

Winter 2007

The Planet, 2007, Winter

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THE PLANET

Winter 2007

ROSES
are
Red

Ecuador's flower industry poisons
its workers and ecosystems

Skagit Snow Geese

Flock faces overpopulation

Western's Waste

Recycling woes and
composting success

Terrell Creek

Combined efforts for
salmon restoration

Dear Reader,

As consumers today we have so many choices. Crest over Colgate, white over wheat, plastic over paper. We can favor a local farmer's market over a big box grocery store. We can buy hybrid cars instead of gas-guzzling SUVs. These consumer choices help drive the environmental economy. We can voice our preferences with our dollar and in many instances, the market responds by making it easier for us to make environmentally-friendly choices. For instance, Wal-mart carries organic cotton clothing.

But some choices aren't so cut-and-dry. Planet reporter Devon Fredericksen found that out when she studied abroad in Ecuador last fall. There she witnessed the massive impact of the flower industry both on the surrounding ecosystems and the Ecuadorians who work on the flower farms. The United States imports approximately 70 percent of Ecuador's roses. As consumers, we can continue to buy these beautiful flowers at the cost of poisoning Ecuador's natural environment and drinking water. We can also choose to buy organic flowers from local growers, but that may leave the impoverished Ecuadorian workers jobless.

Shawn Herbold's "Shades of Green" examines two different lifestyles and how each could be ideal for a person wishing to lessen their overall resource consumption. Would you rather grow a vegetable garden in the yard and compost waste in a worm bin, or live in an energy-efficient house made from recycled materials in a densely packed, anti-sprawl neighborhood? Which is better? Why?

Annalee Dunn asks in "Food at a Snail's Pace," in our fast-paced culture, will you take the time to sit and enjoy a carefully prepared meal made from locally produced ingredients or are you, like most of America, too rushed to eat anything that doesn't come on a bun from the drive-thru?

The point is environmental choices are sometimes tough. It takes careful thought to decide what aspects of your life you are willing to change to prevent environmental degradation. When it comes to easy choices, The Planet found Western students are not willing to walk an extra 20 feet to recycle their plastic bottle or aluminum can. A survey of Western's garbage cans revealed our liberal campus is struggling with one of the easiest ways to prevent unnecessary waste. Meanwhile, students in stack four of Birnam Wood are going out of their way to compost. Two different choices, two opposite impacts.

When it comes to making environmental choices, I hope this issue of The Planet will help guide you on your way. As always, we thank you for your readership and we welcome any letters or suggestions.

Sincerely,



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Special thanks to: All the guest speakers who generously donated their time to our class. Our sources at NSEA and Fish and Wildlife who continue to assist our reporters in providing our community with information on current environmental issues. Chris Baker and the printshop team, and of course Bill, whose continuous insight and advice help us put out the best publication possible.

2 FOR SALMON, JUST ADD WATER
by Isaac Bonnell

Terrell Creek, west of Ferndale, Wash. was once home to thriving salmon populations. In 1945 a dam was built to create a habitat for waterfowl, and since salmon populations in the creek have declined. But now with the help of government officials, a local nonprofit restoration organization and a Western graduate student, salmon populations may be restored.

6 LESSER SNOW GOOSE, GREATER PROBLEMS
by Emily Krahn

Each winter, tens of thousands of snow geese visit the Skagit Valley to feast on crops before continuing on with their migration. Birders and hunters alike enjoy the visiting geese each year, but overfeeding has resulted in overpopulation and may threaten both these pastimes and the birds themselves.

9 FROM TABLES TO TOTES
by Willow Rudiger

The FoodPlus! Recycling program offers an easy way to compost food waste in Whatcom County. Residents of 15 Birnam Wood apartments as well as campus dining facilities are part of the 20,000 customers the voluntary composting program serves. As a result over 1,000 tons of food waste avoid the landfill each year.

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Can that leftover pizza box go in the recycling? Learn what can and cannot be recycled in Whatcom County.

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Reporter Devon Fredericksen returns from a quarter in Ecuador after witnessing the enormous impact of the flower industry on the poverty-stricken people and the vast biodiversity of the South American country.

17 FOOD AT A SNAIL'S PACE
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The Slow Food movement emerged as a refuge from the fast-paced, drive-thru world. Local ingredients and traditional cooking practices contribute to an overall slower, more sustainable and satisfying meal.

20 RECREATION'S DEGRADATION
by Kim Champley

Mount Baker Ski Area remains one of the only snow sports resorts in Washington that has not adopted Sustainable Slopes, a program that lays out standards for environmental management. While officials at Mount Baker claim they are making changes to lessen the impact of the ski season, others say there is still room for improvement.

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Todd Linder follows the extreme northwest winter weather of 2006 and 2007.

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by Jacob Buckenmeyer

As video games and indoor activities overtake the free time of America's youth, organizations like the North Cascades Institute try to make outdoor education a priority in hopes of preserving wilderness for future generations.

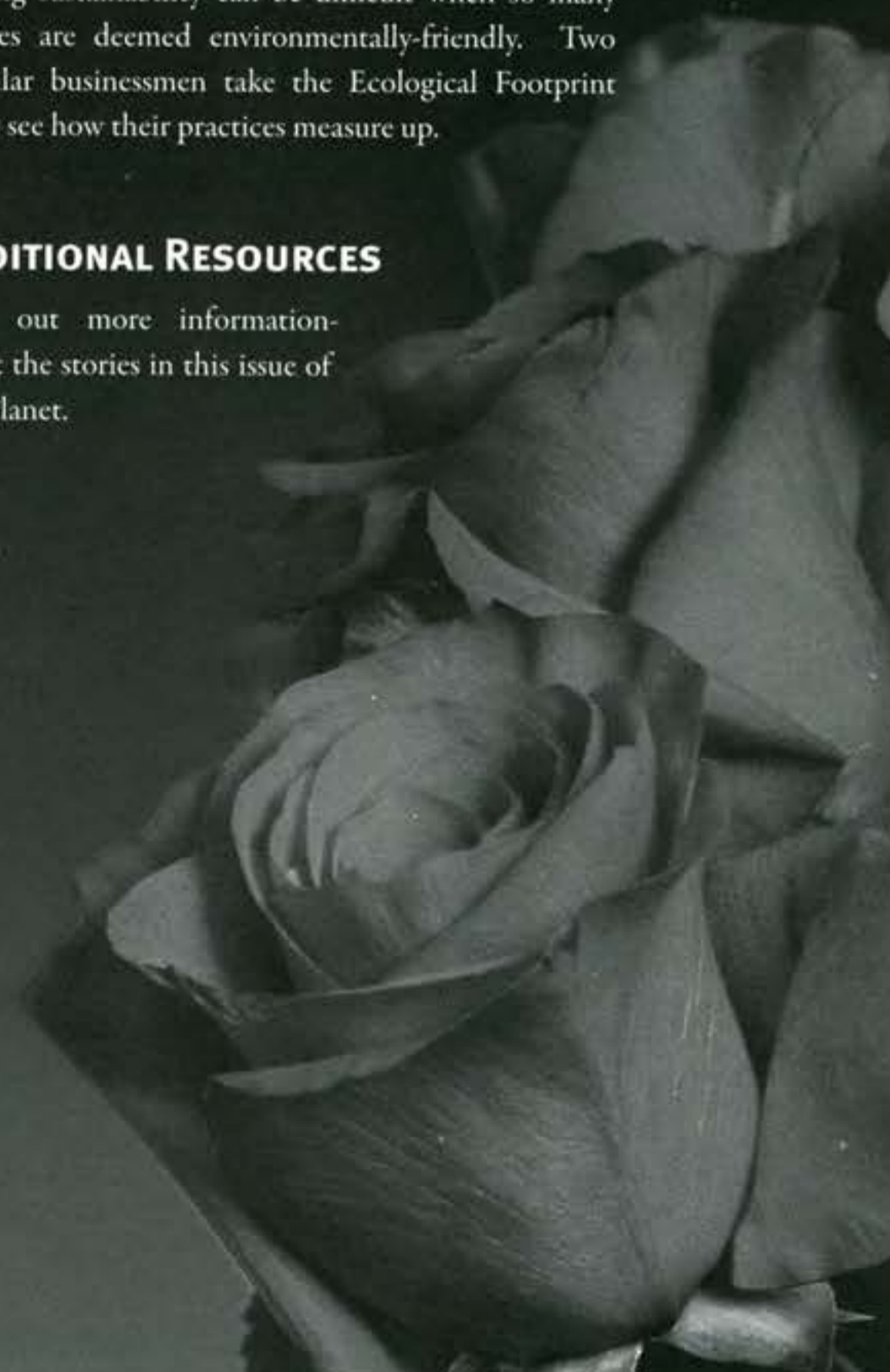
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by Shawn Herbold

Defining sustainability can be difficult when so many lifestyles are deemed environmentally-friendly. Two dissimilar businessmen take the Ecological Footprint quiz to see how their practices measure up.

29 ADDITIONAL RESOURCES

Find out more information about the stories in this issue of The Planet.

CORRECTIONS: In the Fall 2006 issue of The Planet, Brent Vadopalas was misidentified as a graduate student in the pinto abalone story. He received his Ph.D. from University of Washington. The sports fishery for pinto abalone closed in 1994, not 1996 as written. Also, in the Green Living section on packaging, The Planet said ketchup bottles are not recyclable. In Whatcom County, most plastic ketchup bottles can be recycled.





FOR

Salmon

JUST ADD WATER

by Isaac Bonnell
photos by Amy Keeling

Ryan Vasak walks along the service road in his rubber boots and Carharts, topped off with a pair of polarized sunglasses and a down vest for the chilly, yet sunny Pacific Northwest morning. He has walked here many times before, out to a wooden dam at Lake Terrell just beyond Ferndale. This structure is 2 meters tall, but holds back a 550-acre lake.

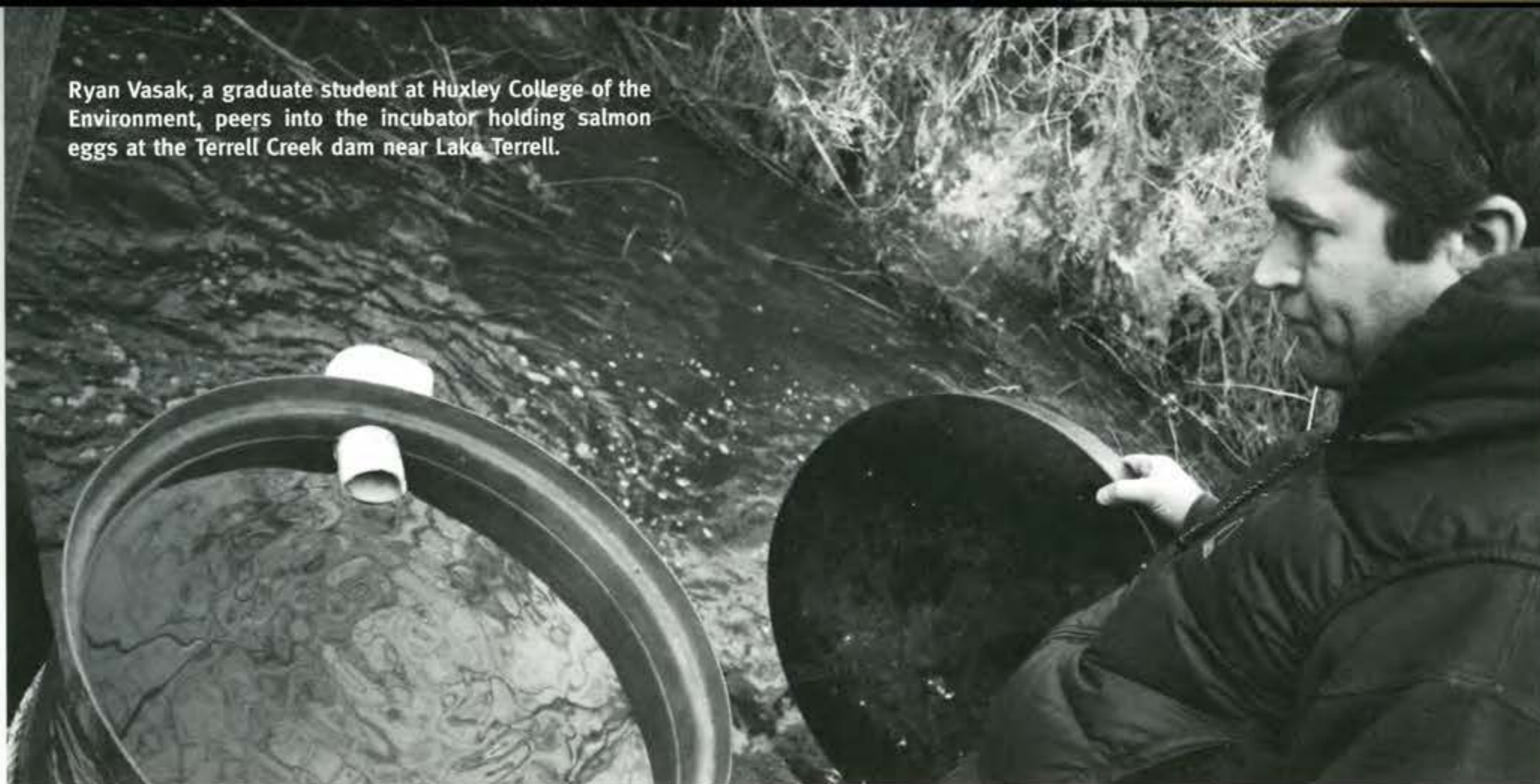
More importantly, the dam controls the amount of water flowing into Terrell Creek, which is home to chum and coho salmon. At least, it used to be.

