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THE PLANET

Spring 2006



The Cost of a FOREST

BLANCHARD MOUNTAIN

ALSO IN THIS ISSUE:

The Evergreen State

Citizens petition for renewable energy

Toxic Gumbo

Western students clean up after Katrina

Picking Their Poison

Pesticides poison workers and the environment

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An area of a 2003 clear cut located on
Blanchard Mountain.

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Dear reader,

What do a university student, a dairy farmer and a devoted hiker all have in common? Each one is making a difference for the environment.

In this issue of The Planet, read how Western Washington University students volunteered to clean up toxic waste in New Orleans and how others teamed up with dairy farmers to create new technologies to power cars from purified dairy waste. Read how a group of devoted hikers and nature lovers joined together to form The Friends of Blanchard Mountain, a local organization trying to stop the proposed logging that would affect favorite trails such as the Max's Shortcut and the Oyster Dome.

The staff of The Planet strives to bring our readers the most timely and pertinent environmental issues in the community. The following collection of articles represents that goal by also discussing a green power initiative for Washington, the exploitation of migrant workers and the environment through the use of pesticides and the local affects of global climate change — just to name a few.

I hope these articles not only inform, but also give hope that change is possible. Although most of these articles are about complex problems, everyone has the ability to work toward a solution and make a difference. Even the littlest things can make a big difference, if made into habit. Explore the Green Living section for ideas on how to start making small changes.

Realizing that a different world is possible is the first step in making it a better place. Keep reading, keep learning and keep hope alive. Change begins with you.

Sincerely,



Sarah M. Kuck

Thanks to: Tim Schultz for his time and dedication with The Planet; the faculty of Huxley College for their time and knowledge; Leo Bodensteiner, Bill Dietrich, Jim Kling, Levi Pulkkinen, and Randy Trick for their presentations; Laurie, Dave and Margaret and all the publishing staff.

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THE PLANET MAGAZINE

WESTERN WASHINGTON UNIVERSITY

SPRING 2006



WORLD

DESTROYING THE RAINFOREST, ONE McNUGGET AT A TIME

Greenpeace links McDonald's with Amazon Destruction

London – Dozens of volunteers dressed as seven-foot tall chickens invaded McDonald's restaurants across the United Kingdom. Some chained themselves to chairs, while others posted images of Ronald McDonald wielding a chainsaw. In Munich, Germany, protestors also gathered at McDonald's European environmental affairs headquarters and called on the company to stop destroying the Amazon rainforest.

After a yearlong undercover investigation, Greenpeace linked soybeans grown on land that was once rainforest to an animal-feed producer whose chickens are processed into Chicken McNuggests and other McDonald's products.

As part of a new campaign to tackle the latest threat to the Amazon, Greenpeace used satellite images, aerial surveillance, previously unreleased government documents and monitoring on the ground to investigate into the global trade in Amazon soybeans. Greenpeace published the findings in a new report called "Eating up the Amazon."

A spokesperson for McDonald's United Kingdom said the company will investigate the claim. The fast-food giant has policy not to source beef from recently deforested areas. U.S. McDonald's has the same policy, but does not use soybeans from outside the United States because the U.S. supply of soybean production is sufficient.

Greenpeace said it has documentary evidence proving the soybeans from Amazon farms is exported from Santarém, Brazil to Europe, along with non-Amazon soybeans.

Cattle ranching is still the primary driver of deforestation in the Amazon. Yet the soybean industry also promotes deforestation indirectly by displacing cattle ranching farther into the rainforest, according to a 2005 study by the Woods Hole Research Center in Massachusetts.

Soybean production in the Amazon grew approximately 60 percent from 1998 to 2002, making Brazil the second largest soybean exporter. The cattle herd nearly doubled from 26.2 million in 1991 to 51.6 million in 2001. Brazil is the world's largest beef exporter.

For more information about "Eating up the Amazon" go to:

www.greenpeace.org/norway/press/reports/eating-up-the-amazon

Source: Environmental News Service

SIBERIAN PIPELINE REROUTED TO SAVE LAKE

Russia – On April 26, President Vladimir V. Putin ordered an oil pipeline to be rerouted to avoid the northern shore of Lake Baikal, the world's largest body of fresh water. Putin's order reversed a government decision in March to allow Transneft, an oil transporting company, to build the pipeline across Siberia and within a half mile of the shore. Lake Baikal holds more than 20 percent of the world's fresh water and is located in a seismically active region, making an oil spill in the area potentially disastrous. Environmental groups and Russian scientists opposed Transneft's planned route. Putin ordered the

route be charted at least 25 miles from Lake Baikal, which would put the pipeline outside the watershed. Transneft officials said moving the pipeline could add nearly \$1 billion to the cost and because the alternative route is a mountainous and would make construction more difficult.

Source: International Herald Tribune

CHINA TO CREATE NEW SUSTAINABLE CITY

China – The Chinese government is planning to make the island of Chongming, a 90-minute boat ride from Shanghai in the mouth of the Yangtze River, into a more sustainable new city. The new city will be called Dongtan, and residents will only be able to use electric vehicles. All construction on the island will be as sustainable as possible, and a five-kilometer buffer of land will protect the wetland ecosystems on the island. The new city is a Chinese government effort to displace overpopulation in Shanghai while constructing a model city for more sustainable living.

Source: Reuters



NATIONAL

ALL (COAL) FIRED UP

Colorado – The power-plant industry has several dozen new coal-fired plants on the table, which typically makes environmentalists cringe. Energy from coal power plants accounts for 50 percent of the nation's electricity, according to the Department of Energy. The majority of those plants also contribute high levels of greenhouse gasses and other pollutants.

But a push is on for "clean coal" plants that burn pulverized coal and pollute less than traditional plants. Clean coal plants convert the pulverized coal to hydrogen, which burns relatively clean in the plant's turbines and allows for the capture of pollutants and carbon dioxide.

Most of the proposed plants are traditional coal-fired plants, but unlikely opposition may delay their construction. In June 2005, California Governor Arnold Schwarzenegger issued an executive order mandating that state utilities only buy energy from plants that do not contribute to global warming. In 2003, the Bush administration launched a program called FutureGen that offered incentives toward the construction of the first "zero emissions" coal plant. Congress also paved the way for more incentives to build clean coal plants through the Energy Policy Act of 2005. These combined efforts may bury most of the proposed coal plants, but two clean coal plants are already under construction, including one in Longview, Wash.

Source: High Country News

SHORT TERM SHORTAGE SOLUTION

Washington D.C. – On April 25, President Bush halted filling of the nation's emergency oil reserve, urged the waiver of clean air rules to ease local gas shortages and called for the repeal of \$2 billion in tax breaks for profit-heavy oil companies.

Still, experts said Bush's actions wouldn't have much impact on gas

prices. The suspension of oil purchases for the federal emergency oil reserve until the fall is likely to have only a modest impact. The halt in deposits involves only 12 million barrels less than the 20 million barrels of oil used every day in the United States for transportation.

Bush directed the Environmental Protection Agency to use its authority to temporarily waive air quality laws in states if that would relieve a local gasoline supply shortage.

The White House was unable to say how much Bush's actions could affect the price of gas.

David Friedman of the Union of Concerned Scientists said an even more effective move would be to require that vehicles sold in the United States get higher gas mileage.

"The fundamental problem is that the fuel economy of cars and trucks is a disgrace and the world is just consuming too much oil and gasoline," Friedman said.

Source: Associated Press



STATE

STATES TO EPA: DO YOUR JOB

Washington D.C. – On April 27, 10 states, New York City and Washington D.C. sued the EPA for failing to comply with the Clean Air Act. The states claim the agency does not do enough to regulate carbon dioxide, sulfur dioxide and nitrogen oxide emissions from power plants, which are known to cause global climate change. The state attorneys general from New York, California, Connecticut, Maine, Massachusetts, New Mexico, Oregon, Rhode Island, Vermont and Wisconsin filed the suit in the federal appellate court for Washington D.C.

Source: Reuters

ALLIANCE FOR PUGET SOUND RECEIVES \$3 MILLION

Seattle, WA – People For Puget Sound, the Trust for Public Land and the Nature Conservancy have partnered to form the Alliance for Puget Sound Shorelines that will work to restore and protect hundreds of miles of shoreline and create 10 new parks and natural areas in Puget Sound during the next three years. The Russell Family Foundation awarded the newly formed Alliance \$3 million to launch the campaign and begin the conservation work immediately. The groups will use the gift as a catalyst to raise a total of \$80 million from the public and private sector for the first three years of the program. The three-year effort will lay the groundwork for what will ultimately be a 10-year, multi-billion-dollar campaign, putting the effort to save the Sound on par with other large-scale estuarine restoration projects, such as those currently underway in the Chesapeake Bay and the Everglades.

The quality of 2,500 miles of shoreline in the Puget Sound has been in decline for years because of pollution and development. Of the 18 threatened or endangered species that reside in Puget Sound habitats, nine rely directly on the shoreline habitat. Since 1980, approximately 30,000 acres of commercial shellfish beds have closed due to pollution.

Source: The Trust for Public Land

\$11.3 BILLION – COSTLY HANFORD CLEANUP

Richland, WA – It costs Americans \$1.4 million a day — \$38 for every man, woman and child. The price has nearly tripled in less than six years. The Hanford Nuclear Waste Site contains 53 million gallons of

deadly waste left over from decades of plutonium production. The cleanup project's completion has been pushed back from 2011 to 2017, according to reports from government agencies, the Army Corps of Engineers and watchdog groups. Meanwhile, corrosive waste weakens tank walls and heightens the risk of leaks. The Department of Energy is managing the project and admits to delays and errors in cost calculations. The contractor, Bechtel National Inc., has halted most of the construction because of safety and technical problems.

Bechtel National is a large construction company and defense contractor with strong political and industry ties. The group constructed the Alaska oil pipeline and the trans-Canadian pipeline. The Bechtel Group has recently been in the news along with Halliburton because of defense contracting in Iraq; the two well-connected companies gained contracts because, with the help of the government, they quashed much of the competition.

Source: Seattle P-I and sourcewatch.org

PUGET SOUND POLLUTION WORSENS

Washington State – Residents of the Pacific Northwest are known for their addiction to caffeine. But after the caffeine rushes through the blood stream, it ends up in a different stream as water pollution.

Scientists warn residents of Western Washington not to pollute Puget Sound and ask them to remember that pollution lingers long after they flush chemicals down toilets or dump them in curbside drains.

The Sound is shallow at the northern end and ocean water does not easily come in to flush out pollutants, state scientists told approximately 400 people at a conference in April. People for Puget Sound played host to the conference, which addressed toxins in the Sound.

Because of the Sound's geography, levels of polychlorinated biphenyls, or PCBs, in chinook salmon are up to six times higher than fish from the Columbia and Sacramento rivers and along the east side of Vancouver Island. The United States banned PCBs in the 1970s.

Scientists also find fish dosed with antidepressants and shellfish tainted with amnesia-causing toxins, researchers said at the conference.

"People need to be mad as hell about this situation, but they aren't," said Brad Ack, head of the Puget Sound Action Team, a government agency. "We haven't gotten the message across."

Ack suggested requiring consumer warning labels, banning substances that do not break down easily, such as flame retardants and updating sewage treatment plants to trap contaminants like caffeine and prescription drugs.

People intentionally ingest many of the Sound's pollutants including antidepressants, drugs to curb nicotine addiction, caffeine and hormones. Research shows that some of these chemicals can skew the ratio of female to male fish, or reduce the fertility of male fish.

Source: Associated Press



ONLINE ENVIRONEWS RESOURCES:

Visit the following online resources to stay up to date with environmental news that affects the world you live in:

ENVIRONMENTAL NEWS NETWORK

www.enn.com

ENVIRONMENT NEWS SERVICE

www.ens-newswire.com

TIDEPPOOL

www.tidepool.org

THE everGREEN state

Citizens petition for renewable energy

state

by Heidi Tews

photos by Matt Vogt

Hundreds of volunteers are collecting signatures to put Initiative 937 on the Washington state ballot in November.

In a community center on Guemes Island, Wash., about 100 people gather for a potluck dinner. But casseroles and cookies are not all that they bring to the table. This potluck is a yearly gathering of people passionate about using renewable energy. The small island community of approximately 500 people has two-dozen solar and wind energy systems, making it an ideal setting for discussing renewable energy. On a table next to the door is a petition for an initiative that would make renewable energy use mandatory for Washington's largest utilities.

Hundreds of volunteers are collecting signatures to put Initiative 937 on the Washington state ballot in November. Representatives from several environmental organizations drafted the initiative with strong support from the Northwest Energy Coalition. The measure would require electric utilities with 25,000 or more customers to meet energy conservation targets and increase the use of eligible renewable energy sources.

Support for the initiative is widespread and includes organizations such as the Cascades chapter of the Sierra Club, Audubon Washington, the Green Party of Washington state, Washington Public Utility Districts Association and the Washington Public Interest Research Group. Democratic Congressmen Jay Inslee of Bainbridge Island, and Adam Smith of Tacoma, also support the initiative.

John Vanden Bosche, principal engineer at the wind energy consulting firm Chinook Wind, said he would like to see more renewable resources in the state.

This wind turbine is located on a dock at the former Georgia Pacific plant, which the Port of Bellingham owns. With help from EcoTech Energy Systems, Kevin Gowan of Bellingham High School built the turbine for his senior project. Gowan is studying wind power implementation.



photo courtesy of Jay Inslee

“[The initiative] is the most powerful thing we can do right now to stop global warming, the most active thing we can do to break our addiction to foreign oil.”

Jay Inslee
Democratic congressman

“Renewables displace other forms of generation that have impacts on the environment,” Vanden Bosche said. “The initiative would create a stable market for renewables. More supply would bring the price down.”

Inslee said he believes increasing renewable energy will provide more local jobs. He also sees the initiative as a homegrown solution to environmental and energy concerns.

“[The initiative] is the most powerful thing we can do right now to stop global warming, the most active thing we can do to break our addiction to foreign oil,” Inslee said. “I would be very concerned if we don’t do something like this.”

I-937 would require the state’s 17 qualifying utilities to use renewable resources to meet the equivalent of 15 percent of their electricity supply loads by Jan. 1, 2020. These 17 utilities represent 87 percent of the power delivered to customers in state, said Grant Ringel, director of corporate communications at Puget Sound Energy.

Eligible renewable resources under the initiative include wind, solar, geothermal, methane gas from landfills or sewage treatment facilities, tidal power, biodiesel fuel and biomass energy derived from animal waste or fuels from wood, forest, or field residues.

Currently, renewable energy does not make up a large part of Washington’s energy supply. PSE, Washington’s largest electric utility, uses eligible renewable resources for less than 1 percent of its total power supply, according to the PSE Web site. Though neutral on the initiative, Ringel said PSE is nevertheless on track to increase the supply of wind energy to 5 percent by the end of 2006 and 10 percent by 2013.

“With our two wind projects we have no stress about complying,” Ringel said. “We’ll be way ahead of requirements.”

George Pohndorf, director of major accounts at PSE, said he looks for two factors when acquiring energy resources: minimizing cost and risk.

“Natural gas and electrical wholesale prices are high right now, meaning that natural gas has a higher cost than our wind projects,” he said. “If natural gas and electric prices go down, we might go with something different.”

However, PSE takes into account environmental factors as well as economic when providing energy, Pohndorf said.

In addition to its acquired renewable resources, PSE is one of 16 utilities in Washington that offer a green power option to allow customers to purchase renewable energy. As of December 2004, more than 14,000 PSE customers, or about 2 percent, were participating in the Green Power program, according to the 2005 PSE Green Power Report.

“Green power is an addition to what you’re paying on your bill,” Pohndorf said. “Cities have a fairly high concentration, but [the program] is new, and more and more people sign up every day.”

Students at Western Washington University voted in 2004 to purchase 100 percent green power from PSE. Western and other Green Power participants purchase electricity generated from renewable resources, and the utility adds this to the Northwest power-supply grid along with electricity from all other energy sources. Employees in the state capitol building have also made a similar 100 percent commitment to green power.

Ian Woofenden, senior editor of Home Power magazine, who has used renewable energy for more than 20 years, said people should be encouraged to use renewables. At the potluck on Guemes, Woofenden brought the initiative to people’s attention. He said he is more in favor of letting individuals choose to use renewable energy than making it mandatory.

“I wonder if the people who are circulating the initiative are using renewable energy,” Woofenden said.



Dana Brandt, owner of EcoTech Energy systems, displays solar panels that have been installed on the roof of a local Bellingham residence.



Ian Woofenden, senior editor of Home Power magazine, talks to community members about the environmental advantages of using renewable sources of energy.

He said he believes people will make the switch to renewables not because of incentives or a government initiative, but because they know they are doing the right thing.

“Compared to subsidized non-renewable electricity, renewable energy is expensive,” Woofenden said. “People want the cheapest energy, but they need to look at quality, not price. They’re not paying the cost of the damage it is doing.”

Woofenden’s son, Ryan Woofenden, 17, has lived on solar and wind energy his entire life. He said he does not believe money should be the most important issue when talking about energy costs.

“Comparing the cost of renewable energy to fossil fuels is ludicrous,” he said. “The money is what I consider a very small part of the cost.”

Lori Hauser and Ron Nichols of Mount Vernon own the first and only residential grid tie in the city. A grid tie extracts power from a solar panel array, converts this to usable electricity and sells excess energy back to a power transmission system, or grid. They said they agree with Ryan Woofenden about renewable energy costs.

“All the energy we use on this planet comes from the sun anyway,” Nichols said. “If you can access something directly, it becomes so much more convenient and efficient. The wind’s going to blow and the sun’s going to shine whether or not we’re using it.”

Renewable energy is something everyone has access to, Ryan Woofenden said.

“Not everyone has oil wells or refineries in their backyard, but everyone has sun,” he said.

Alex Ramel of the Environmental Resources Division of the City of Bellingham said he believes people care about the renewable energy issue.

“When people realize they have a choice, they’re willing to put money into making that difference,” he said.

