

Fall 2002

The Planet, 2002, Autumn

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the planet [autumn 2002]
The North Cascades

EDITOR'S NOTE:

Click, swish, tap. Click, swish, tap.

The last decent radio station turned to static three miles east of Marblemount, Wash. The only thing I could hear was the gentle tap of rain on the windshield, the wipers whisking the water away and the hum of my Jeep's motor. I needed inspiration.

The idea for this issue of *The Planet* started with an epiphany during a lecture last spring. I was watching a slide show with images from a summer backpacking trip across the North Cascades crest when I realized how special it was to be this close to such an amazing and wild place. Snow-capped peaks and blue glaciers, gnarled trees and 300-foot waterfalls flashed across the screen, each slide more impressive than the last.

We set out to cover everything, but sadly we couldn't possibly do it all in 28 pages of text. Instead, we put together a selective look at the North Cascades' peaks, places and people. We tell the story of the Northwest's playground through the eyes of an elder of the climbing community, with the voice of a lookout-turned-poet and from the heart of a constantly changing mountain range.

Initially, our goal was to encourage people to get out and enjoy the powerful landscape — the rugged trails and winding gravel roads, the blue skies and misty gorges, the mudslides and wildfires. But the more we listened, the more we learned that getting people to visit the region might not be the best thing for it.

This issue isn't a regurgitation of expert opinions. It highlights real people in real places. We talked to farmers who worry about grizzly bears eating their livestock and U.S. Customs officers who worry about being killed by drug runners. We met scientists who watch glaciers accumulate pollutants and lose mass each year. We saw a village completely isolated from the rest of the world and a basin being loved to death by climbers.

I thought about these things as I traveled west on Highway 20, heading back to the office to put the finishing touches on this issue. The road wound around the base of mountains taller than skyscrapers. I leaned forward and looked up through the windshield, straining to see their tops, but they were engulfed in a cloud of mist. I settled back in my seat and watched the wet, blue-tinted rock walls change to orange as the sun peeked out from under the clouds before it slipped into Puget Sound. The rain stopped. I smiled to myself, turned off my windshield wipers and turned on the radio.



Kate Koch

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COVER: On a summer morning in 2001, Patrick Farrell traverses the east summit ridge of Eldorado. The 8,672 foot peak towers over the North Cascades.

(Photo by Colin Shanley)

BACK: Map of the North Cascades.

(By Nikole Coleman)

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The history of the North Cascades begins with the geologic forces that shaped the peaks and valleys of the region. These awesome events create mudslides, earthquakes and volcanic activity and draw people from around the world to enjoy the range.

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The Planet is an environmental magazine published three times yearly dedicated to environmental advocacy and awareness through responsible journalism. It is written, designed and edited by students through Huxley College of the Environment.

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THE PLANET
autumn 2002

dynamic landscape

BY BRENDAN McLAUGHLIN ILLUSTRATION BY ANDREA THOMAS



Ninety-million-year-old metamorphic rock litters the glacially sculpted amphitheater of Boston Basin. Photo by Colin Shanley.

NOV. 1, 1985 was a wet evening in the Cascade River Park. William and Alice Bower invited their friends Clair and Betty Wilson over for a game of cards in their mobile home, unaware that heavy rain had transformed the soil on the hillside above to unstable mud. The mass suddenly gave way in a mammoth slide, careening down the slope and crushing the trailer. Skagit County Sheriff's Deputy Johnie Rose responded first to the emergency.

"I was walking through looking at the damage and we heard sounds from beneath the mud," he said. "Firemen were digging by hand to locate survivors for about nine hours."

The slide, 50 yards wide and about 6 yards deep, washed

across the road and flattened the Bower home to 3 feet tall, he said. No one survived.

Geology is not the study of stagnant, unmoving rocks, but of a dynamic interplay between slow earth movements and their destructive side effects, such as the fatal 1985 mudslide. Regardless of their timeless appearance, the North Cascades did not always exist as we see them today. Geologic forces have compressed, stretched, built up and torn down this impressive landscape for millions of years. Short-term visitors often fail to recognize the profound influence geologic processes had in defining the region. The mountains create opportunities for people to vacation and explore, and for native plants and animals to flourish.

DATING ROCK

Geologists can accurately date rock formations thanks to small amounts of radioactive elements called isotopes, found in all rocks. Western Washington University geomorphologist Paul Thomas studied the age of glacial deposits on Mount Baker as a graduate student.

Radioactive elements breakdown at a consistent rate into stable, "daughter" atoms, he said. Every radioactive element has a unique

rate of breakdown, or decomposition, called a half-life, the time it takes to lose half of its mass to its stable "daughter" ion.

It is possible to tell when a rock formed by measuring the balance of a compound found in a rock and, given that compound's rate of decay, it is possible to extrapolate back in time to estimate the rock's age.

"If you know the rate, you can date," he said.

The story began 570 million years ago, when pieces of the Earth's crust started scraping past North America, a process called lateral fault movement. Crustal plates slid past the relatively stationary North American plate, leaving portions of their rock behind from British Columbia to Wenatchee in long slabs called terranes.

Millions of years and ten terranes later, a complex collage of different rock types packed together, forming the foundation of the North Cascades. Compression, intense heat, pressure and later volcanoes, pushed the mountains upward to their current heights. As recently as 13,000 years ago, ice ages scoured and shaped the peaks. Today, the possibility of geologic hazards like mudslides makes any trek into the mountains a risky endeavor.

DISTANT ORIGINS

The terranes finished settling 90 million years ago, brought to their present location by lateral fault movement.

"A lot of the stuff that was scraped off has moved a great distance," said Jon Riedel, North Cascades National Park geomorphologist. "There's a big controversy over how far the crustal pieces have moved."

Riedel said he thinks many of the terranes migrated to Washington from somewhere in southern California. Some, like the Nooksack terrane, contain reminders of how far they have traveled.

"The Nooksack terrane formed as a result of sediment deposited in an ocean basin off the continental margin 120 to 170 million years ago," said Scott Babcock, Western Washington University geology professor. "It includes fossilized squid, clams and shellfish. Chowder Ridge (in the Nooksack terrane) got its name from these fossils. It looked like somebody threw a bowl of chowder out over the rock."

The terranes of the North Cascades are categorized into three general domains: the Western, Metamorphic Core and Methow. Two major faults running through the area divide the domains.

During his graduate studies, Babcock became very familiar with an outcrop of rock in the Metamorphic Core Domain called Skagit gneiss. He said he spent weeks at a time crossing the high mountain ridges between Eldorado Peak and the South Pickett Range, collecting rock samples until they doubled his pack's weight.

Geologists easily recognize rocks in this central part of the range because intense heat and pressure deep in the Earth's crust has dramatically warped the rocks, a process known as regional metamorphism.

Ninety-million years ago, a regional metamorphic event affected almost all of the Metamorphic Core Domain, Babcock said.

"Basically, these rocks were once 80,000 to 90,000 feet (15 to 17 miles) below the surface," he said. "Very hot, high pressure metamorphosed it into the gneiss and schist seen there."

Erosion and uplift have since brought non-volcanic, metamorphic peaks like Mount Shuksan to the surface, Babcock said.

"Mount Shuksan's summit is made of oceanic basalt that has been metamorphosed," Western professor Ned Brown said.

Brown spent 10 years helping research and draft the "Geologic Map of the Northwest Cascades, Washington" for the Geological Society of America.

"This is the general structure of most non-volcanic mountains in the North Cascades," he said. "It somehow came out of the subduction zone and was thrust up to form the top of the mountain."

Possible deposition of rocks of the Yellow Aster Complex.

Deposition of rocks of the Chilliwack Valley terrane.

2.5 billion years ago

570 mya

210-375 mya

VOLCANIC COMPLICATIONS

Mount St. Helens erupted in 1980, reminding Washington residents that they live in a region subject to the violent whims of the Cascade Volcanic Arc, a long string of volcanoes running through the range.

Washington's North Cascades are located where the subducting Juan de Fuca Plate plunged deep enough under the North American plate to melt the rock, Western graduate student David Tucker said. The magma rises to the surface and creates volcanic mountains.

"North America is slowly moving to the southwest and colliding with the Juan de Fuca Plate, which is diving under it," he said.

Mount Baker is a local example of the Cascade Volcanic Arc phenomenon. Baker, a 50,000-year-old volcano, sits on the remains of a much larger volcano known as Black Butte, Tucker said.

"We tend to think of Mount Baker as this big snow cone, but there has been volcanism in the surrounding area for 1.15 million years," he said. "Baker is a young pimple on the side of a much larger volcanic field."

On a clear day, it is often possible to see a steam cloud wafting from the active crater at Mount Baker's summit as vents around the rim release built-up heat and pressure. Water percolates far enough into the ground to reach a mass of magma beneath the mountain, instantly turning the water to steam.

Tucker assisted in a U. S. Geologic Survey mapping project of the Mount Baker area, collecting samples to characterize eruptions and their sources. With an active volcano as close as Mount Baker is to a population center the size of Bellingham, scientists should have a solid understanding of its nature, he said.



Mudslides continue to occur along Cascade River Road outside of Marblemount, the site of the 1985 fatal slide. Photo by Katie Kulla.

Deposition of
rocks of the
Nooksack terrane.

120-170 mya

Deposition of
rocks of the
Methow
Domain

92-135 mya

Metamorphism in
Core Domain

90 mya

ICE SHEET AND ITS RETREAT

Just as tectonic and volcanic forces work to build the Cascades up, occasionally walls of ice descend from the north to scour and flatten them.

Ice ages periodically blanket the Northwest in a sheet of ice. The most recent episode occurred between 13,000 and 25,000 years ago, smothering the Cascades in the Cordilleran Ice Sheet and obliterating all evidence of previous ice sheets, Babcock said.

"At the end of the ice age, this was probably a very difficult place to be," Riedel said.

The Cordilleran Ice Sheet plowed through and blocked river valleys, straightening previously meandering waterways into linear U-shaped valleys, he said. Slight alterations in earth's orbit around the sun create dramatic global temperature changes. As temperatures increased at the end of the ice age, the ice melted and water began flowing again. The only problem was the drainage patterns sometimes completely reversed, as in the case of the Skagit River, Riedel said.

Before the Cordilleran covered the land, a mountain ridge extended through the middle of the Skagit River Valley. The upper river flowed north and the lower river flowed southwest, Riedel said. The ice sheet destroyed the ridge and the Upper Skagit reversed its flow and joined the Lower Skagit, resulting in the single river seen today.

CURRENT HAZARDS

Although geologic forces appear to work slowly, catastrophes threaten to unfold at any time. Aside from his duties monitoring glaciers in the park, Riedel is responsible for geologic hazard management. Potential catastrophes include landslides, debris avalanches, slumps in sediment and rock falls, he said.

"Freeze-thaw action and steep slopes with no tree cover results in a lot of melted water that causes landslides," he said.

Aided by a faulty logging road and heavy rain, these conditions caused the 1985 mudslide, Riedel said.

Journeys into the mountains always include an element of danger, to the point that even professionals like Babcock and Brown said they fear solo expeditions. Brown said the North Cascades raw, unbridled mountains intimidated him when he moved to Washington after studying the Sierra Nevada mountain range in California.