Water rushes over the dam as Vasak crosses the bridge in front of it to demonstrate the focus of his nearly complete graduate studies at Western: two PVC pipes channel water over the dam and into Terrell Creek. This simple, scrappy siphon – something Vasak said he threw together in a few hours – could bring salmon back to their native spawning grounds. When combined with the efforts of a local nonprofit environmental organization, an oil refinery and a group of dedicated volunteers, Terrell Creek could one day be a model of successful salmon restoration.

In the late 1940s, Washington's Department of Fish and Wildlife purchased four dairy farms around the headwaters of Terrell Creek and installed a dam, creating what is now Lake Terrell. This 9-foot-deep lake provides habitat for local and migrating waterfowl such as ducks, snow geese and swans. The lake is also a popular recreation area for bird watching, boating, fishing and hunting.

The creation of Lake Terrell was not without consequences. The dam restricts precious water flow during the driest months of the year.

Ryan Vasak, a graduate student at Huxley College of the Environment, peers into the incubator holding salmon eggs at the Terrell Creek dam near Lake Terrell.



disrupting an already shallow and slow stream. Accurate data is not available to determine if Terrell Creek used to dry up in the summer, but salmon once did spawn in the creek and now they are gone. Residents of Birch Bay – where Terrell Creek empties into Puget Sound – once fished for spawning chum and coho, and for their close cousins steelhead and cutthroat trout. Last year, volunteer surveyors spotted only three coho spawning in the creek. No chum or cutthroat were found.

No water, no fish.

On any given day, Tom Reed can be found somewhere around the shores of Lake Terrell. His house sits 100 yards from the lake and his office, which is decorated with stuffed waterfowl, is part of the garage. Reed has managed this watershed since 1972, and works to keep the lake pristine for visitors, winged and tourist alike.

With this low-tech but effective system, Vasak measured the flow of water moving through the twin-valve siphon. He started with 40 gallons per minute and checked the creek for continuous water flow. No change.

“Forty gallons per minute is nothing. It looks like a small trickle,” Vasak said. “Well-pumps pump more than that.”

He then ratcheted the valves up to 60 gallons per minute and checked the creek again. This time, water flowed throughout the whole creek; minimum flow was reached.

“So what that told me right off the bat is that there’s not a lot of water coming into the creek from other sources, if just 20 gallons more per minute actually allows for surface flow throughout the whole creek,” he said.

Continuous stream water flow is vital for the survival of coho salmon because they spend approximately 18 months maturing in fresh water

“Forty gallons per minute is nothing. It looks like a small trickle,” Ryan Vasak said. “Well pumps pump more than that.”

Two years ago, Reed collaborated with Vasak to install the siphon. Since the lake is Reed’s main priority, he was originally hesitant to release any water during the dry summer months. Lower lake levels could provide noxious weeds, such as purple loosestrife and reed canary grass, an opportunity to invade the fragile wetland area. Still, he took a chance and agreed to let the project continue.

That first summer, the goal of the project was to determine if releasing water from the lake would create consistent flow through Terrell Creek, connecting the dots of dry spots with life-sustaining water. Vasak said he did not measure the amounts of water he released, but visually checked sections of the stream for results. He also watched the lake to see how his experiment affected the water level.

The first stage of the experiment was a success: Dry spots disappeared and water flow was attained without drastically lowering the level of the lake.

This past summer, the goal was to determine the lowest possible flow rate of the siphons while maintaining a minimum flow in the creek. It required a classic high school word problem: If it takes Vasak 7.5 seconds to fill a five-gallon bucket with water from the siphon, how much water will Vasak have after one minute? (Answer: 40 gallons.)

before migrating to the ocean. Chum, on the other hand, spend one to two weeks in a stream before migrating downstream to an estuary, where they develop into adults. Because coho spend so much time in the creek their success will signify the overall success of restoration in Terrell Creek.

“[Coho] are a pretty good indicator for the health of the stream,” Vasak said. “If they’re there, then the cutthroat ought to be able to be there as well.”

Water supply is not the only problem plaguing Terrell Creek. Though spawning fish now have enough water to wiggle their way upstream in the summertime, large sections of stream habitat are still overrun with reed canary grass. This invasive, noxious weed poses a serious threat to wetland and streamside ecosystems throughout Washington. The grass grows so quickly – up to 6 feet in a single growing season, according to the Washington state Department of Ecology – and densely it chokes competing native vegetation. Its thick root system catches small silt particles that fill in stream channels and gravel beds, which are prime spawning grounds for salmon.

As reed canary grass encroaches on a stream channel, it transforms the four-lane fish highway into a one-lane dirt road with no shoulder, turning the green and diverse streamside scenery into a desert.

"It makes a pretty formidable opponent if you're a small tree trying to gain some footing in that area," said Rachel Vasak, Ryan Vasak's wife and program coordinator for the Nooksack Salmon Enhancement Association (NSEA), an environmental non-profit focusing on restoring wild salmon runs in Whatcom County. "The only way that we can effectively get rid of reed canary grass is to shade it out."

In 2000, NSEA began surveying the stream habitat and counting the number of smolt, or young salmon, leaving the creek. This data was then used to identify areas in most need of restoration.

The section surrounding the Jackson Road crossing was quickly identified as the top priority for restoration. Here the creek meanders through a 40-foot-wide depression that consistently floods during rainstorms. At the time, it was so degraded that the stream channel was choked with reed canary grass, Rachel Vasak said.

"I can hardly wait for those first fish to come back."

- Elie Friedlob, Chums of Terrell Creek Founder

In 2003, NSEA began restoring streamside habitat along the Jackson Road section. This meant manually removing reed canary grass and planting native trees and shrubs. To date, Rachel Vasak estimates that NSEA has installed 20,000 plants along Terrell Creek at a cost of approximately \$60,000, which is more than half of the \$100,000 project price tag.

Much of this work would not have been possible without the support of British Petroleum Cherry Point oil refinery, which owns the section of Terrell Creek upstream from the Jackson Road bridge. If politics creates strange bedfellows, then so does salmon restoration.

"We have identified that we want to continue restoration on our property," BP Environmental Supervisor Elizabeth Daly said. "I give [NSEA] \$20,000 a year and we pay for maintenance on projects we have done."

Going into its fifth year of restoration work, the refinery also collects runoff water from its site and channels it into numerous wetland ponds that surround Terrell Creek. This water then filters into the groundwater and helps recharge low summertime flow.

The money from BP and other sources also funded improvements to in-stream habitat along the Jackson Road section. NSEA paid a contractor \$20,000 to place large woody debris in the creek. Though these squarely cut logs give the creek a manicured, amusement park look, they create much-needed pools and riffles in the creek. Riffles are areas of the stream where ripples form on the surface of the water, which are prime spawning areas for salmon. Such riffles sound like a soothing 'babbling brook' soundtrack and act as aerators, increasing the amount of dissolved oxygen in the water.

"Pools tend to have finer sediment whereas the riffles tend to have coarser sediment, which is what [salmon] need for spawning," said Leo Bodensteiner, an environmental science professor at

BELOW: Ryan Vasak stands on the bridge over the dam holding back Lake Terrell. To the right sits the incubator for chum salmon smolts.



NSEA loses creek restoration funding

by Sam McNeil

This year is going to be one of thrift for NSEA. The salmon restoration organization's two major grants, Jobs in the Woods and Jobs for the Environment, expired. This cut NSEA's budget from \$1.2 million to \$431,805.

"It's not a crisis," said Wendy Scherrer, executive director of NSEA and Huxley College graduate.

NSEA is reacting to the setback by "regrouping," Scherrer said. Employees are applying for more grants, checking the organization's efficiency, working with more volunteers, designing a media campaign, and asking their neighbors for help.

"We need to have more local community support," Scherrer said.

Despite grant exhaustion, restoration work still needs to be done: trees need planting, barriers to salmon migration need removal, and stream banks need repair. Salmon populations remain a slight fraction of pre-industrial levels, and northwest fishers now trawl in Alaska.

NSEA is part of a statewide coalition of salmon enhancement groups founded in 1990 by commercial fishers looking for a local catch. Clearcuts and fickle salmon runs mean fewer jobs for fishers and loggers.

NSEA was able to employ and train 18 natural resource workers with the

Washington Department of Fish and Wildlife Jobs for the Environment and the U.S. Fish and Wildlife Service Jobs in the Woods grants.

When the larger grants ran out, NSEA was forced to lay off these workers. Scherrer said the loss of Jobs in the Woods and Jobs for the Environment grants was part of the Bush administration's cull of national environmental projects. The result of "fiscally responsible" policies also means NSEA has a difficult time raising funds. They must now raise \$1 to \$2 locally to match every federal dollar.

Before the grants ran out the natural resource workers evaluated site needs, created stronger stream banks by planting trees, and maintained restoration. Volunteers now must fill the muddy shoes of skilled restoration technicians.

The listing of the spring Chinook salmon as a threatened species also resulted in funding loss for NSEA. Funds are now focused on the spring Chinook's territory in the southern fork of the Nooksack River, leaving lowland salmon restoration in Terrell, Tenmile, and Fourmile Creek high and dry, Scherrer said.

Despite the loss of funds, Scherrer said she is optimistic. She is working on a media campaign to teach Whatcom residents about salmon restoration and hopes to air public service announcements on local radio stations. The segments would feature practical tips for ensuring the future vitality of Whatcom County.

"For my grandchildren - we need to step it up," Scherrer said.



Huxley College of the Environment. "So that provides habitat for the eggs."

Rather than wait for salmon to slowly repopulate the stream, a group of volunteers called the Chums of Terrell Creek are sponsoring a salmon incubator to augment the chum population. Each winter for the past three years, the group places 50,000 chum eggs in a black plastic container that resembles a 55-gallon oil drum located at the base of the dam at Lake Terrell. A small tube connects to the top, supplying running water from the dam, and a similar tube drains water at the base. Smolts mature in the incubator and are later released into Terrell Creek.

Since chum do not spawn until their third or fourth year of maturity, salmon released from the first incubator three years ago are expected to return to spawn this winter or next.

"I can hardly wait for those first fish to come back," said founding Chum group member Elie Friedlob of Birch Bay. "Those first fish will be really powerful [for the community]."


The Chums of Terrell Creek also focus on connecting the community to salmon restoration and organizes work parties for NSEA tree planting events. Last summer the group marched in the Birch Bay Discovery Days parade with a 17-foot-long salmon made from scrap metal and chicken wire.

"It makes the restoration that much more successful when it's connected to the community," Friedlob said. "Restoring salmon is so much bigger than Terrell Creek. Restoring our salmon is really restoring our community."

In the meantime, Ryan Vasak said he is in the writing stage of his study and hopes to graduate this spring. But his involvement with Terrell Creek will not end there.

"You can put water in the creek, but if it's not suitable, then what's the point?" he said.

To the dedicated group of people who want to see Terrell Creek lined with native trees, filled with gravel spawning beds, and full of cool, running water, the daunting task of restoring wild salmon runs to this tiny creek is worth every day of effort.

"We can't say we didn't try," Rachel Vasak said. "Some days are two steps forward, one step back. Some days are ten steps forward, no steps back. Other days are more steps back than not." 

Isaac Bonnell studies environmental journalism. He has been published in *The Western Front*.

Salmon survive under Bellingham's busiest street

by Yuki Nakajima

Dark brown water flows quietly through eroded banks, lined by dead cattails and invasive blackberry. The banks are eroded and surrounded by invasive blackberry. This stream runs not through a forest or a farmer's field, but next to Bellis Fair Mall along the Guide-Meridian. Residents know the crowded street near Bellingham's shopping district has a lot of traffic, but not many people know that salmon live next to the city's busiest road.

Baker Creek follows Meridian Street, and meets Squalicum Creek at Squalicum Parkway, then flows into Bellingham Bay. The drainage area of Baker Creek is approximately 3,150 acres and meanders through agricultural, wooded, industrial, commercial and residential areas.