But not everyone believes the benefits of renewable energy will outweigh the possible costs of the initiative. Some energy companies, such as Avista Corp. and Inland Power & Light Co., are concerned about the strict regulations and requirements proposed in the initiative. Tom Paine, director of government relations at Avista Corp., an Eastern Washington utility that is officially neutral regarding the wording of the initiative, said he is concerned that the initiative will not allow for flexibility in acquiring energy.

“We like that the initiative is attempting to broaden the development of clean renewable energy for all utilities,” he said in an e-mail. “We have never been that excited about hard mandates and penalties with inflexible timelines because mandates can skew the market and can increase the cost of acquiring such generation.”

Paine said one of the best ways to serve customers and the community is to make every effort possible to keep power affordable and reliable.

Vanden Bosche, while supporting renewable energy and gathering signatures for the initiative, said he still believes energy regulation would be best served through the legislature.

“The legislature is better equipped to analyze complex issues than the general population to create utility regulation policy,” he said.

He said he believes Washington’s current state legislature would be more agreeable now than in past years to pushing a renewable energy bill through.

Cindy Bjorklund, a National Park Service employee, uses renewable energy sources at her home and permaculture farm conservation site. She said she believes bureaucratic channels will make it harder to achieve the goals of the initiative.

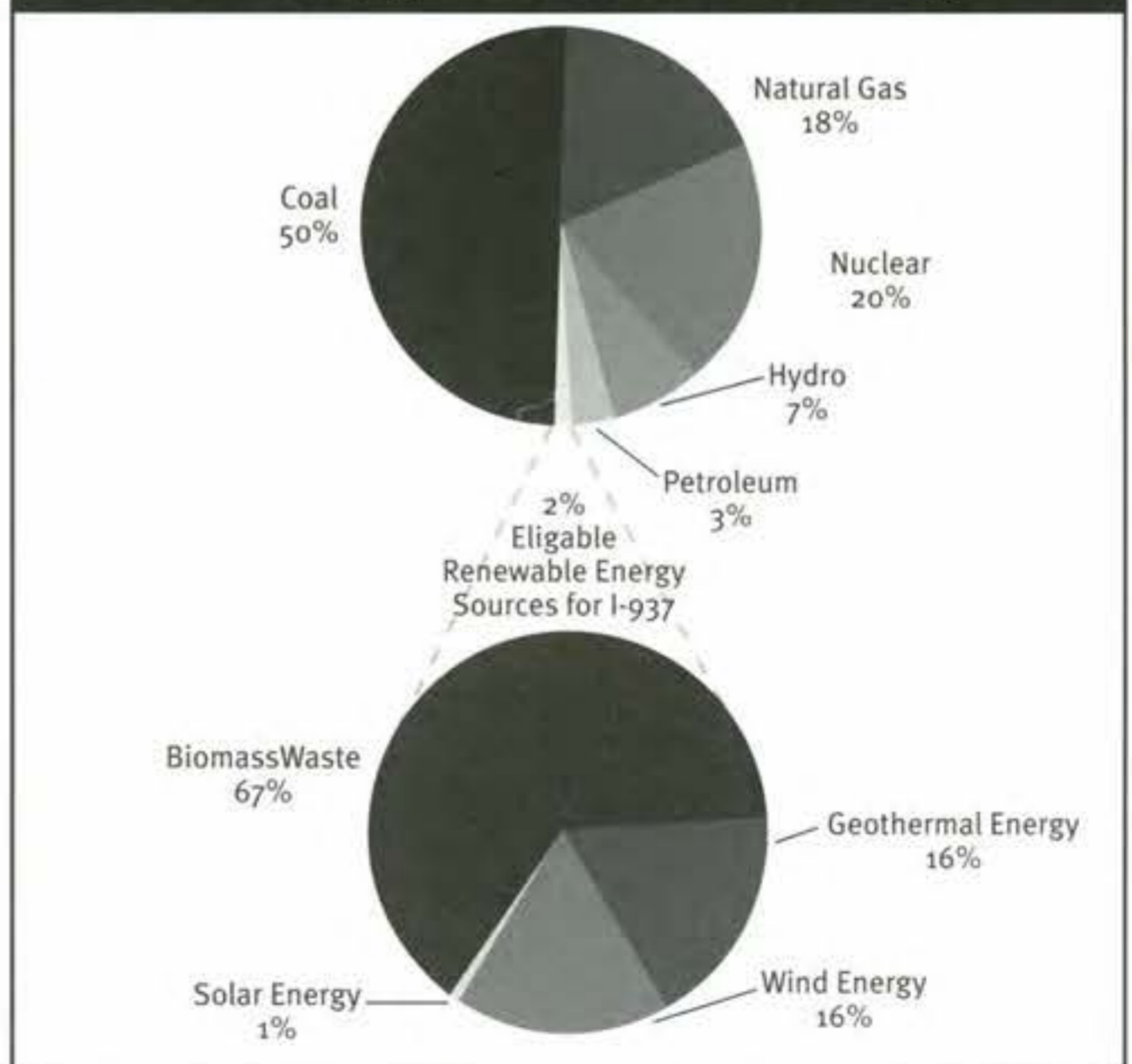
“There are so many layers in the government that it trips people up,” she said. “There should be overall encouragement. The bucks should be put into (encouragement) rather than into administering an initiative.”

As she walked onto the ferry leaving Guemes Island after the potluck, Bjorklund summed up many of the hopes and concerns relating to renewable energy and I-937.

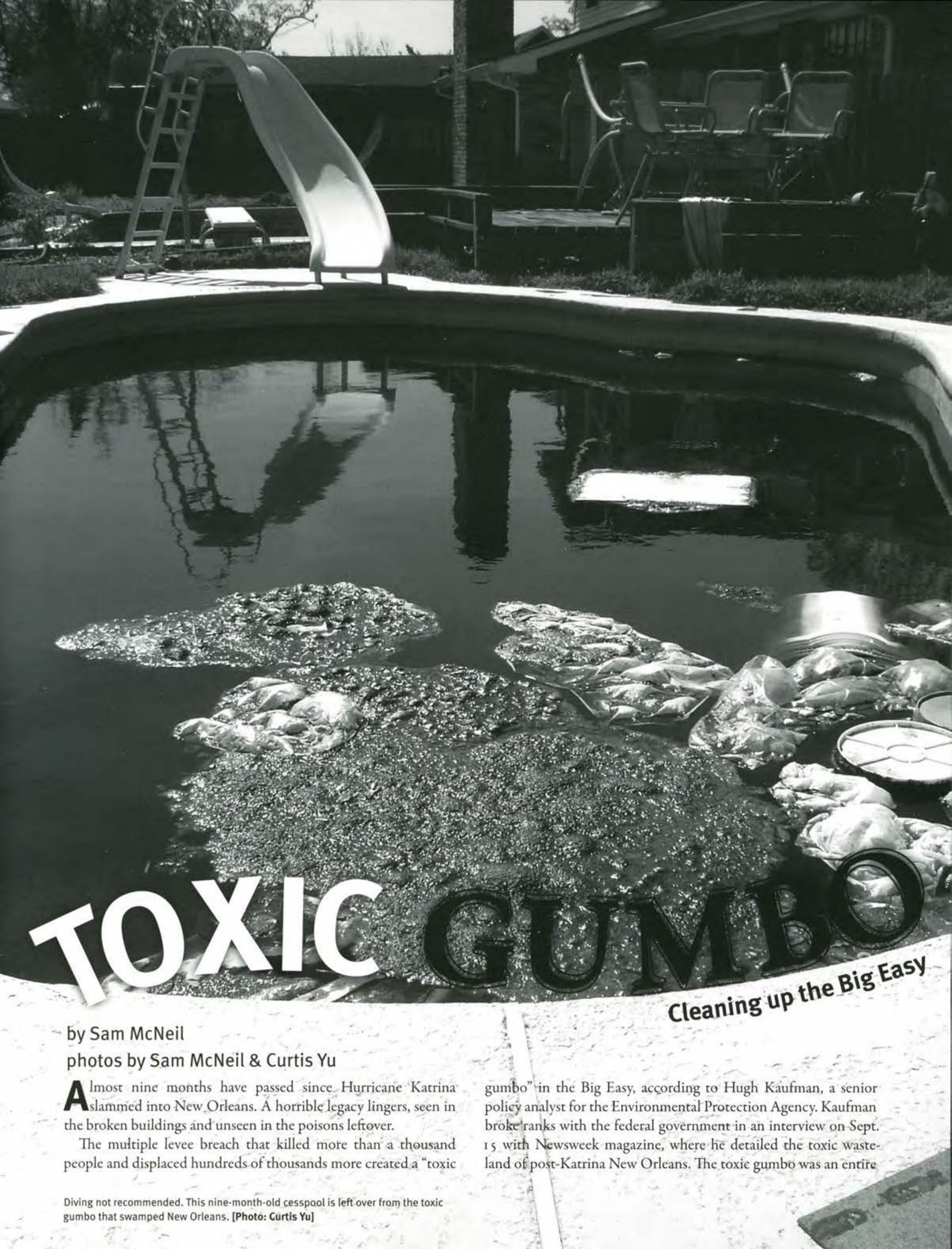
“We want it to happen,” she said. “But we want it to happen for the good of everybody.”

Heidi Tews has a B.A. in archaeology, and she now studies environmental education. This is her first published piece.

U.S. Energy Resource Percentages



Percentages of total and I-937 eligible renewable energy used in the United States. Source: Energy Information Administration



TOXIC GUMBO

Cleaning up the Big Easy

by Sam McNeil

photos by Sam McNeil & Curtis Yu

Almost nine months have passed since Hurricane Katrina slammed into New Orleans. A horrible legacy lingers, seen in the broken buildings and unseen in the poisons leftover.

The multiple levee breach that killed more than a thousand people and displaced hundreds of thousands more created a “toxic

gumbo” in the Big Easy, according to Hugh Kaufman, a senior policy analyst for the Environmental Protection Agency. Kaufman broke ranks with the federal government in an interview on Sept. 15 with Newsweek magazine, where he detailed the toxic wasteland of post-Katrina New Orleans. The toxic gumbo was an entire

Diving not recommended. This nine-month-old cesspool is left over from the toxic gumbo that swamped New Orleans. [Photo: Curtis Yu]

city mixed together into a giant cesspool, according to Kaufman. Oil spilled, sewage leaked, bodies of people and animals festered in the murky waters, and cars leaked battery acid, gas, oil and engine coolant.

"Fecal matter and all sorts of toxins contaminated almost all the water that was covering 80 percent of the city," said Wilhelmina Peragine, a New Orleans resident who evacuated before the storm hit.

To help deal with this toxic legacy, Peragine organizes busloads of fellow Loyola University New Orleans student volunteers to feed residents, help rebuild homes and provide support for relief organizations. This spring, hundreds of volunteers swelled the ranks of the organizations to help in New Orleans, including 23 Western Washington University students.

The surge of volunteers was a national movement that at one time had more than a thousand students and activists helping residents. Many relief groups adopted the organizational style of the Freedom Rides of 1950s and 1960s civil rights movement.

Malik Rahim, an ex-Black Panther member and Katrina survivor, founded the Common Ground Collective, one of the first groups assembled for Katrina relief. At the Walkin' to New Orleans rally organized by Veterans For Peace in Congo Square on March 19, Rahim took the stage and spoke about the origins of Common Ground.

"When we started with Common Ground, we started with nothing," Rahim said. "I had \$20, my partner — my former partner — had \$30, but we had the hope. We had the belief and the spirit that we can make a difference."

Common Ground is located in the 9th Ward, the most toxic neighborhood in New Orleans, according to the Louisiana Department of Environmental Quality. Common Ground's mission is to work in solidarity with residents to restore the environment and the lives of New Orleans residents.

Common Ground uses a non-chemical detoxification process called bioremediation on yards and in houses. This process employs microbes, plants and fungi to clean up toxins. Their compost tea program takes the beneficial bacteria in worm castings and mixes it

with molasses and water, letting it ferment for 48 hours.

"The molasses serves as a food source for the bacteria and they multiply in the billions and then when you apply it to the ground, the bacteria uses petroleum as its food source," said Common Ground organizer Lisa Fithian.

Common Ground also plants sunflowers and Indian mustard greens in a bioremediation process that uses the root systems of the plants to remove toxins from the water. This process removes lead effectively, Fithian said. After the plants soak up the poisons, Common Ground disposes them in a toxic waste dump.

Bioremediation is a critical part of rebuilding the city for the health of generations of people living in New Orleans, Rahim said. He ended his speech in Congo Square with a vision of a restored New Orleans.

"We are going to change this damn world, we are going to make this a world that is truly about peace and justice," he said. "We are going to start only talking about: how can we rebuild? How can we restore this environment for our children and grandchildren?"

Restoration of the New Orleans environment, alongside rebuilding the city, will be difficult because of the size of the problem, Kaufman said.

"A tremendous amount of toxic waste [has] to be cleaned up and disposed of," he said.

One month after the storm hit, the EPA collected 50,000 containers of hazardous waste and warned residents of *E. coli*, fecal coliform, lead and two staph strains in the water.

"It's uncountable, the amount of environmental and public-health problems that most folks down there are going to see for years to come," Kaufman said.

Volunteers from across the nation, residents and relief groups like Common Ground, HOPE, and Emergency Communities are tackling those environmental and public health problems.

GUMBONAUTS

The hostile environment of the 9th Ward requires Common Ground to substantially outfit volunteers. A bulky, white, one-piece, full-body Tyvek bio-hazard suit, rubber gloves, a waterproof jacket around work boots, goggles, a respirator and duct tape to seal it all together protects the volunteers.

It costs \$60 a day to feed, protect and shelter a single volunteer. Common ground provides the gear free of charge through donations from individuals, groups like Veterans for Peace and the government of Venezuela.

Black mold is the main reason for the precautions, Peragine said. "It's pretty much mold unlike most mold that people have experienced. Glossy black mold that covers sometimes whole walls," she said.

Black mold is a *Stachybotrys* mold species and is capable of killing nerve cells, according to researchers at Michigan State University. Infants and people with weak immune systems are more prone to black mold infection that can cause respiratory problems, immune suppression, infant pulmonary hemorrhage and nerve damage, according to the National Resource Defense Center.

The ground is so toxic in New Orleans that replacing it is sometimes necessary; shown are Common Ground volunteers planting new top soil in a New Orleans East neighborhood. [photo: Curtis Yu]



A sledgehammer hitting a moldy surface creates an impact cloud with spore levels 500 times what the National Resource Defense Council considers to be a dangerous concentration in a residential zone.

To combat black mold and to make the building safer, Common Ground sends a bioremediation team out to spray down the houses with effective microorganisms before and after the volunteer work.

The bacteria and yeasts in the spray eat the mold spores and colonize the surfaces mold grows on, preventing its regrowth, according to a bioremediation guide Common Ground refers to.

After spraying, volunteers enter the rotting remnants of a home with foggy goggles and masks filtering toxins from the humid air. Pictures hang on the wall, some clocks still work, clothes are still in drawers and dirty mirrors reflect the presence of white-shrouded strangers sometimes walking eye-level with the water line.

As volunteers pull out the corroded remains, they sometimes leave a pile of items that appear salvageable or meaningful for a resident to sift through.

Months of decay have turned commonplace household items into health hazards.

“Whatever you do, do not open a refrigerator,” is the loudest point in Common Ground’s daily safety briefing. Volunteers are told to duct tape refrigerators shut and leave them for the Federal Emergency Management Agency to safely deal with.

One returning resident did not know about the dangers in his fridge, and in the process of removing the sealed biohazard, the duct tape broke and the food that had festered for six months in an anaerobic icebox sloshed out. The spill shimmered because of all the flies that came to feast on the wretched jambalaya. The putrid, primordial aroma permeated the mask of Western senior Chad Robertson, who compared the smell to dog feces.

After a house is clear of objects and debris, volunteers pick up sledgehammers and crowbars to gut a house bare. Targets include the dry wall, trim, doors, insulation and carpet. The aim is to remove all the materials that could have absorbed the toxic gumbo so residents can restore their houses safely.

“Looking at the devastation along the Gulf Coast, it’s reminding us [veterans] all very much of Iraq — the way the buildings look bombed out, just the destruction.”

Michael Blake
Iraq war veteran and Katrina victim



Volunteers plant sunflowers and Indian mustard outside a bioremediation facility in the lower 9th ward. Bioremediation is a process that uses the root systems of plants to soak up toxins in the ground.

Peragine said she questioned whether restoration is enough. Upon moving to New Orleans three years ago, she said she thought the levels of poverty and illiteracy were disgusting.

“Sixty-five percent of the city could not read above a sixth-grade level,” she said. “And that is not some sort of cultural deficiency. That is like neglect by larger society of a pretty non-diverse group of people who happen to be black.”

John Rybczyk, a former Louisiana resident and assistant professor at Huxley College of the Environment at Western, said the problems facing New Orleans residents are not new.

“The water quality there was not great in the first place,” Rybczyk said.

The toxic gumbo is the result of a century of petrochemical and chemical industry operation, earning the area from Baton Rouge to New Orleans the title “Cancer Alley,” Rybczyk said.

Katrina’s Oil Spills



☛ Katrina triggered 44 oil spills, totaling 7 million gallons of oil that either settled onto soil or leaked into the water system of Southeast Louisiana, according to the U.S. Coast Guard.

☛ The floodwaters dislodged a 250,000-barrel aboveground storage tank at the Murphy Oil Refinery, causing one of the largest spills in New Orleans, according to the Federal Agency for Toxic Substances and Disease Registry.

☛ The Murphy Oil spill leaked 1.05 million gallons of mixed crude oil, affecting approximately 1,700 homes in the adjacent residential neighborhood.

☛ Two days after the hurricane, the Louisiana Coast Guard announced that they could not find 20 oil rigs in the Gulf of Mexico. One loose oil platform dragged a 12-ton anchor behind it along the ocean floor, cutting two underwater pipelines 100 miles south of New Orleans.

Half a block from a ravaged neighborhood and a crippled levee with virtually no reconstruction projects, a massive mobilization of resources was underway building a new oil derrick. One of the major contributors to the toxic legacy of Hurricane Katrina was the oil facilities that were lost or leaked by the storm. [photo: Sam McNeil]

Plants, fungus or microbes cannot remedy the historical and grave danger that faces New Orleans.