"It's much more wild and dangerous than the Sierras," he said.

Geologic events shape the landscape that attracts visitors to the North Cascades. The mountains' elevation allows alpine glaciers to form, ambitious climbers to seek their fortune and endless armies of evergreens to reach astounding levels of diversity. Geologic processes created habitat for grizzlies and other native species and inspiration for hikers and poets.

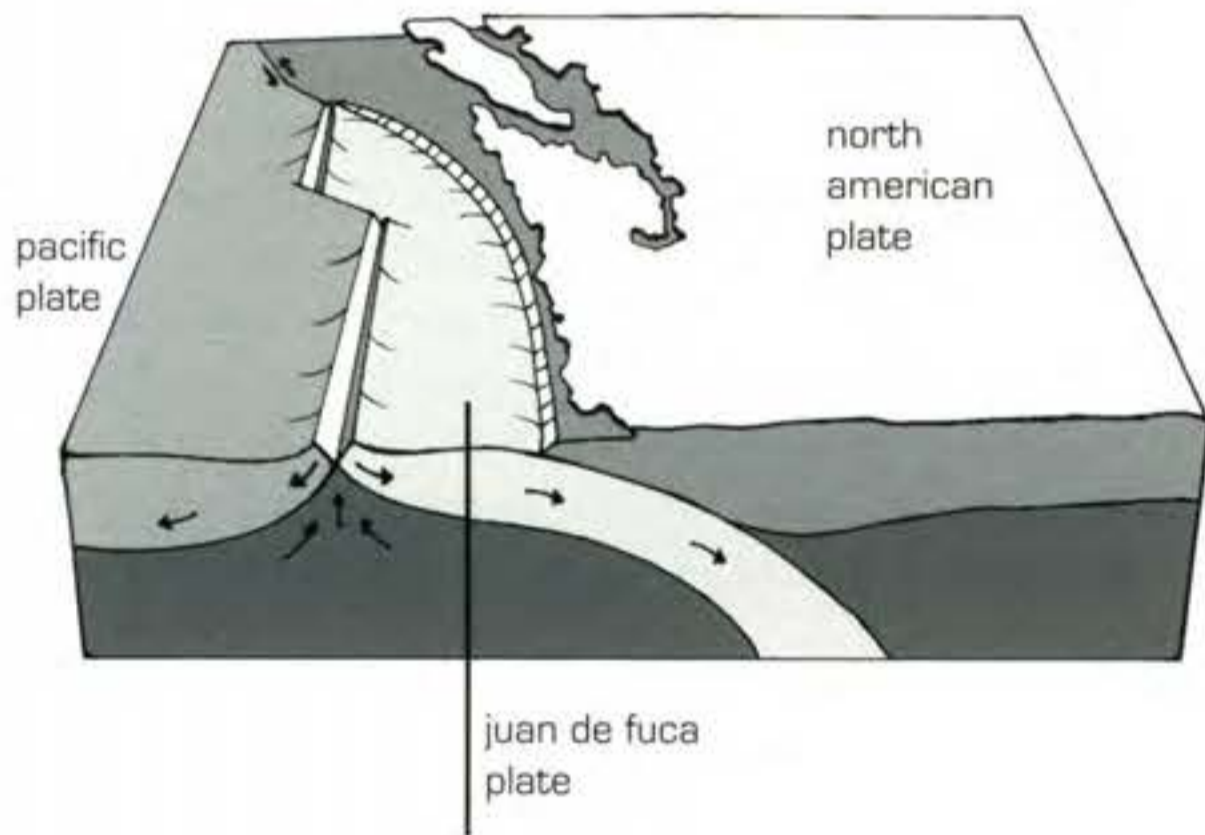
After witnessing the 1985 mudslide's wreckage, Rose said he was in awe of the amount of damage natural processes can cause.

"I was the first one there and the last one to leave," he said. "At dawn, after everyone had left, I drove up to the Cascade River Road and got out to look down on the area. I could hear rocks tumbling down. In the early morning light I could feel a calm, deathly still."

Perhaps a solid understanding of the history of these majestic peaks isn't necessary in order to enjoy them. But some day, when the tireless tectonic forces turn their attention elsewhere, these mountains will be gone, laid to waste by the inevitable forces of gravity and time.

Senior Brendan McLaughlin studies environmental journalism at Huxley College. He has previously been published in *The Western Front* and *The Planet Magazine*.

PLATE TECTONICS OF THE CASCADE RANGE



Continued metamorphism in Metamorphic core Domain

45 mya

Cordilleran Ice Sheet covers the North Cascades and Puget Sound

1.6 mya

0.1 mya

Mount Baker begins to form

45,000 years ago

Mount St. Helens erupted

22 years ago

Cascade River Park mudslide

17 years ago

BY PAUL OLUND
PHOTOS BY BRANDON SAWAYA

DRUG TRAIL



South Pass Road, east of Everson, runs along the United States/Canada border. The area is kept under constant surveillance with two cameras installed within a quarter mile of each other.

DROPS OF RAIN pounded onto the already wet forest floor as North Cascades National Park Ranger Hugh Dougher pulled his handgun from the holster at his hip and touched the cold metal trigger for assurance.

It was a typical day for Dougher, stuck in the forest alone. His radio was broken, he had no back-up and it made him nervous to know that the two drug smugglers sitting handcuffed beside him would kill him if they had the chance.

THE DRUGS

A few miles away, on the Chilliwack trail near Highway 20 — the road running north to Ross Lake — U.S. Customs officers led four more smuggling suspects, found toting bags of marijuana down a forest trail near Ruby Creek, into the back of a law enforcement vehicle parked nearby.

The four suspects had trekked south along Ross Lake, a 30-mile stretch of water that crosses the border into Canada, near Hope, B.C. The town of 9,000 is a regular stop for drug traffickers heading south through the North Cascades.

Smugglers avoid densely populated areas and instead frequent smaller towns such as Hope to avoid detection, said Jim Delnia, Royal Canadian Mounted Police staff sergeant of the Hope Detachment.

He said marijuana grown in British Columbia — B.C. Bud — is frequently moved through less regularly patrolled areas and then south, where it is sold for up to three times the Canadian price.

A common smuggling route begins in Hope and follows a road across the border to the Hozomeen Campground along the northern tip of the North Cascades National Park. Drug runners use trails to backpack the contraband 19 miles south to Highway 20.

B.C. Bud is notorious for its high levels of tetrahydrocannabinol, THC, the mood-altering chemical found in marijuana. It is sold for \$1,500 per pound in Canada, \$3,000 in Washington and as much as \$6,000 in California.

Since the B.C. strain appeared in 1990, border agents estimate that \$2 billion worth of marijuana is moved from Canada to the United States each year. The marijuana grow houses, which number as many as 9,000 in Vancouver alone, can be home to as many as 100 plants. A basic grow house producing 10 plants per year can average nearly \$225,000 Canadian in drug sales.

Delnia said groups like the Hell's Angels Motorcycle Club and Asian gangs are mostly to blame for the increase in the cross-border marijuana trade, but the image of the marijuana smuggler is rapidly changing.

In 2000, a grandmother and granddaughter were caught with a propane tank lined with \$36,490 in smuggled cash. Last January, park rangers seized Michael William Karras after a 30-mile smuggling trip on foot through the snow-covered North Cascades left him frostbitten and nearly dead.

THE BORDER ORDER

Every day, nearly 1,500 commercial vehicles carrying food, furniture, oil and many other goods use the truck crossing near Blaine, Wash.

Even with X-ray equipment, cameras and highly trained personnel performing the searches, smugglers are still getting through, said Tyler Morgan, investigations officer for U.S. Customs in Blaine.

Morgan said criminals typically smuggle marijuana through customs in 5- to 100-pound loads to avoid detection.

“There is too much activity at ports to catch everyone,” he said.

During the 2001 fiscal year, customs agents at the Blaine crossing confiscated 13,000 pounds of marijuana and more than \$1.5 million in smuggled cash. The seizure of a beer truck en route to California in January accounted for more than 1,400 pounds of marijuana alone, the largest single marijuana seizure ever at the crossing.

Morgan said increased federal assistance after the Sept. 11 terrorist attacks helped lead to approximately 170 arrests in 2002. Customs agents use surveillance, evidence gathering and port observation to aid enforcement.

“A typical day usually consists of sitting at trails or on boats looking for people, surveying suspects and obtaining evidence for prosecution purposes,” Morgan said.

He said suspect surveillance can often lead customs agents as far south as Seattle or Portland to cash houses where drugs or money are stored.

Morgan said although the largest percentage of trafficking still occurs along major ports of entry, many smugglers are moving to more remote locations, like national parks, to avoid contact with border enforcement.

THE RANGERS

Ross Lake, a popular family recreation area, is drawing a new crowd these days — smugglers. The lake, which crosses the border between the United States and Canada, is the most widely used smuggling route in the park.

Rangers started patrolling the lake after law enforcement groups began tracking smugglers in the park five years ago, a problem Dougher said is getting worse.

Dougher, a park ranger for the past 10 years, estimates that less than 10 percent of the illegal substances coming across the 23-mile stretch of park-controlled borderland are being detected or confiscated.

“The drug problem is based on different laws in Canada and in the United States,” he said. “Canadian-side laws are much more liberal.”

The smugglers, who often travel through the park by powerboat, canoe, kayak, foot, snowmobile or helicopter, are becoming more difficult to find and causing greater danger to park visitors. Dougher said he is concerned that smugglers steal equipment and food from hikers and tourists and that the problem could get worse.

He said until recently he handled up to one drug bust or arrest per week, a number far above this summer’s four-arrest total. He attributed the change to new park goals designed to bring down organized groups — traffickers moving large amounts of drugs or money for organizations — instead of small-scale smugglers.

Dougher said the park’s main objective is to avoid drug busts that require M-16 rifles and SWAT gear, and to survey suspected groups until larger enforcement agencies can take over.

“If we see a suspicious person, we begin surveillance and continue until an arrest is made,” he said. “The most effective way may be to wait until the suspect leaves the park before taking action.”

Dougher said controlling drug activity in the park is impossible with only four full-time enforcement officers.

“We do the best we can with what we have,” he said.



Tight security at the Lynden border crossing attempts to keep drug trafficking at a minimum.

Chief Ranger Pete Cowan said the rangers' job is to stop the flow of drugs in either direction — an objective that he said is becoming difficult to meet because of budget shortfalls.

"Our problems revolve around dollars and lack of staff," Cowan said.

Dougher said because of budget cuts and an increase in drug trafficking, rangers are vastly outnumbered, which compromises safety. Although he was able to safely arrest the two drug trafficking suspects alone, the possibility of an officer being injured or killed during an arrest is an unacceptable risk, he said.

"It's a major officer safety issue," he said. "It's against any standard in law enforcement to make an arrest like this (with multiple suspects) alone."

Although budgets have increased for many other border agencies, Cowan said the park system is operating under a budget that is severely strained.

"We have more problems to deal with now and less staff to deal with it," Cowan said. "We need more money, more staff and better communications."

In 1996, police caught potential terrorist bomber Abu Mezer entering the United States through the North Cascades. Mezer, 23, broke bail after an arrest in Whatcom County prompted his deportation to Canada. FBI investigators tracked Mezer to an apartment in Brooklyn where officials found plans to bomb a busy New York subway station. Mezer was linked to Hamas, a Middle-Eastern terrorist group.