Water quality is essential to salmon survival. Clean, cold water is important for the fish to spawn and survive. Wendy Scherrer, NSEA executive director, said salmon also need high dissolved oxygen levels to breathe. To keep high oxygen levels, the water must be cold. The colder the water is, the more oxygen it can hold.

According to the City of Bellingham Urban Streams Monitoring Program 2005 Report, the dissolved oxygen level of Baker Creek was dangerously low, especially from June through September.


Salmon can survive in water ranging in temperature from 5 to 20 degrees

Celsius. Higher or lower water temperatures usually kill fish, especially when endured for a long period of time. In July and August 2005 the temperature in Baker Creek was 15 degrees Celsius, but dropped below 5 degrees in February and December of 2005.

Dissolved oxygen and decreased temperature are not the only issues Baker Creek faces. Population growth in Bellingham has caused increased development. Construction of new homes and businesses produces silt, which flows into the stream. This increases turbidity that kills insects, which are salmon's food. Silt is also harmful to salmon because it clogs their gills. If too much silt accumulates in the stream it will also eventually suffocate salmon eggs.

Whatcom residents directly affect urban streams and salmon cannot live in them if the issues are not taken seriously.

"We made Baker Creek like a sewer," Scherrer said.

Commuters, homeowners, and businesses can protect salmon and Baker Creek. The more people who understand the issues, the more likely they will be willing to solve them. 

LESSER SNOW GOOSE

A lone snow goose stands away from the flock in a field near Conway in the Skagit Valley. The geese come to feed here in the winter months before they return to the Arctic in the spring.

GREATERT PROBLEMS

by Emily Krahn
photos by Amy Keeling

RIGHT: A startled flock of snow geese quickly lifts off the field of grass where they were feeding.

BOTTOM: Geese feed on grasses near Conway. Warmer temperatures and conservation efforts have increased their population, causing concern among local farmers.



While driving through Skagit Valley in the winter, travelers see open fields blanketed in white. Soon they realize this covering is not from snowfall. A low echoing call rises in the distance and a wave of white fills the air. In a split second, the sky is hidden from view as tens of thousands of birds fly overhead, linger in the air and then land to reorganize their heavy flock.

Every winter, a population of the Lesser Snow Goose migrates to Skagit County from Wrangel Island, Russia. The birds seek relief from the bitter temperatures of their frozen homeland and draw hunters and wildlife enthusiasts who wish to see these massive flocks. Their plumage is almost completely white except for black wing tips. Often the birds have a rusty orange face, stained by iron in the earth where they feed. In recent years this flock's population, which was once dwindling, has exploded, causing problems for local farmers and leaving many of the birds' admirers wondering if their continued population increase will eventually lead to their destruction.

Maynard Axelson is a Skagit County resident who studies the Lesser Snow Goose, and has visited their arctic breeding grounds. He said humans are the main contributors to the population problem.

"A lot of it is our fault for providing food," Axelson said. "It's not intentional, but we're tipping things out of balance."

Axelson, who speaks to Audubon groups, founded the Washington Brant Foundation in 2001, which is dedicated to protecting the Brant Goose. He said snow geese are accustomed to the food available to them in Skagit County. Their arctic habitat is a harsh existence because their food source lacks nutrients. When the geese migrate to places such as Fir Island on the Skagit River delta, they are exposed to farm crops that give them more energy and larger fat reserves. This allows the snow geese to return to their breeding grounds earlier and lay more eggs, Axelson said.

Their ability to adapt is demonstrated by the birds' behavioral change in recent years. Axelson said the geese traditionally grazed on greenery, but learned to spend days at a time in dirt fields digging potatoes and other crops out of the ground. They also stopped spending their evenings on the water and now remain on land all night to feed.

"These birds have responded so well to opportunities here," Axelson said. "It's almost too much of a good thing."

Warming arctic temperatures result in longer breeding seasons for the snow geese, which also contributes to the overpopulation problem, he said.

The geese leave Wrangel Island in late August, stop in Alaska and then the Fraser River delta in Canada. They arrive at the Skagit River delta in October, Axelson said. Some of the population continues on to California, but the majority flies back and forth between the two river deltas, and returns to breeding grounds in early April.

The amount of geese migrating to Skagit County ballooned from 30,000 to 120,000 in the last 40 years, Axelson said.

The geese draw wildlife enthusiasts and contribute to Skagit Valley's revenue each winter. Claudia Young, who works at the La Conner, Wash. Chamber of Commerce, said she witnesses the effects of the birds first-hand.

"The geese contribute to our tourism a great deal," Young said. "The word gets out about the massive flocks and people love to come and see them."

According to Washington's Department of Fish and Wildlife, the Skagit population suffered two decades ago when several years of harsh arctic summer weather caused the loss of numerous goslings.

In response to this decline, the state created the Fir Island Hayton Snow Goose Reserve, and set a minimum maturity for hunting geese, requiring a large percentage of the population to be juveniles, according to Fish and Wildlife.

Now overpopulated, the flocks are depleting their arctic habitats by overgrazing. According to an article by Mike Johnson of the Northern Prairie Wildlife Research Center, overgrazing in nesting grounds in Northern Canada has led to erosion of topsoil needed to support plant life. As populations continue to increase, more habitats will be destroyed.

"Any damage done to the arctic could take 25 years to come back," Axelson said. "[The habitat] takes forever to heal itself. As the geese become more overpopulated they will eventually push out other species."

Damage to the arctic is not the only issue of concern. Mike Davison,



the district wildlife biologist for Fish and Wildlife said crop destruction from the birds is a major problem for farmers in Skagit Valley. Farmers plant cover crops at the end of harvest to prevent the run-off of soil nutrients. They keep the cover crop over the winter, then till it back into the ground before planting the standard crop in the spring, Axelson said.

"It's really the birds that pay the price," Davison said. "The landowners get frustrated and chase them off their land."

Davison said reserves, like the one on Fir Island, are attempts to give the snow geese a designated area to live. However, he said no swift action can solve the current population problem.

"Currently, the snow goose population is growing at a rate that exceeds anything we can do in terms of harvesting the geese or population control right now," Davison said.

He said future solutions may include working with landowners to increase goose hunting and extending the hunting season, which normally lasts from October to January.

For the 2006 to 2007 snow goose hunting season 3,500 to 3,700 hunters registered, said Doug Huddle, the Fir Island snow goose quality hunt coordinator. Registration and kill reports are mandatory for those who hunt the geese, he said.

This year, a new program will allow for more control over snow goose hunting techniques around Fir Island, and helps lessen the negative effects the geese have had on residents' property. The Quality Hunt Program lasts 12 weeks and involves opening private property for snow goose hunting, Huddle said, who will oversee the program.

"The responses from island residents have been overwhelmingly favorable," Huddle said. "We were able to introduce the opportunity to hunt snow geese to those who had never attempted before."

Programs like the Quality Hunt Program are important for population control, Axelson said. As a man with a deep love and admiration for the species, he said he also realizes the important role hunters play in ensuring the survival of the geese. He said the rivalry between birders and hunters is puzzling.

"Birders will argue they don't want to see the birds hurt and that they don't injure them," Axelson said. "But hunters are the first to open their wallet to contribute donation dollars for the birds. Hunting is definitely part of the equation. They both love birds, so why can't we all work together to help them?"

The wave of white that so many birders enjoy grows each year. This spectacular sight is a result of human-induced overpopulation, devastation and the need for control. The geese learned to thrive in Skagit Valley, but a solution must be reached before the birds are deprived of their way of life and the valley loses them. ●

Emily Krahn studies public relations.
She has been published in Klipsun and The Western Front.

"Currently, the snow goose population is growing at a rate that exceeds anything we can do in terms of harvesting the geese or population control right now."

- Mike Davison, District Wildlife Biologist, Fish and Wildlife

BELOW: Snow geese glean potato fields before making their way back to the Arctic this spring.



From TABLES to TOTES

by Willow Rudiger
photos by Sally Wolff

Western junior Bridgett Jamison was raised in a rural community in Pennsylvania. Her family always kept a compost pile for any food waste they produced, but when she moved into Birnam Wood apartments on campus last fall, she said she was appalled by the amount of food scraps she and her roommates threw out each week.

"I was used to separating food [waste] out, and when I got here and no one was doing that, it was kind of a shock," Jamison said. "Especially when I realized how much garbage we were generating."

Jamison is an active member of Students for Sustainable Food, a campus club, and serves as the recycling representative for Birnam Wood. In fall of 2006, Jamison approached members of the Birnam Wood community council about starting a composting program in the apartments.

In January, residents from Birnam Wood apartments met at the

"I was used to separating food [waste] out, and when I got here and no one was doing that, it was kind of a shock."

- Western junior Bridgett Jamison


community building to sign up for the FoodPlus! Recycling program run by Sanitary Service Company (SSC), a locally owned and operated, full-service recycling and waste collection company.

"This is the first place on campus where people are going to be able to do food composting in their living space," said Rodd Pemble, recycling manager for SSC, to a crowded audience. "This is the easiest place because you have kitchens and you're probably preparing more food than somebody in one of the high-rise dorms."

Western began the program in June 2005 for yard waste, food-soiled papers and food scraps. A FoodPlus! recycling tote can be found on campus almost anywhere students buy food, said Seth Vidaña, campus sustainability coordinator at Western's Office of Sustainability. Approximately 150,000 pounds of Western's food waste is composted each year as a result of the program.

Pemble said he estimated one of the single largest volume items coming out of Birnam Wood is pizza boxes. Residents typically throw away pizza boxes because they have food on them. With FoodPlus! any food-soiled paper and food scraps are compostable.

"When we say any, that's what we mean," Pemble said to an intent crowd of students. "So if you've learned about backyard composting



Green Earth Technologies compost piles contain food scraps and other materials from approximately 3,500 Whatcom County residents.



before and you think: I can't put dairy products in, I can't put meat in, I can't put bones in – that's all out the window with our program."

Western senior Michelle Metzler, a student manager at the Viking Union Market, is known by her fellow co-workers as the "compost girl." Metzler is at the forefront of the FoodPlus! program in the Viking Union, where everything from uneaten food, milk cartons, coffee grounds, receipt paper, napkins, and paper cups are collected for composting.

"I'm just a weird kid who cares about composting," Metzler said. "I really try not to nag people, and I can't always be there to police it, but I'm graduating this spring, so I really wanted to make some changes that are going to last."

As of fall 2006, all of Western's food-preparing retail and dining facilities use FoodPlus! totes. The Viking Union fills at least one 64-gallon tote each day, while the Viking Commons fills eight or nine, Metzler said.

When Chris Kenney, resident dining operations director for Dining Services, started his position in November 2005, the Viking Commons went through a new food disposal unit every five months. He quickly tired of spending thousands of dollars to dispose of food waste.

Kenney said cooks in the dining halls already composted kitchen scraps, so he suggested scraping students' uneaten food into totes instead of into the disposer trough.

Residents of each of the 15 apartments in Birnam Wood that signed up for the recycling program received a blue, two-gallon tote for collecting kitchen scraps. When their tote is full, students deposit their food waste in a 64-gallon container outside of the apartment building.

University Residences offered to cover the costs of FoodPlus! in Birnam Wood and chose stack four for the pilot because residents showed a strong interest in the program, said Kurt Willis, associate director of University Residences.

SSC collects food waste for recycling five days a week as part of the

regular yard waste route using two trucks that run on biodiesel. After SSC picks up food waste, the contents are hauled to Recycling & Disposal Services, Inc. in Ferndale, and loaded into a 40-yard-long box. The container is taken to Green Earth Technology (GET) in Lynden, a 20-acre compost facility established specifically for compostable waste.

Pemble said GET makes 100-foot-long piles called "windrows" out of 500 cubic yards of food and yard waste. The piles are covered with blankets that allow water vapor to cycle through the waste, but trap odor molecules. The material sits on concrete pads with aeration channels running underneath for airflow, and hoses for added moisture. Temperature probes help monitor heat levels in the piles. Within a day or so the compost reaches 180 degrees, which helps paper products, meat, and animal bones decompose quickly.

Pemble said once the material decomposes, employees screen the compost for large pieces that didn't break down. The compost is loaded into dump trucks and hauled to greenhouses, nurseries, golf courses, and landscapers.

"We end up with a valuable local product that somebody can then use in their business," Pemble said. "The material gets picked up locally, processed locally, and used locally."

Stephanie Harvey, co-partner at GET, said 30 percent of waste in Whatcom County can be composted using GORE technology. The facility currently handles 14 windrows on five acres, each taking approximately 60 days to completely break down yard and food waste. GET is recycling at a rate of 7,500 tons of material per year with the potential of reaching 10,000 tons each year, Harvey said.

Individuals like Jamison and Metzler, who are committed to reducing food waste, make the program possible. Pemble said approximately 3,500 Bellingham commercial and residential customers are currently signed up for the voluntary FoodPlus! Recycling program, which is available to



PHOTO BY AMY KEELING

20,000 customers.