The Mississippi River has not deposited sediments and nutrients in New Orleans since Albert Baldwin Wood's levees enabled city growth below sea level in the early 1900s. The levees disturbed the natural cycle of sediment deposition and the cycle of subsistence continued downward, Rybczyk said. New Orleans is slowly sinking, he said.

"It's sinking, and it's sinking and it's sinking and as long as those sediments aren't getting onto that land to build more land then its just going to sink out of existence," Rybczyk said.

The possibility of an underwater Big Easy might become a reality much sooner, Peragine said.

"If another hurricane hits this city, this city would turn into an Atlantis," she said.

New Orleans faces a host of problems: cancer, black mold, diseases, sinking homes, annual hurricane dangers, racial barriers and great economic disparity. Katrina brought some new problems, while the waters and wind exacerbated the old.

These problems settled in the wake of a national focus on war and oil, but Katrina exposed the racial and socioeconomic problems, Peragine said.


"Something is really wrong, because obviously level five levees

aren't being funded and people aren't getting the help they need," Peragine said.

For Michael Blake, a veteran of the Iraq war, rubble, smashed houses, wrecked lives and ravaged land are all surrealistically familiar.

"Looking at the devastation along the Gulf Coast, it's reminding us [veterans] all very much of Iraq — the way the buildings look bombed out, just the destruction," Blake said in a speech before Rahim's at the Walkin' to New Orleans rally.

Blake struggled with what he saw as he marched with Veterans for Peace from Mobile, Ala. to New Orleans.

"It's really hard to come to grips with," Blake said, standing amidst signs that read: Every bomb that is dropped in Iraq explodes in New Orleans. 

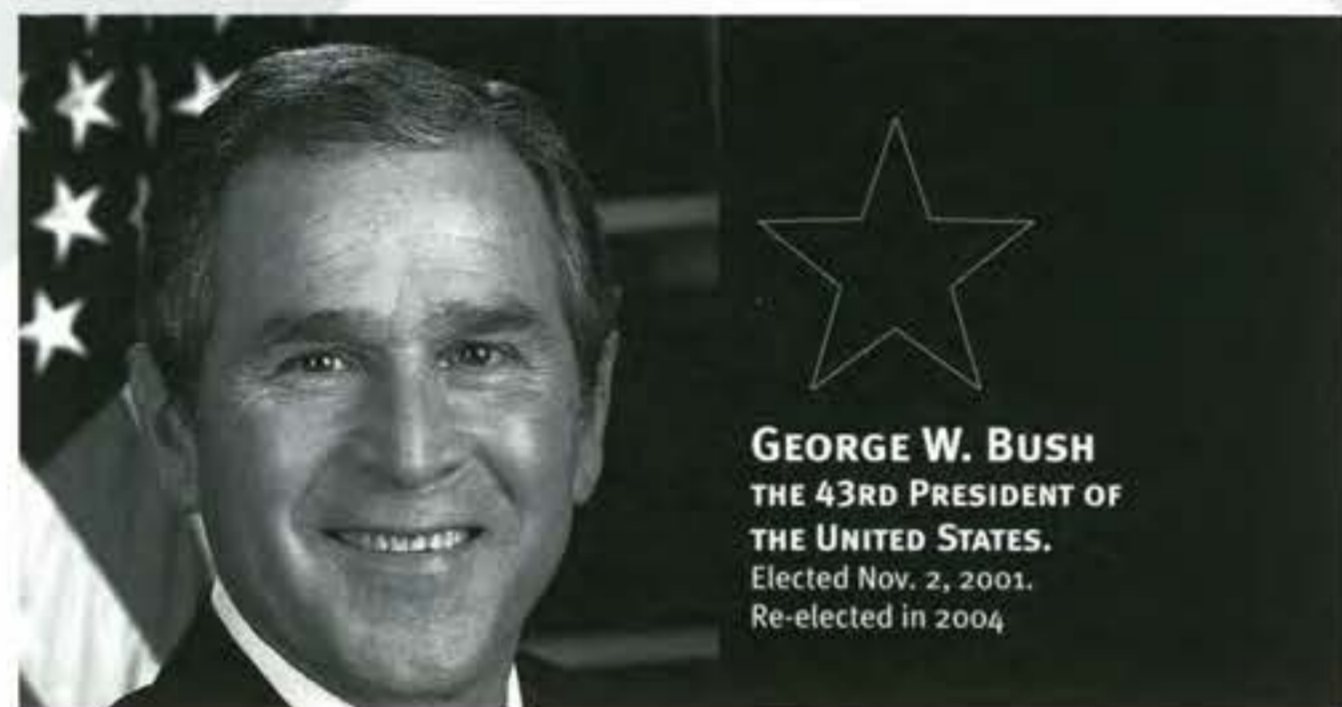
Sam McNeil spent two weeks in New Orleans during his spring break. McNeil spent time with Common Ground, Emergency Communities, HOPE and Loyola University Community Action Program working on bioremediation, gutting houses, interviewing residents and volunteers, feeding and serving victims. He is also putting together a video about New Orleans with fellow volunteers.

Junior Sam McNeil studies environmental journalism and international politics. He has been published in The Planet.



[Right] Thousands of cars sit underneath highways in New Orleans, their waterlines show the height of the toxic gumbo, which was spiced by the cars' leaked oil, fuel and fluids. **[Left]** Common Ground is located in the middle of the disaster zone. This sign sits outside Common Ground's Pauline Street facility in the 9th Ward. New volunteers arrive at the facility daily to help New Orleans residents rebuild their community. **[Photos: Curtis Yu]**

The BUSH REPORT



GEORGE W. BUSH
THE 43RD PRESIDENT OF
THE UNITED STATES.
Elected Nov. 2, 2001.
Re-elected in 2004

PRIOR QUALIFICATIONS:

In 1975, Bush established his own oil and gas business in Texas, but sold it 10 years later before it went bankrupt.

Spearheaded Clear Skies Initiative and Healthy Forest Initiative, which successfully weakened environmental laws in place since the 1970s.

In April, Bush authorized the temporary elimination of some environmental regulations for refineries to leave more oil on the market.

Cut overall environmental funding by 13 percent for 2007, resulting in the lowest funding ever for clean water infrastructure; zero funding to help states protect parks and wilderness areas; and a lower level of funding to end the nation's oil dependency than at the start of his administration.

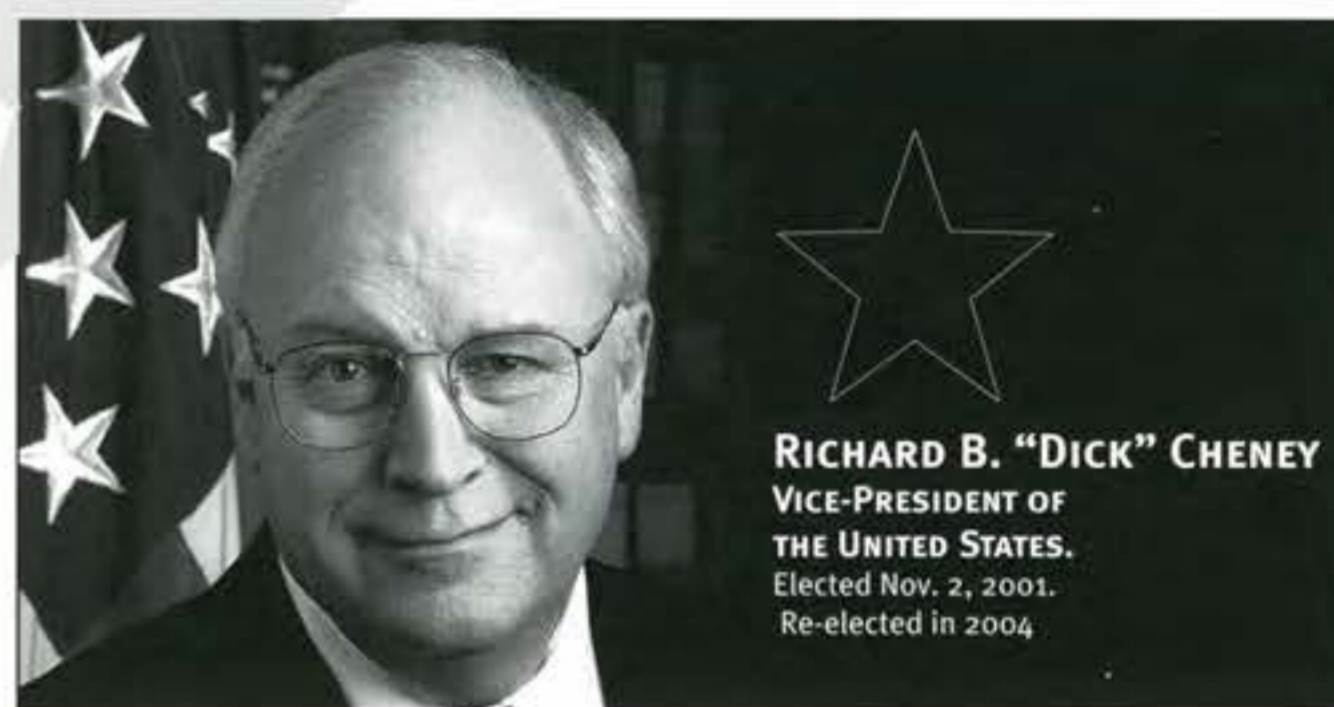
Cut EPA funding by 4 percent, roughly half a billion dollars less than last year's.

Bush asked for \$20 million less than the superfund budget last year and \$131 million less than three years ago. This comes with superfund staff decreases (down 29 full time employees in 2007) and funding shortfalls for cleanup sites have grown to a record \$250 million in 2004.

OCCUPATIONAL HAZARD

Made up of multiple oil tycoons and the lawyers who represent them, the Bush administration and their occupational histories only make their biases more apparent. Their opinions concerning whether to conserve or to use natural resources can be seen in the more than five years of environmental rollbacks.

The president's choice for vice president and of nominees for directors of executive agencies, such as the secretary of the U.S. Department of the Interior, makes his environmental philosophy clear. The Secretary of the Interior oversees the National Park Service, U.S. Fish and Wildlife, the Bureau of Land Management and the Office of Surface Mining.



RICHARD B. "DICK" CHENEY
VICE-PRESIDENT OF
THE UNITED STATES.
Elected Nov. 2, 2001.
Re-elected in 2004

PRIOR QUALIFICATIONS:

Served three former presidents as an elected official (Nixon, Ford and Bush senior).

Former CEO of Halliburton Company, the Dallas-based oil services giant that also provides construction and military support services. Cheney continues to receive as much as \$1 million a year from the company.

Created a secret Energy Task Force in 2001. In the early months, he was taking advice from Enron, an energy trading and communications company that went bankrupt in 2001, as well as studying oil field maps of Iraq. No information from the task force has been released to the public.



GALE NORTON
FORMER SECRETARY OF THE U.S.
DEPARTMENT OF THE INTERIOR
Appointed Jan. 2001.
Resigned Mar. 16, 2006.

HER ENVIRONMENTAL LEGACY:

Norton spent her five years as secretary opening public lands for commercial development and advocated expanding coal mining and oil and gas drilling on public lands.

In 2000, she and her Denver law firm, Brownstein Hyatt and Farber, lobbied in Washington for a total of 45 clients. These included: Delta Petroleum Corporation (interested in offshore resources); Titanium Metals Corporation (metals processor); the Shaw Group (makes pipes for oil companies and power plants); Ustman Technologies (monitors underground storage tanks);

and Warren Rogers Associates (sells products and services for chemical and petroleum storage tanks).

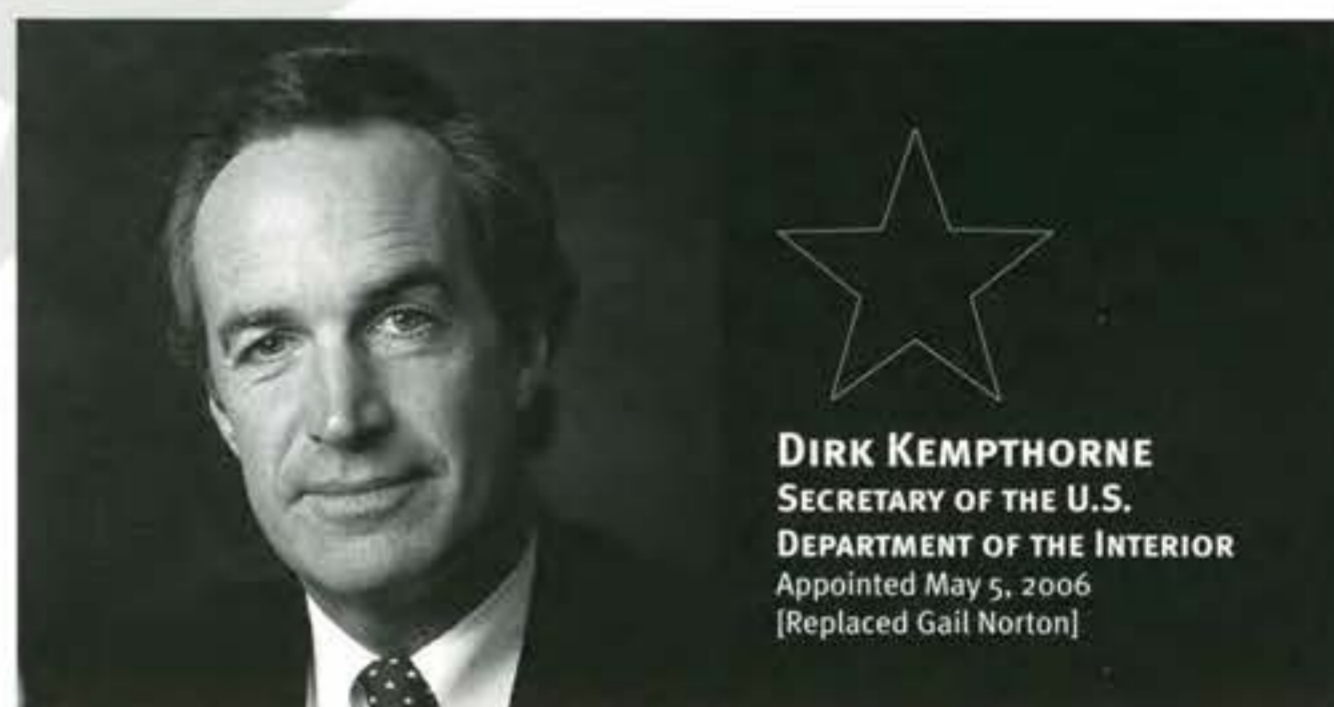
Lobbied for NL Industries, formerly National Lead Co. Court records show the company listed as a defendant in at least 14 federal environmental and personal lawsuits from 1999 to 2001, which included superfund and toxic waste sites.

Pushed to open the Arctic National Wildlife Refuge to oil drillers. Oversaw the opening of millions of acres of public lands to new oil and

gas drilling, opened public lands to roads and oversaw the expansion of devastating mountaintop removal mining in Appalachia.

Consistently rejected efforts to protect and rebuild endangered species populations across the country.

Founded a group called the Council of Republicans for Environmental Advocacy. The group's sponsors included the Chlorine Chemical Council, the National Coal Council, the Chemical Manufacturers Association and the National Mining Association.



DIRK KEMPTHORNE
SECRETARY OF THE U.S.
DEPARTMENT OF THE INTERIOR
Appointed May 5, 2006
[Replaced Gail Norton]

HIS ENVIRONMENTAL LEGACY:

Kempthorne is a pro-development Republican that strongly supports more oil and gas drilling.

He has been called "Gale Norton in pants" by Chuck Clusen of the Natural Resources Defense Council who also said Kempthorne's environmental record was 'abysmal.'

In Congress, Kempthorne supported drilling in the Arctic National Wildlife Refuge, opposed Clinton-era roadless rules and weakened endangered species and water protections.

"President Bush could not have named a Western governor more in line with this administration," said Philip E. Clapp, president of the National Environmental Trust.



FOR MORE INFO...

For more information check out these online sources:

- * sourcewatch.org
- * nrdc.org
- * seattletimes.com

By August, the sun has melted away winter snow, revealing a mountain-top wrapped in thick bodies of ice. A shiny ice cap stands out against the blue sky. Towering 10,778 feet above sea level, Mount Baker holds the second largest glacial system in the contiguous United States. But like others around the world, Baker's glaciers are receding.

Past weather records show a trend of warmer, wetter winters and less snow accumulation. The resulting glacial recession on Mount Baker will alter the ecosystems connected to these massive bodies of ice because glacial melt provides a late summer water supply that humans and salmon rely on.

According to a masters thesis written by Joel Harper, a former Western Washington University geology graduate student, Mount Baker glaciers retreated in the 1940s, advanced from the 1950s to the early 1980s, and retreated again in the mid 1980s.

For the past five years, Doug Clark, an associate professor of geology at Western, has measured the end of the Easton Glacier, located on the south slope of Mount Baker, and found the glacier has receded approximately 150 feet within that time.

"The glaciers on Mount Baker are retreating, but slowly," Clark said. "They may advance some in the future, but not enough to counteract the retreat of the past 100 years."

Glaciers accumulate mass when snow falls on the glacier in the winter, said Joe Wood, a geography graduate student at Western. The snow left over at the end of the summer compresses and recrystallizes, eventually adding to the glacier's size.

Glacial recession depends on how much snow accumulates in the winter and how much snow and ice the glaciers lose in the summer, said Jon Riedel, a geologist for the North Cascades National Park.

The Pacific Northwest recently experienced warmer summers and winters, Riedel said. In these winters the glaciers on Mount Baker received less snow and more rain, resulting in less snow accumulation, he said.

However, glaciers do not respond to just one year of weather, Clark said.

"If we have one good snow year and another bad, the glaciers aren't going to immediately show that," he said. "It typically takes 10 to 15 years for a glacier to respond to a

changing climate."

Clark said the glaciers respond in part to Pacific Decadal Oscillation, a normal Pacific Northwest climate cycle. PDO consists of several decade-long periods of warm, dry climate conditions and switches to cooler, wetter climate conditions, said Andy Bach, an associate professor of environmental geography at Western's Huxley College of the Environment. PDO has a large impact on the Pacific Northwest climate, he said.