Since then the responsibility of maintaining tighter border security in the parks has shifted from customs and border patrol agencies to the Park Service.

"Stopping drug introduction and smuggling is not the principle service of park rangers, but the role of the ranger is changing," Cowan said. "We have become an integral part of homeland security."

WORKING TOGETHER

Dougher said because the park is not equipped to deal with high-level smuggling operations, rangers must look elsewhere for assistance.

"We work together to get the job done," Dougher said.

He said because of a growing emphasis on large-scale drug busts, enforcement focus has shifted from arresting entrepreneurs to arresting organized groups on either side of the border.

In 2000, law enforcement agencies working with the Park Service confiscated more than \$1 million during a bust on organized drug-trade groups using helicopters to drop drugs in remote forest areas.

Enhanced communications and annual meetings discussing Canadian and United States' enforcement strategies help cut down on organized drug operations, he said.

"Everyone is networked," said Art Edge, sergeant of the Northwest Regional Drug Task Force. "Whenever we have information that will benefit another enforcement group we pass it along."

Dougher said multi-agency enforcement forces many smugglers to find alternate routes of trade, but halting the flow of marijuana into the United States altogether is an impossible task.

"We either need to make the effort to successfully stop smugglers or get rid of the problem by legalizing marijuana," he said. "If we don't put the necessary resources into stopping smugglers, it will still be a problem 10 years from now."



Senior Paul Olund studies journalism and anthropology at Western. He has previously been published in What's Up, Whatcom Watch, AS Review, The Western Front and The Planet Magazine.

Firing the Forest Plan



IN MID-AUGUST 2001, lightning struck Wenatchee National Forest in the North Cascades along Rex Creek, 34 miles north of Chelan, Wash. The strike ignited a complex of five fires that burned two structures, consumed 54,000 acres and cost the U.S. Forest Service more than \$4.3 million.

Fire ecologists and policy makers blame an early-20th-century federal fire policy for catastrophic fires, like the Rex Creek Complex, as well as those of past fire seasons. In 1910, a fire nicknamed the Big Blowup in Idaho killed 85 people and changed the nation's view of wildfires. Less than a year later, the Forest Service issued a new plan for fighting forest fires. The plan called for total suppression of all wildfires across the nation.

University of Washington fire ecologist Jim Agee said the goal of eliminating wildfire worked — too well.

"We have essentially built a huge biomass bank over the last century," he said.

The bank contains decades worth of tree limbs, needles and brush that have accumulated on the forest floor, Agee said. He said without periodic fires to remove the debris, unintentional fires ignited in these conditions could become uncontrollable.

"Had we done the kinds of fuel treatments (before the Rex Creek fire) we are currently trying to accomplish, I think that it would have made a big difference," said Richy Harrod, a Wenatchee National Forest fire ecologist.

The federal government responded to concerns about fires because of national attention given to last summer's massive fires — primarily in Colorado and Arizona — with the introduction of the Bush Administration's Healthy Forest Initiative.

"The forest policy of our government is misguided policy," President George W. Bush said in a speech to residents of Central Point, Ore., a town west of Bend. "It doesn't work. We need to thin. We need to make our forests healthy by using some common sense."

The focus of the initiative is to reduce restrictions on fuel reduction treatments — forest thinning to reduce debris — and restoration projects in previously burned areas of the forest.

"If the Bush Administration has their way, which it's unclear that they will, the environmental safeguards will be substantially undercut," said Michael Closson, executive director of Biodiversity Northwest, a Seattle-based environmental organi-

zation. "As a result, there could be a significant increase in old-growth logging."

The initiative also includes legislation designed to eliminate administrative appeals and lawsuits that challenge salvage-timber sales and fuel reduction treatments.

Bush said, however, he believes his forest policy is the best way to solve the litigation problems that exist in current forest policy.

"There's a fine balance between people expressing their selves [sic] and their opinions and using litigation to keep the United States of America from enacting common sense forest policy," Bush said.

To lessen the costs to the federal government, which has already promised \$428 million to the program, stewardship contracts will be awarded to private timber companies. In exchange for thinning the forest and clearing it of dead wood and brush, the private companies get to keep the harvested wood.

Closson said the stewardship contracts are a problem because large timber companies stand to gain the most from the agreements.

"The way it's set up, the bigger companies get the lion's share of the work and the contracts," he said.

Organizations such as Northwest Ecosystem Alliance and Biodiversity Northwest criticize the plan and compare it to the failed Emergency Salvage Timber Sale Program of 1995. The program focused primarily on removal of fire-damaged trees from the disastrous 1994 fire season.

"There are some real similarities," Closson said. "They come from the same motivation."

Like the Bush initiative, the 1995 program limited legal appeals of timber sales.

The program remained in operation until July 1996 when the Clinton Administration stopped using it and allowed its mandate to run out. Former Vice President Al Gore later admitted that approving the program was the worst mistake the Clinton Administration made during its first term.

"(The Healthy Forest Initiative) is a clear attempt to erode the conservation and environmental regulations that have been established in the last 30 years," Closson said. "You could almost say it's logging without laws returned."



Junior Wolfgang Deerkop plans to study environmental journalism at Huxley College. This is his first published piece.



TOP: Alycia Behrens starts an intentional, low-intensity fire using a drip torch.
BOTTOM: Prescribed burning clears underbrush that could potentially fuel larger, more dangerous fires. Photos courtesy of Tod Johnson



Connecting Communities AND *Nature*

BY COURTNEY BROUSSEAU PHOTOS BY JAMIE CLARK

BETWEEN THE dizzyingly high peaks of the North Cascades, sounds of hammers, saws, backhoes and bulldozers pierce the still mountain air. Construction is in full swing on a new school in the mountains — the North Cascades Institute's Environmental Learning Center.

Britt Olson, a Western Washington University graduate student, shielded her eyes against the sun's glare as she gazed up at a steel support sticking out of a concrete platform. Olson works as the link between the construction process and the public, educating citizens about the site that will open in fall 2003. The center will consist of 18 buildings for classes, housing and dining.

"When I first came, there were a few building pads, which is where the old houses used to be," Olson said. "But everything else was forest. It all looked the same. The first thing I noticed was all this fencing that came up. The fencing was to protect the trees, which is a very important message that (NCI) is trying to get across — the reduced site disturbance."

A few moments later, a massive bulldozer illustrated her point. It churned and chugged up the construction road. The driver, hard hat slightly askew on his head, eased the machine's steering wheel to the left to avoid running over a tiny, 2-inch-tall Douglas fir sapling. It trembled slightly in the machine's noisy wake, but, unharmed, settled back into place on the dusty road.

Saul Weisberg, executive director and founder of NCI, said the institute's goal is to connect community to nature.

"It's critical to develop a sense of home and have that place be more than a house or your school or a business," he said. "Our mission is to restore the environment. It's not merely environmental education. We have a conservation mission and education is our tool."

Weisberg created NCI's predecessor, the Shuksan Institute, in 1983, because of a desire to conserve and restore the environment of the Northwest through a combination of education, volunteer opportunities and nature exploration.

"(NCI) began as the Shuksan Institute because for us (Mount Shuksan) symbolized the place so well and because we'd spent so much time on its glaciers and summit," Weisberg said. "However, most of the world, even in the Pacific Northwest, doesn't know the mountain or where it is, so what was an important symbol to us did not resonate with other people."

ABOVE: Britt Olson, environmental education graduate student, and Steve Colony, senior civil engineer for the City of Seattle, examine the site map of the Environmental Learning Center.

While the name changed, NCI always focused on the North Cascades ecosystem, he said.

"This was the landscape we loved and which we knew best," Weisberg said. "It seemed an obvious choice at the time and it has served us well for the past 16 years."

Since its conception, NCI has grown from two part-time employees to 14 full-time employees, and from a budget of \$35,000 to more than \$1 million annually, Weisberg said. Originally, the institute only offered a few seminar programs. Now it boasts 12 program areas and 60 faculty members that teach courses throughout the year on everything from winter bird identification to San Juan Island botany.

"We're not an advocacy organization, so we don't litigate, don't regulate and don't buy land," he said. "But in some ways, we're the most radical of all. We're trying to change the landscape."

Many people working at NCI believe that being outside and enjoying the natural world is necessary for a person to learn and eventually care about nature. The opening of the learning center will further this idea.

NCI offers summer camps for young people, volunteer stewardship programs, teacher workshops, seminars for adults and natural history retreats, NCI marketing coordinator Bob Langan said. NCI also offers community resources like publications for educators and naturalists.

But, this year, the ELC is one of NCI's biggest projects. Olson said many groups are involved in the construction. The Henry Klein Partnership, located in Mount Vernon, Wash., is in charge of construction. The National Park Service owns the land, rents it to NCI and performs maintenance. Seattle City Light provides funding for the project.

When Diablo Dam was relicensed in 1991, SCL was required to lessen the dam's impact on the native fish.

"(SCL) had to do some sort of mitigation, and that was in the form of this environmental learning center, which I believe is possibly the first of its kind," Olson said. "Usually mitigation means planting trees somewhere else or restoring habitat for fish. So this is a different type of mitigation."

Olson said the project benefits the community by involving multiple groups.

"It's a statement of sustainability," she said. "Granted, it's a development, but we're trying to work as best we can with the environment and reducing the amount of impact we have on the environment."

Don Burgess, the center's director, said as a part of lessening construction's impact on the environment, the center's design incorporates nature-friendly construction methods.

The site once housed a restaurant on Diablo Lake. After the restaurant closed, the building's platforms remained. NCI chose the site because they could lessen the environmental impacts by using the location of the old building.

Also, in order to protect specific trees and wildlife areas, construction workers placed fencing around the sensitive areas, Olson said.

Perhaps the most vivid example of NCI's pursuit of sustain-

able architecture is its move to acquire a Leadership in Energy and Environmental Design rating.

Olson said LEED, established by the U.S. Green Building Council, certifies building projects in one of four categories: certified, silver, gold and platinum. NCI is working towards a gold rating, the second highest.

The gold rating involves the completion of 36 different criteria from a range of categories including reduction of disturbances and water use, as well as the use of certain materials and resources like certified wood.

"The trees are coming from certified forests that go through a very extensive process to demonstrate that their forestry comes from using sustainable techniques," said Steve Colony, senior civil engineer for the City of Seattle.

Olson said cedar trees from Bellingham's River Farm and Oregon will become siding on many buildings after being logged using sustainable practices.

"The cedar site is being logged using helicopters, so they're taking individual trees and pulling them out rather than using the usual slash and burn or clear-cut logging," Colony said.

The goal is for 90 percent certified wood to be used on the site, Olson said.

NCI hopes to use the ELC as a hub to get more people to enjoy nature.

Until the center is complete, the NCI staff will continue their daily routine. But, no matter how much the institute expands in the future, Weisberg said NCI's mission will always remain the same.

"I think all of us at NCI — staff, board, instructors and friends — are committed to our mission for the long haul," he said. "Core values remain just that — at the core of who we are and what we do."



Senior Courtney Brousseau studies environmental journalism at Huxley College. She has previously been published in the *Western Front*, *Ecotones* and *The Planet Magazine*.