"These folks are motivated," Pemble said. "They want to do it and they want to do it right. We advertise very little for the program. It's people talking to neighbors. That's really how the program has grown."

Each ton of food waste Whatcom residents recycle locally means less money and energy wasted on transporting garbage to landfills in eastern Washington, Pemble said.

Landfill sites are lined with clay, and trash is thrown in and capped with more clay, Harvey said. This process removes oxygen and turns food

"You may not see it itemized on your tuition bill, but you are helping lower the operating costs of the entire campus by participating in this program."

- Rodd Pemble, Sanitary Services Company recycling manager

and other waste into static material that is packed together and unable to break down.

"To compost and break stuff down you need to feed that biological process with microbes, the right bugs, and oxygen," Harvey said. "Landfills are managing their space and managing their water, but they're not managing the breakdown."

Harvey said if SSC customers really decided to recycle they would see their garbage decrease by 80 percent.


Pemble said FoodPlus! has the potential to help lower Western's overall garbage bill.

"You may not see it itemized on your tuition bill, but you are helping lower the operating costs of the entire campus by participating in this program," Pemble said to Birnam Wood residents. "It's cheaper for us to pick up this material and recycle it than it is to pick up the same stuff and



ABOVE: Western junior Bridgett Jamison examines her new composting tote she received for the FoodPlus! Recycling Program

charge the college for garbage."

Back in Birnam Wood, Jamison hovers over her new tote under the fluorescent glare of her flickering kitchen light. Nestled in the folds of a biodegradable bag lining the blue tote rests a rainbow of waste. Banana peels, lemon rinds, mushy tomatoes, and a soiled paper bag filled with mangy mushrooms serve as Jamison's first offering to the new FoodPlus! Recycling program that she helped start in her community. 

Willow Rudiger studies environmental journalism. She has been published in The Western Front, Klipsun, and The Planet.

Trashed: What's in Western's Garbage?

compiled by Corina Jones

Recycle Instead

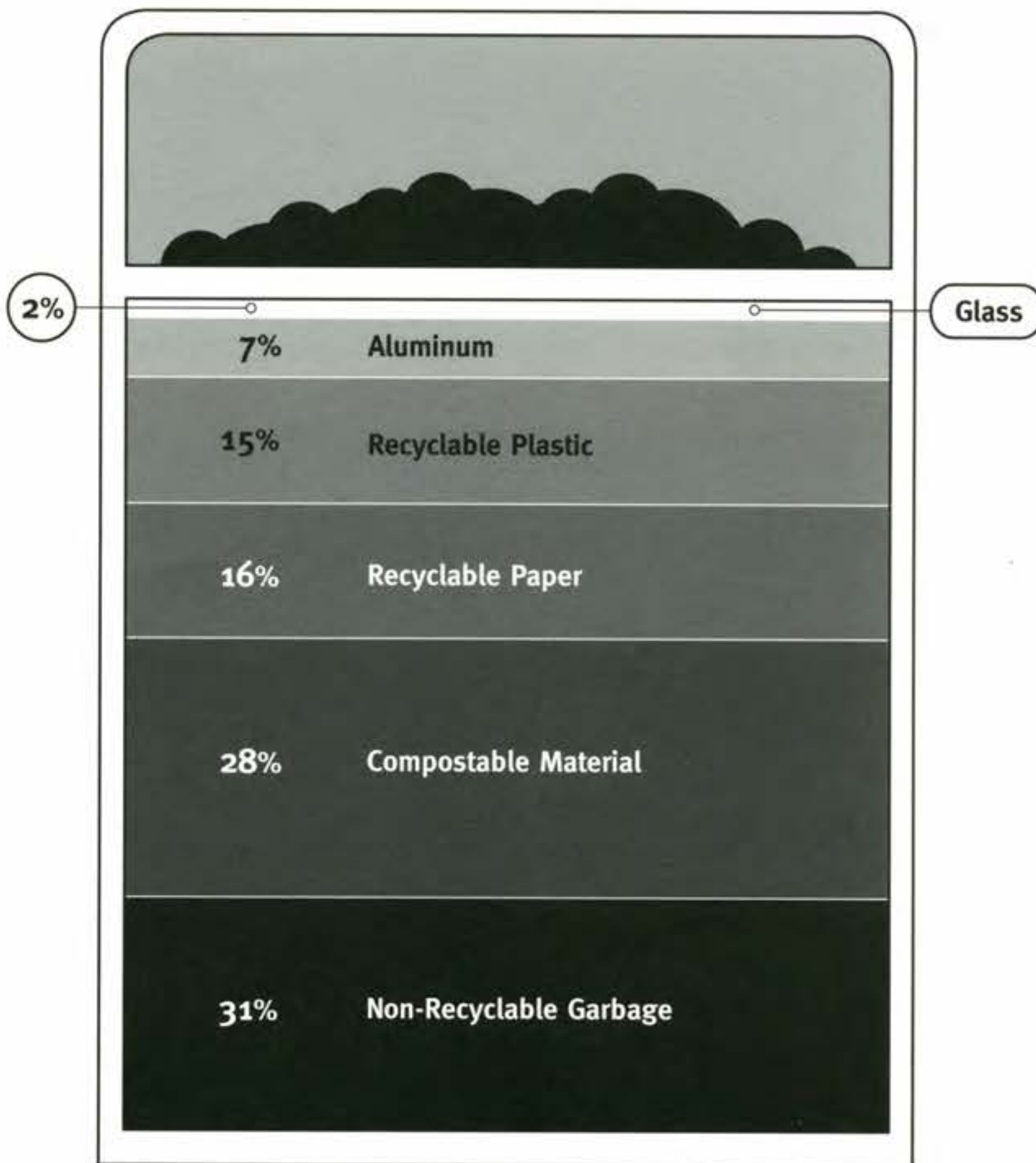


ILLUSTRATION: JOE SHOOP

Recycle Instead. This simple message is posted on the garbage cans located throughout Western's campus. Two words, highly visible, and repeated over and over again. Students see this message every time they pass through Red Square. However, upon closer examination of contents of the garbage cans, it is obvious RECYCLE INSTEAD does not read as clearly as it appears.

According to a recent waste analysis of 57 garbage cans between the Viking Commons and Fairhaven Dorms, students at Western produce about 584 pounds of garbage per day.

Much of what students throw away in major traffic areas on campus such as the Viking Union, Red Square and Arntzen Hall is recyclable, but ends up in the trash. About 59 percent of the contents in 57 of Western's most frequented garbage cans are recyclable materials. Thirteen percent is compostable food scraps, and only 28 percent of the contents inside these 57 cans is actually garbage.

Staff from The Planet conducted their own study by digging, sorting, and weighing contents from three garbage cans located on Western's campus. Items pulled from the cans were separated into actual garbage, compostable materials and recyclables. The total weight of all three equaled 30.75 pounds. A total of 28 percent of the contents was actual garbage, 31 percent was compostable material, 16 percent recyclable paper, 15 percent plastic, 7 percent aluminum and 2 percent glass. All three garbage cans were less than 20 feet away from recycle bins.

Considering how close the nearest recycling bins are to the garbage cans sampled, it is disappointing to see so many recyclables thrown away. At a university where students spend extra money to purchase green power, they could do a much better job protecting the environment by putting just a little more effort into recycling.

Green Living: Recycling

compiled by Emily McMahon



Wait, I can recycle that?

No!

- Milk Cartons
- Juice Cartons
- Plastic Tubs
- Paper Coffee Cups
- Paper Soda Cups
- Plastic Packaging
- Aerosol Cans
- Styrofoam

Yes!

- Pizza Boxes
- Any plastic bottle with bottleneck or threaded top.
- Magazines
- Newspapers
- Sheet Paper
- Aluminum Foil
- Cans
- Most Glass

Products made from recycled materials

Glass

- Jars
- Bottles
- Decorative Tile
- Road Fill
- Sandblasting Material

Plastic

- Containers
- Bottles
- Fleece Clothing
- Carpet
- Fill for Sleeping Bags
- Flower Pots
- Car Parts

Paper

- Toilet Paper
- Paper Towels
- Copy Paper
- Building Insulation
- Cardboard Boxes
- Newspaper

Aluminum

- Car Bodies
- Beverage Cans
- Appliances
- Windows
- Doors

Source: Washington State Recycling Association

Decomposition rates for various recyclables

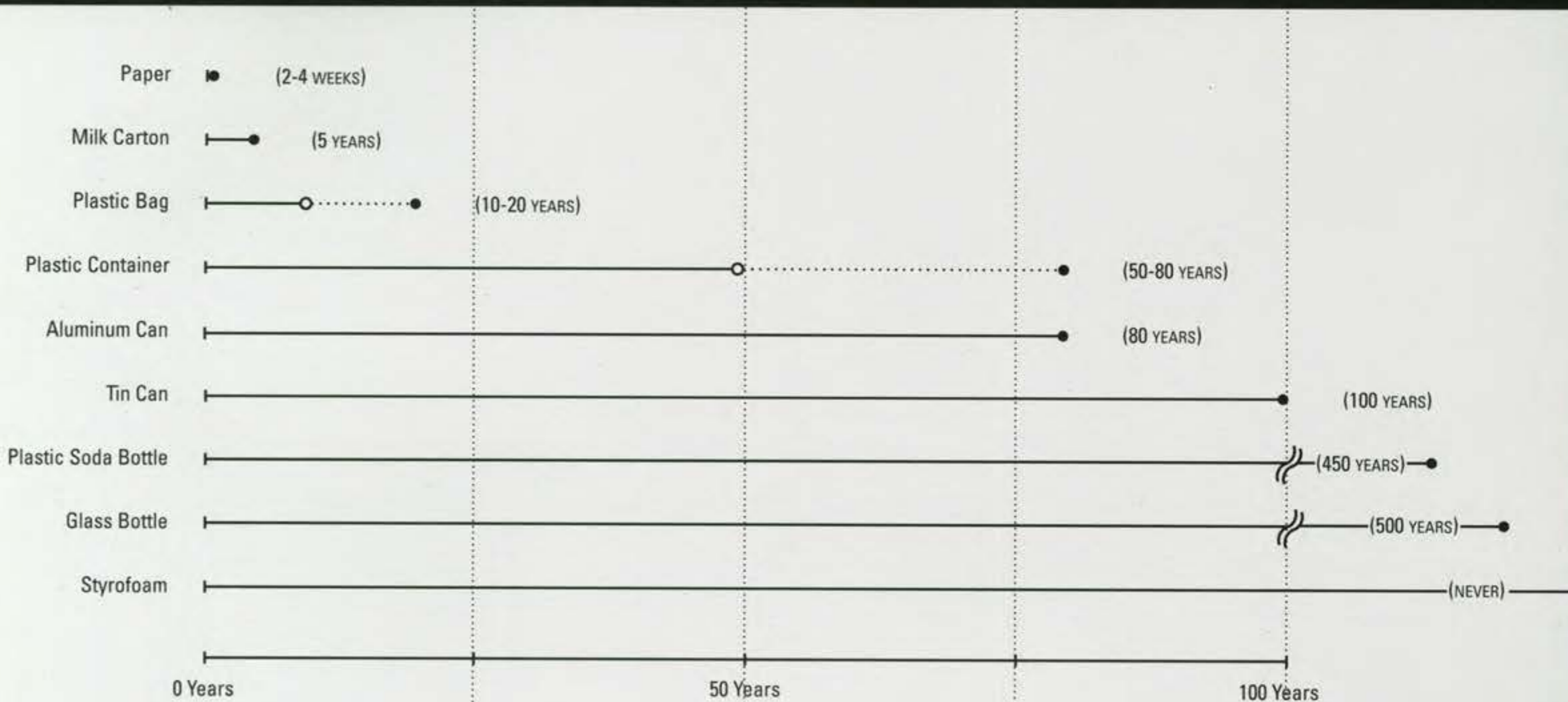


ILLUSTRATION: JOE SHOOP

Source: Penn State University

Una Flor TÓXICA

by Devon Fredericksen

photos by Todd Linder



Beauty comes at a steep price in the Ecuadorian flower industry. Perfect petals mean poisonous floricultural practices. Harmful pesticides in flower production weaken the health of both Ecuador's natural environment and the farm workers.

Traditionally, a flower is a symbol of love, beauty, and purity. After studying abroad in Ecuador last fall I learned that for Ecuadorians a flower represents a harsher reality. In a country as economically unstable as Ecuador, the flower industry is more concerned with maximizing profit than environmental or human welfare.

I was stunned by the concentration of biodiversity in Ecuador, a tiny country the size of Colorado. I found that the different ecosystems change with altitude. High in the Andes, I stooped to observe the short, water-retentive plants scattered on the hillsides with buds that bloomed straight from the ground. To then stand and look

across miles of highland grasses stretched over the rugged mountainous landscape took my breath away.

