs order establishing expanded Mt. Si and new Middle Fork Snoqualmie Natural Resource Conservation Areas at Mountains to Sound Greenway annual dinner, December 2009.

—AMY BROCKHAUS PHOTO

from the Middle Fork. So these trees were left alone, bypassed in the quest for more valuable wood. Even more surprising is the understory of hazelnut. Normally a lowland tree of warmish places, it is not commonly associated with Sitka spruce, but here the two seem to go together. Few trees offer more to wildlife than hazelnuts.

Wildlife abound in the claylands. Various shrubs, forbs and grasses get a chance to grow on naturally disturbed sites when the clay shifts, toppling trees and letting sunlight reach the ground. In some places enough forage grows to encourage populations of deer and elk needed to create "elk gardens," where continual grazing and browsing keeps down brush and encourages yet further growth of browse species. This is a rare phenomenon in the Cascades, reminiscent of the heavily browsed, open appearance of some parts of the Olympic National Park. It is almost impossible not to see wildlife in these parts of the claylands, a sharp contrast to the dark, shady silence of most Douglas fir-hemlock forests.

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Claylands

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The lack of Douglas fir and hemlock opens up space for a number of tree species to flourish. Along with the hazelnuts, such clay-tolerant, high wildlife-value trees as pacific crabapple, bitter cherry, and cascara, scarce in most Cascade forests, are abundant. There are also very large old cedars. The forest here is not totally undisturbed. At some point, probably in the 1970's, some cedars fell victim to shake rats, whose efforts can be seen in the form of occasional stumps, and trunks partially cut up in the quest for solid wood.

Fortunately, many of these cedars were simply too big, old, gnarly and punky to justify the considerable labor of cutting them down. They too were left alone. Really old forests are seldom the most valuable ones in terms of usable wood, since so many of the trees are "defective." Most Northwest forests reach their height of commercial value at about 200 years of age. The old forests of the Middle Fork claylands may qualify as "antique" forests, places where there is no evidence of any past fires, and where the forest itself is older than any of the trees within it. Such places are rare, since everything tends to burn sooner or later. Fires were also more frequent before the start of the Little Ice Age around 1400 A.D. Some of the trees here look like they date from before then, although trees are seldom as old as they look. It would be interesting to have expert eyes see if they really qualify.

With big trees and brush pretty much everywhere, it was hard to figure out the least brushy path for the Commissioner. So we decided to just look around ourselves. We descended some slopes where the clay was slumping and exposed, with layers that probably represent different eras of lake-bottom deposition. We crossed a stream flowing across an exposed claybed, and climbed up another adjacent rib. A friend had told us that there were some old Douglas firs on this rib, which sounded unlikely but interesting.

And it was. It turned out that the Douglas firs were farther over, but we did come across plenty of large, old, wide spreading bigleaf maples, probably the most numerous of the impressive trees of the claylands. Forests of old maples have a look and feel unlike any others in the conifer-dominated Northwest. The moss and fern-draped limbs grow out horizontally from the trunks for dozens of feet, and the trees have great individual character. In summer

when the leaves are out, the space below is cool and airy, but never dark.

On this early spring day, the ground was carpeted with swordferns and trilliums. This rib led up onto an extensive, nearly flat bench, with large maples extending far in every direction, delightful to walk through. The claylands pack a lot of interest into a relatively small area. A place that looks small on the map will offer many hours' worth of exploration. Mark and I, occasionally accompanied by others, have been to the claylands many times now, but there are still places we have yet to see.

More Middle Fork archaeology

Eventually we circled back below the old road, most of the way through old maple forest with occasional big spruces. We passed beneath a part of the road that had been blasted across cliffs, once a spot for giving unwanted or stolen cars a grand sendoff. Most had been winched up and recovered by Wade Holden and "Friends of the Trail," a nonprofit group that has spent countless hours cleaning up the Middle Fork and other abused places. Mark thought that Wade had managed to get all the cars pulled up. I thought there might still be a few left.

Finding three cars beyond even the range of Wade's cable gave us another chance to practice our Middle Fork archaeology. The first was easy, a late 60's Ford truck, and then, less obviously, a 1963 Chevrolet Impala. The third and oldest-looking vehicle was bashed up almost beyond recognition. With no seatbelt anchors, it could have been a pre-1965 Rambler. None seemed to have any vital fluids left, and all were rusting away. We couldn't help but wonder what passersby in the far future would think about the civilization that produced them and then threw them away.

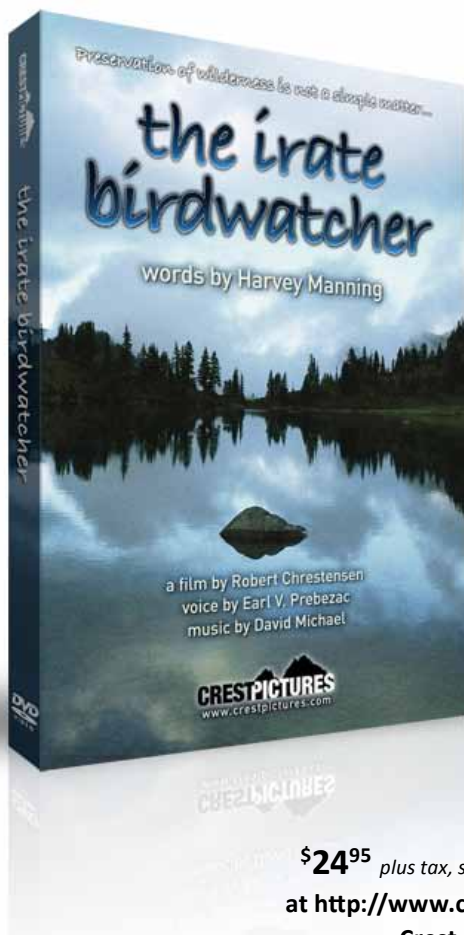
The comparatively easy travel under the big maples had spoiled us, and we were forced to make up for it by enduring a section of especially nasty brush. It took at least twenty minutes to get back to the road, which was not far off. We hadn't covered much ground in terms of miles, but it had been a full and interesting day. As it turned out, the time pressures of an election year kept the Lands Commissioner from making his hoped-for visit, but he has since rescheduled. And those of us who love the Middle Fork never need much of an excuse to go spend another day in the clay.

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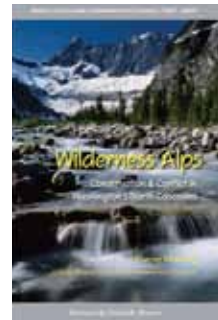
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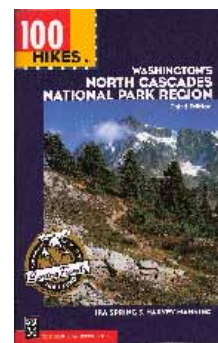
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Winter shot of Outrigger Peak (southeast peak of Mt. Fury) in the Pickets. —THOM SCHROEDER PHOTO