Fences protect trees from damage on the building site.



Fred Beckey: *Married to the Mountains*

Fred Beckey has climbed in the North Cascades for almost 70 years.
Photo by Colin Shanley.

BY COLIN SHANLEY

A LONG-AWAITED MESSAGE from the Mt. Robson Ranch in British Columbia crackled on Alex Bertulis' radio in Seattle. The weather over the mountain was going to be clear for the next ten days. Bertulis and his climbing partners wanted to make their second attempt to be the first group to summit the ice and snow plastered flanks of Mount Robson. But one of Bertulis' climbing partners, Fred Beckey, was missing.

"I left a message with his girlfriend in Seattle that I was going to climb Mount Robson, thinking he would never be able to make it in time," said Bertulis, a Seattle architect and friend of Beckey's for about 60 years.

When Beckey got the message from his girlfriend in Seattle, he drove from Colorado straight to British Columbia. Along the way, he called climbing partners from phone booths, giving them minutes notice of the upcoming climb. Beckey and his partners arrived barely in time to attempt the ascent.

"A week into our trip, my partners see people coming up the glacier on this unclimbed mountain," Bertulis said. "They asked, 'Who could that be?' I said 'It could only be Fred Beckey.'"

Beckey and Bertulis, along with two other climbers, made the first ascent of Mount Robson in that winter of 1965.

Mount Robson is one of hundreds of Beckey's first ascents.

"Many climbers, after they've done a very good successful ascent, will rest on their laurels," Bertulis said. "Where as Fred, as soon as he's done with one climb, he's immediately talking about the next climb he wants to go on, preferably tomorrow."

For nearly 70 years, Beckey has focused his life on climbing all around the world, especially in the North Cascades. Beckey wrote the definitive climbing guidebooks for the North Cascades and several historical books on Northwest exploration.

The North Cascades mountain range extends from British Columbia to Interstate 90 in Washington state. Interstate 5 boxes the North Cascades in on the west and the Columbia River borders them on the east. The landscape contains more than 1,500 peaks, 700 active glaciers and innumerable lakes and rivers.

When Beckey started climbing in the North Cascades, people sparsely populated the bordering valleys. Native people, trappers, miners and mountaineers had explored the interior, but maps were inaccurate and not much comprehensive history was known. Beckey took an interest in exploring the North Cascades' challenging summits and documenting their history.

"Most other people are married and have a family, which adds focus to their life in another direction, but with Fred it's only climbing," Bertulis said. "It's his life and his passion."

In the early 1920s, when he was 2 years old, Beckey's family moved to the Seattle area from Dusseldorf, Germany. At age 13, he wandered up Boulder Peak in the Olympic Mountains, to the worry of his parents, who later put him in the Boy Scouts to learn basic wilderness survival skills.

Eventually, the lure of bigger, snow covered mountains above the tree line landed him with an instruction group called The Mountaineers. They taught him and his younger brother,

Helmey, alpine climbing and safety skills. Soon the Beckeys outgrew the bounds of the conservative curriculum and ventured into the unknown mountains that their instructors deemed unclimbable.

"I value the freedom (of climbing) an awful lot," Beckey said. "Climbing unexplored mountains is an accomplishment to me. It's an interesting challenge. It's more of an adventure than following someone else's route. You have to research these mountains — where to go, how to get there, the right equipment, the right amount of food."

Even as Beckey discussed his climbing plans, he was recovering from surgery for a hematoma that resulted from a car crash last spring. Standing about 6 feet tall, he had the disheveled appearance of a stubborn old cowboy.

"I'm trying to take a few months off every summer to go climbing. There's a lot of unexplored places," Beckey said. "There are lots of places that are just as pretty but not as many people go there."

In 1940, a teenage Beckey, with a party of four others, hiked 13.5 miles to Cascade Pass, now one of the most heavily trafficked backcountry areas, and made the first ascent of the mountain they named Forbidden Peak.

Their journey started at Sibley Creek outside the town of Marblemount, Wash. Since then, the Cascade River Road has extended up the valley and Cascade Pass is now a 3.7-mile hike from the parking lot.

"Some places like Cascade Pass now are too close," Beckey said. "The road access and the trail access essentially make them too close."

After climbing many unclimbed peaks in high school, Beckey went to the University of Washington where he earned a degree in business administration. In his spare time, he scaled the walls of the campus' gothic buildings. He also researched The Mountaineers' old publications on mimeographs. With this information and his first hand knowledge, he wrote the first alpine climbing guide to the Cascades and the Olympics. This and the trilogy that followed were called "Beckey's bibles" by eager followers.

"Fred did more than write a guide book, he wrote a history book," said Lowell Skoog, a friend of Beckey's. "He never merchandised the Cascades, he kept them complete and I respect that."

Beckey published his first book through the American Alpine Club in 1949, for a flat fee, and printed about two thousand copies. But he made very little money from it or the later series published by The Mountaineers.

Writing and research helped him develop an interest in cartography, but he did not move to Washington, D.C., where most of the government map-making work was being done. Instead, when he graduated from college, he took a job as a delivery truck driver, to fit with his climbing schedule.

At Snoqualmie pass, Beckey and his friends created new rock climbing techniques that enabled them to safely travel in the mountains. Money was short so they were resourceful. The group scrounged up scrap metal and made pieces they could

jam in the rock to protect themselves in case of a fall.

During World War II, Beckey trained for combat in the Alps, but missed most of the action. After the war he returned to his mountaineering.

Beckey's explorations took him across North America and as far away as China and Nepal. In the Himalayas, he used small amounts of gear that enabled him to travel unburdened up unknown peaks well before the mountains became popular.

Beckey might have become as world renowned as Jim Whittaker, who was part of the first American team to summit Everest in 1963, but his independent attitude didn't fit well with the team's expedition style. In that year, 1963, he did 26 first ascents in North America.

As an adviser for the Washington State Board of Geographic Names, Beckey named peaks in the North Cascades such as Phantom Peak, Inspiration and Visiliki Tower, which he named after a Greek woman he loved in the early 1950s.

Beckey said he stays busy in the off-season, utilizing the research talents he developed while writing his climbing guidebooks.

He recently completed a book for the Oregon Historical society about contact with Native American settlements and early exploration in the North Cascades, which will come out at the end of this year.

"I'm trying to portray a sense of history," Beckey said. "Most of this is lost information. Right now I'm working for the Washington state Department of Ecology for about eight months a year. I'm doing a geographic study of the Columbia River."

Today, with more roads and people, traffic in the North Cascades is much heavier than during Beckey's first visits.

Beckey said areas like alpine lakes in the North Cascades are changing. He said the increasing number of visitors could damage the area. While Beckey said he doesn't like regulations, he said he understands that permits might be necessary to protect the environment.

"(Overcrowding) is going to be tough on the environment," he said. "It's going to trample down the meadows and pollute the lakes. It's going to look like a tent city, like they had back in the mining days in the 1900s."

Beckey said the solution to overcrowded areas is creativity. He said he looks for uncommon approaches and peaks. He left some remote mountains out of his climbing guidebooks for future exploration.

Nobody, not even Beckey, has counted all his first ascents since his start in the 1930s. This summer he explored the British Columbian Coast Range where he climbed Rusty, a previously unclimbed peak.

For Beckey, the next adventure is always in the planning.

"If the weather holds, I'm going out somewhere this weekend," he said.

He won't say where he's going, because he doesn't want anyone else to be there.



Junior Colin Shanley studies environmental education and fine arts at Western. He has previously been published in Pack and Paddle.

ALDER BRANCHES in one hand, ski pole in the other, climbers use the branches like jungle vines to swing themselves across swift-moving mountain streams. Farther down the path, exposed tree roots serve as handholds, helping climbers scramble up a steep polished glacier slab. Once up the tough incline, climbers thrash through a mile of avalanche debris to get to Boston Basin — one of the premier snow and rock climbing venues in the United States.

The North Cascades are known for a wide variety of high-quality climbing routes and amazing scenery, yet many climbers concentrate in popular areas like Boston Basin, overcrowding and damaging the fragile landscape. Overcrowding affects ecosystem functions and erodes the range of landscapes that draw climbers and hikers from around the world.

Todd Newburger, a Western Washington University geography graduate student and biological technician for the National Park Service, studies

human impact throughout the North Cascades. He said subalpine plants, like heather, are more at risk in popular climbing areas than plants growing at lower elevation areas. The short growing season combined with the cumulative effects of many people walking on heather limit the plants' ability to repair old branches and grow new ones, he said. Broken heather branches serve as an indicator of the extent of human impact in a climbing area.

Newburger is part of an effort by the Park Service to monitor and map popular climbing areas to see how climbers might impact wilderness areas.

Scientists and wilderness managers will use the maps to monitor human impacts such as unofficial trails, fire rings and bare ground.

"Monitoring will help North Cascades National Park create a baseline to measure future impacts," he said. "The goal of the monitoring program is to alert the park as to when intervention is required."

If the monitoring program indicates overuse in an area, one possible solution is to reduce the number of climbers that can use the area.

Galen Stark, a retired wilderness district ranger with 25-years experience working for the Park Service, said the park has never reduced the number of

climbers simply out of concern of overuse in an area.

"It's politically difficult to attempt to limit the number of users visiting an area," Stark said.

Kelly Bush, wilderness district ranger for the park, said the current number of people allowed to visit these subalpine areas is based on limits set in the Wilderness Management Plan. The plan was written 14 years ago when fewer climbers used the park.

Today, the Park Service would have to conduct an Environmental Impact Statement — a document outlining the effects of proposed activities on the environment — in order for wilderness managers to permanently lower the number of climbers allowed in the park.

As it is now, the Park Service allows six groups of climbers into Boston Basin each day, a maximum of 72 people.



Limiting the Impact

STORY AND PHOTOS BY ALEX BRUN

Western senior Seth Hobby, an avid climber and mountain guide for the Bellingham-based American Alpine Institute, said he agrees with wilderness management and he would like to see smaller groups of climbers visiting climbing areas.

Hobby guides clients on Mount Baker, which is outside of the park's boundaries. Since the area is not as well regulated as the park, climbers often leave their waste instead of packing it out with them. He said the presence of human waste on Mount Baker is frustrating because peaks like Mount Shuksan, which is inside the park, are much cleaner. The park has four climbing rangers to enforce park rules, whereas Mount Baker has only two rangers.

"Considering that the mountains are my office in the summer, human feces on the snow bothers me the most, because that is where I get my drinking water from," Hobby said.

Solar toilets — small plastic receptacles that use the sun's energy to break down human waste into organic material — are not as readily available on Mount Baker as they are in the park so climbers have to carry their waste with them.

"Although it's inconvenient to carry out your own waste it's well worth it," Hobby said. "I think it should be really strictly enforced or we need to increase the amount of solar toilets out there."

Tim Shultz, a Western lecturer and mountain guide, conducted a study that, in part, dealt with increasing the number



Climbers hiking to Mount Challenger often trample fragile heather plants, creating a new trail.

of solar toilets in mountain areas. Shultz completed his master's in geography in 2001 with a thesis exploring how much waste climbers were willing to accept on Mount Baker.

Shultz said he found that a majority of climbers would be willing to see receptacles for human waste on Mount Baker.