Bach questioned if global warming will counteract the PDO, or if the PDO will mask global warming.

"I don't know for sure which is going to dominate," Bach said. "Most say global warming will overwhelm PDO."

If global warming plays out as predicted, snowpacks will decrease and glacial mass will diminish, Bach said.

North Cascade glaciers at lower elevations are shrinking and may even disappear. However, the high elevation of Mount Baker will allow the glaciers to remain longer, Clark said.

"It would take drastic weather changes for the Mount Baker glaciers to disappear," Clark said.

The average end-of-summer snowline altitude, an indicator of how much snow remains on the glacier at the end of the melt season, has risen on Mount Baker glaciers, said Robert Burrows, formerly a geologist for the North Cascades National Park. This indicates less snow supply to the glacier and will result in recession, he said.

ALTERING CONNECTING ECOSYSTEMS

As glaciers recede, ecosystems move upslope. Alpine plants migrate and plant succession occurs, said David Hooper, an associate professor of biology at Western. Succession is the replacement of bare soil with fast growing plants, which are then replaced by progressively slower growing phases of species.

Receding glaciers expose sand, gravel and rocks, Hooper said. The soil is incapable of supporting vegetation initially, but nitrogen fixers such as lichen and herbaceous plants colonize the bare ground, making nutrients more available, Hooper said. As more nutrients are available, red alder, another nitrogen-fixing plant, moves in,



[Top] Mount Baker in late summer 1912. Photo taken from Loomis Mountain, southwest of Mount Baker looking up at the Easton Glacier. **[Photo: J.D. Welsh]**

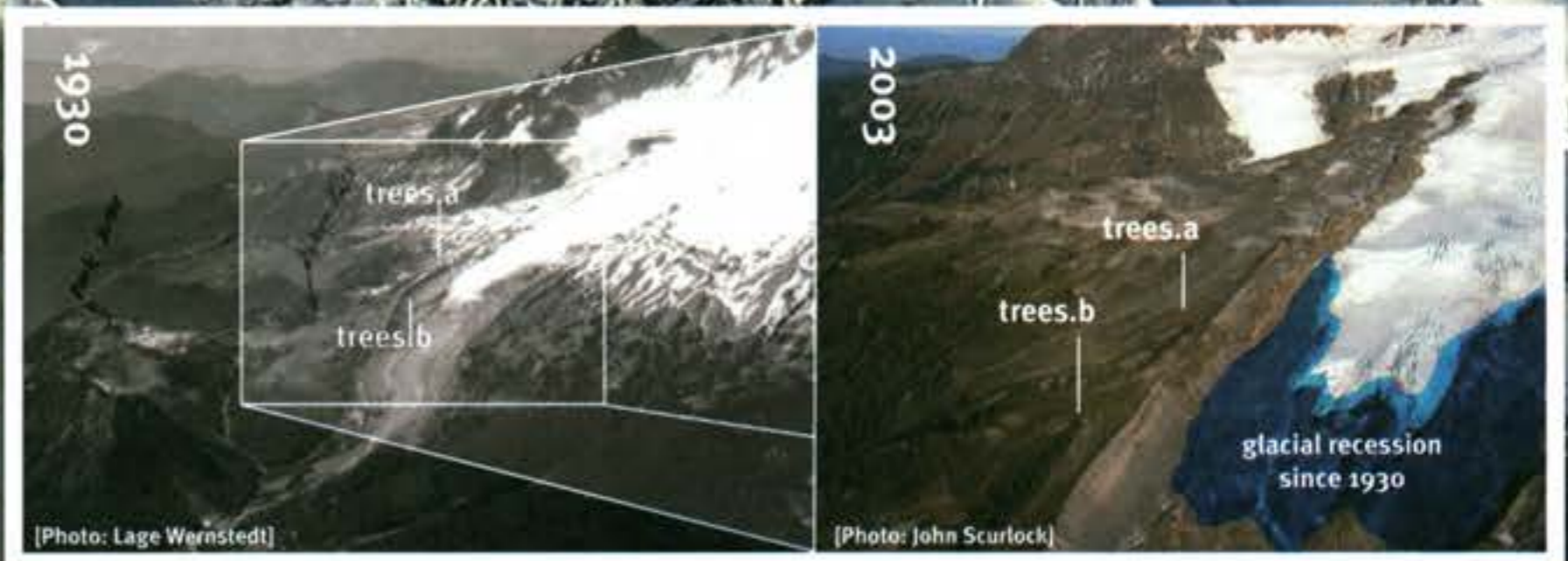
[Above] 2003 aerial view of Mount Baker northeast face with the Roosevelt Glacier (upper right of the mountain) and the rainbow glacier (foreground). **[Photo: John Scurlock]**

[Right] 2003 aerial view of Mount Baker looking across Lincoln Peak (left) and Colfax Peak to the west face of Mount Baker. **[Photo: John Scurlock]**

[Diagram] A photo comparison of the glacial recession from 1930 to present day.

BAKER'S *Retreat*

by Codi Hamblin





followed by other tree species, he said.

“You can see this succession happening below the Coleman Glacier,” Hooper said, referring to the glacier located on the west slope of Mount Baker.

The treeline on the mountain is also progressing upslope. The treeline is the point on alpine terrain where trees stop growing.

Global warming can create conditions suitable for the establishment of trees at higher elevations, said David Wallin, a professor at Huxley studying forest ecosystems.

In order to survive, seedlings need to be well established before the snow falls in the winter, Wallin said. Seedlings need long, warm summers to survive, which rarely happens above the treeline.

Wallin said more seedlings survive in a climate of long summers and warm winters. With a warmer climate the trees will fill in and raise the treeline, he said.

In response to forests moving upslope, animal habitats, like those of marmots, are shrinking, Bach said. Trees are invading the grassy areas where marmots live, forcing them upslope, he said.

“The marmots can only move up as high as the mountain,” Bach said.

SALMON & STREAMS

The amount of snow and ice melt flowing into nearby streams will change as Mount Baker glaciers recede.

From June until October, glaciers begin



Coleman Glacier as seen from Heliotrope Ridge on Mount Baker. The area below the glacier shows signs of succession – the progression to more complex ecosystems, said David Hooper, a Western associate professor of biology. As glaciers recede, ecosystems move upslope. [photo: Matt Vogt]

supplying streams with water, according to a report written by Mauri Pelto, director for the North Cascades Glacier Climate Project. The NCGCP is a group from Nichols College in Dudley, Mass. that annually measures glaciers in the North Cascades.

The glaciers on Mount Baker flow into the Baker River and the North and Middle Forks of the Nooksack River. Many fish species use the Nooksack River, including the endangered chinook salmon. In the fall, if a decrease in glacial melt occurs, input of cool water flows may decrease causing the water temperature to increase, Bach said. Adult salmon, fry and eggs have certain temperature requirements for survival, he said.

Salmon prefer water temperatures around 50 degrees Fahrenheit. The chance of survival for fish decreases as the water temperature rises to 70 degrees, said Steve Seymour, a watershed steward biologist for the Washington Department of Fish and Wildlife.

Flooding, another result of glacial recession,

also impacts salmon, Seymour said.

Glacial recession will increase the frequency of flooding. A glacier acts as an aquifer by absorbing snowmelt in the spring. But if glaciers reduce in size they will store less meltwater and flood streams and rivers, Pelto said.

Flooding affects salmon by washing away redds, gravel nests salmon dig to lay their eggs. They dig these nests six inches under the gravel, but a flood can wash out one to two feet of gravel. Salmon are spawning in unstable conditions because flooding in the location of redds is already an issue.

“Not having stable spawning habitat likely is one of the major limiting factors slowing down the recovery of our Nooksack salmon,” Seymour said.

WATER SUPPLY

Aside from wildlife ecosystems, glacial recession also affects the people of Whatcom County. The Nooksack River supplies drinking water, hydroelectric power, recreation, fisheries habitat, irrigation and several industries with water. Bach said glacial melt has provided humans with water for decades, and humans expect rivers are always going to serve as a water supply.

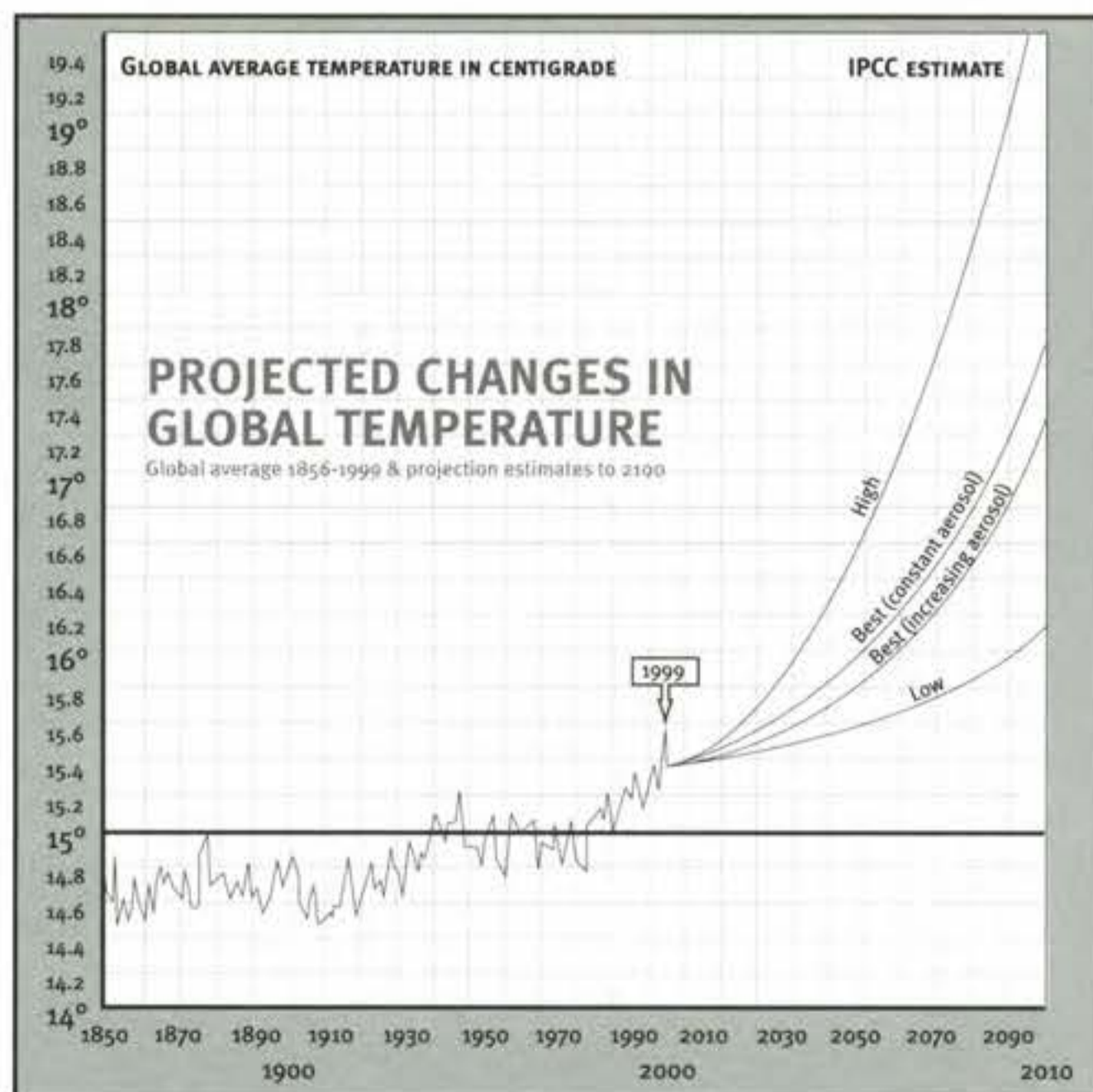
“We are living on borrowed time with the summer water that the glaciers are providing us,” he said.

The scientific community needs to take into account that worldwide weather patterns can affect Mount Baker, Clark said.

Global warming is a grand experiment, he said.

“There’s a lot of things we don’t know are going to happen, things we don’t fundamentally understand about how the climate works,” Clark said. “It’s grand because the whole globe is involved, not because it’s great.”

Junior Codi Hamblin studies environmental journalism. This is her first published piece.



Climate Shift: The Intergovernmental Panel on Climate Change projected global mean temperature changes relative to 1990 up to 2100. Climate models calculate that the global mean surface temperature could rise by about 1 to 4.5 Celsius by 2100, respectively. The lowest curve assumes constant aerosol concentrations beyond 1990. The IPCC assumed that the Greenhouse effect is reduced with increased aerosols. Temperatures from 1856 to 1999 are shown in Celsius from 14 to 19.4 degrees, representing the average global temperature. In Fahrenheit that temperature range would be 57.2 to 66.92 degrees.

Source: Temperature 1856-1999 Climate Research Unit, University of East Anglia, Norwich UK, Projections: IPCC report '95

green LIVING

Every action has a reaction and each choice an effect. Everybody can make a difference by rethinking everyday decisions. Before purchasing an item think: where was it produced? Who produced it and how was it transported? How many times can it be reused? Considering these questions can make everyday decisions make a difference.

3 Three habits to decrease your impact on the earth:

1 Bring your own bag:
Limit the waste of paper and plastic resources by bringing a good-sized bag with you when you leave the house.

2 Carry a reusable cup:
Take a hot and cold mug with you to reduce the number of to-go containers you use daily. Most coffee houses offer a discount when you use your own cup.

3 Move your feet:
Decrease your oil consumption by wearing comfortable shoes to help you go the extra mile. Ditch your car at home — walking 10,000 steps a day helps you maintain your health and helps decrease your dependence on your car.



“We are what we repeatedly do. Excellence, then, is not an act but a habit.”

Aristotle, (384- 322 BCE) Greek philosopher

Boundary Bay Brewery & Bistro manager Janet Lightner once wished for more business.

When she and Ed Bennett built the brewery in 1995, business was lively but not booming. Today a steady flow of new residents during the past decade has helped fill the beer garden and create waiting lists for live bands. But the booming business comes with a price — new condo and apartment buildings loom over the restaurant.

Water, mountains and agricultural land surround the city on all sides. With nowhere to build without encroaching on open space, Bellingham residents may see an increase in upward building concentrated in the downtown area during the next few years.

“We are thankful for the time we have had without construction,” Lightner said. “This is just part of a revitalization for our noisy, fun rockin’ downtown.”

How the city grows is the key to whether it remains attractive and livable. According to the Bellingham Comprehensive Plan, a document that outlines growth and development policies, new developments of high-density housing in “urban villages” will complement existing single-family suburban areas. The plan proposes that the city determine how to accommodate growth in existing neighborhoods in a way that builds on the pattern of park and open space systems. The city’s plan is to encourage the development of vacant land within built-up areas to accommodate growth while retaining Bellingham’s compact form.

City Planner Chris Koch said he has been trying to jumpstart development in downtown Bellingham for years and is surprised at the recent tower proposals between 10 and 20 stories tall. He said downtown living offers an alternative lifestyle to typical American suburban living.

“Places of work, play, shopping and dining are all within an easy and pleasant walk from where you live,” he said.

Koch said the benefits of this strategy, if done right, far outweigh negative aspects. Even though building vertically in developed areas like downtown Bellingham might lessen the impact of growth on agricultural areas in the county, but not everyone welcomes the new and proposed buildings.

Tiffany Brooks said the current “yuppifying” of downtown Bellingham saddens her. A waitress at Pepper Sisters, Brooks said she remembers two years ago when she and co-workers would

lounge on the restaurant’s deck watching the last glimmer of sunlight bouncing from island to island while they ate their spicy Blue Moon Enchiladas. In the past year, she said a five-story condo complex has blocked Pepper Sisters’ patio ocean-view and replaced it with bedroom windows.

“It’s disturbing for our sweet little Bellingham,” she said. “If contractors keep building, it will only attract more people.”

Approximately 4,000 new residents are moving to Whatcom County each year, and the county must make wise long-term planning decisions, said Hal Hart, the Whatcom County planning director.

Urban development like downtown does not offer the front and back yards typical of suburban living. Instead, systems of connected park and open space corridors are incorporated into mixed housing types, Hart said. Each vertical floor means less horizontal sprawl into non-urban areas, such as agricultural lands and forests, he said.

This build up, not out concept is part of a growing movement planners and developers call “new urbanism,” which contrasts sharply with suburban sprawl common among American cities during the last century. Development in Bellingham’s urban fringe reflects the cooperation of city and county officials with the community to assure an orderly and compatible transition from rural to urban areas.

“I think of new urbanism as a mix of uses and design elements that adds a vibrancy to an area and creates a strong sense of place, of community,” Koch said. “It connects all the essential elements — residential, community, recreational, occupational — physically, visually, spiritually and by mobility.”

Hart said new urbanism promotes mixed-use development within high-density neighborhoods. Concentrated development on major transit routes is essential for successful



a new view

by Renee Redekop

photos by Taylor Williams

Building vertically in developed areas like downtown Bellingham might lessen the impact of growth on agricultural areas in the county, but not everyone welcomes the new and proposed buildings.



[photo: Taylor Williams]

[photo: Renee Redekop]

[photo: Taylor Williams]

[Left] Boundary Bay Brewery & Bistro in the middle of new downtown construction. [Middle] Hal Hart and Anna Shephard looking over maps of the proposed areas. [Right] Danielle Dahle looks to the construction site from her Morse Square balcony in downtown Bellingham.

new urban planning, Hart said.

According to the Bellingham Comprehensive Plan, significant increases in the number of bicycle commuters in the downtown area reduces the need for new parking spaces and decrease motorized traffic congestion, noise and pollution. Lower levels of vehicle traffic and less space devoted to parking frees street areas for open green spaces, creative commercial activities and cultural events that attract people to the downtown area, according to the plan.

Hart said he insists on making decisions that lightly impact preceding generations. He said he battles pressures from growth, height restrictions, landscape preservation and a push from contractors toward new urbanism on a daily basis.

On March 30 Hart signed a document that expanded Lynden's urban growth boundary by 107 acres – now agricultural land. His signature effectively transformed 107 additional acres of soil into houses and pavement.