In lower elevations, I hiked lush forested hillsides with avocados, oranges, guavas, guayabas, and other tropical fruits hanging overhead. Red, blue and black butterflies fluttered away as I walked along paths through the misty cloud forest region and the Amazonian rainforest. The chaotic tangle of vines, ferns, trees and flowers growing and twisting their way through the forest amazed me.

All manner of organisms live in Ecuador: hummingbirds, anacondas, pumas, tarantulas, leaf-cutter ants, condors, tou-

cans and parrots. These animals, their ecosystems and farm workers are increasingly burdened with the demands of Western culture in the form of luxuries like perfectly preserved flowers.

One of the most biologically and culturally diverse countries in the world is also one of the poorest. During Christmastime I saw hundreds of children lining the highways with cupped hands begging for charity. I witnessed an old man sitting on a city curb spooning powdered sugar into his mouth for nutrition. I met an elderly couple selling pornography on a street corner to make enough money to survive.

Despite obvious signs of economic poverty, Ecuador is rich in human kindness. During my travels, I met few people who were inhospitable, whether they lived in the towering Andes, the dense coastal mangrove forests or the mysterious realm

of the Amazonian rainforest. I'll never forget the rural indigenous family of eight living in a

one-room house that fed me without expecting anything in return.

Burdened with considerable national debt, political corruption and unemployment, Ecuador relies on its wealth of natu-

"I'm not organically inclined. I don't know exactly where these flowers are from, and I don't really care as long as they're good quality." -Janice Oberg-Barrett, owner of Belle Flora & Home Interiors

ral resources and its abundance of people willing to work for low wages. The Ecuadorian government sacrifices environmental and worker health to meet the high demand for cut flowers.

After returning to America from my studies, I realized the lack of consumer awareness of the biological and social health problems in Ecuador's flower industry. Western culture uses flowers for special occasions, from weddings, to funerals, to Hallmark holidays. This dependency relies on an ample supply of flowers year-round.

The United States imports 70 percent of Ecuador's roses, according to an article in USA Today. Approximately one-quarter of rose bouquets sold on street corners across the country are imported from Ecuador's Cayambe Valley.

The Ecuadorian flower industry inundates a majority of these flowers with fertilizers, insecticides, fungicides and plant growth regulators. These chemicals protect and preserve the flowers during the growing and shipment processes, according to a FoodFirst Information and Action Network report, an international human rights nonprofit organization.

"These flower farms are terrible for Ecuador," said Santiago F. Burneo, Ecuadorian biologist, teacher, and conservationist at Pontificia Universidad Católica del Ecuador.

The government does not pressure

flower growers to adopt safer practices that could also hinder their production, such as meeting environmental and workers' rights standards, Burneo said.

As a result, pesticides wash into rivers from the flower farms, causing considerable harm to the surrounding biodiversity, according to studies by Tanya Korovkin, associate professor of the Department of Political Science for the University of Waterloo, Canada.

The pesticides contaminate groundwater and soil, and wild animals eat the sprayed plants, incorporating the chemicals into the food chain.

Water over-consumption is another cause of ecological and social damage by the flower industry. The industry uses the water normally available to the surrounding environment and local communities, according to the Organic Consumer Association, a nonprofit organization campaigning for health, justice, and sustainability.

A majority of flower farm workers suffer from health problems linked to daily exposure to toxic pesticides. According to an OCA study, six of every 10 workers have health problems such as allergic reactions, vomiting and fainting, lung illness and vision loss.

One of the principal health effects from the pesticides is the "chronic toxicity secret killer," or exposure to poisonous chemicals over a long period of time, according to OCA. This exposure can cause damage to the liver, kidneys and bone marrow, resulting in cancer and birth defects.

The Ecuadorian flower industry's contribution to domestic welfare is a topic of controversy, said Freddy Caceres, an Ecuadorian energy and environment researcher.

"There are many problems, especially with the contamination from chemicals, and the social and environmental problems related to the workers and people in local communities," Caceres said. "But it's also an industry that has grown significantly and has given fountains of work to people who didn't have work before."

In conversations with Ecuadorians, it broke my heart to hear stories about rural mothers who endure the poor conditions of these flower farms to support their families. The real tragedy in their stories is that they have little say regarding their



An Ecuadorian farm worker on a flower plantation wears gear to protect him from pesticides.

PHOTO: COURTESY OF THE INTERNATIONAL LABOR RIGHTS FUND

rights in the industry.

The workers want Western consumers to be their voice. Without a demand for certified-organic and fair trade flowers, the Ecuadorian flower industry has little incentive to change.

"There are many people in the local communities who have work thanks to the industry," Caceres said. "I don't believe you should campaign so consumers stop buying flowers from Ecuador. It would be better to campaign to pressure companies to improve their environmental management."

Unfortunately, supporting the organic and fair trade movement is not as simple as visiting the local florist shop and paying a higher price for a sustainably produced bouquet.

Haggen sells cut flowers from Ecuador, but none are certified organic, said Pat Jones, floral manager of the Schome Haggen's floral department. Jones said customers never ask her if Haggen sells organic flowers.

Organic flowers are just as difficult to find in local florist shops.

"I'm not organically inclined," said Janice Oberg-Barrett owner of Belle Flora & Home Interiors, located in downtown Bellingham. "I don't know exactly where these flowers are from, and I don't really care as long as they're good quality."

Trish Manley, owner of A New Leaf

A bouquet of tulips from Alm Hill Gardens at Pike Place Market in Seattle. All flowers at Alm Hill are organically grown.



Flower Shoppe, also located in downtown Bellingham, said she is concerned about environmental damage and labor conditions in countries like Ecuador.

"I like to know where the product is from, where the growers are," Manley said.

Although Manley wants to support organic growers, she said her organic stock is limited during the winter months because these alternatives are either not available or not economically viable for her small business.

Fair trade certified flowers are not yet available in the United States. TransFair USA, a nonprofit organization, works to build a more sustainable model of international trade and plans to launch fair trade certified flowers in the American markets in May, said Nora Ferm, program officer for the International Labor Rights Fund.

"In recent years the non-organic farms have improved, but they still have much to improve upon concerning human rights, labor norms, the environment and corruption," said Omar Vacas, Ecuadorian research biologist.

But not all Ecuadorian flower farms fit into the typical environmentally and socially destructive mold, Burneo said.

"Companies exist that treat their employees justly, that pay them well, that don't saturate the soil with fertilizers," Burneo said.

One flower farm that uses organic practices is Canaan Tropica, located in the misty cloud forest region of Ecuador, near San Miguel de los Bancos.



ILLUSTRATION: MATT HARVEY



PHOTO: COURTESY OF THE INTERNATIONAL LABOR RIGHTS FUND

Ecuadorian women prune roses on a flower plantation in Cayambe Valley Ecuador.

On one particularly foggy day during my stay in Ecuador, Marcelo Villacís, owner of Canaan Tropica, gave our group of students a tour of his farm where he grows birds of paradise, ginger, orchids, heliconia, and other tropical flora.

"In the long term, it's more profitable to grow an organic farm since the soil of the land is not degraded," Villacís said as he led us through the rows of flowers. At times, his farm seemed more like a tropical forest than a farm.

There is a method to the planting madness, Villacís said. He uses poly-culture techniques to create a forest-like environment, growing a diversity of plants in the same area. A high variety of plants in a concentrated area ensures increased protection from diseases and deters some insects from destroying crops.

To avoid problems such as bacteria or fungi, Canaan Tropica utilizes organic remedies made from garlic, apple, and chili extracts, Villacís said.

But Canaan Tropica does not use entirely organic forms of production.

"If a [disease or insect] problem continues then we resort to traditional chemicals," Villacís said. "This organic farm uses the same principal humans use: when you have a stomach pain you can cure yourself with chamomile tea. But if you have cancer you should receive chemotherapy."

This limited use of chemicals could be seen as a breach in pure organic agriculture dogma, but for Villacís it is a means of staying afloat in an increasingly competitive business. He views his advances in organic production as small victories in a battle to protect Ecuador's biodiversity.

"Many people don't grow organic farms because they believe they won't earn money," Villacís said. "Nevertheless, if they continue to abuse the chemicals, they don't see that what they will lose is the

fertility of their lands, and infertile lands don't generate richness."

Heavy chemical use will continue to destroy Ecuador's natural beauty if consumers are not willing to pay the extra price for certified organic flowers or to confront flower sellers about the problem.

"To a consumer who is deciding between an organic versus a non-organic flower for his or her loved one, I would say to choose the organic flower because the production process is less harmful for both the environment and the workers in the greenhouse," Ferm said.

I left Ecuador with a new eagerness to become a more conscientious consumer. I now understand that local decisions have global consequences.

Flower consumers have options. Ordering organic flowers online is one way to preserve the environment; some online sellers include Organicbouquet.com, Californiaorganicflowers.com, Localharvest.org, and Diamondorganics.org. Buy locally grown flowers at the farmers market and ask florists to support more organic growers. Finally, planting a garden is a personally rewarding way to avoid pesticide abuse.

From now on, when I buy a flower, I want to know about the soil it grew in and the hands that cultivated it. If either were poisoned in the growing process, the flower is not worth its price. **P**

Devon Fredericksen studies environmental journalism. She has been published in *The Planet*.

Food at a Snail's Pace



As manager of Bellingham's Mount Bakery Café, Vince Lalonde proudly offers a slow food menu. But for the time being, he has decided to scratch the words "Slow Food" off the front window, worried that hurried Americans won't take the time to slow down and enjoy a meal.

"If people know slow food, they are excited and come in, but if they don't, they might drive by thinking 'I just don't have time for that,'" Lalonde said.

He said he hopes to introduce his customers to slow food after they've eaten their meal.

"Slow Food" is a relatively new term to describe some very old practices. Imagine a made-from-scratch meal, using unprocessed, fresh ingredients bought at a local market or picked from a friend's garden. Perhaps the recipe or technique was passed down from a grandmother; a simmering tomato sauce or slow-roasted meat from a local farmer. Slow food connects the place to the plate by prioritizing the source of ingredients, utilizing local and traditional cooking methods and taking time to fully enjoy the meal using all five senses. It is a movement toward a pleasurable and sustainable food system.

As a variety of new Slow Food cookbooks and restaurants begin to emerge on the culinary scene, the movement risks appearing as an elite "wine and cheese" club. But another face to slow food holds true to its activist roots, and a number of residents in the Bellingham community are playing a part in pushing the movement toward environmental change.

In 1986, McDonald's planned a new branch near Rome's historic Piazza di Spagna. In protest, native Carlo Petrini organized a demonstration on the landmark. The incident spurred him to found the International Slow Food Movement in response to a growing culture of "fast life" and un-sustainable farming. Today, Slow Food is an international member-supported organization of over 80,000 chefs, businesses and food producers who are involved in 850 convivia (local chapters) worldwide, including Bellingham's Fourth

By:
Annalee
Dunn

Photos by:
Amy
Keeling

Vincent Lalonde, manager of Mount Bakery, a slow food certified Belgian bakery and restaurant in Bellingham carries out a specially made Belgian hot chocolate.

Corner Slow Food Convivia. Old Town Café, Ciao Thyme Catering and a number of individuals and local farmers join Mount Bakery on the list of local Slow Food members.

Driven by a mission to defend biodiversity in the food supply, educate on taste and connect food producers through events and initiatives, the Slow Food organization founded Terra Madre, a biennial meeting of worldwide producers in Turin, Italy. The Ark of Taste and Presidia are Slow Food initiatives that rediscover, catalog, and publicize forgotten flavors, food

tions is far more connected to preserving cultures and livelihoods. Farming in Italy is still done by hand and steeped in family tradition, and food preparation and origin is valued more than in America where the tendency is towards processed, packaged and fast food which caters to our hurried schedules, Campbell said.

"Agriculture in Italy is very specific by region," he said.

American industrial farming is designed for intensive, concentrated agriculture, eliminating a sense of regional ecology and variety of plant species. The majority of the

USA. "Bringing producers together encourages a collaborative effort, empowering them to return to their communities with new knowledge and as stronger activists."

Terra Madre is one way the organization is taking "think global, act local" to another level of activism. Faber agrees the "wine and cheese" reputation of the movement is a problem, and she identifies the Slow Food angle as one of celebration, pleasure and a dialogue around the table and farm. Its roots are about the consumer. The Cedar Tree Foundation chose Slow Food as



"Corporate America has a massive interest in us not caring about our diet or where our food originates."

-Vince Lalonde, manager of Mount Bakery Café



heritage and practices.

Crystine Goldberg and Brian Campbell own and operate Uprising Organics, a small farm in Acme, Wash. The couple's practice of farming heirloom varieties and preserving seeds qualified them as Bellingham's Fourth Corner Slow Food nomination to attend the Terra Madre symposium in October. The couple said they were surprised to observe how politically charged the movement has grown internationally.