But human feces isn't the only problem. Don Slack, president of Skagit Mountain Rescue, said guidebooks could be the reason climbers are overusing particular climbing routes.

"When Beckey's guide came out I saw more climbers in Boston Basin and we did more rescues there as well," he said.

Slack is referring to the first edition of Fred Beckey's "Cascade Alpine Guide: Climbing and High Routes: Rainy Pass to Fraser River," published in 1980.

He said this and other guidebooks are responsible for climbers repeatedly visiting areas instead of climbing hundreds of

other potential routes. By staying on the same routes climbers have a huge impact on the wilderness, he said.

Professional photographer, author and former mountain guide Alan Kearney said guidebooks, like his "Classic Climbs of the Northwest," lead to increased usage in areas like Boston Basin. He said, however, he feels mountain guiding companies have a bigger impact on sub-alpine terrain.

"Guide services zero-in on the select climbs," he said. "Guide services have more of an impact than books, by taking a person by the hand and taking them to a place they possibly wouldn't go by themselves or couldn't go by themselves."

The side effect of people climbing in the North Cascades is they leave behind the signs of their presence.

"Climbers are anarchists," Kearney said. "When you're out at the end of your rope you're kind of doing whatever you want. Climbers need rules."

Hobby said the issue of impact is one that all climbers must take seriously so other wilderness enthusiasts will follow in the same path.

"If we're not watching our footsteps and not following good outdoor ethics, we are not setting the stage for backpackers and we're setting a bad example," he said.



Senior Alex Brun studies geography at Huxley College. This is his first published piece.



OPPOSITE: Colin Shanley rappels the West Ridge of Forbidden Peak using webbing left by another climber. Climbers on Forbidden encounter permanent climbing hardware about every 200 feet.

Photo courtesy of Patrick Farrell ABOVE: A tent set up on a durable rock slab on Mount Challenger is a good example of low impact camping.

GOLDEN HORN ROADLESS AREA

an uncertain future

BY ALISON BICKERSTAFF PHOTOS BY KATIE KULLA

FROM ATOP CUTTHROAT PASS in the Golden Horn Roadless Area, the peaks of the North Cascades appear to stretch into infinity in all directions.

Here, in the middle of one of the largest unprotected roadless areas in the North Cascades, Tina and Eliot Scull rested in a boulder-strewn meadow. The retired physicians had hiked up from the North Cascades Highway to the crest of the range, where east meets west.

"We love this place," Tina Scull said as she propped herself up to speak. "We've been coming up here for 25 years to ski and hike."

Nearby peaks glow gold under a pale blue sky. Crustal uplift and erosion exposed the rock — the Golden Horn batholith — that served as the parent rock for these peaks.

Golden Horn is 30 miles east of Winthrop, Wash. The area, part of the Okanogan National Forest, is home to old growth and mature stands of evergreen trees and a stretch of the Pacific Crest Trail. Golden Horn is a diverse ecosystem — a convergence of climates, vegetation and habitats for rare species. Currently, state and federal laws do not permanently protect Golden Horn, but visitors to the region often think the area is protected.

"Yes, the area is permanently protected, as far as I know," Eliot Scull said.

Like others who enjoy hiking, skiing, biking or resting in this 118,000-acre region that straddles the North Cascades backbone, Scull's assumption is incorrect.

In the late 1970s, the U.S. Forest Service identified the area as "roadless," said Jennifer Zbyszewski, a Methow Valley Ranger District resource assistant.

"I don't know why it was not selected as a wilderness area back in 1984 when the Washington State Wilderness Act was

passed," Zbyszewski said. "It looks just like wilderness up there and seems to fit the requirements."

Wilderness designation for Golden Horn would permanently protect its natural character for future use and enjoyment, and preserve it as a place of solitude. A long stretch of Golden Horn falls within the North Cascades Scenic Highway Corridor, where the Forest Service permits some motorized recreation, such as snowmobiling, and prohibits timber harvest and grazing.

As use of Golden Horn increases, so do complaints of poor management. Some argue that Golden Horn deserves permanent protection — either as a wilderness area or as part of the North Cascades National Park.

Enthusiasm for designating Golden Horn as a wilderness area is not new. Nearly half of the people who commented on the Okanogan National Forest's draft Forest Plan in the early 1980s expressed a preference for the government to designate the area as wilderness, according to the Forest Service. The plan was established to give direction for managing the land and resources of the forest.

"Just this October we began the revision process for our Forest Plan," Zbyszewski said. "We expect to be done by 2007."

According to the Washington State Wilderness Act of 1984, the Forest Service must reconsider designating the area as wilderness during this review process.

Dennis O'Callaghan, a retired veterinarian, has enjoyed hiking and backcountry skiing in Golden Horn for more than 25 years. He said he thinks public approval for designating the area as wilderness has increased.

"I feel strongly about maintaining this place as it is," O'Callaghan said. "There is very little degradation in this area now, and there's the chance to maintain it as a wilderness."

He said the area is an important part of the 2 percent of U.S. forestlands that are still roadless. O'Callaghan said the Forest Service has not analyzed the impacts of the combined effects of multiple types of recreation in the area.

Recently, at the request of North Cascades Heli-Skiing Inc., the Forest Service permitted the company to double the maximum number of clients allowed in Golden Horn to 1,050 a year.

"The Forest Service was supposed to do this analysis before allowing more helicopter-assisted skiing in Golden Horn, and they never did this," O'Callaghan said. "They said they made a decision of non-significance. That doesn't fly. It's not true."

Matt Firth, a member of the North Cascades Back Country Skiers, filed an appeal against the Forest Service's decision.

"The Forest Service's decision was so poor that we had to stand up," Firth said. "In the last six years, there's been an eight- to ten-fold increase in the number of backcountry skiers there, but heli-skier numbers just go up and down a lot.

"Backcountry skiers are already confining themselves so they don't run into heli-skiers out there. It's not too bad now, so we want to get a handle on this before it does get bad."

Firth said he felt Golden Horn needs better management, not necessarily more protection.

Zbyszewski said she strongly disagrees that her agency is

doing a poor job. In fact, she said the Forest Service's Pacific Northwest regional office recently affirmed her district's decision to allow more heli-skiers. This decision was based on an environmental assessment that looked at the cumulative impact of winter recreation on wildlife habitat, cultural resources and water and air quality.

"We have seen use increase (in Golden Horn), but we have no scientific evidence that the recreation occurring there is having an effect on the landscape," she said. "We found that the recreation there is not causing a significant environmental impact."

George Wooten, a former Forest Service employee and current member of the Kettle Range Conservation Group, also filed an appeal against the decision. KRCG members advocate wilderness protection where they feel it is appropriate and possible. Wooten said the group would like to see Golden Horn protected as a wilderness area.

But, snowmobiling, helicopter-assisted skiing and mountain biking — all of which now occur in some parts of Golden Horn — are incompatible with the ideals of wilderness designation, he said.

"I don't think heli-skiing is all that bad and we are not against recreation," Wooten said. "We only want the Forest Service to do its job and really analyze the cumulative effects



Although no roads or development spoil the Golden Horn landscape, the roadless area has no permanent protection from future intrusions on the ecosystem.

This is national park-quality land. It's a logical extension of the existing park. The NPS could also manage the area as a wilderness. I think they would be more qualified than the Forest Service, who has a mixed record with managing its own wilderness areas.

Peter Morrison
executive director of the Pacific Biodiversity Institute



LEFT: Tina and Eliot Scull rest after a hike to Cutthroat Pass. The Scull's have visited the area for the last 25 years. CENTER: Hikers in the Golden Horn Roadless area trek through deciduous larch forests. RIGHT: Ben Nimmer admires the view from Cutthroat Pass. He said he moved to the Northwest to enjoy places like Golden Horn.

before any additional recreation is permitted like that.”

Wooten said the Bush Administration’s Healthy Forest Initiative could threaten roadless areas like Golden Horn. He said the initiative uses fire protection and thinning efforts as a front to promote logging of mature and old-growth forestlands.

“This thinning critter is a whole other beast,” Wooten said. “It might be very practical for them to say, ‘oh, we’re only going to do thinning, and it will be just as beautiful after as it was before, more fire-safe.’ I don’t buy that. This is going to be on the block. Don’t fool yourself.”

Zbyszewski said currently the Forest Service has no logging or road construction planned for the area.

“The area hasn’t had any road construction and there’s been no logging, so the forests there are a classic mosaic of stand structure,” she said. “So there are old-growth and mature trees there.”

Wilderness advocates said they consider this even more reason to preserve the integrity of the landscape.

Peter Morrison is executive director of the Pacific Biodiversity Institute, a research institute based in Winthrop, Wash., which studies and maps conservation priorities like Golden Horn and offers nature outings there. Morrison said he believes the Park Service is the most qualified agency to manage landscapes with high recreational use like Golden Horn.

“Most areas in the North Cascade range got some kind of protection, but not this place,” he said. “Golden Horn was included in original national park proposals for the North Cascades that date back to the 1930s, but the area got chopped off for political reasons. So now it is a huge gap in what is otherwise protected country.”

Morrison said he felt adding Golden Horn to the North Cascades National Park would help make the area more viable and continuous in terms of recreation.

“This is national park-quality land,” Morrison said. “It’s a logical extension of the existing park. The NPS could also manage the area as a wilderness. I think they would be more qualified than the Forest Service, who has a mixed record with managing its own wilderness areas.”


He said more people are discovering Golden Horn and the Forest Service is not managing the impacts from the increased use.

“Getting some really good professionals in there that know how to manage now would be better and you wouldn’t see the degradation of the place slowly take place,” Morrison said.

Whether or not Golden Horn should be permanently protected — either as an addition to the park or as a wilderness area — is a murky issue. It is clear, though, that no matter how the area is labeled, its popularity among hikers, climbers, skiers and new visitors will continue to rise.

Ben Nimmer and Morrow Pettigrew, two new visitors to Golden Horn, stood admiring the views from Cutthroat Pass. The friends said they moved to Seattle last year to work and enjoy outdoor places like Golden Horn.

“Is this place part of the National Park?” Pettigrew asked.

The pair said that they were not sure but they would probably come back again. 

Senior Alison Bickerstaff is an environmental science major at Huxley College. She has previously been published in Whatcom Watch, the Every Other Weekly, Tidepool.org, Northwest Ecosystem Alliance’s quarterly newsletter and The Planet Magazine.



'COMPETITIVE ADVANTAGE'

BY HEATHERJUNE OLAH

CAR WHEELS crunch rocks on a gravel road as hikers drive to Ross Lake for a weekend excursion. What the hikers didn't plan to bring — what they weren't even aware they brought — could ruin their future vacations.

The seeds embedded in the dust of the hubcaps run off with rain. The water washes them down to the lake where they rapidly mature and spread. The plants push out native grasses and clog the banks of the lake, making them hard for animals and humans to access and uninhabitable for native species.

About 2,330 species of vascular plants are native to Washington and hundreds are specific to the North Cascades — including 13 conifer species, six fern species and at least 27 types of berries. Until recently, they co-existed with few threats from the outside world.

Scientists have cataloged 236 non-native plants living in the North Cascades, said Mignonne Bivin, a member of the North Cascades National Park exotic species management team.