Hart said he does not advocate for the destruction of county land. But as director of Whatcom County Planning and Development Services, he said he makes final recommendations consistent with the Whatcom County Comprehensive Plan and the Growth Management Act.

"The Growth Management Act sets up a tension between competing uses of the land," he said.

According to the county plan, tree preservation and planning efforts have been combined with interests in preserving views. Greenery is retained on the hillsides and throughout while creating view corridors for residents.

Jacob Rowan, a construction laborer for Ebenal General Construction Inc., is working on three five-story low-income housing units located just south of Pepper Sisters and Boundary Bay Brewery. According to Rowan, at some point every city's officials make a decision to either allow for growth or limit the potential by not building to accommodate. Bellingham has decided to welcome newcomers and make room, Rowan said. He said he does not understand why people are afraid of the new downtown towers. With growth comes an increase in job opportunity, he said.

Contractors will finish 18-story Morse Tower and the 20-story Bay View Tower in 2008. But Koch said he thinks proposals for future height and bulk regulations will not allow anything close to Vancouver or Seattle's skyscrapers.

Danielle Dahle and boyfriend Shawn Carlson recently bought a condo in the new Morse Square condos in downtown Bellingham. With no yard to maintain, safe downtown streets to jog through and access to grocery stores and gyms, Dahle said buying a condo

downtown was a smart choice. She said she can walk to work, campus and local restaurants and is excited about the new construction downtown and increasing popularity of urban living.

"If being close to bars and trails is preventing sprawl, we are excited to help," she said. "We are secluded enough that if the bars get too loud, I just shut the window."

Although multi-story buildings have closed in on all sides of Boundary Bay Brewery, Lightner said she maintains a positive outlook. She said she hopes planners will keep lines of communication open to businesses. If this happens, she said downtown Bellingham will continue to be loud, fun and safe. With a little adjustment from all stakeholders including contractors, new residents and nearby businesses, Lightner said she believes everyone can still have pride in the community.

"Bellingham is a jewel and its character needs to be kept alive," she said. ☘

Junior Renee Redekop studies journalism and sociology. She has been published in *The Western Front*.



The Bayview Tower, soon to be located at 1217 N. State St., next to the Daylight Building, is a 20-story building planned for downtown Bellingham.

[Image courtesy: Zervas Group Architects]



Blanchard MOUNTAIN

THE COST OF A FOREST

by Brandi Bratrude

photos by Mark Malijan & Chris Huber

Blanchard Mountain, with its maturing forests and views of the San Juan and Gulf islands, divides the urban areas of Bellingham from the farmland of the Skagit Valley. As well as being the natural boundary between Whatcom and Skagit counties, Blanchard Mountain is the only place where the Cascade mountain range reaches the sea. It is also a haven for approximately 45,000 hikers, climbers, bikers, horseback riders, hang gliders and campers seeking nature and recreation each year, said Brad Wellman, co-founder of Skagit County grassroots organization The Friends of Blanchard Mountain.

But those are not the only aspects of Blanchard Mountain that make it an important part of the surrounding communities. Since the early 1900s, the Washington State Department of Natural Resources has managed the area as a Forest Board State Trust Land to generate revenues for Skagit County, specifically the school districts, and is creating a plan for future timber cuts on Blanchard Mountain.

"We have a legal obligation to generate revenue for the trust and that's why we're managing Blanchard as a timber area," said Jim Cahill, planning coordinator for the Blanchard Forest Management Project of the DNR.

The DNR has managed timber sales around the perimeter of

Blanchard Mountain below roads B-1000 and B-2000. Above these roads, logging has not occurred since the early 1920s. In the past three years, timber sales on lower Blanchard Mountain generated an average of \$178,000 for Skagit County schools, said Dr. Rick Jones, Burlington-Edison School District superintendent.

Jones said the school district uses timber revenue in two ways. The first is through the general fund, which is used for operational costs such as textbooks. The second, Jones said, is through a state tax. The state receives a value estimate on the timber harvest. The state then gives the money to the school district, repaying the tax debt of school levees and bonds, Jones said. The tax debt comes from school bonds that residents vote to pay, he said.

The DNR has proposed more timber sales on Blanchard Mountain, but has postponed logging indefinitely, Cahill said.

The Friends of Blanchard Mountain is an organization working to prevent logging on the highest 2,500 acres of the mountain. Cris Feringer, who co-founded the organization in 2004, said the upper region of the mountain, known to many as "the core," offers recreational opportunities as well as providing habitat for countless species.





“We have a legal obligation to generate revenue for the trust and that’s why we’re managing Blanchard as a timber area.”

Jim Cahill
Department of Natural Resources



Feringer lives on the south side of Blanchard Mountain and said he believes preservation is necessary. He said he has tried to stop DNR logging on the mountain for the past 10 years.

The DNR’s proposed logging plan would undoubtedly ruin the trail system because of the construction of permanent and temporary access roads that would cross over a majority of the existing trails, Feringer said.

“I don’t know any hikers who like to hike through dirt and debris and logging slash,” Feringer said.

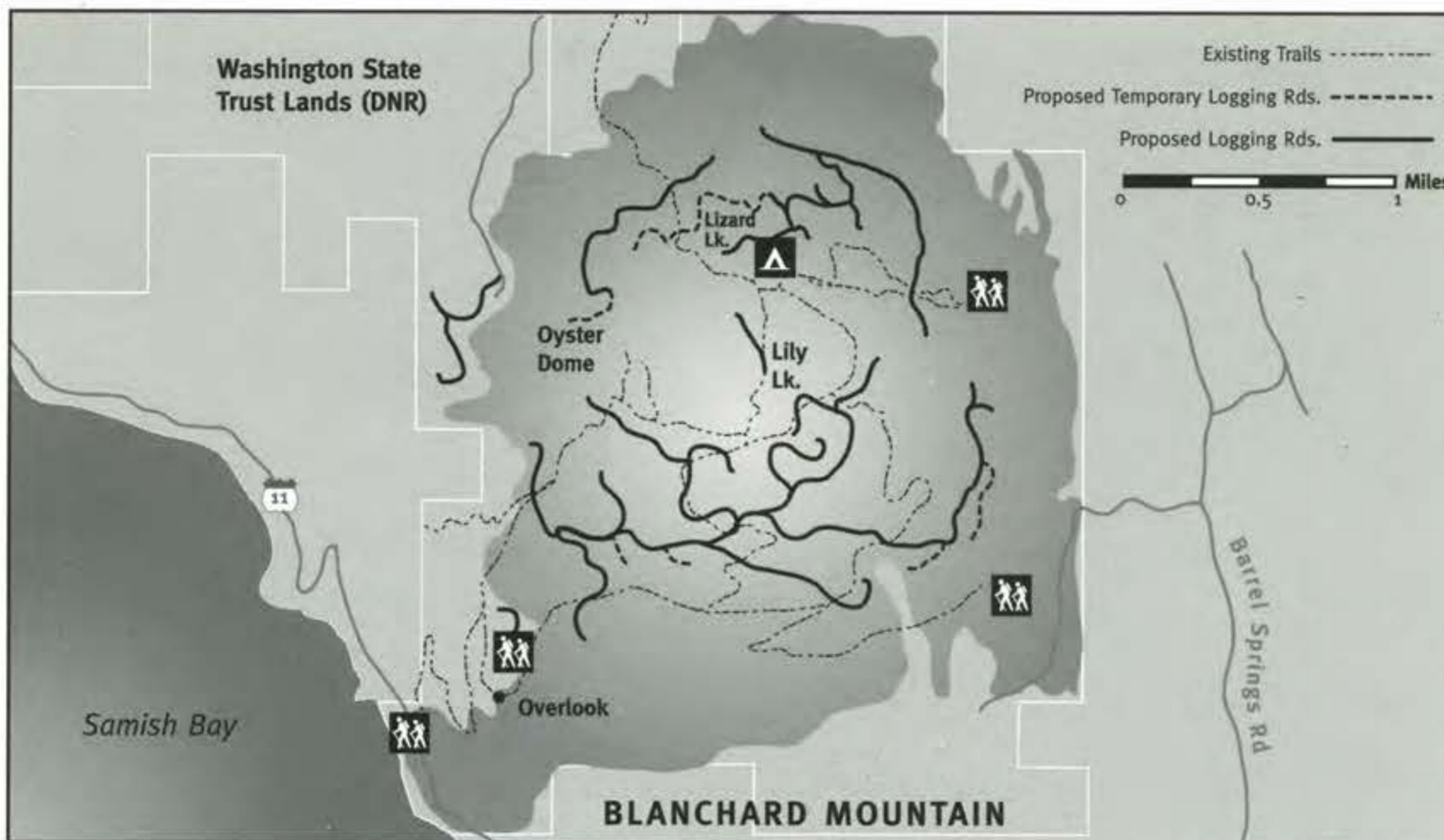
From the mid 1800s to the early 1920s, extensive logging took place on Blanchard Mountain. But in 1925, the owners abandoned the land after a devastating fire. The areas of Blanchard Mountain previously cleared from timber harvests were not replanted and the forest regenerated naturally. The area has grown into maturing second growth forest, which occurs when a forest undergoes natural succession after environmental disturbances such as clear cutting or fire damage. This process increases species diversity and decreases forest vulnerability to disease and other disturbances.

“Intact lowland forests are essential to wildlife and are becoming more and more rare,” said Rose Oliver, a Blanchard Mountain coordinator for Conservation Northwest. “Most other lowland forests have been replanted with monoculture Douglas fir plantations.”

Oliver said that because Blanchard Mountain regenerated naturally, the area has high biological diversity and an increasing number of native plant and animal species.

“The creeks that flow off of Blanchard are important for salmon and clean water, including water quality in Oyster Creek and Lake Samish,” Oliver said. “Blanchard Mountain is also a historic nesting area for [marbled] murrelets and bald eagles, and it is home to the endemic Townsend’s big eared bat.”

In 2001, Conservation Northwest (formerly Northwest Ecosystem Alliance) conducted a study to evaluate what attributes of Blanchard Mountain the public thought were important. When Skagit and Whatcom County residents were asked, “How im-



[Previous] A Clear-cut area from 2003 located on Blanchard Mountain. [photo: Mark Malijan]

[Above] These stations containing information about logging, are found all over Blanchard Mountain. The proposed logging would result in a loss of recreational activities on the mountain. [photo: Mark Malijan]

[Left] The Department of Natural Resources has proposed temporary and permanent logging roads that crisscross the existing trail system on Blanchard Mountain.

[Next page above] A pristine view from the top of Blanchard Mountain is just one of the recreational benefits that might be affected by the DNR’s future plans. [photo: Chris Huber]



portant to you are forest lands?” 87 percent and 90 percent of the respondents said they were important, respectively. When asked, “How important to you is harvestable timber, that is, trees that can be logged to produce income for local services?” 48 percent and 42 percent of the respondents said that was important respectively.

“Blanchard Mountain is sandwiched between I-5 and the ocean and between two growing populations,” Oliver said. “Pressure from development and overpopulation make places like Blanchard Mountain even more important as a place of refuge, a source of clean water and unique recreational opportunities.”

Oliver coordinates weekly hikes on Blanchard Mountain that vary in difficulty and focus on different environmental aspects of the area, including wild flowers, mushrooms and herpetology — the study of amphibians and reptiles.

“I grew up in Skagit County and have been hiking on Blanchard Mountain since my early teens,” Oliver said. “It is definitely in my heart.”

The DNR has organized a strategy group of nine stakeholders to collaborate on future management strategies of Blanchard Mountain. Cahill said the Blanchard Mountain Strategies Group includes representatives from Conservation Northwest, The Friends of Blanchard Mountain, the timber industry, the DNR, Skagit County Land Trust and Skagit county citizens.

“The task of the strategy group is to try to find a balance between needed revenues and recreational benefits,” Cahill said.

The strategy group plans to hold the first of six to eight meetings on May 22, Cahill said. After the conclusion of the strategy group meetings, the DNR will analyze the resultant management concepts and form a management plan, which the DNR will present for comment by the strategy group and the general public, he said.

“I hope that [the strategy group] comes to a conclusion that everyone can agree on, that the beneficiaries are to be compensated and that it runs quickly and smoothly,” Oliver said.

Oliver said the goal of Conservation Northwest is not to oppose logging in the area, but to protect the upper 2,000 acres and promote sustainable logging. This practice involves protecting ecological processes and biological diversity while maintaining community benefits from forest resources.

Randy Walcott, conservation chair of the Bellingham Mountaineers, said any amount of logging on Blanchard Mountain is unacceptable. Walcott said he has worked on conservation efforts involving Blanchard Mountain since 1998 but has failed to see any progress.

“The important thing to understand about Blanchard

Mountain is that it is probably the largest acreage on the west side of the freeway that is still wild,” Walcott said. “With development, I think it is really important that we set aside an area like this—otherwise we’re not going to have room like this for people to use for recreation.”

Jones said he is interested in finding other sources of revenue to supplement the revenues lost to the school district if logging is stopped on Blanchard Mountain.

“The annual budget (of the school district) is around \$24 million,” Jones said. “Timber revenues, at around \$200,000, are a small percent.”

Ken Wilcox, an environmental planning consultant for Osprey Environmental Services, Inc., said using revenues from timber harvests to support schools is an archaic system that needs changing.

“As far as school funding, that system’s broken,” Wilcox said. “One hundred years ago that system worked, when there were more forests and smaller schools — now that’s reversed.”

Wilcox said society should pay for schools through taxes because the benefits of generating a small amount of revenue do not outweigh the destruction by timber harvest on the ecologically unique area that is Blanchard Mountain.

“It’s a local issue but also a state issue because there’s not another Blanchard Mountain in Washington,” Wilcox said. “I haven’t heard of anything else in the state that’s been such a prominent thorn in the DNR for so long.”

A plan to achieve balance between environmental integrity and timber harvest interests is what Cahill said the DNR hopes to get from the Blanchard Mountain Strategies Group.

“We are looking for a durable set of strategies that has broad community support,” Cahill said.

Cahill said the legal obligations of the DNR will influence the management plan for Blanchard Mountain, but room for creativity lies in the collaboration of the DNR with the strategies group. He said the management planning process will conclude in late summer or early fall.

“Ideally, (Blanchard Mountain) would be transferred into a National Conservation Area,” Wilcox said. “My preference would be to stop all logging, but certainly I want to preserve the core and the area that connects it to other public lands. Blanchard is just starting to feel like a forest.”

Senior Brandi Bratrude studies environmental journalism. She has been published in *The Western Front*, *Klipsun Magazine* and *The Planet*.

AN AFTERNOON WITH DAVE SMITH

by Brandi Bratrude
photos by Mark Malijan

Trekking up Max's Shortcut on Blanchard Mountain, outreach volunteer for The Friends of Blanchard Mountain Dave Smith used hiking poles to navigate his way through mud puddles and protruding tree roots.

"It's a definite uphill battle to try to keep this from getting logged," Smith said.

For the past seven months, Smith said he has spent the majority of his weekends hiking a 10-mile loop on Blanchard Mountain while stopping to chat with fellow recreation enthusiasts about the proposed logging in the area. Equipped with a backpack stuffed with brochures and maps, Smith said he talks to most of the people he sees, sometimes 60 to 80 in a single day.

Walking past an alder grove, Smith stopped to admire the aging trees.

"It's kind of primordial," Smith said. "Doesn't it look like dinosaur habitat?"

The alder grove, known as the Drake Cut, is tagged for harvest but the Washington State Department of Natural Resources has postponed logging the area, Smith said.

Crossing paths on the trail, Smith stopped hiker Linda Wetzel of Seattle to discuss the situation on Blanchard Mountain.

"There's nothing really comparable here, there's Larrabee (State Park) but that's not as nice," Wetzel said. "I can't figure out why (the DNR) would pick this area to log."

Smith gave Wetzel a map of the proposed logging roads that would crisscross the trail system, encouraged her to check out The Friends of Blanchard Web site and then the hikers continued on their respective paths.

Continuing onward toward the Oyster Dome, Smith described himself as a reactionary and said when he saw the maps of the proposed logging he was furious.

"We the people own this land," Smith said.

Meeting two more hikers on their descent from the Oyster Dome, Smith approached them with the same question as the earlier hiker, "Have you heard they're going to log up here?"

The three discussed their feelings about the logging and Smith pulled from his backpack a petition for Bellingham residents Brenna Forester and Graham Hamby to sign. Smith said The Friends of Blanchard Mountain uses the petitions to gather contact information and send updates on the state of the mountain and ways in which they can get involved.

"I was really upset when I heard about the logging thing," Forester said.

Forester said she would take one of Smith's petitions to her work at Whatcom Transit Authority to gather support for The Friends of Blanchard Mountain.

"This is a pretty cool place," Smith said. "Think if it had never been logged."

"We the people own this land."

Dave Smith
outreach volunteer
The Friends of Blanchard Mountain





PICKING *their*
POISON

Pesticides exploit workers & the environment

by Katie Mathis

photos by Mark Malijan



“It’s not explained to them how serious it really is (to be exposed to chemicals).”

Aline Soundy
project coordinator
Community-to-Community Development

In the produce section at the grocery store, shoppers put fruits and vegetables through a grueling sequence of tests before adding them to their baskets: they squeeze, smell and scrutinize. A woman studies half a dozen bunches of bananas before she settles on one that suits her. One man sifts through a pile of red potatoes looking for the ideal candidate for his dinner’s side dish. Customers leave produce with the slightest hint of a bruise untouched. Most shoppers gravitate toward the cheapest produce and away from the organic section that fills a fraction of the space the conventionally grown crops occupy. Despite what shoppers may or may not know about organic produce, they tend to pinch their pennies and breeze past the section.

The perpetual cycle of producing low-priced, spotless food requires farmers to use cheap labor and chemicals that are potentially damaging to the environment and farm workers, said Tim Terpstra, assistant farmer at Ralph’s Greenhouse organic farm in Mount Vernon. He said a lot of what farmers do to their crops is cosmetic, so consumers will buy their product. Terpstra said he believes this system exploits farmers, farm workers and consumers — profiting only the companies who produce the chemicals used in agriculture.

“The farmers aren’t benefiting, and the workers certainly aren’t,” he said.

Each year, approximately 442,000 migrant and seasonal workers occupy farms in Washington state. An unknown percentage are illegal, or undocumented, workers.