"There were presidents of countries attending this event," Goldberg said. Outside of the United States, preserving food tradi-

world's food supply depends only on rice, wheat, and maize. Campbell and Goldberg combat this limited dependency by taking the time to research the history here, then planting endangered native and heirloom vegetables specific to the Pacific Northwest. Their goal is to introduce a diverse palette of flavors to local markets and restaurants. They hope to get people excited about the possibility of color and taste on a dinner plate and in family gardens.

Goldberg and Campbell said they experienced Terra Madre less as a part of the Slow Food organization and more as evidence that farmers like themselves are creating and preserving food's identity.

"This is exactly the intention behind such a gathering," said Makalé Faber, officer of The Renewing America's Food Traditions Program (RAFT) at Brooklyn-based Slow Food

an umbrella organization for biodiversity projects. The hope is for local chapters to introduce communities to the pleasure of new tastes and encourage them to demand heirloom breeds of livestock and agricultural varieties in the supermarkets.

"Tasting events empower people to vote with their dollar," Faber said.

This is ultimately what Fourth Corner Slow Food gatherings encourage: creative potlucks, shared original recipes and traditions, slow meals with friends and community, farmers market cooking demonstrations, harvest dinners and meetings to discuss community food issues.

"The best way to keep it on the planet is to use it," Faber said. "We like to say, 'eat it to save it.'"

Faber hopes Slow Food will decentralize and build stronger regional chapters like Fourth Corner. Such chapters are in a better position to expose the consumer to what local farmers' and producers are attempting to preserve.



The entrance to Mount Bakery, a Belgian crepe and dessert shop on Champion Street.

"How a species eats is how they interact with their environment," Bellingham fisherman Jeremy Brown said.

He and his friend Anne Mosness, a retired commercial salmon fisher, also attended Terra Madre as Fourth Corner Slow Food members. Mosness and Brown are politically active on issues such as disappearing salmon habitat, the threat of oil and mining industries to commercial fishing and educating the public about the harmful impacts of farmed salmon.

As a mother who raised her family on

fishing boats, Mosness said she believes the local fishing industry is deeply rooted in the community. Brown sells to many local businesses and holds a canned tuna project every year.

"It's a community event where the tuna is caught and canned by hand," Mosness said, who was one of several dozen people at the event.

Mosness echoed Faber's sentiments on the unique role of Slow Food to create a change in the consumer.

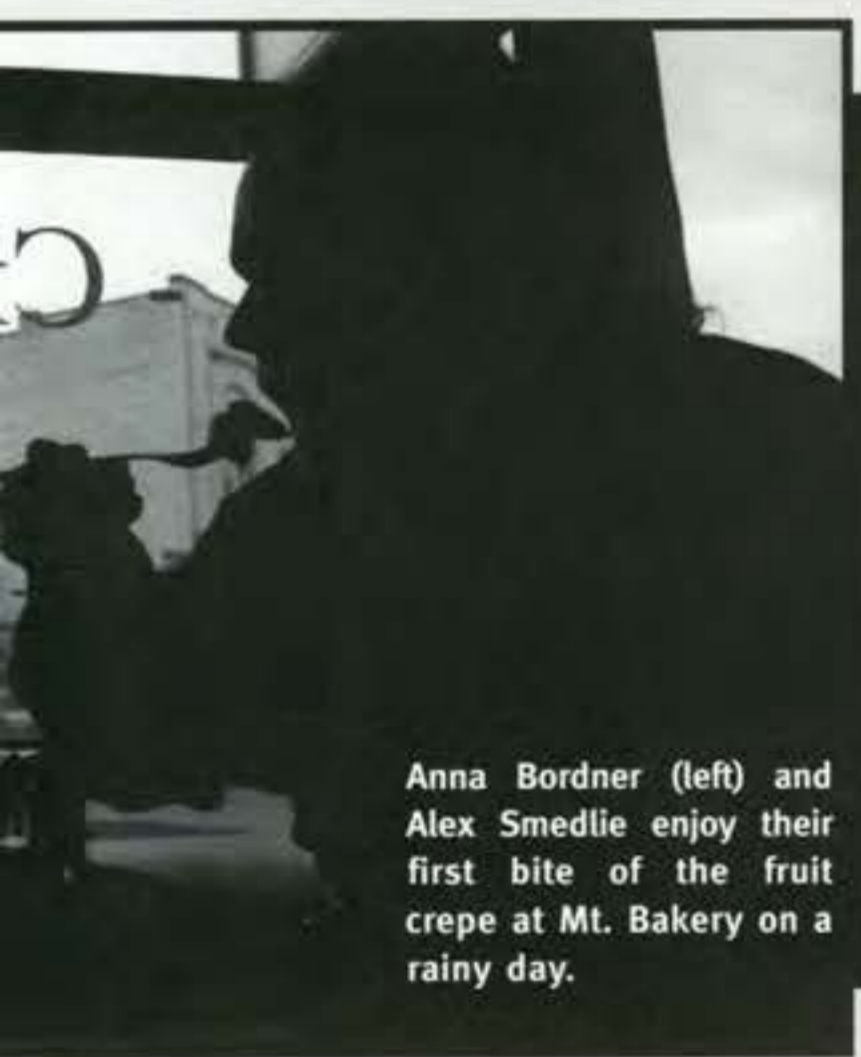
"If you convince people to care for what they eat, they may change their mind more

in doing so, the complex web is valued, recognized and fully enjoyed.

Mount Bakery's Lalonde said he also hopes the movement becomes more active in combating such homogenization.

"Corporate America has a massive interest in us not caring about our diet or where our food originates," he said.

The bakery's pledge to slow food challenges the corporate interest with its from-scratch methods handed down from owner Olivier Vrambout's Belgian grandmother. In an environment where chain restaurants serve machine-made sauces



Anna Bordner (left) and Alex Smedlie enjoy their first bite of the fruit crepe at Mt. Bakery on a rainy day.

"If you convince people to care for what they eat, they may change their mind more than if an environmentalist tells them what they should be caring about."

-Anne Mosness, retired commercial fisher



Retired Bellingham fisher Anne Mosness holds a package of her own smoked wild salmon.

than if an environmentalist tells them what they should be caring about," she said.

Simply appreciating a slow food meal has the power to encourage the consumer to seek out local ingredients and create a culture of connectedness with the community. Reconnecting people with the pleasure of a meal may change their habits of fries and burgers at a drive-thru window to a meal with friends or a bite to eat at a local restaurant.

"In the U.S. we have two components," Brown said. "Things we have lost, and things we have the potential to have and encourage."

The local chinook salmon is listed on the Ark of Taste, and native Lummi reef-netting techniques are now listed on Precidia. Such practices and species are in danger of disappearing under the American system of a homogenized food supply.

"We're taking a very complex web and collapsing it," Brown said.

Both Mosness and Brown find great value in bringing the tradition of community, family and food together. Hopefully

from bags shipped from hundreds of miles away, the character and attention to flavorful cuisine is endangered.

"We are always introducing new and strange food combinations to the public," Lalonde said.

On a sunny day, the specials board at Mount Bakery reads: "Duck Crepe with local Chevre and Mango salsa and local Bellewood Acres Apple Cider." The aromas from the open kitchen are a mouthwatering bouquet well worth sitting down for, and just because it's slow food doesn't mean customers have to give up their afternoon to enjoy lunch. The intention behind the preparation makes a slow food meal tastier for the individual and the community. ●

Annalee Dunn is a Fairhaven student. She has been published in Entertainment News Northwest.

recreation's DEGRADATION

The Cascades of the Pacific Northwest are a vision of wild beauty and an oasis for the winter sports enthusiast. This Pacific Ring of Fire is home to active volcanoes, high precipitation, towering firs and expansive wilderness. Yet these mountains are also home to ski resorts, parking lots and clear cuts that degrade the natural environment and scar the landscape.

The conflicting interests of use, protection and management of public land are a constant struggle. Conservation groups and environmental activists worry about the negative impacts ski areas have on the environment, whereas skiers and snowboarders would like more runs and a wider variety of terrain to explore.

In a world where both types of people exist, compromise must be made. This is why the National Ski Area Association (NSAA) and the Natural Resource Defense Council worked cooperatively to create the Sustainable Slopes Program. The charter, created in 2000, provides ski areas with a framework for sustainability in their operations. The program is voluntary, and ski areas must pay to join.

According to NSAA's 2006 report, 180 ski resorts endorse the charter, including eight resorts in Washington; among them are Stevens Pass, Crystal Mountain and the Summit at Snoqualmie. While many resorts have signed the charter, Whatcom County's own Mount Baker Ski Area is risking falling

behind by not joining.

The Mount Baker Ski Area formed in 1953 and encountered operational difficulties due to its remote location and the limited availability of electricity, sewage treatment and water. The area is a member of the Pacific Northwest Ski Area Association, a nonprofit trade organization, and has not

"The fundamental issue at hand is sprawl and the loss of wilderness."

- SCOTT SILVER, CO-FOUNDER OF WILD WILDERNESS

adopted the Sustainable Slopes charter or any other environmental programs.

"Because our area is off the grid it is in our best interest to be conservative with energy," said Gwyn Howat, business manager at the Mount Baker ski area.

The ski area's eight lifts, snowmobiles and snowcats are all fueled by diesel.

Other efforts to conserve energy and reduce waste at Baker include efficient lighting and a wastewater treatment system that uses sand filtration. A heat recovery system that traps residual energy from the combustion of diesel in the generators is used to heat the White Salmon day lodge, Howat said.

"To minimize our environmental impacts we utilized natural terrain for runs that follow the natural contour of the mountain," Howat said.

"We also purchased china plates and real silverware for the lodges to reduce waste. It was a hefty investment, but it was the right thing to do."

Toilets and faucets with low-flow plumbing reduce water consumption at the ski area, and the resort does not produce artificial snow, which can have a negative environmental impact.

A recent step towards energy conservation at Baker was an upgrade of its generators to make them more efficient and compatible with biodiesel, Howat said.

"I am excited about the new technologies of biodiesel and am waiting for a few more improvements to be made," she said. "Biodiesel is easily affected by cold temperatures and it can gel and clog the lines, so we are waiting until summer to test it out."

Further south of Bellingham, off Highway 2, lies Stevens Pass Ski Resort, another member of the Pacific Northwest Ski Area Association. Unlike Baker, Stevens Pass has been a member of Sustainable Slopes since 2000.

"The value of the charter is that it sets a standard for where ski areas should be environmentally," said Chester Marler, director of planning and entitlement for Stevens Pass Ski Resort. "It helps the ski areas lessen their environmental footprint."

In 2004 Stevens Pass joined efforts

by Kim Champley photos by Sally Wolff

with the Bonneville Environmental Foundation to offer customers the opportunity to buy Green Tags to offset the greenhouse gases a car produces on a day trip to the mountain. Each tag costs \$2 and the money is pooled towards purchasing renewable wind energy. So far, Stevens Pass subsidized enough wind energy to run one chairlift, Marler said.

Stevens Pass started offering an expanded, free employee shuttle in 2000, Marler said. The employee shuttles travel as far west as Monroe and 6 miles east of Leavenworth.

The initial cost of changing the operations of Stevens Pass to be more sustainable is the reason behind the slow progress, Marler said. Marler said Stevens Pass recycles cardboard and food waste but does not recycle glass, paper or plastic; however, it is looking to establish a recycling program, Marler said.

"Stevens Pass has made some strides environmentally," Marler said. "We're also getting better with our recycling problem, but we could certainly do better and we are working on improvements."

Scott Silver co-founded the Wild Wilderness organization based in Bend, Ore. in 1991. He said even with Mount Baker's potential upgrade to biodiesel and the improvements at Stevens Pass, these resorts need to clean up their acts.

"The fundamental issue at hand is sprawl and the loss of wilderness," Silver said.

The organization opposes efforts to commercialize, privatize and motorize U.S. public lands, he said. Ski areas tend to bring urbanization into the wilderness, disrupting wildlife and vegetation, and intrude into areas once used for other winter recreation.

"I am not opposed to ski areas. I used to work at Bachelor," Silver said. "I am

concerned with the fact that ski resorts are expanding into areas that were traditionally backcountry."

Logging and vegetation removal are the first steps in building a ski resort, which leads to erosion and permanent clear-cuts on the mountain where chairlifts are constructed and ski runs are cleared, Silver said. This is where the majority of environmental damage occurs.

"If a ski area is located on public land, it is imperative to justify why more land should be developed," Silver said. "Many areas expand to increase profitability and to lure in more customers. Public land should not be optimized for the profit of a ski resort."

Silver said the fundamental issues of sprawl are not dealt with when a ski area looks to make environmental improvements. He said the use of renewable energy sources at ski areas is a false attempt to become more sustainable.