For thousands of years, the American Indian trade of goods along the Pacific coast brought plants from one area to another, said Pat Milliren, also a member of the team.

In the mid to late 1800s, however, westward expansion from European settlers brought dramatic and rapid change to the Northwest, said Laurel Baldwin, Noxious Weed Control Board county coordinator. Settlers and immigrants from Asia and Europe flooded the region, introducing new species to the rich, rocky soil of the North Cascades.

The problem with introduced species is not only their capacity to out-compete native plants but their cumulative effects on entire ecosystems — plants, animals, land and the people who use the land, Huxley College professor John Rybczyk said.

"When a species invades, it has a competitive advantage over the species that lives there," he said. "When a new species comes in, it doesn't have any natural predators, it has nothing to compete with it. It has no natural pathogens, no diseases, so it can just grow and be extremely productive unlike the native species that are there."

In addition to pushing native species out, non-native plants are fire hazards and frequently toxic to humans and animals. They also interfere with wetland restoration and clog natural recreational areas with overgrowth.

Invasive species are the second-leading cause of biodiversity loss in the United States behind habitat fragmentation — urban developments that cut into and across natural areas — said Catherine Hovanic, administrator of the Washington Native Plant Society.

Nationwide, the United States loses 4,600 acres every day to introduced species, Baldwin said.

"There are other plants dependent on these (native) populations, and they are also being negatively affected," Hovanic said. "They tend to dominate an area, displacing native plant species."

She said ecosystems are very complex. As non-native plants

push out native species, they displace the organisms dependent on native plants.

"(Non-native plants) create a monoculture, which is an environment that has one plant in it, instead of several species, which wildlife need," Baldwin said.

Contemporary contamination can come from people wanting exotic species in their gardens, but non-native species also arrive in ship ballasts, soil, car wheels or even animals, Baldwin said.

"(Gardeners) just get tired of what we have and want something different," she said. "Most people aren't aware (their plant is an invasive species). Other people are aware and just don't care."

A number of non-native plants are such a common sight that it almost appears they have always been here. Some of the most common non-native plants to the North Cascades include foxglove, tansy ragwort, St. John's wort and holly.

A recent problem is reed canary grass, which thrives in wetlands. It dominates Ross Lake, a reservoir above Diablo Dam, as well as many other low-elevation lakes in the North Cascades, by clogging the lake's banks and pushing native plants out, Bivin said.

But reed canary grass, considered an aquatic weed, is also starting to appear along roadsides and trails in the mountains, Milliren said.

"It sort of confounds me because it's not what I necessarily consider a wet (enough area)," she said. "On Ross Lake we have not done anything about it. I don't think we can do anything. If we had lots of money we could probably try and dig it up, but it's in some very large patches now, so it would be a very hard thing to do."

One method of removing reed canary grass near trails is planting cedar trees by the patches of grass. Reed canary grass won't grow in shaded areas and the trees soak up much of the water the grass needs to thrive, Milliren said.

Hovanic said non-native species grow in every region of Washington.

"Even within the interior forests, along the trail sides, you can find many non-native species," she said. "And that's something the Forest Service wants to stop."

Bivin said she doesn't know how to fix the system and without more money for plant work in the park, non-native plants might become a more widespread problem.

"Sometimes I feel overwhelmed, but I also know that it's possible, so I don't feel discouraged," she said. "It's just a matter of figuring out how you're going to do it. Once you get the population down to a small group, you still have to keep on and never stop pulling weeds."



Senior Heatherjune Olah studies journalism at Western. She has previously been published in *The Western Front* and *The Valley Reporter*.



Mountains dwarf Holden Village. Behind the retreat center remains the refuse of a former mining operation: 90 acres of bright orange mine tailings.

Isolated Experience

STORY AND PHOTOS BY KATIE KULLA

TO GET TO HOLDEN VILLAGE, visitors must choose between two routes: a three-hour boat ride up Lake Chelan, followed by a ten-mile bus ride into the mountains, or a multiple-day trek through the North Cascades. At the end of either, the traveler finds a small gathering of 1930s-era buildings — a former mining town turned Lutheran retreat center.

Holden Village is located in the Railroad Creek Valley on the east side of the North Cascades, near Lake Chelan and surrounded on three sides by the Glacier Peak Wilderness Area. Nine thousand-foot mountain peaks enclose the valley, cutting Holden off from the rest of the world. The village has no televisions or phones. The remoteness of the area forces villagers to experience wilderness instead of communicating with civilization.

Although Holden is a Lutheran retreat center, the village looks like a mountain resort — without the luxuries. Individuals, families and groups visit the village to enjoy Holden's teaching programs, hiking,

crafts and religious community experience. Guests normally stay for a week, but staff members live in the village for a month or longer. Some villagers live there year-round.

Holden food service coordinator Miriam Schmidt said the village's remoteness frightens some visitors.

"Wilderness scared me hugely," Schmidt said. "Give me a New York City subway any day — that's fine!"

After living in Holden for a year and half, however, she spends most of her free time hiking through forests that once frightened her.

Ben Stewart, Holden's pastor, said some of the fear people feel towards nature is warranted.

"Living here long enough, with the dangers of the wilderness, leads to a really deep sense of humility and a healthy respect for life and death — how fragile life can be," Stewart said.

He said the wilderness setting helps the community relate to traditional church practices like Advent. Advent is a season of darkness and waiting observed during the four weeks preceding Christmas Day. During this season at Holden, mountains block direct sunlight, creating darkness in the valley. In addition, more than 300 inches of snow fall every winter, often making travel impossible.

"For ancient peoples, Advent was an anxious time," Stewart said. "Will the sun ever come back? Will we have enough food to last the winter? In our bones, we get that feeling here."

As daylight diminishes in December, so do Holden's water and power supplies. The village creates its own electricity using a small hydroelectric generator. In the winter, freezing weather decreases the creek's water supply and the hydro-system produces an average of 45 kilowatts of electricity. In order to compensate for the decrease, fewer than 80 people live in the village during the cold season.

During the warmer months, the generator provides 300 kilowatts of electricity, enough for the summer population of 500 people.

Operations manager Kristofer Gilje said using clean energy and avoiding pollution are priorities for the village. Since the village heats buildings in the winter with firewood and diesel fuel — both of which create air pollution — residents are remodeling many of their buildings to be energy efficient.

Villagers also built a new drain field to prevent wastewater from entering the watershed. Gilje said both projects are expensive, but essential for the village to exist in the remote valley.

"You can't justify living here if you are going to impact the environment negatively," he said.

Across Railroad Creek from Holden, mine tailings illustrate previous environmental impacts in the area. Before the village, a copper mining operation occupied the property and left 8 million tons of bright-orange tailings, a by-product of the mining process. The piles of toxic tailings cover approximately 90 acres, an area equal to 68 football fields.

The mine left 60 miles worth of tunnels inside the mountain. After Howe Sound Mining Co. closed the mine in 1957, the tunnels flooded, causing a constant stream of water to exit the portal and enter Railroad Creek.

According to a recent study funded by the mine's successor company, Intalco, the tailings and mine seepage pose no immediate risk to human health, but toxins contaminate the groundwater and the river. Researchers detected abnormally high levels of arsenic, cadmium, copper, lead, nickel, manganese and zinc in the groundwater and believe the toxins came from the tailings and the mine. Reports also show dramatic decreases in fish populations in the creek near the site.

Intalco, in cooperation with Holden and the U.S. Forest Service, is choosing a Mine Site Remediation Plan this year. Plans range from taking no action to consolidating the tailings and treating the water before it enters the creek. Depending on the method of containment or water management chosen, Intalco could pay up to \$120 million to clean the site.

Fifteen-year-old villager Adrienne Cryer said, however, the tailings are an important part of life and ritual at Holden.

The surface of the tallest pile provides a place for many village activities including basketball games, stargazing and high school graduation.

"I feel like the mine is a huge part of Holden," Cryer said. "It is Holden. That's how Holden started.

"As much as it is an environmental hazard, I just don't want to get rid of it. It makes me feel comfortable."

Stewart said the tailings serve a more important role than a playground for villagers.

"The tailings piles keep us honest," he said. "They're very obvious scars and wounds that we live with and continue to live with, along with the reclamation work."



Senior Katie Kulla studies photography at Western. This is her first published piece.



LEFT: Howe Sound Mining Co. closed the mine in 1957, but the entrance just outside the village remains open.
RIGHT: Everyday a bus arrives with new villagers and departs with leaving villagers. Saying good-bye to those leaving is an important part of daily life at Holden.

BY COLIN McDONALD



1928



1979



2000

South Cascade Glacier has dramatically receded since 1928. Photos courtesy of the U.S. Geological Survey, Washington Water Science Center.

THE LAST THING Dylan Taylor remembers is the ice disappearing beneath his feet.

"I just free fell," Taylor said. "I thought I was going to die."

Taylor was leading a three-person rope team down the Coleman glacier on Mount Baker in late September of 2000 when one of his clients broke through a snow bridge, pulling Taylor and his other client into a crevasse.

Snow bridges form every winter as snow covers the openings of crevasses, deep cracks in a glacier, and climbers use them to negotiate across the cracks. On this particular afternoon, sun had weakened the 8-foot-long bridge causing it to collapse, dropping Taylor and his clients into the depths of the glacier.

"I could feel the tension in the rope increase when the second guy went over," Taylor said. "I had this sense of panic as I realized I was not slowing down. I don't remember anything after going over the edge."

When Taylor regained consciousness, he was lying next to his clients and bleeding from his head — 45 feet below the surface of the glacier. They were lucky, a jumble of ice blocks wedged between the walls of the crevasse saved Taylor and his clients from plummeting another 100 feet to the bottom.

The glaciers of the North Cascades are constantly changing. Taylor witnessed one of these changes first hand and it almost killed him. But the collapse of a snowbridge is only a small part of much larger changes happening to the glaciers of the North Cascades. Researchers now use the glaciers as barometers, measuring glacial retreat and snow accumulation to understand small changes in the climate and atmospheric pollution levels.

North Cascades National Park geomorphologist Jon Riedel studies the glaciers and landscape of the North Cascades. In 1992, Riedel received funding to start monitoring the glaciers in the region.

"We knew that the climate was changing and that the glaciers were an excellent indicator of that," Riedel said. "We knew that if we could start monitoring these glaciers it would be an

indicator of change for the whole ecosystem, terrestrial as well as aquatic."

Every year, Riedel and two research scientists from the Park Service measure snow levels on the Noisy, Silver, Sandalee and North Klawatti — four glaciers in the park. By comparing winter ice accumulation with summer melting, Riedel and his team are able to determine if the glaciers are growing or shrinking.

Riedel's monitoring allowed him to construct a chart of changes in the glaciers for the past 150 years. Comparing his data and U.S. Geological Survey graphs with climate indicators such as tree rings, Riedel said he correlated patterns of growth in trees with longer periods of retreat by glaciers.

In the winter of 1999, the Mt. Baker Ski Area in the North Cascades set a world record for snow accumulation with 95 feet of snow. At the end of the summer, snow remained on the glaciers, making 1999 a positive balance year and the beginning of a short glacial growth period.

In the past 150 years North Cascade glaciers lost 44 percent of their cover because of warmer summers and less snowfall, a trend even large snow years like 1999 can't compensate for.