Apples require the largest labor force in Washington. In 2005, approximately 184,000 farm laborers worked in the state apple industry.

In order to yield a profitable crop, apple growers apply chemicals throughout every stage of growth to ward off pests. According to the Environmental Protection Agency Web site, the EPA has a registry of more than 865 active ingredients as pesticides, which are then reformulated into thousands of products available to farmers. Food growers apply approximately 350 different pesticides to crops.

Azinphos-methyl is a chemical commonly found in pesticides applied to apples. According to the EPA, 33 percent of the total use of this chemical is applied to apples. Farmers apply it to kill insects such as codling moths, but pesticides can have inadvertent effects.

[Previous] The tulips at the Skagit Valley Tulip Festival are beautiful but are treated with pesticides.

[Top] A wide variety of apples line the produce shelf at a local Whatcom County grocery store.

[Right] John Belisle at his Bellewood Acres apple orchard in Lynden. He practices integrated pest management, managing up to 15 major pests at a time.

The chemical enters the human body through inhalation, ingestion and contact with skin or eyes. Symptoms from exposure include dizziness, headache, nausea and labored breathing. Azinphos-methyl, a neurotoxin, inhibits the production of cholinesterase, an enzyme essential to the functioning of the central nervous system.

Dr. Gloria Coronado, an epidemiologist at Fred Hutchinson Cancer Research Center in Seattle, studied the connection between certain farming tasks and pesticide residue in urine samples of workers and their children. Coronado and her colleagues tested urine samples from 24 agricultural communities and labor camps



in Eastern Washington. Coronado said Azinphos-methyl was present in a large percentage of urine samples taken from the children of agricultural workers.

"Children have a unique exposure and susceptibility to pesticides," she said.

Coronado said parents unknowingly expose their families to chemicals through "take home pathways." Parents pick up their children at daycare or return home from a long day at work without first removing contaminated clothing. She said residues from the chemicals can cling to fabrics and carpet fibers, which is particularly dangerous for small children who spend a lot of time crawling and playing on the ground. Coronado said she and her colleagues found a direct correlation between pesticide exposure in parents and their children.

Farm workers often do not realize the danger of the chemicals they work with, said Aline Soundy, project coordinator at Community-to-Community Development.

"It's not explained to them how serious it really is (to be exposed to chemicals)," she said.

Soundy said she has heard of instances where companies did not print instructions or warning labels in Spanish. She also said workers often choose not to wear gloves or protective clothing because they can be cumbersome and slow the pace of work.

Soundy said farm workers are reluctant to seek medical attention for their maladies, for fear of missing work or losing their jobs. Symptoms of pesticide exposure include coughs, skin rashes, burning sensation in the eyes and nausea. She said workers often feel powerless to do anything about their problems, especially if they are undocumented and are at risk of being deported. Soundy said she spoke with one farm worker who said he credited his symptoms to eating too many chili peppers. When she asked him if he really believed peppers were causing his health problems, he laughed nervously and replied, "No, of course not."

"Usually farm workers are very silent about it," Soundy said.

Azinphos-methyl can also wreak havoc on the environment. Farmers often use crop airplanes or ground sprayers to apply pesticides. According to the EPA, these application methods result in "spray drift," or the travel of chemicals to unintended sites. Azinphos-methyl has been responsible for killing aquatic organisms such as salmon when it travels from farms into rivers and lakes, according to the EPA. The chemical is also toxic to other unintended recipients including honeybees, birds, reptiles and small mammals.

John Belisle owns Bellewood Acres apple orchard in Lynden. He said his farm is the first in the Northwest to be certified "Salmon Safe," which means he only uses pesticides not known to be harmful to salmon. Belisle said he practices integrated pest management, a method that involves identifying and monitoring pest populations and understanding the balance between pests, crops and the environment. Belisle said he targets specific pests at certain times in their life cycles rather than indiscriminately spraying a cocktail of pesticides. He said he is also discerning about what types of chemicals he uses on his land.

[Right] A grove of budding trees in John Belisle's Apple Orchard. His orchard has been certified salmon safe because of the way he manages the treatment of his fruit.


"Everyday I look for something softer that I can use. Every day," he said.

Belisle said if he did not use any pesticides, he would run the risk of losing his crop and his livelihood.

Ralph's Greenhouse, where Terpstra works, also uses safer methods of pest management to protect the environment and the people who work at the farm. Terpstra said crop rotation, hand weeding and composting are chemical free approaches used in organic farming. Another method for pest management that involves no chemicals is to plant a "trap crop," which insects flock to instead of profitable crops. Terpstra said even organic farms use pesticides as a last resort, but they use chemicals that are certified organic. He said he understands why conventional farmers rely on pesticides and other chemicals to ensure a successful season.

"You want to make a living farming? It's hard enough as it is, try losing your crop," he said.

Terpstra said although buyers are beginning to put pressure on growers to use safer methods, consumers should also be less concerned with what their food looks like and more concerned with how it is grown. Soundy said encouraging farmers to use safer methods is one way consumers can help alleviate the problem. She said a resolution will only come when farmers, workers and consumers collaborate.

"I see a solution to that (problem) in working together," she said. 

Senior Katie Mathis studies environmental journalism. She has been published in *The Western Front* and *The Planet*.

***"You want to make a living farming?
It's hard enough as it is, try losing
your crop."***

Tim Terpstra
Assistant farmer at Ralph's Greenhouse



Wanambisi WESAKANIA

Far from home, close to change

by Michael Lee

photos by Mark Malijan

Scenes of colorful gardens and sun-scorched orange land dotted with crisp trees fade slowly into each other on Wanambisi Wesakania's laptop. The pictures show Wesakania in his village of Kesogon, Kenya, a town of about 5,000. He's in Bellingham now, finalizing his geography degree at Western Washington University and looking for a job so he can go home.

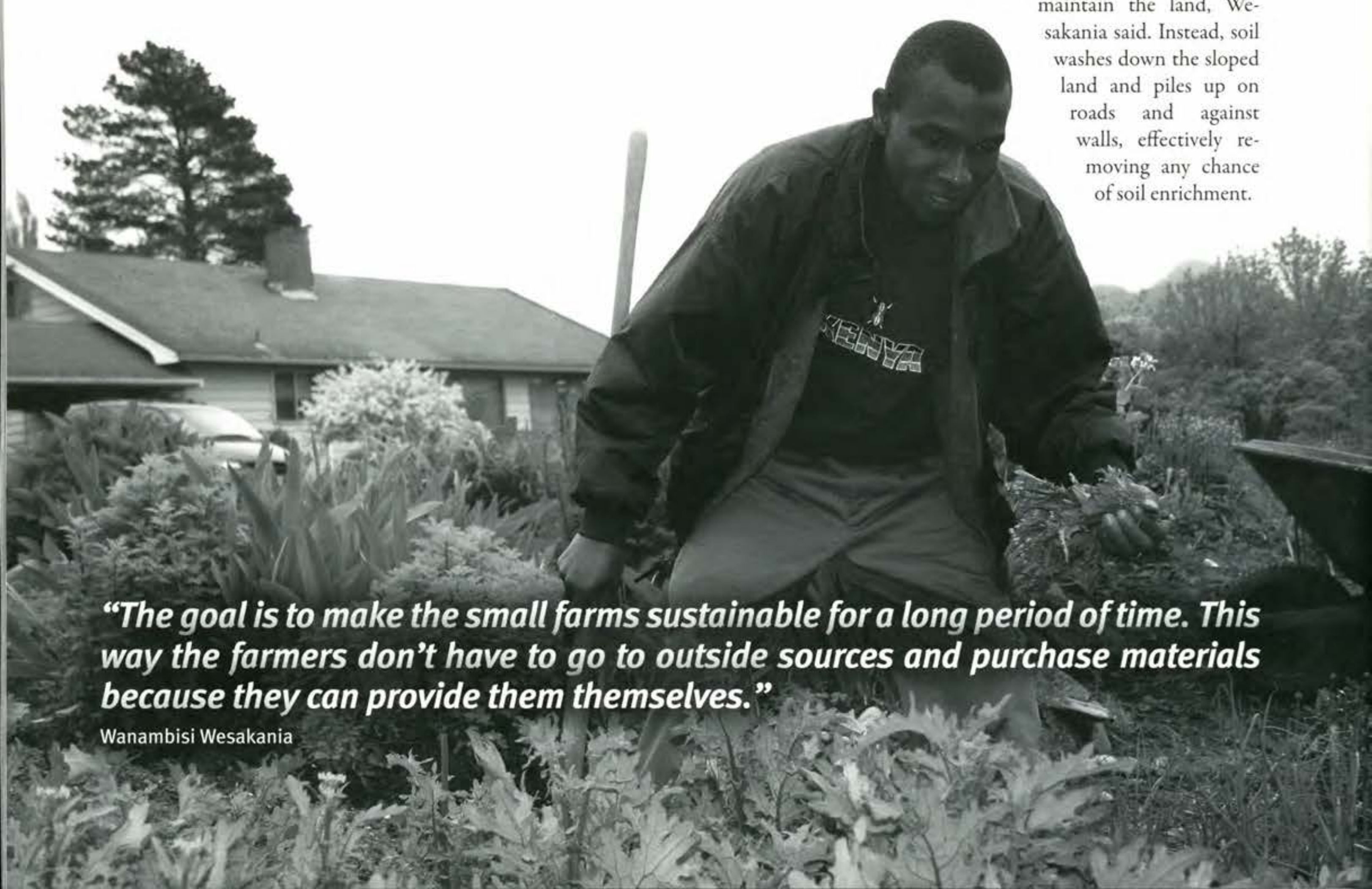
"I need \$50,000 for funds and an air ticket or a tractor," Wesakania, 44, said in his dense rhythmic accent.

The funds would go to Eco-Garden, an organization he started two decades ago in Kesogon. The title stands for environmental conservation and organic gardening. Eco-Garden in its physical state is a true garden, filled with trees, corn, indigenous forests and other vegetation, Wesakania said. The 7.5-acre organic farm doesn't use synthetic sprays or enhancers, he said. But Wesakania said he is most focused on how Eco-Garden members can teach the small-scale farmers of Kenya how to make the most of the land they have by using organic farming techniques and preventative measures to maintain it.

"The goal is to make the small farms sustainable for a long period of time," Wesakania said. "This way the farmers don't have to go to outside sources and purchase materials because they can provide them themselves."

In Kenya, soil erosion is a serious problem among farmers, Wesakania said. Many farmers didn't understand the value of the terraces built by colonial farmers settling in Kenya, so they destroyed them. Further, the government of Kenya doesn't extend sufficient

agricultural support to maintain the land, Wesakania said. Instead, soil washes down the sloped land and piles up on roads and against walls, effectively removing any chance of soil enrichment.



"The goal is to make the small farms sustainable for a long period of time. This way the farmers don't have to go to outside sources and purchase materials because they can provide them themselves."

Wanambisi Wesakania

Eco-Garden teaches methods of soil erosion prevention like terracing. Farmers make curved steps to slow the water and make the soil stay put on the slopes, Wesakania said.

The organization also teaches farmers to re-plow and recycle their unused plant matter back into the ground instead of burning it. This creates a natural fertilizer and enriches the soil.

"The most important thing is feeding the soil," Wesakania said. "The soil will feed the crop, the crop feeds the human and that is why we do organic farming."

Eco-Garden provides seeds to farmers to plant organic tomatoes, pumpkins, squash, millet, bananas, guava and more, Wesakania said. The organization encourages them to slowly enrich the soil on their farms instead of using quick fixes like synthetic sprays and fertilizers. Those products may work at first, Wesakania said, but they do not last.

THE BEGINNING OF A MISSION

When Wesakania completed high school in a town two hours from his village, he returned to find nearly all of the forests gone, he said. The mushrooms he used to dig for food had all but vanished. He wondered why. Wesakania began listening to the radio, using his talent for language (he knows five) to soak in the information from programs such as Washington D.C.'s "Voice of America" and Germany's "Man and the Environment," he said.

"At first I didn't realize what was a Third World, Second World, First World country," Wesakania said. "And then I realized, I am in a Third World country that all these programs talk about that are not well-managing their environment."

In Kesogon, like many villages in Kenya, grass houses shelter the people. Electricity and indoor plumbing are uncommon, and families depend on their gardens and animals for food. Wesakania said he identified the problems he heard on the radio in his own community. He decided then, in 1982, to try and change farming in a way that would sustain the land for prolonged use and prevent as much damage as possible to the surrounding environment, he said.

He began by starting a tree nursery, planting seedlings and recruiting young

people to help teach the local farmers about efficient farming, but found he lacked the technical knowledge needed to truly make an impact on the farmers or speak with any type of authority, he said.

Undeterred and still focused on his mission, in 1993 Wesakania said he sold his family's only milking cow — the equivalent to selling a family car — so he could pay for one quarter of a two-year college program at the Manor House Agricultural Center in Kenya. He left behind his wife, 2-year-old daughter Elly and 1-year-old son Jackson to attend the program.

"He has been here at great personal sacrifice," said Tim Costello, a friend of Wesakania and an interim director with the Slum Doctor Programme, an organization that helps Africans with AIDS.

Wesakania said he wanted to return with enough knowledge to influence the small-scale farmers who owned acre or half-acre plots of land. These small plots of land can use the labor-intensive techniques of organic farming more easily than larger corporate farms and could make a visible difference in the community.

After the two-year program at the Manor House, Wesakania said he decided he needed more knowledge to add depth to the practices of Eco-Garden and the skills of its employees.

He moved to Bellingham to attend Western in 2000 after being one of seven students granted the Sidney MacIntyre Jr. scholarship, worth \$25,000 towards a four-year university. Western accepted him first, so he went, Wesakania said.

"Wanambisi is one of the most motivated students I've ever met," said John McLaughlin, associate professor of environmental studies at Western's Huxley College and professor of Wanambisi's ecology class. "He was never satisfied with one answer — he always wanted to learn more deeply."

Wesakania sent every extra bit of money he had through his five years of schooling


[Previous and Right] Wanambisi spends much of his free time tending to his simple yet efficient 4-year-old organic garden in Fairhaven. He started the garden in the side yard of his residence. His garden includes peas, carrots, onions, strawberries and other plants.

back home so his young recruits at Eco-Garden could attend the Manor House school. By 2004, Wesakania said he had financed five volunteers through the program.

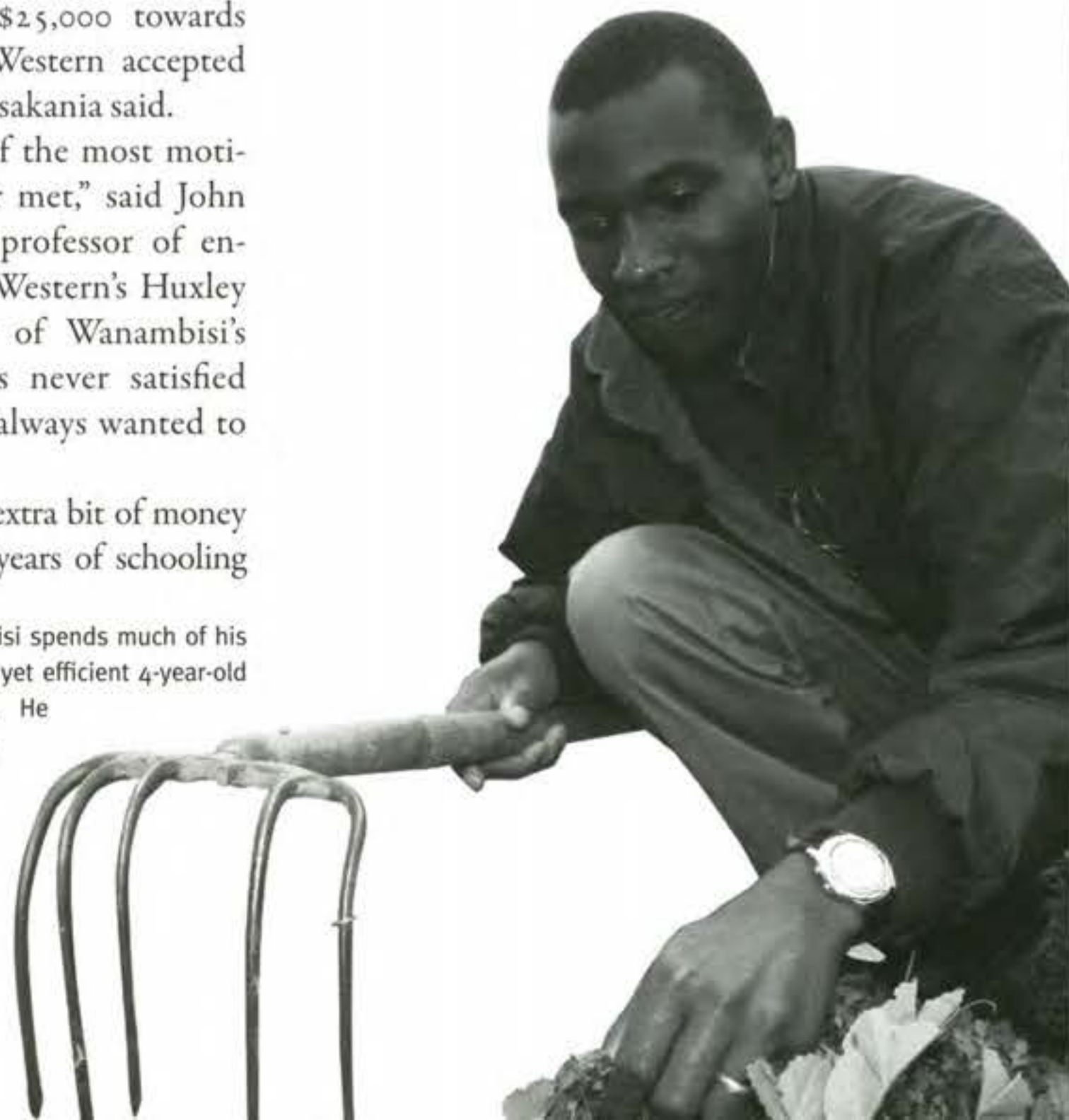
Wesakania said he is looking for work and people willing to donate to Eco-Garden. He said most of his money is spent on long-distance phone calls back to his family, and uses what he has left to support himself. As soon as he returns to Kesogon, Wesakania will serve as head coordinator of Eco-Garden and will teach the methods of organic farming, which more than 500 farmers in his community have already adopted.