"The National Ski Area Association is using renewable energy as a greenwash to cover the surface of their problems," Silver said. "Just because you recycle soda cans doesn't mean you are eco-sustainable, it's all crap."

The Wild Wilderness organization does, however, support the Ski Area Citizen's Coalition and their Ski Area Environmental Scorecard. The scorecard evaluated the environmental performance of ski resorts in the United States. Ski areas were graded in nine different categories, including their impacts on roadless areas, old-growth forests, energy and wildlife.

Mike Petersen, executive director of the Lands Council, helped to create the scorecard and said it goes beyond the Sustainable Slopes program because it takes expansion and habitat loss into consideration.

"Anytime you have an industry regulating itself, such as the National Ski Area Association, outside help is necessary," Petersen said. "They tend to hear what they want to hear."


An independent third party is necessary in order for the ski industry to clean up its act, Petersen said. Citizens, environmental groups and conservation organizations should be involved with the drafting of sustainability plans.

"The more people involved in making a decision always comes up with a better solution," Petersen said.

The scorecard is an accurate evaluation of a ski area's environmental impacts, and the public can view the grade of their local ski areas online, Petersen said. The Mount Baker Ski Area scored fairly well, earning a B grade. No resort in Washington earned an A.

Whether a ski area receives an outstanding or failing grade is not always of the greatest importance environmentally, said Sean Wetterberg, winter sports specialist for the Mount Baker-Snoqualmie National Forest.

"One must consider the degree of the impact," Wetterberg said. "Even a shack will kill all life under it, but will it actually affect the survival of the region as a whole?"

With the help of third-party individuals, the gap between skier and conservationist can be bridged. Recreation does not have to lead to degradation. Currently, it appears the best remedy for the environmental problem of ski areas is a slow transition to sustainability. 

Kim Champley studies environmental journalism. She has been published in *The Western Front* and *Klipsun*.



The parking lot outside Mount Baker Ski Area, filled with CO₂ producing vehicles. The area is a member of the Pacific Northwest Ski Area Association, but not a member of Sustainable Slopes.

The Ski Area Citizen's Coalition scored resorts around the country on sustainability. Here are some of the grades Northwest ski resorts received.

Mount Baker Ski Area	_____	B
The Summit at Snoqualmie	_____	C
Stevens Pass	_____	B
Crystal Mountain	_____	D
White Pass Ski Resort	_____	F
Mission Ridge Ski and Board Resort	_____	C
Mount Bachelor	_____	A

the ski resort
REPORT CARD



Apple orchards along Interstate 5 south of Burlington, in the early morning fog Jan. 27.

Between November 2006 and early January 2007 a series of winter storms pummeled the Pacific Northwest with record-breaking winds, rain and snowfall resulting in a death toll of at least 28. Impacted by ice-covered roads and long, costly power outages, some residents wonder what caused such extreme conditions, if they are related to global climate change and whether to brace for a new climatic norm so soon. Photographer Todd Linder captures the unusually intense weather in Puget Sound.



Andy Haner checks weather patterns over western Washington at the National Oceanic & Atmospheric Administration offices in Seattle Jan. 22.

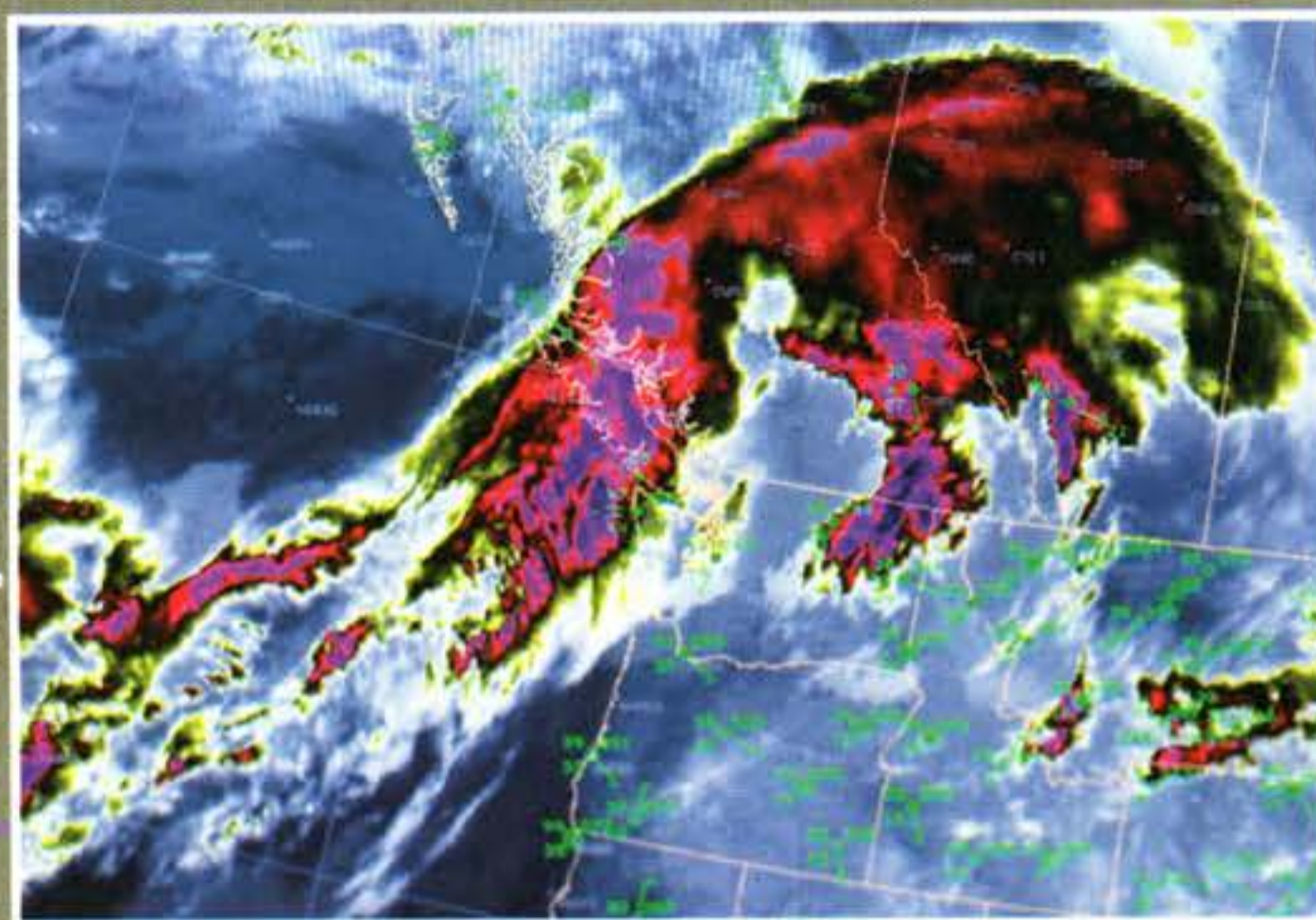


wild winter weather

Introduction by Rane MacDonough
photos by Todd Linder

Western students pass in the fog next to Wilson Library Jan. 31.

Sunlight hits "Stadium Piece" at Western Jan. 9.



Cloud cover patterns over western Washington at the National Oceanic & Atmospheric Administration offices in Seattle Jan. 22.

Ice on the docks at Squalicum Harbor in Bellingham Jan. 14.



From drilling for oil in Alaska's Arctic National Wildlife Refuge to urban sprawl in big cities, conservationists are up in arms about America's disappearing wilderness. It's tempting to point fingers and lament our loss, but we should hope our children will be as lucky. They might not even care.

Statistics from the U.S. Census Bureau show visits to America's National Parks and participation in outdoor activities as a whole have steadily dropped for the last 15 years. The 35 to 44-year-old demographic makes up the majority of park visitors. This leaves educators and environmental groups wondering about the future of America's wilderness.

Young people today spend less time fishing, hiking and camping outdoors in the wake of pastimes that rely more on technology, said Charles Boyeall, chief of interpretation and education for North Cascades National Park Service Complex.

"We had the luxury in past generations that interest in outdoors came from other sources, like parents," he said. "We've certainly recognized that the youth may not see the relevance in wilderness, and we're taking steps to fix that."

If children do not see wilderness as relevant, they certainly will not see the point in allocating resources to protect it. One program helping children in northwest Washington learn about the outdoors is Mountain School. North Cascades Institute runs the program that takes students out of the classroom for a three-day tour of their natural environment.

The North Cascades Institute opened a new environmental learning center in July 2005 near Diablo Dam. The center is the latest addition to North Cascades Institute's Mountain School education program that has brought more than 12,000 students to the North Cascades since 1989, said Paula Ogden-Muse, an educator at the park.

The new learning center is located 90 minutes east of Sedro-Woolley, and takes most visiting students two or three hours to get to.

Mountain School offers two programs: an upper-elementary program and a high school program. North Cascades Institute works with individual schools, but has also produced an agreement with the Mount Vernon School District requiring Mountain School for every fifth-grader in the district.

The Olympic National Parks System, on Washington's peninsula, has run a program similar to Mountain School since 1987, reaching 4,000 children each year, said Darek Staab, an educator with Olympic Parks Institute.

Staab said he attributes much of the

decline in park attendance to a change in the pace of American society. He said he laments families' schedules becoming more stringent to the point that family vacations and camping trips rarely last more than two nights on a weekend.

"The parents go back to work — sometimes both of them — and the students are off to soccer camp," he said. "Our goal is to connect people to the natural world so that they understand it to the point of sustaining it."

In 2006, Mountain School hosted 838 students, including 31 public school fifth grade classes. The high school program, piloted in spring 2006, is growing, said Bree Yednock, youth programs coordinator for the institute.

"Teachers always want to come, but it comes down to the financing and the cost," she said. "It really takes an excited science teacher to be able to express that it's going to benefit the students and really work with some of the other teachers to get them on board with it."

Suzy Laas is one such excited science teacher. She said raising \$100 per student is difficult, but not impossible.

Laas took 20 students from her sophomore science class at Squalicum High School to the center for three days last spring, and said she is planning to take two classes this year.

She said outdoor education is an essential part of promoting the conservation that will protect wilderness for generations to come. Children will never protect the environment if they aren't exposed to the wonder of the natural world and never learn why protection is important.

"A shockingly huge number of kids have never even been on Highway 20, and you get them up there to see the lakes and mountains and just explore the world, and it just opens their minds," she said. "They get to see what it is out there that people want to protect, and why they should."

Laas said her teaching philosophy involves taking her class outside to experience science in a hands-on manner that makes it more real for her students. She said one of her students last year began crying when he looked out over a bridge on Highway 20.

"He had never seen anything so beautiful," she said.

Squalicum junior Jimmy Zourkos attended Mountain School last year. He said he and his classmates do not get out into the wilderness very often, so the experience was a memorable one. The view from Diablo Dam exposed the North Cascades mountain range, and rangers showed his class a white deer that almost looked like an albino.

"I didn't even know that existed,"

"A shockingly huge number of kids have never even been on Highway 20, and you get them up there to see the lakes and mountains and just explore the world, and it just opens their minds."

-Suzy Laas, Squalicum High School teacher





Students at North Cascades Institute's Mountain School program learn about the interconnectedness of the web of life through exploration and educational games in the North Cascades.

he said. "There were very few people in my class who weren't surprised by what we saw."

Laas said although she did not have any objection to her students missing school for three days, the only draw-backs of the program are the cost and the limited space at the center.

The two classes from Squaticum High School attending the camp this year comprise 60 of the 250 sophomores at the school — less than a quarter of the class.

Camp for the entire sophomore class would take five three-day sessions instead of one.

Choosing who can go is never easy and depends in a large part on how much fundraising the group is able to do, Laas said. She said she recognizes that often the children who need wilderness experiences the most are those whose families are least able to pay the \$100 fee.

Many of the youths who visit the learning center each year may be venturing from their hometown for the first time, Learning Center Director Jeff Muse said. The Mountain School program requires students to leave all cell phones and other electronics at home. Western graduate students make up the center's instructional staff, which guides the students in their learning — pointing out the intricacies of nature and asking the students questions that inspire wonder.

"It's not just a lack of understanding, it's a complete lack of familiarity with the natural forces of the world: What's the weather like? Why do rivers flow where they do? How many glaciers do we have?" Muse said. "That results in a lot of degraded landscapes and unhealthy communities. The need is for people to reconnect with the places they ultimately thrive on."

Western graduate student Jenny Cloutier has worked at the institute since last spring. Huxley College's Masters of Education program takes two years, and Cloutier will return to Western in the fall to take classes and graduate in March 2008.

Four other graduate students work at the institute with Cloutier. She said she grew up in Montana and chose to attend Western's program with North Cascades Institute because she wants to share her love of the natural world.


"It's important to educate people about the world around them and the effects they have on it so they can be better stewards of the land," she said. "In the future these kids are going to teach their parents."