"At these rates of change, I could believe that sometime in the next half of this century we would lose our glacier cover," Riedel said.

With the capacity to store ice for decades, alpine glaciers act as high mountain reservoirs — storing winter snows for summer melting and balancing out the wet and dry seasons. This ability to equalize stream flow is reduced as the glaciers shrink.

While this melt water replenishes mountain lakes and feeds tributaries, it also carries pollutants. Distilled out of the air by cold temperatures or precipitated out of the atmosphere in snow and rain, the pollutants collect on the glaciers.

High mountain lakes from the Sierra Nevadas to the Canadian Rockies contain pollution, with contaminants such as DDT and mercury showing up in fish, otters and eagles.

"It all comes back," Riedel said. "You can't just dump pollution on that side of the ocean or up the river. It's going to come right back down on you."

Patrick Moran is a USGS biologist researching toxic compounds in high-mountain-lake fish.

"Some studies have shown that the North Cascades might be a trap for certain air pollutants," he said. "Similar studies, done in the Canadian Rockies and the Sierra Nevadas, show that there is an increase in organochlorines as you increase elevation."

To measure pollution levels, Moran and other USGS biologists studied fish from 14 mountain lakes in North Cascades National Park, Rainer National Park and Olympic National Park. The lakes range from 3,500 feet to 6,600 feet and are considered pristine by the park. With no other considerable inputs, the only source of pollution to the lakes is from the atmosphere. Moran intends to find out to what extent these lakes are polluted.

"We're using the fish as a canary in the coal mine," Moran said. "If there are problems they will show up in the fish."

Moran will have the results of the tests this winter. If the fish test positive for organochlorines or mercury, the lakes will undergo further testing.

Ideally, Moran will find few pollutants in the fish, but with current local and historic pollution, and increasing global pollution, he said that is unlikely.

For the past five years, University of Washington professor Dan Jaffe has studied pollution levels in air masses crossing the Pacific Ocean. The industrialization of South Asia, along with massive forest fires and expanded use of arid farming, led to radical increases in air pollution levels over the past 30 years, Jaffe said.

"It is difficult to put a number on it, but I would say that 10 to 15 percent of our air pollution comes from South Asia," Jaffe said.

Powered by the jet stream, the westerly winds pick up dust from the Gobi desert, DDT and PCBs from the arid farmland of southern China and mercury and other heavy metals from coal-fired power plants. With satellite imagery, Jaffe watches the dust cloud cross the Pacific Ocean and takes air samples when the mass arrives over Washington.

"The particulates either smack into the mountains, are dropped out or pass right over," Jaffe said. "If it does not hit us, they have to deal with it in Utah."

He said air pollution sources are difficult to pinpoint. While the pollution in glaciers can come from as far away as Europe, the majority comes from local sources, Jaffe said.

"The thought is that it may be a bigger problem here (in the North Cascades) because we get so much snow," Riedel said.

The glaciers of the North Cascades are a changing resource. They keep streams and dams flowing, provide recreation and serve as a benchmark for environmental change.

When fellow guides pulled Taylor from the crevasse, he did not know if he would ever guide again. But, he returned the next summer to share the mountains with others. Taylor is now more aware of his surroundings and shares his story with his clients so they can better understand what forces are acting on the glacier.

Moran and Riedel do not have an explanation for what is happening to the glaciers of the North Cascades. While the human role in the changes is not clear, we are far from being free from responsibility.

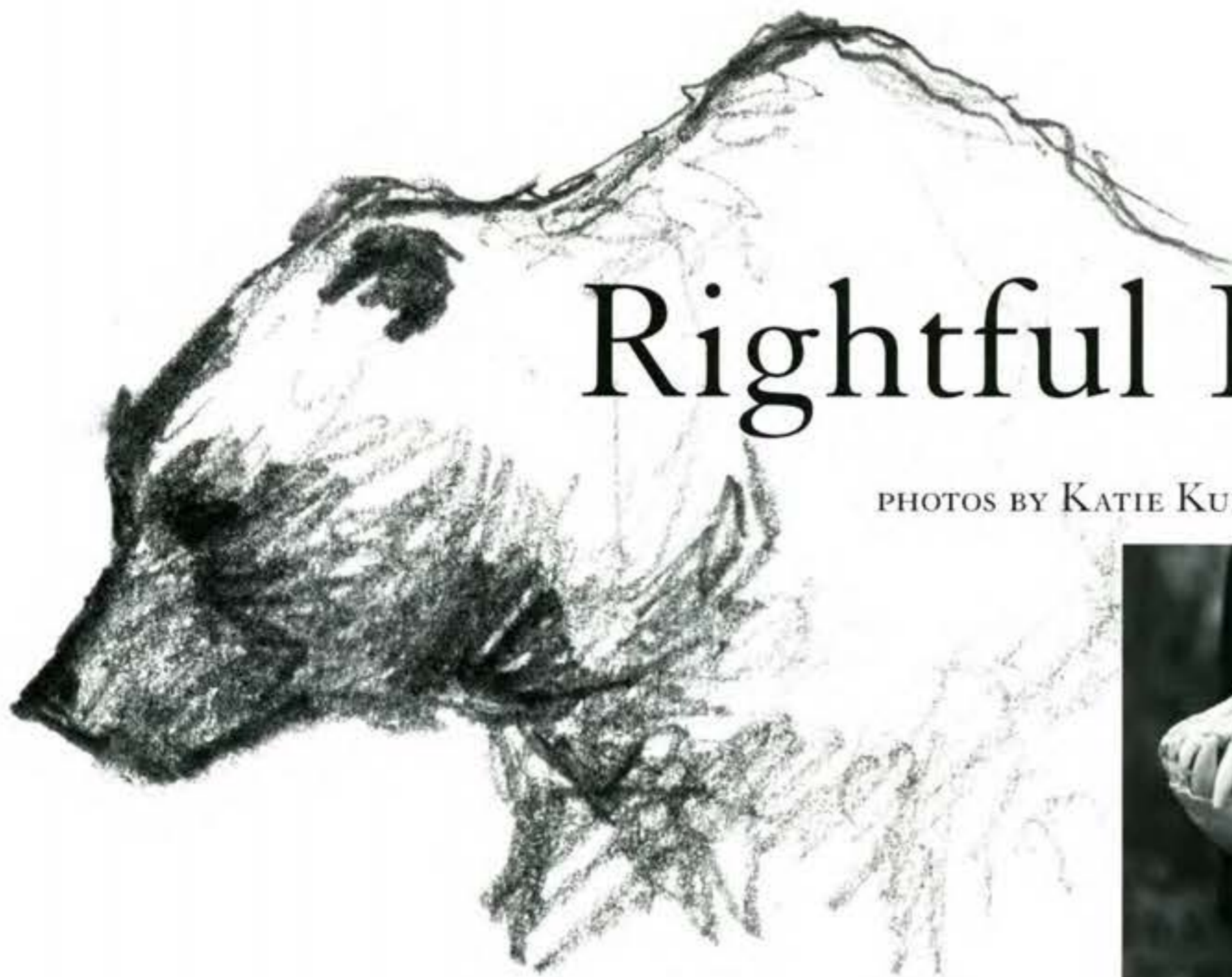
"It is a little disconcerting that we leave the public with the notion that this is not our problem," Moran said. "It definitely is."



Junior Colin McDonald studies environmental journalism at Huxley College. He has previously been published in *The Western Front*, *The Whatcom Watch* and *The Planet Magazine*.



The heavily crevassed terrain of Coleman Glacier is typical of glaciers in the North Cascades.
photo courtesy of Karl Kruger



Rightful Place?

BY SONJA L. COHEN

PHOTOS BY KATIE KULLA ILLUSTRATIONS BY JOSH BARRETT



GEOLOGIST NED BROWN'S encounter happened on a hot August day in 1996. A helicopter dropped Brown and two geology students at a high ridge area of the North Cascades, just inside the Canadian border. While standing alone at the edge of a meadow, Brown saw a large bear cooling itself in a snow patch 100 yards away. Brown's previous encounters with black bears taught him what to do in this situation — yell at it and wave his arms.

The bear charged.

Brown yelled louder and waved his arms frantically.

"At that point, it noticeably picked up speed toward me," he said.

Frightened, Brown jumped behind some bushes and prepared to fight the bear with a 2-pound rock hammer, the only defense he had. But the bear didn't follow him; about 30 yards from Brown, it veered into the trees.

Later, after Brown calmed down, he checked the bear's tracks in the snow. They were huge, about seven inches across, with long claw marks. Two days later when the helicopter returned for Brown and his students, the pilot said they were sharing the ridge with a grizzly bear. He didn't need to tell Brown — Brown had met the bear.

What makes Brown's experience so remarkable is not that a grizzly charged him, but that he saw one at all.

Grizzlies were once numerous in the North Cascades, said Chris Morgan, wildlife ecologist and bear specialist. Morgan is the director of Insight Wildlife Management, a research and education group in Bellingham. IWM is one of the groups facilitating the Grizzly Bear Outreach Project, an independent project aimed at listening to concerns about grizzly bears and educating the public.

He said trapping records from the Hudson Bay Co. report 3,788 grizzly bear hides shipped from the area between 1827 and 1859. Commercial trapping, habitat loss and hunting continued to devastate the grizzly population for more than a century.

In 1975, the grizzly bear was listed as threatened under the Endangered Species Act and in 1982, the federal government designated the North Cascades as one of six Grizzly Bear Recovery Plan areas in the lower 48 states.

Looking for a grizzly bear is a lot like looking for a needle in a field full of haystacks when the needle is trying to avoid you.

Doug Zimmer

North Cascades Grizzly Bear Management Committee

Washington's grizzly recovery area encompasses 10,000 square miles of forest, mountains and valleys, with at least 100 different plant species important to the bears' diet, making it an ideal location for the threatened grizzly.

Despite the 1982 national recovery plan, officials do not have plans for active grizzly recovery steps in Washington. While Yellowstone, a smaller recovery zone, has a grizzly population of about 350 bears, the North Cascades recovery zone remains practically vacant.

"There's probably between five and 20 (grizzlies) right now," Morgan said.

The region needs 200 to 400 grizzlies for a successful repopulation, Morgan said. Even a fully recovered population would be widely spaced because the North Cascades recovery area is so large.

"There isn't going to be one behind every tree," Morgan said.

Doug Zimmer, chair of an information and education subcommittee of the North Cascades Grizzly Bear Management Committee, said to get population estimates, scientists look for patterns in the types of bear sightings and the distance and time in between them.

"Seasoned bear biologists look at sighting data over a period of five years and make the best guess based on the data," Zimmer said.

Morgan called grizzlies the "mystery species of the North Cascades."

"People don't know how many there are now, data is insufficient on how many there were earlier this century, but we have enough evidence to suggest there are a handful left," he said.

The elusiveness and rarity of the bears complicates efforts to count them.

"Looking for a grizzly bear is a lot like looking for a needle

in a field full of haystacks when the needle is trying to avoid you," Zimmer said.

A major blockade to recovery is the Environmental Impact Statement, a document outlining the effects of proposed activities on the environment. Re-introduction cannot begin until an EIS for the North Cascades is complete and accepted.