"(Wanambisi) has always been very enterprising and holistic in his approach," said Sandra Mardigian, director of the Kilili Self Help Project. "He has a big perspective."

When he returns to Kenya, Wesakania said he is anxious to teach the volunteers at Eco-Garden computer skills that are virtually non-existent in Kesogon. He said he would like to be able to educate using techniques like PowerPoint presentations and diagrams on computers. He said he is excited to return and be a hands-on part of the changes in Kenya once again.

"It's really working," Wesakania said. "We are even starting to see forests again." 

Senior Michael Lee studies journalism. He has been published in Klipsun Magazine and The Western Front.

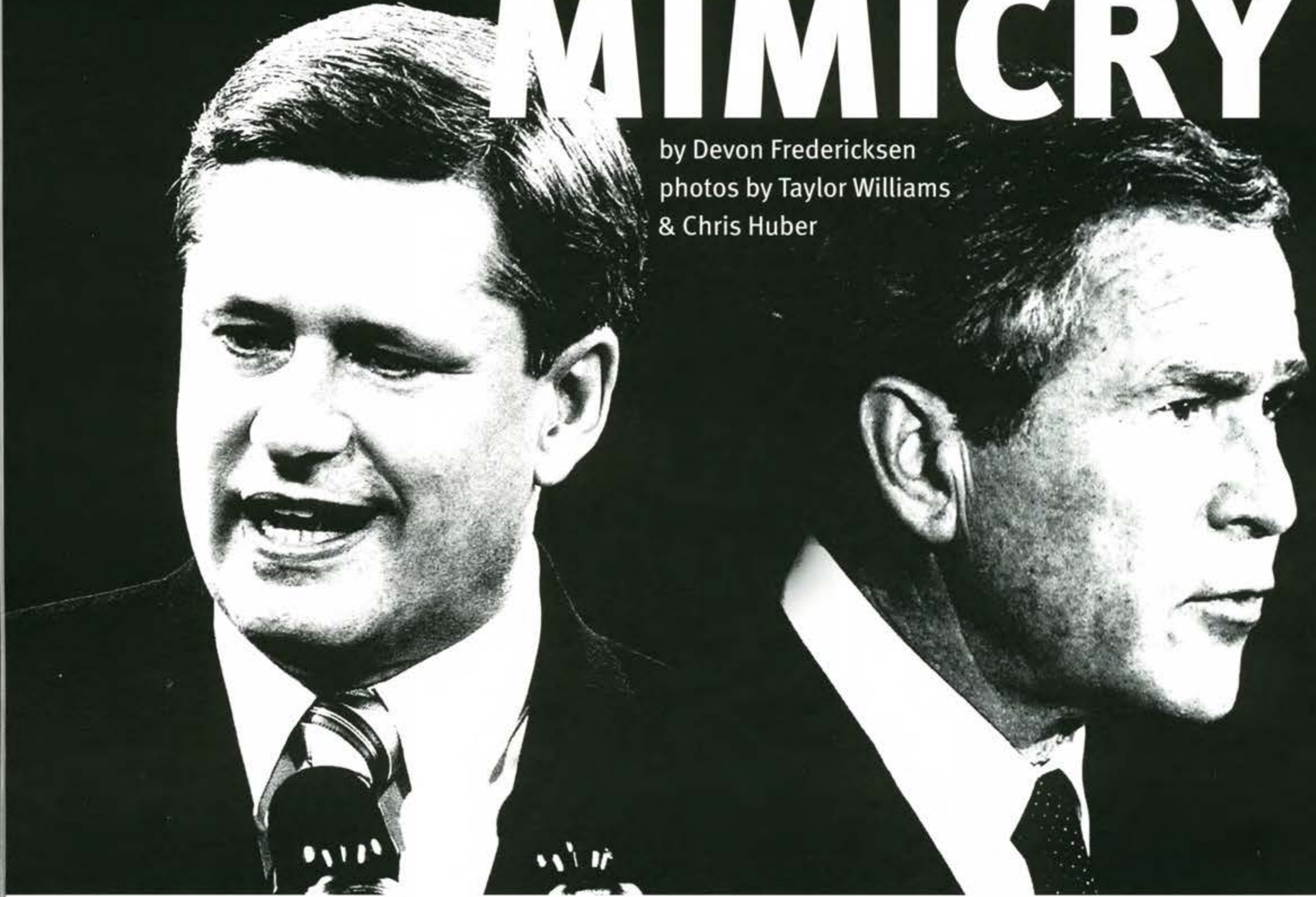


BUSH

Canadian environmental
policy gets an American flair

MIMICRY

by Devon Fredericksen
photos by Taylor Williams
& Chris Huber



Canadian Prime Minister Stephen Harper is expected to take an ideological stance on climate change, similar to that of President George W. Bush, and is likely to end Canadian compliance with the Kyoto Protocol.

British Broadcasting Corporation

An infestation of the mountain pine beetle is killing entire forests of Canadian pine trees. Pacific salmon populations are declining and migrating to cooler waters. Polar bears are falling through thinning ice in the Arctic. Throughout Canada, habitats are changing due to global climate change.

If the Canadian Foundation for Climate and Atmospheric Sciences predictions are correct, Canada will face extreme environmental changes by the middle of this century. Through CFCAS, 90 climatologists and oceanographers sent a letter on April 18 to the newly elected Prime Minister of Canada, Stephen Harper. The letter urged Harper's administration to develop an effective national strategy on climate change.

The letter listed the observed and predicted climate related effects on the environment. The foundation letter emphasized humans' harmful role in global warming but acknowledged that humans still have time to adapt to changing conditions. The authors of the letter also urged the Canadian government to increase funding for climate change research in order to develop more adaptive strategies for reducing greenhouse gas emissions.

Harper has not made climate change a national priority. A recent British Broadcasting Corporation news release said Harper is expected to take an ideological stance on climate change, similar to that of President George W. Bush, and is likely to end Canadian compliance with the Kyoto Protocol.

David Rossiter, assistant professor of human geography at Western Washington University's Huxley College of the Environment and the Center for Canadian-American Studies, said he would be surprised if Harper pulled Canada out of the Kyoto agreement, but thinks the prime minister will avoid meeting Kyoto emission reduction goals.

Don Alper, director of the Center for Canadian-American Studies, said the checks and balances of the Canadian government will not allow Harper to do anything too drastic. Opposing parties will pressure Harper's minority government in Parlia-

ment not to ignore the environment entirely, Alper said. New concerns about political action on climate change are surfacing after weather patterns changed noticeably in the past year, bringing discussions on climate change to the political forefront.

Canada endured its warmest winter ever recorded last year, 3.9 degrees Celsius (7 degrees Fahrenheit) higher than the average temperature, according to Environment Canada. Climatologists remain inconclusive as to whether this is another effect of global climate change.

"A record high and future highs are consistent with the forecast for global warming. But you can't attribute any particular pattern to global warming," said John McLaughlin, population biologist and associate professor at Huxley. "It's a long-term trend. There is always variation within the trend."

Jack Hardy, a Huxley faculty member and expert on global climate change, said linking any one-year's weather records to climate change is not scientifically sound.

"There are anomalies," he said, but added that the sharp increase in temperature is consistent with the general upward trend climate models continue to predict.

"This trend is unprecedented in its rapidity," he said.

Historically, it took thousands of years for global temperatures to increase 5.4 degrees Fahrenheit. Whitewood said now scientists predict it may only take a matter of decades to warm the globe the same amount. This warming is causing major ecological changes and environmental damage on a global scale, according to the David Suzuki Foundation, a Canadian environmental advocacy organization.

The epidemic of the mountain pine beetle is spreading rapidly through forested parts of the country, resulting in massive economic and ecological damage. The spread of the mountain pine beetle has links to warmer temperatures, Whitewood said. More beetles survive to flourish in the summer when winter temperatures do not drop below a certain threshold. The warmer temperatures also make trees more vulnerable to the beetles, weakening their defense against disease and infestation, he said.



[Photos: Chris Huber]



[Photos: Taylor Williams]



[Photos: Chris Huber]



British Columbia's Premier Gordon Campbell said the pine beetle epidemic is the worst natural disaster to ever hit Canadian forests, according to a 2005 news release from the Office of the Premier.

The warmer temperatures are also forcing Pacific salmon further upstream to spawn, reducing their chances for survival, according to CFCAS. The Committee on the Status of Endangered Wildlife in Canada declared four Canadian salmon species endangered due to significant population declines. Competition and predation are expected to increase as a result of a northward shift of various marine water species the salmon rely on for food. Possible migration delays are also anticipated due to reduced flows and increased temperatures.

The observed and predicted effects of climate change in the Arctic also have climate experts worried. Melting permafrost in the Arctic leads to an environmentally-damaging positive feedback loop, Hardy said. He said permafrost is like a rich organic soil, and as it melts, bacteria start to grow, breaking down the organic material and producing carbon dioxide. The increased carbon dioxide in the atmosphere results in global warming, he said.

According to the letter to Harper, the continual melting of the permafrost could have both dire economic and ecological effects in the Arctic region. The authors predict that continued thawing of permafrost will damage infrastructure, roads, pipelines and buildings in the region, as well as to northern eco-

systems and indigenous cultures.

Whitewood said climate models help explain why temperatures have been increasing. They show at least some of the warming is due to anthropogenic influences. According to the CFCAS letter, these influences exacerbate the effects of climate change. The authors emphasized the urgency to act on the threat of climate change and called for the Canadian government to develop future emission reduction strategies accordingly by furthering scientific research and implementing more effective national policies.

According to the David Suzuki Foundation, the Canadian government has allocated more than \$5 billion Canadian during the past five years for climate change related programs. Despite these efforts, Canada is not meeting Kyoto Protocol emission reduction targets. Oil and gas emissions have increased by 41 percent, electricity emissions have increased by 41 percent and road transportation emissions have increased by 31 percent since 1990, according to the foundation.


According to a speech given on March 31 by Rona Ambrose, minister of the environment of Canada, Harper intends to "move beyond the limitations" of the Kyoto Protocol. He plans to implement more effective environmental policies that will not have drastic repercussions for the nation's industrialized economy, she said.

"In order to address climate change, it will take a great deal of innovation and tech-

nological development," McLaughlin said. "U.S. and Canada have a great capacity to be leaders in this advancement of technology."

But Harper openly opposes the Kyoto Protocol, saying Canada will not be able to cut its emissions to reach Kyoto targets, according to an article in the National Post, a Canadian newspaper. He advocates for a made-in-Canada approach that will more effectively reduce emissions. According to the press release, Harper recently cut 15 programs dedicated to Kyoto research.

According to a Canadian Broadcasting Corporation news release, Harper's administration cut 40 percent of funding for climate change programs from the 2006 budget. Included in the cuts is the One Tonne Challenge, a program that advertises how individuals can make small lifestyle changes to conserve energy. The administration also cut financial support for 40 public information offices throughout the country and several scientific and research programs on climate change from the budget.

"We should become climate literate, and learn about how our individual activities affect the climate system," McLaughlin said. "We should ask ourselves how we can change our activities to benefit ourselves and future generations." 

Freshman Devon Fredericksen studies environmental journalism and Spanish. This is her first published piece.



HOW YOU CAN MAKE A DIFFERENCE:

- ✦ Turn off electric lights and appliances when not in use.
- ✦ Set home and workplace thermostats lower at night or when gone and higher when air conditioning is used.
- ✦ Turn water heaters down when gone for a period of time
- ✦ Set refrigerators no lower than 5 degrees Celsius (41 degrees Fahrenheit) and check the door gasket
- ✦ Unplug idle electric appliances
- ✦ Replace incandescent light bulbs with energy-efficient fluorescents
- ✦ Wash full loads of clothes and dishes using cold-water rinse and preferably after 8 pm or during other off-peakhours
- ✦ Use a microwave rather than a conventional oven when possible
- ✦ Install improved insulation and seals in your home
- ✦ Walk, bicycle, carpool, or use mass transit when possible instead of a single passenger vehicle
- ✦ Select an energy-efficient automobile and combine tasks to reduce the number of trips
- ✦ Encourage others to adopt energy-saving practices

source: Jack Hardy's book *Climate Change: Causes, Effects, and Solutions*



PURIFYING A NEW POWER

by Lance Henderson
photos by Matt Vogt

Whatcom County's 55,000 dairy cows produce nearly 60 tons of manure each day. But with the help of newly-developed technology to generate electricity and fuel vehicles, dairies are putting that waste to work by helping to decrease methane emissions and dependency on fossil fuels. The daily manure from eight cows can power an average home for one day, said Kyle Juergens, assistant manager of the digester project at the Vander Haak dairy in Whatcom County.

Vehicle Research Institute students, striving for a "closed system" on their methane scrubber, search the device for leaks. Leaks allow oxygen into the system, which may cause an explosion.

Western Washington University students at the Vehicle Research Institute are building a purification system called a "bio-methane gas scrubber" that would refine biogas, a mix of bio-methane, carbon dioxide and traces of hydrogen sulfide. After biogas is "scrubbed" the result is pure bio-methane, to be used as a vehicle fuel. The biogas would supplement the current supply of natural gas and provide a better means of using renewable resources.

METHANE BASICS

Methane is a greenhouse gas that traps heat in the atmosphere and contributes to global warming. Methane, or natural gas, remains in the atmosphere for approximately nine to 15 years and traps heat 20 times more effectively than carbon dioxide, according to the Environmental Protection Agency.

However, methane can generate electricity, heat homes and power automobiles. Additionally, methane already has an infrastructure in place for distribution to most homes throughout the United States.

Natural gas companies drill and place wells in the ground for the extraction of methane, which forms during the decay of ancient forests and sea life trapped in the ground for millions of years. The drilled gas is approximately 90 percent methane and 10 percent carbon dioxide. Gas companies rid the gas of carbon dioxide to make it "pipeline quality."

The digester's methane product, however, faces a problem that drilled methane does not have — the methane produced from manure has approximately 40 percent carbon dioxide and trace amounts of hydrogen sulfide, Juergens said. Even in trace amounts, hydrogen sulfide corrodes key engine components vital to internal combustion, he said.

Bio-methane scrubber technology cleans the gas to eliminate carbon dioxide and hydrogen sulfide.

Sweden uses scrubber technology and has an entire public transit system built around natural gas, according to U.S. Department of Energy reports. However, high maintenance costs have discouraged their use in the United States.

Juergens said the available gas scrubbers need regular filter replacement, which makes them too expensive to maintain and less economical than frequent oil changes. The VRI design is a more economical approach to purifying bio-methane, he said.

THE VRI SCRUBBER

Another problem with the methane produced by digesters, said Eric Leonhardt, director of the VRI, is that the impurities make the gas difficult to compress efficiently for storage and transportation.

But once the gas passes through the scrubber, the compressed biogas can be used in natural gas vehicles and will not corrode engine parts, Leonhardt said.

"The scrubber is really a small refinery for bio-methane," Leonhardt said.

The VRI's scrubber is a foot-and-a-half in diameter, 6-foot-tall tube. An irrigation sprinkler at the top sprays a hydrogen sulfide and water solution. Small objects, called bio-balls, are covered with tiny, plastic spines to increase their surface area, fill the tube. A line pumps in the biogas at the bottom end.

First, the sprinkler sprays down the solution and coats the bio-balls. Then, biogas slowly travels up through the coated bio-balls. The solution attracts the impurities and a clean, refined bio-methane gas collects at the top of the tube. The bio-balls and solution act as a filter, which do not require costly replacement like other scrubber technologies, Leonhardt said.

The purified gas is easily compressible and the VRI will use it in Viking 32, a compressed natural gas-electric hybrid, he said.

No one else is producing a compressed natural hybrid powered by bio-methane, which makes Viking 32 a "one-of-a-kind car," said Ryan Cruse, a Western environmental policy major, vehicle design minor and member of the Viking 32 Hybrid Team.

A Honda Civic natural gas engine powers Viking 32's rear wheels and a Unique Mobility electric motor drives the front wheels, Cruse said.

"We are taking hybrid propulsion systems and taking it one step further," he said.

Leonhardt said retrofitting a gasoline engine to run on bio-methane natural gas is possible, but expensive.

"You would have to change out expensive internal components," Leonhardt said.

BAF Technologies is the leader in natural gas and propane vehicle retrofits across the United States, according to the EPA. The company converts Ford and GM vehicles into natural gas or propane-burning vehicles for company fleets and state and federal agencies. But according to the company's Web site, few private citizens retrofit their gas engines because of the enormous expense.

VRI Lab Manager, Ian Bissell said while up-front costs may be high for the natural gas conversion, the savings are long-term with decreased operating and fuel costs.

Bissell said if the scrubber can cheaply purify biogas from dairies, then other dairies would have an incentive to invest in scrubber technology. They could then sell bio-methane to natural gas companies. The gas companies could then use a renewable resource instead of finite, drilled methane, Bissell said.



Small objects, called bio-balls are covered with tiny, plastic spines to increase their surface area, fill the Vehicle Research Institute scrubber tube.

The current price of gasoline has consumers feeling the pinch at the pump. According to the U.S. Department of Energy, crude oil prices reached an all-time high during the third week of April 2006, at \$75 a barrel. In 1998 the price was \$14 a barrel, adjusted for inflation.


Cheap fuel supplies such as biogas could also shift public opinion toward natural gas vehicles and persuade automakers to invest in expanded natural gas vehicle programs, Bissell said.

"When supplies go up, prices go down," he said. "And with gasoline so expensive, natural gas could emerge as the dark horse of the alternative fuels war."

Cruse said as cleaning bio-methane and using it as a vehicle fuel becomes more economically feasible, current practices of igniting excess gas so it does not escape into the atmosphere, will be replaced by scrubbing facilities that clean and sell the gas.

Western's VRI is funding all of their natural gas projects, but has applied for a grant from the EPA to help fund the scrubber project. Paccar, a local automotive design and manufacturing firm, has donated gas tanks for the institute's natural gas projects, and a local dairy provides the biogas.