Mountain School was once located at the Newhalem campground and held in tents for 16 years before moving to the learning center in July 2005, Yednock said. The new facilities accommodates twice the number of students and can better withstand the elements, she said.

"In Newhalem it was definitely education, but there were days with the weather, when it was about survival," Yednock said. "It was about making sure that kids were warm and happy and getting enough food. It was a great program, but definitely a different experience."

North Cascades Institute developed the new learning center in coordination with Seattle City Light and North Cascades National Park Complex. Seattle City Light, a publicly owned power utility, paid for the demolition of existing buildings at the site and for construction of new buildings. The land belongs to North Cascades National Park, and the institute runs the programs. Each partner plays a role in educating the children who will protect the backcountry in the future.

While Mountain School is the institute's largest program, other opportunities include family-oriented courses and a 10-day North Cascades Wild summer course for teens from Seattle's inner-city schools. The students learn about the environment while traveling by canoe to sites of restoration work.

"We want them to love the North Cascades and care for these public lands, but we're really only successful if they begin applying it to their home lives," Muse said. "We want to see healthier landscapes and healthier communities. It's just that education is our tool." 

Jacob Buckenmeyer studies journalism. He has been published in *The Western Front* and *Klipsun*.

OUTDOOR Elementary

by Jacob Buckenmeyer



shades of green

Rick Dubrow and Jeff Kraug are two Bellingham business owners who live two different lives.

Dubrow owns A-1 Builders, a construction company, and Kraug owns Naked Clothing, a hemp-made clothing business. Dubrow is 56 years old, married with three grown children, and lives in a small modern house. Kraug is 33, single, has no children, and lives in a three-story Victorian-style house with seven people.

While their differences are many, they have one ideal in common—both strive to live sustainably. How sustainable their lifestyles are depends on what sustainability means and how it is measured.

Sustainability implies meeting the needs of the present without compromising the ability of future generations to meet their own needs, according to the United Nations Report of the World Commission on Environment and Development.

“Sustainability is taking full responsibility for your actions,” said Seth Vidaña, campus sustainability coordinator for Western.

He also said while people use the word frequently, sustainability is difficult to define.

“We don’t really know what a sustainable society looks like,” Vidaña said.

He said he thinks sustainability is a moving target, and what is sustainable today may not be tomorrow. The definition needs to be a collective vision with flexibility to adapt as society changes, he said.

In order to define sustainability, Earthday Network, which promotes environmental activism, developed the Ecological Footprint Quiz. The quiz consists of 14 multiple-choice questions measuring the amount of land needed to support an individual’s lifestyle. Questions about food, transportation, goods and housing choices are used to determine an individual’s “footprint” on the Earth in acres. The survey also calculates how many planet Earths would be needed if everyone lived in a similar way.

According to Earthday, approximately 4.5 acres of productive land exist for every person to live on. The typical American lifestyle requires 24 acres of land. If everyone lived like the average American, 5.3 planets would be needed.

While the United States is

Casey Hons mixes together spinach, cabbage, and wheatgrass in a vegetable juicer to share with the Oasis household.

by Shawn Herbold photos by Amy Keeling

not the only industrialized nation with cars and electronics, it is the country with the largest impact per capita. With only 5 percent of the world's population, the United States uses one-third of the planet's resources and accounts for one-quarter of its fossil fuel use, according to the Union of Concerned Scientists.

Dubrow and Kraug both live in the United States, but what sets them apart from the average American is how both deliberately live in a way that reduces their ecological footprints.

Dubrow and his wife Cindi Landreth built a "green" home together. Their house is small, with only 1,300 square-feet, but surprisingly spacious. Landreth, who is the manager of Adaptations, A-1's design division, designed the house. The couple used sustainably-harvested wood and bought salvaged lumber and other supplies from the ReStore, which sells reclaimed building materials.

Because of the home's layout, a gas stove in the living room heats most of the house. Their hot-water tank heats water only as needed.

The exterior is made of Rastra, a cement-based expanded polystyrene made from 85 percent recycled material. They also built the roof to last by using tri-laminated shingles which have a lifetime warranty.

A leading characteristic of the home's design is what Dubrow calls "dematerialization," which uses as few materials as possible while maintaining the quality of the home.

Outside, no grass lawn is to be found, but there are trees that Dubrow and Landreth intentionally left standing. Most builders clear a lot entirely before construction, Dubrow said.

His company promotes environmentally friendly building meth-



Jeff Kraug, a member of the Oasis household, poses outside in the garden, where he discussed the plan for springtime planting with his housemates. "Living intentionally has to include the learning process," Kraug said.

ods and received several awards for its own sustainable practices.

The couple lives comfortably and enjoys an urban setting while reducing their environmental impact.

In fact, according to Earthday Network, living in a city reduces an individual's footprint. Dubrow deliberately built his home in a pre-existing neighborhood to avoid contributing to sprawl.

While Earthday considers living in a green-designed home important, the quiz considers other living situations. It also assesses how often a person consumes animal products, how much processed, packaged, and non-local food a person eats, the amount of waste a person generates, the number of people living in his or her

NEW WECU BRANCH BUILT GREEN

by Liz Beaulieu



PHOTO: JOEL KRESSE

Blue and red beams of light illuminate the inverted pyramid hanging from the ceiling of the newest building in downtown Bellingham. Its glass walls and sleek design makes it stand out among the brick and asphalt of Holly Street. What really sets the new Whatcom Educational Credit Union building apart, however, is what is inside.

Leadership in Energy and Environmental Design (LEED) is a national program that regulates the growing trend of "green" building. The organization certifies buildings and rates them according to their degree of sustainability. Sustainability, to LEED, means reducing energy use in the buildings and recycling extra construction materials used on the site.

The recently constructed WECU building is a local example of a LEED building that contains enough innovative construction to apply for a gold rating. To receive a gold LEED rating, the second highest certification possible, a building collects "points" by using sustainable construction practices and materials. Addi-

tionally, projects get double points for using materials within 500 miles of the site.

The building features include many windows to emphasize natural lighting on the south side. This makes indoor lighting unnecessary during the day. It also includes other features such as a rooftop garden for its employees, air circulation through dozens of vents in the floor, bamboo and cork walls, and automatic light sensors that detect and turn off the lights when people have left the room. The bathrooms have dual-flush toilets and waterless urinals.

WECU also chose to use recyclable carpet, safer paints, and "agrifab" cabinets made from agricultural waste. With these additions, WECU went beyond the minimum standards to qualify as a gold-rated building.

Mike Smith, whose architectural firm designed the project, said that demand for LEED certified projects is growing. "We're finding many more people coming to us now and saying, 'we want to do this,'" said Smith. "Clearly it's a trend, and a good trend."

household, and how often he or she uses alternative transportation. According to Dubrow's quiz results, his lifestyle requires 9 acres of land. If everyone on Earth lived like Dubrow, about two planets would be needed. While this is less than the 5.3 planets needed for the average American, it is still one Earth too many.

Dubrow said he does not think society as a whole is shifting toward sustainability, but part of it is.

"The pace of the destructive lifestyle is outpacing the improvements for those moving toward sustainability," Dubrow said. "I think the net effect is we're still going down."

According to Earthday, living with others increases population density, thereby reducing an individual's footprint.

Kraug lives with seven people. He and his housemates share a fruit and vegetable garden, collect eggs from ducks, and prepare meals together. People know his house as "The Oasis."

By growing a garden and buying locally grown, unprocessed food, Kraug decreases the distance his food travels, further reducing his footprint. He also uses a worm bin to compost food scraps, which cuts down on food waste.

While Kraug's lifestyle appears simpler than Dubrow's, it still requires 11 acres of land. If everyone lived like Kraug, nearly 2.5 planet Earths would be needed.

Kraug said he feels the quiz is oversimplified. For example, he drives a truck but fuels it with bio-diesel, which reduces the amount of carbon dioxide it emits. He also uses his truck to haul solar hot-water tanks and clothes for his eco-friendly business.



Tyrone LaFay checks on some important members of the Oasis household: composting worms. The worms digest food scraps and leaves, creating a rich soil to add to the garden.

"They set parameters that aren't really applicable, and don't take into account a lot of variables that are hard to quantify in multiple choice," Kraug said.

Dubrow said although the quiz is not perfect, he has not found a better model for measuring sustainability. Even though A-1 Builders is an award-winning environmental company, not all of their clients want green homes.

"What does a person do for work?" Dubrow said. "The biggest footprint I have is the work I do."

A more extensive version of the footprint quiz is available online through Earthday, and is a four-page spreadsheet that reads like a tax return.

"III. Register your monthly consumption in column D (or your yearly consumption in column E). Optional: put the dollar amounts into column F. Goods may be entered as they are purchased to calculate a "one-time footprint," or may be divided by their lifetime (i.e. If you purchase 5 pounds of clothing, and expect the clothing to last 3 years, divide 5 pounds by 36 months)."

According to Earthday, this version of the quiz is more accurate than the shorter one. Anyone attempting to calculate his or her footprint using the spreadsheet better set aside about five hours—a background in accounting would not hurt, either.

Dubrow said although sustainability's definition is debatable, people could be doing more to reduce their impact on the Earth, even if they are unsure of the outcome.

"For the Joe America, the environment isn't even on their radar screen," Dubrow said. "Most people will say, 'yeah, I'll do something for the environment if it's the same price or cheaper. I'll take it into consideration.'"

Dubrow said he does not think the American Dream and sustainability can co-exist.

"Worse yet, the American Dream is now the global dream," he said.

Vidaña said he thinks the American Dream is changing.

"I think that more people are seeing that there is an incongruity between what the American dream has been and what it means to be sustainable," he said.

Derek Long, program and development director for Sustainable Connections, a nonprofit organization connecting businesses using sustainable practices, said he




Rick Dubrow of A1 Builders and his wife Cindi Landreth of Adaptations stand in front of their "green" designed house. Landreth specifically wanted the kitchen window placed between two trees for the view of the mountains.

doesn't think most people are ready to give up their cars and fast food.

"I don't think we are very good at radical change to our lifestyles," Long said. "Crash diets don't work for people who are overweight. The United States is overweight as far as its environmental impact."

Long said he believes that slow, steady change is possible and as people continue incorporating sustainable practices into their everyday lives, society will start to see results.

Dubrow said he does not think everyone has to change all at once. Even he did not dive headfirst into a sustainable lifestyle.

"I don't sense a real big difference in my lifestyle because I've been doing it step by step, more and more as I've gotten older," Dubrow said. "As long as a person's compass is pointing toward sustainability, that's the important piece." 

Shawn Herbold studies environmental education. This is her first published piece.

Take the ecological footprint quiz to see your potential impact:

<http://earthday.net/Footpring/index.asp>

ADDITIONAL RESOURCES

Food at a Snail's Pace:

Slow Food International
<http://www.slowfood.com>

Slow Food USA
<http://www.slowfoodusa.org>

The Mount Bakery
<http://www.mountbakery.com>

Fourth Corners Slow Food
<http://www.fourthcornersslowfood.com>

Una Flor Tóxica:

Organic Consumers Association on Ecuador's flower industry
<http://www.organicconsumers.org/valentines/workers060214.cfm>

Flower Label Program - Ecuador
<http://www.flp-ecuador.com>

Where you can buy organic flowers year-round:
<http://www.organicbouquet.com>
<http://californiaorganicflowers.com>
<http://www.localharvest.org>
<http://www.diamondorganics.org>

Outdoor Elementary:

North Cascades Institute
<http://www.ncascades.org/>

National Park Service – Nature and Science for Students and Teachers
<http://www.nature.nps.gov/edures/>

National Recreation and Park Association
<http://www.nrpa.org/>

Recreation Degradation:

Ski Area Environmental Scorecard
<http://www.skiareacitizens.com/>

National Ski Areas Association – Sustainable Slopes Program
http://www.nsaa.org/nsaa/environment/sustainable_slopes/

For Salmon Just Add Water:

City of Bellingham – Urban Streams
<http://www.cob.org/pw/environment/us/index.htm>

Nooksack Salmon Enhancement Association
<http://www.n-sea.org/>

Washington Department Fish and Wildlife – Lake Terrell
http://wdfw.wa.gov/lands/wildlife_areas/tennantlake/lkterrell.htm

Whatcom Salmon Recovery
<http://whatcomsalmon.wsu.edu/>

WECU Building:

United States Green Building Council
<http://www.usgbc.org/>

Shades of Green:

Earthday's Ecological Footprint Quiz
<http://earthday.net/Footprint/index.asp>

Peter Moore, 4, of Bellingham, shows off a mussel shell from the touch tank at the Marine Life Center.



PHOTO: AMY KEELING

“Unless someone like you cares a whole awful lot, nothing is going to get better. It’s not.”

-Dr. Seuss, from *The Lorax*