"It's partially a problem of funding," said Don Gay, Mount Baker Ranger District wildlife biologist. "It would cost at least \$1 million just to fund the Environmental Impact Statement, with meetings and all."

Morgan also said he believes money is a major issue.

"Funding is one of the major restrictions to recovery of this population and that's largely because more government attention has been focused on other grizzly bear recovery centers, such as Yellowstone and Northern Continental Divide systems," Morgan said.

Morgan said another hindrance to the recovery effort is the bears' biological processes. Grizzly bears are the second slowest reproducing land mammal in North America, after the musk ox.

"It's a survival strategy," said Zimmer. "If you have lots of big bears in the same area that require lots of food they'd all starve."

The bears spend many years teaching their cubs to survive. Zimmer said this strategy worked until the invention of the modern firearm, which allowed hunters to kill bears faster than they could reproduce.

"The process of getting to a recovered population can take 100 years — it'll take 100 years in this case," Morgan said.

But David Gaillard, program associate for the animal advocacy group Predator Conservation Alliance, said grizzly recovery in Washington was put on the back burner years ago.

"It's been the neglected corner of grizzly recovery for years," he said.

Bear management biologist Anne Braaten said she thinks this neglect is the result of more active efforts in the Rocky Mountains.

"People were already so involved with the Rocky Mountains that it took a long time for the (government agencies) to acknowledge this area," Braaten said. "That's changing though."

Morgan said he thinks more attention might soon be focused on the North Cascades recovery zone because grizzly bear populations in the Rocky Mountains are stabilizing.

While Washington's recovery efforts are on hold, British Columbia's grizzly recovery is moving ahead in the North Cascades.

Morgan said British Columbia is considering augmenting current bear populations as part of their recovery process, but this is separate from recovery efforts in Washington.

"An interesting thing about the B.C. population is that if they



OPPOSITE: Chris Morgan, wildlife ecologist and bear specialist, displays the skull of an average-sized grizzly bear. LEFT: Morgan holds a cast of a grizzly bear's paw, using his own hand to comparatively illustrate the size of the bear.



Okanogan rancher Joel Kretz said he agrees that grizzlies belong in the North Cascades but opposes any plan to move bears in from other places. Cougars attacked animals on his horse ranch 19 times in three years, making Kretz wary of predators.

It's a hot subject. The general public over here is strongly against it.

Joel Kretz

Okanogan County Farm Bureau president

do augment, there is a chance that some of their bears could head south because of course they don't recognize international borders; no passports required," Morgan said. "So I think that's another good reason for educational efforts this side of the border."

Part of the educational effort includes distinguishing between the terms recovery, reintroduction and augmentation.

Morgan said recovery is the process of protecting and encouraging a population to grow to the point where it can sustain itself and ultimately be removed from the endangered species list. Reintroduction is moving animals into an area they formerly inhabited but no longer do.

Morgan said a small number of bears still exist in the North Cascades, so augmentation, adding to the existing population, is one of the main options for recovery in the region.

"The vast majority of people agree that grizzly bears have a rightful place in the Cascades and that they should be encouraged to recover," Morgan said. "Some people draw the line at augmentation. They believe if it can happen naturally, fine, but perhaps we shouldn't be adding them."

The Okanogan County Farm Bureau is currently gathering information about the possible implications of grizzly recovery.

"It's a hot subject," said Joel Kretz president of the bureau. "The general public over here is strongly against it."

Kretz raises quarter horses, cattle and poultry, as well as occasionally harvesting timber. He said recent economic depression has affected the Okanogan area.

He said he fears grizzly recovery would cut off economic possibilities in that part of the state.

"What makes me nervous is the absolute army of biologists and the stream of regulations that would run rural people off

the land," Kretz said. "I think (farmers and bears) have a chance to get along, but rural areas won't get by economically with the regulations that go along with it."

He said the idea of grizzlies in the nearby Pasayten Wilderness Area does not bother him, but when the government talks about lowland habitat for the bears they are talking about his backyard.

Kretz said the federal and state government already own 80 percent of Okanogan County. Now, with proposed grizzly reintroduction, Kretz said he wonders if the community will survive.

"How much is enough?" he said. "They have 80 percent. Do they need 90 or 100 percent? Then where do they put us?"

Kretz said his group will reserve judgment until all of the facts are clear, but they are concerned.

The wildlife advocacy group Defenders of Wildlife has a compensation program to reimburse ranchers for lost livestock, Gay said. In Yellowstone, grizzlies occasionally eat sheep because they are easy targets, but grizzly bears are primarily vegetarian.

"It surprises a lot of people to hear that (grizzlies) are 90 percent vegetarian," Morgan said. "Just 10 percent of their diet is made up of animal matter."

In reality, climbers and hikers are most likely to encounter grizzlies if the bears recover in the North Cascades, but they have expressed support rather than fear about grizzly recovery.

"It's a big area," said Steve Glenn, Bellingham Mountaineers climbing class chairman. "I don't see any reason why climbers and bears can't coexist."

Gay said Yellowstone statistics show a one-in-a-million chance of physical interaction between hikers and grizzly bears.

“In my years of experience working in grizzly bear country they’ve always amazed me with their patience and understanding demeanor,” Morgan said. “Bee stings, lightning strikes, snake bites, stick ups — they’re all things that people need to be more concerned about.”

Knowledge is the key to safe bear interaction, Morgan said. He said with proper education potentially dangerous scenarios are easily avoidable.

“Grizzly bears don’t want to waste their energy with aggression,” Morgan said. “They’ll avoid aggressive interactions as much as a person would like to.”

He said the grizzly bears’ value in an ecosystem is their role

as an indicator species — those species whose presence indicates that the environment is healthy.

“We’re managing large wilderness areas well if they can sustain large viable grizzly bear populations,” he said.

While Brown said he would like to see bears recover to sustainable populations, he can’t get past the memory of a grizzly bear charging him.

“I have mixed feelings on this subject,” he said. “I support efforts promoting recovery of the natural ecosystem. (But) grizzlies scare me.”



Senior Sonja Cohen studies journalism at Western. She has previously been published in the Bellingham Herald, The Western Front and the AS Review.



An old building marks the entrance to Joel Kretz’s 1,352 acre horse ranch in east Okanogan County.



'Poetic Cadence'

STORY AND PHOTOS BY JAMIE CLARK

GARY SNYDER stood underneath a beech tree in the Skagit River Valley, surrounded by the large granite walls of the North Cascades. Just before Snyder, a Pulitzer-Prize winning writer and former fire lookout, began his poetry reading, Shubert Hunter raised his hand in the crowd. He sheepishly asked if he could present Snyder with a poem he'd written called "Hock Eye."

"I thought, if there ever was a time to present my poem to Gary, now would be it because I knew that after hearing his poems, I wouldn't feel good about mine anymore and I wanted to feel good about it when I read it," Hunter said.

Hunter, a former North Cascades fire lookout, read his poem shyly and quickly.

"After I got done, I looked over at Gary and it looked like his eyes were glossy and he had a smile on his face," Hunter said. "I knew from that he really liked that I wrote it."

Snyder asked Hunter if he could read the poem to the crowd again.

"He slowed it down a bit and added a poetic cadence," said Jeff Muse, adult education coordinator at the North Cascades Institute. "It was really powerful. Shubert had a big smile on his face. He was so proud that a big poet had honored his work."

About 350 people gathered that day, July 27, 2002, to meet a

literary legend of the North Cascades. The event, organized by the North Cascades National Park, was called A Lookout's Rendezvous: An Afternoon of Poetry, Storytelling, and Photography with Gary Snyder. Many former fire lookouts, like Hunter, came to listen to Snyder, the writer who gave a voice to the culture of the North Cascades backcountry.

"The feeling I got when I was in the lookout had a lot to do with the poem," Hunter said. "As you go along, you pay attention to Mother Nature. Little things about Mother Nature will give you a treat — the sound, the scenery, cloud formations, birds ... I just expressed my feelings the best way I knew how."

The view from Sourdough Mountain and its surrounding peaks in the North Cascades not only inspired Hunter's poem, but also the writings of Snyder and two other former lookouts: Jack Kerouac and Philip Whalen.

In the 1950s, all three men sat alone on mountaintops, in small lookout towers watching for fires and writing. Snyder, Kerouac and Whalen eventually became published writers and an influential part of a literary era called the Beat Generation. Almost 50 years later, Snyder, the last surviving of these writers, returned to the region for the first time since 1953 to attend the Lookout's Rendezvous.

Snyder did most of his writing in the early 1952 and 1953 on



Hock Eye

Bald Eagle high and nearly out of sight.
Can you see the sun rise, clouds colored bright?
Can you see the colors on the mountain?
Hear the whispers of the wind?
Can you see the river in the valley?
In a world that never ends.
Can you see the colors of the sun set?
In a world that bids us all goodnight.

-Shubert Hunter



The view from Sourdough Mountain inspired Snyder, Kerouac and Whalen's writing.

a mountain surrounded by glacier-covered peaks. From his lookout station, he could stare down at one of the deepest gorges in North America, the Skagit Valley.

"Every lookout who has been on Sourdough (Mountain) and has seen the view has heard Snyder's poem running through their head," said Maxine Franklin, a lookout in the 1970s and again in the 1990s.

Snyder's writings reflect on the culture of the North Cascades backcountry. Every trail crew is familiar with his work and his poems have something that backcountry people relate to, Franklin said.

"Snyder's writing focuses a lot on the relationship of people to wild places," Muse said. "He doesn't write about thoughts, he writes about experience."

At the Lookout's Rendezvous, Snyder, Franklin and Hunter joined Gerry Cook, Harold Vail and Jack Francis on a panel of storytellers, Muse said. All the former lookouts told stories and discussed their experiences in the mountains.

Cook, a lookout in the early 1970s, said since lookouts are by nature solitary people, the fact that they all came together was a special thing.

"When you are a lookout, it's almost like you are part of a fraternity," Cook said. "There's this unsaid camaraderie."

Franklin said Snyder spent his days in the same towers and took in the same views as the other lookouts. Since the lookouts shared similar experiences, Snyder's writing had added meaning for them.

"When I was laying in bed in the lookout, I always thought 'wow, this is the same bed that Snyder laid in,'" Franklin said.

The North Cascades haven't changed much since the last time Snyder was in the region. It remains one of the few untouched, wild places left in the lower 48 states, Cook said.

"I was very impressed by Gary's impression of the Skagit when he came here," he said. "He was taken with how much had stayed the same and how beautiful it was."

Snyder's time as a lookout in the North Cascades was brief, but his writing captured the essence of the North Cascades in such a way that it has connected people to this region ever since.

"Everyone who loves the wild should get to know Gary Snyder," Muse said. "It's enriching, it's part of the backcountry culture. You can read the books and go hike around on the same trails that Snyder, Kerouac and Whalen did."

"Snyder's writing is timeless. It's just as right now as it was then."



Sophomore Jamie Clark studies photography and environmental journalism at Huxley College. This is her first published piece.

*Snyder's writing focuses a lot on the relationship of people to wild places.
He doesn't write about thoughts, he writes about experience.*

Jeff Muse, North Cascades Institute

LEFT: The lookout on Sourdough Mountain was home to many people that attended the Lookout's Rendezvous, including Gary Snyder, Shubert Hunter, Maxine Franklin and Gerry Cook.