The VRI holds no patents on the project, and Leonhardt said neither he nor the VRI expect to see any income as a result of their research. He said the project's main goal is to build vehicles powered by a more sustainable fuel source.

According to the EPA, methane emissions since 1990 have been consistently lower than projections because of "voluntary action programs," like the anaerobic digesters and natural gas vehicles. Still, millions of cubic feet of methane escape into the atmosphere every year and contribute to global warming. Technology such as the VRI's scrubber may be a vehicle of change that promotes a better environment for future generations. 

Junior Lance Henderson studies journalism. He has been published in The Western Front, The Cascadia Weekly and High Times magazine.

From Poo to Power

Dairy farmers from Japan to California and Whatcom County, are extracting biogas from cow manure using an anaerobic digester and using the gas to power a combination engine-generator to generate electricity.

Farmers deposit waste into the digester in slurry form, which is a mixture of liquid and solid clumps, said Kyle Juergens, assistant project manager for Andgar Corp., which built and maintains the anaerobic digester in Whatcom County. The digester heats the waste to approximately 100 degrees Fahrenheit and retains it for 22 days to maximize biogas production. Juergens said manure takes that long to digest because it is difficult to break down.

"You have to remember that a cow has already digested the feed so the digester is digesting what the cow did not," Juergens said. "You could think of the digester as an extension of the cow's stomach."

Next, the digester pumps biogas into a combination 270-kilowatt engine-generator, he said.

The top 18 inches of the digester are used for biogas collection. If the generator cannot use the produced biogas, Juergens said, pressure builds inside the digester. Once the pressure reaches a specified point, a pressure-sensitive valve releases and ignites the extra gas to prevent it from entering the atmosphere.

Derek Long, the executive coordinator for Sustainable Connections, said the methane digester has many environmental benefits. Sustainable Connections is a business network that works to establish and support a local economy that sustains itself, the community and a healthy environment.

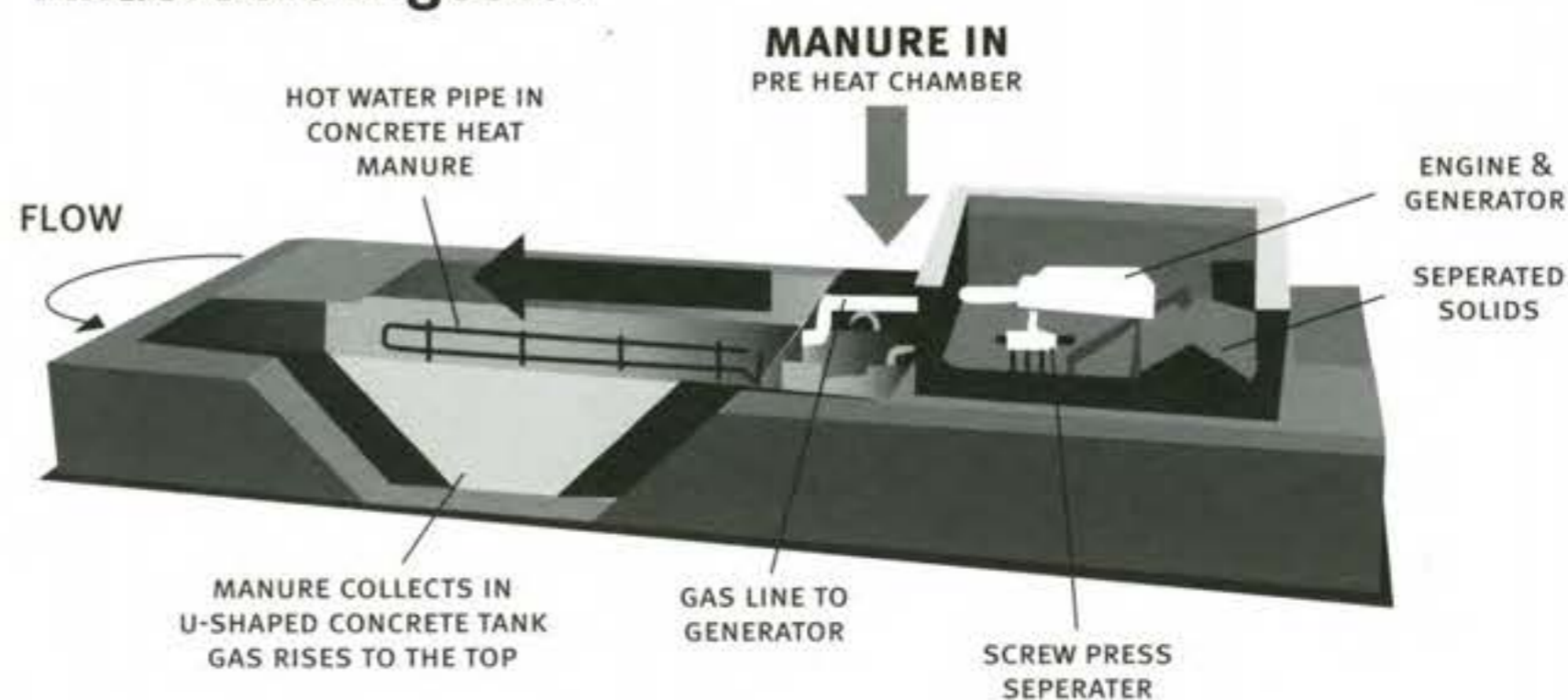
Long said the system captures the greenhouse gas methane and burns it cleanly to produce electricity. The added benefit to the economy, he said, is the farmer is not only producing much or all of their own energy, but they are also getting an additional bit of revenue selling electricity to Puget Sound Energy.

"If Bellingham's interest in green power encourages more dairy farmers to invest in digesters, we will experience terrific economic outcomes and build community at the same time," Long said.

According to National Renewable Energy Laboratory, Puget Sound Energy's Green Power Program is one of the top 10 renewable energy programs in the country. Solar, wind and biomass energy are a few of the renewable resources PSE is committed to expanding, according to the PSE Web site. PSE's renewable energy projects include the construction of two large wind farms in Eastern Washington.

Juergens said while dairies can use the electricity generated by the digester, the Vander Haak dairy sells it straight to Puget Sound Energy and buys back what it needs.

Anaerobic Digester



Source: Andgar Corporation

GREEN from the GROUND UP

by Kadi Matherne
photos by Laura Greaby

At first glance, Andy Walker's house appears like any other new home under construction. Thudding hammers and whirring saws echo throughout its hollow frame. The scent of earth and sawdust hangs in the cool spring air. But besides the ordinary sights and sounds of construction, something unique is taking place.

Walker chose to construct his home using the procedures of Built Green, a house design program dedicated to reducing the environmental impact of construction. Built Green is a nonprofit organization, partnered with the Building Industry Association of Whatcom County, which provides local builders with a method to certify their projects as environmentally friendly.

Walker said quick and easy construction is taking its toll on the environment and he and a handful of local developers are seeking a better way of building.

Strolling around the build site, Walker pointed to some of the Built Green features of the development, such as reuse of natural materials that builders traditionally throw away.

"We use woodchips all around the site to control erosion while we build," he said. The tree trunks will later be hauled off for Nooksack Salmon Enhancement Association stream restoration projects, Walker said.

A pile of dirt the size of a small car was moved to make way for the house's foundation and will be used in the vegetable garden at the side of the house, Walker said.

Reusing natural materials is just one of the principles used in making modern homes greener. Much of the Built Green process happens before the first shovel even hits the dirt. Builders consider many factors before construction begins in order to make the most out of the land. These concerns include factors like climate, water flow, natural light and native vegetation.



"Green building is hard work. But most things that are of value are."

Brian Evans
owner of Green Mountain Homes

A geothermal heating system uses the Earth's ability to store heat in the soil. These systems, also called ground-source heat pumps, capture this steady supply of heat energy and move it from the earth to the building.

"There are 46 windows in this little house," Walker said, basking in the warm glow from the bay window in the master bedroom. "Why waste electricity when the sun's right here?"

Well-planned window placement makes the house more energy efficient during the day by using less energy to heat and illuminate the house, Walker said.

Walker said some of the most valuable parts of green building are not visible.

"I'm installing a geothermal heating system in this house, which is underground magic, if you ask me," Walker said leaning against a silver furnace pipe.

A geothermal heating system uses the Earth's ability to store heat in the soil. These systems, also called ground-source heat pumps, capture this steady supply of heat energy and move it from the earth to the building.

According to the article "Mining the earth for heat," geothermal heating systems use 25 to 70 percent less energy than conventional systems like electricity or natural gas, and can reduce energy bills from \$35 to \$70 per month.

Bill Querhn, BIAWC executive vice president and one of the founders of Built Green in Whatcom County, said it takes an average of 10 years for green appliances to pay for themselves.

Walker said his employer, Brian Evans, inspired him to make his home more eco-friendly. Evans owns Green Mountain Homes, a housing construction company dedicated to green building.

"We as a company feel that green thinking is important," Walker said. "Planning is so paramount, and it should be done more in general construction."

Evans' company is one of the founding members of the Built Green organization in Whatcom County.

"Some people have been using these kinds of green building techniques for years," Evans said. "This program is simply

putting those methods into quantifiable measurements in hopes of creating a standard for the future."

A-1 Builders in Bellingham is ahead of the curve in green building. It is recognized as one of the region's premier building contractors working towards more sustainable construction practices.

Cindi Landreth, a residential designer and co-owner of A-1 Builders, said her company is not affiliated with the Built Green program because it has been building responsibly since 1955.

"We are thrilled that the BIAWC and Built Green are moving forward with this philosophy," she said. "But we chose not to get involved because we are already there."

Landreth said A-1 Builders works with people who are environmentally minded. She and her customers are deliberate in their stand for more sustainable home building and remodeling. However, she said that Built Green is a baby step in the right direction for the industry because it makes sustainable development more palatable to the builder as well as the consumer.

"The biggest concept that we believe in, though, has yet to be stressed by Built Green,"

Landreth said. "Size really does matter. A 3,000 square foot house just isn't green."

A-1 Builders encourages consumers to build small because building size is where the largest environmental impact truly lies, she said. A huge house with five bedrooms and a three-car garage has much more of an impact on the environment than a two bedroom cottage, she said.

Whether the building industry chooses to face the impact of a growing population, the United States will. According to the article "Toward a new metropolis: The opportunity to rebuild America," the United States will need 100 billion square feet of new residential space by 2030 to house its growing population.

"If we're going to get the building industry onboard with sustainable building, we need to start with the consumers," Landreth said. "We as a society need to shift our awareness as homeowners and consider that we are part of a community, and our individual homes impact that community."

Querhn said the key is in making the environmental impact of each new build as light as possible.

"Any way you look at it, we are going to



[Above] Andgar Heating installer, Chris Paris, works on installing a heating unit in Andy Walker's house.

[Opposite] Construction on Walker's house includes a number of Built Green features, one of which is geothermal energy.



need more houses,” he said. “If we’re going to make an ecological footprint, we should at least try to make it a small one.”

The Built Green program created a point system for builders to follow in order to certify their projects as green homes. Builders earn these points by preserving natural soil and vegetation at the build site, recycling materials, using non-toxic chemical products and using efficient heat, light and water systems in the house.

“Built Green was designed to keep the building industry ahead of government regulation, rather than just being responsive to it,” Querhn said.

The BIAWC was the fourth local building association in the state of Washington to incorporate a Built Green program into its organization. King, Snohomish, Pierce, Jefferson, Kitsap and Thurston Counties also have Built Green Programs.

Evans worked with Querhn in 2003 when Built Green in Whatcom County was still in the conceptual stages.

“Like all other good ideas, this had to start somewhere,” Evans said. “And it’s time our industry started to embrace conservation and efficiency.”

Querhn said the program still has a ways to go. Since 2003, only 12 homes in Whatcom County have been built with Built Green certification.

“The main thing that deters people from buying green homes is the price,” Querhn said.

The extra time and effort needed to construct an environmentally conscious home can make its starting price 10 to 20 percent more expensive than a similar house built with conventional methods, he said.

The planning and preparation involved requires more of the builder and the buyer than the average home construction, Evans said.

“Green building is hard work,” Evans said. “But most things that are of value are.”

Walker said he hopes that consumers will see the value they get when investing in a Built Green home. Green Mountain Homes has started another green home project without securing a prospective buyer. Walker said he is confident that the added value of the house will sell itself.

“For most people it’s not the green in the environment that makes their decision, it’s the green in their wallet,” Walker said. “But what most people don’t realize is that making your home more efficient really pays off in the long run.”

Senior Kadi Matherne studies both journalism and public relations. She has been published in The Western Front and Klipsun Magazine.

BUILT GREEN PROCESS

Built Green certification is on a sliding point scale. Each technique or procedure has a point value, and based on the number of points accrued, a builder can determine which level the product can be certified. Builders follow more than 280 different procedures in this process. The following are a few examples of those procedures.

SITE PROTECTION

- ‡ Set aside a percentage of the site to be left undisturbed
- ‡ Preserve existing native vegetation as landscaping
- ‡ Use erosion control devices such as woodchips and sediment traps
- ‡ Replant or donate removed vegetation for immediate reuse

OUTDOOR WATER

- ‡ Use a water management system that allows groundwater to recharge
- ‡ Install at least a partial vegetative roof system to reduce impervious surface runoff
- ‡ Limit use of turf grass to 25 percent of landscaped area

INDOOR WATER

- ‡ Install plumbing to capture graywater for reuse
- ‡ Install low-flow sink fixtures
- ‡ Install dual flush toilets
- ‡ Provide food waste chutes and compost instead of garbage disposal

ENERGY EFFICIENCY

- ‡ Install a solar water heating system using the south-facing roof area
- ‡ Use light tubes and skylights to increase natural light
- ‡ Install a geothermal heating/cooling system

MATERIAL EFFICIENCY

- ‡ Use marmoleum for bathrooms, laundry and kitchens
- ‡ Use a sustainable wood source for flooring, preferably bamboo
- ‡ Use re-milled salvaged lumber, certified sustainable by a recognized third party
- ‡ Use locally produced materials from the Pacific Northwest

JOBSITE OPERATIONS

- ‡ Prepare a jobsite recycling and reuse plan before beginning
- ‡ Use recycled products and materials whenever possible
- ‡ All paints, glues, finishes and carpets must be low VOC

DEFINING GREEN

GRAYWATER - domestic wastewater that does not contain human wastes such as tub, shower, or washing machine water that can be reused in other capacities

DUAL FLUSH TOILETS - technology which allows the user to select a short flush (3 liters) for liquid waste or a long flush (6 liters) for solid waste, thereby saving a substantial amount of water

LIGHT TUBES - innovative tubular skylights that capture sunlight from a rooftop and redirect it down a highly reflective shaft, diffusing it throughout an interior space

MARMOLEUM - a flooring alternative to linoleum made from linseed oil and other naturally occurring materials

VOC - Volatile Organic Compounds are toxic substances found in many building products. Low- and no-VOC products release no, or minimal VOC pollutants into the air

Source: Built Green Web site

RESOURCES

WANT TO LEARN MORE?

The following is a list of sources compiled by reporters and editors for those who want to learn more about the stories reported in this issue.

BLANCHARD MOUNTAIN

Friends of Blanchard Mountain

www.blanchardmountain.org

Department of Natural Resources

www.dnr.wa.gov/htdocs/agency/blanchard

Current High Country News about healthy forests initiative

www.hcn.org

WANAMBISI WESAKANIA

Official Eco-Garden Site

www.awish.net/Africa/ecogarden.htm

BUSH-MIMICRY

"An Open Letter to the Prime Minister of Canada on Climate Change Science"

http://cfcas.org/sitemap_e.html

"Warmest winter raises climate worries"

http://reports.discoverychannel.ca/servlet/an/discovery/1/20060314/discovery_winter_060314/20060314?s_name=&no_ads=

Speech delivered by Canadian Minister of the Environment

Rona Ambrose on solutions for climate change

www.ec.gc.ca/minister/speeches/2006/060331_s_e.htm

"Climate Change, Adaptation, and 'Endangered Salmon' In Canada"

www.fishclimate.ca/pdf/sar2004/13irvine.pdf

Canadian Foundation for Climate and Atmospheric Sciences

www.cfcas.org

Environment Canada

www.climatechange.gc.ca/english

Canadian Center for Policy Alternatives

www.policyalternatives.ca/for_the_media/index.cfm

Meteorological Service of Canada

www.msc-smc.ec.gc.ca/cd/index_e.cfm

Canadian Ministry of Forests and Range

www.gov.bc.ca/bvprd/bc/channel.do?action=ministry&channelID=8385&navId=NAV_ID_province

David Suzuki Foundation

www.davidsuzuki.org

PURIFYING A NEW POWER

For more information about methane science, sources and emissions and voluntary action programs, visit

www.epa.gov/methane

Andgar Corporation Methane Digester

www.andgardigester.com

A NEW VIEW

Building Industry Association of Whatcom County

www.bellinghamfarmers.org

A-1 Builders

www.a1builders.ws

The Re-Store

www.re-store.org/bham.htm

THE EVERGREEN STATE

Full text of the initiative:

www.secstate.wa.gov/elections/initiatives/text/i937.pdf

Official website of the initiative

www.yes0937.org

PSE's green power page

www.pse.com/solutions/home_greenPower.aspx

Energy Information Administration

www.eia.doe.gov

PICKING THEIR POISON

Environmental Working Group

www.ewg.org

Environmental Protection Agency Pesticide Information

www.epa.gov/pesticides/about/index.htm

Community to Community Development

(360) 738-0893

Organic Farming Research Foundation

www.ofrf.org

THE BUSH REPORT

Source Watch

www.sourcewatch.org

Corp. Watch

www.corpwatch.org

Judicial Watch

www.judicialwatch.org

BAKER'S RETREAT

North Cascades Glacier Climate Project

www.nichols.edu/departments/glacier

TOXIC GUMBO

Common Ground Relief

www.commongroundrelief.org

The New Orleans Times – Picayune

www.timespicayune.com

GREEN FROM THE GROUND UP

Franklin Energy Services

www.energymatch.com

Built Green Washington

www.builtgreenwashington.com

Built Green Whatcom

www.biawc.com/builtgreen

