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Ecotones: The Heartbeat of Huxley, 2001, Spring, Issue 04

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ecotones

"The heartbeat of Huxley"

Huxley College of the Environment

www.ac.wvu.edu/~ecotones

Spring Quarter, Issue 4

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Got Internet?

www.ac.wvu.edu/~ecotones
Ecotones Online has calendar events, a discussion board, and more!

Adventures in Cars, Fuel and Cooking Oil

By Emi Morgan

Imagine hopping into an old diesel bus with some friends and hitting the road, free to explore the open country. Better yet, imagine never having to stop at a gas station. With the help of spare cooking oil, this vision can become reality.

After some simple alterations, recycled cooking oil can be used as fuel in any diesel vehicle. It is termed bio-diesel or "life-based" fuel, as opposed to the standard petroleum-based byproduct of gasoline.

Orión Polinsky, a Huxley student with a self-designed science major in renewable energy is working this quarter to create his own fuel. Last year, a friend offered Polinsky a 1981 diesel Volkswagen Dasher in exchange for his old car. Polinsky made the trade,



Orión Polinsky smiles knowing he is preserving the quality of the environment by designing bio-diesel
Photo by Emi Morgan

but rarely drove because he did not want to buy gas and support an industry he disapproved of.

He said, "If I'm going to drive I should at least be conscious of what goes into my car."

Polinsky knows peo-

ple who create bio-diesel fuel in their kitchens and are able to power their cars with used vegetable oil. He has also worked in restaurants and witnessed the vast amounts of fryer oil that must be discarded each night. Restaurants are required

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Cooking oil (continued)

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to separate the oil and pay to have it specially disposed. According to From the Fryer to the Fuel Tank by Joshua Tickell, every year the fast food industry produces three billion gallons of cooking oil waste.

Fascinated with the idea of running his car on recycled oil, Polinsky began to research the possibilities of bio-diesel fuel. He discovered that it was environmentally sound, cheap, and easy to make. Bio-diesel can be created from any type of vegetable oil including coconut, canola, safflower, soybean, hemp, corn and peanut oils. These oils can be used singularly, or mixed with each other and petroleum diesel. The possibilities are endless.

Polinsky is working with fellow Huxley student, Mateo Ledenham, to make bio-diesel fuel a reality. They are using the water quality lab with the assistance of professor John Rybczyk. They hope to create bio-diesel, test it, and use it in their own vehicles.

Rybczyk is "learning together" with Orion, who is "very motivated about the independent study."

Through their research, Polinsky and Ledenham have discovered one key aspect to preparing oil is removing its natural glycerin. If left alone, the glycerin coagulates, or turns into a jelly-like substance, clogging engines. To remove the glycerin, one part of a catalyst, methanol, should be added to four parts oil. Methanol is a waste product of pulp mills and can

be obtained from chemical specialists such as Western's Chemistry Department. After 5 minutes of strenuous shaking and eight hours of occasional sloshing and waiting, a substance of 80% bio-diesel floating atop of 20% glycerin remains. Easily taken off the top, the fuel can be added to any diesel engine.

When used as a fuel, bio-diesel is much cleaner than petroleum-diesel. It reduces carbon dioxide emissions by 100%, sulfur dioxide by 100%, soot emissions by 40-60%, carbon monoxide by 10-50%, and hydrocarbons by 10-50%. It also reduces all polycyclic aromatic hydrocarbons (PAH's), which are carcinogenic.

According to Polinsky, using bio-diesel will make a "gigantic difference for the quality of the environment."

Along with being environmentally friendly, bio-diesel is much cheaper since most restaurants are happy to have someone dispose of

their oil waste. When compared with petroleum-diesel, bio-diesel performs identically in vehicle engines.

The main reason that bio-diesel fuel has not become widespread stems from the fact that petroleum-diesel is a waste product of gasoline. Major corporations that produce gasoline, make more money by marketing the excess diesel.

Although large oil companies are doing their best to keep bio-diesel out of engines, consumer knowledge of this alternative fuel is spreading. Polinsky recently visited a company in Hawaii who recycles all of Maui's restaurant grease. They convert it into bio-diesel and sell it for five cents more than petroleum-diesel.

"The potential for bio-diesel is unlimited," Polinsky said, "and I just want to explore it." In reference to a future road trip, he laughs and admits, "That's what inspires me - the idea of people driving across the country on used vegetable oil."☀

"The potential for bio-diesel is unlimited," Polinsky said, "and I just want to explore it."

Ecotones Online Discussion!!!

Have you got something to say?

BE HEARD

on the Ecotones discussion board.
www.ac.wvu.edu/~ecotones

Mad cowboy sees red

Food safety advocate voices disgust with American meat industry

By Courtney Brousseau

"We are digging more graves with our forks than with any other tool."

These were the words of Howard Lyman, ex-cattle rancher turned vegan and author of MAD COWBOY: Plain Truth from the Cattle Rancher Who Won't Eat Meat. Slotted as the "most unconventional farmer you'll ever meet", Lyman spoke Tuesday night about the dangers lurking in a meat-eater's diet.

A fourth generation farmer from Montana, Lyman operated a feedlot for 20 years before selling his ranch. He began helping farmers in financial trouble, acted as a lobbyist in Washington D.C., and ran for Congress in 1982. He is currently the president of EarthSave International, an organization that inspires and educates people about a planet-friendly diet centered on vegetables, legumes, fruits, and grains.

On stage, the ex-rancher spoke of how the U.S. cattle industry potentially exposes Americans to Mad

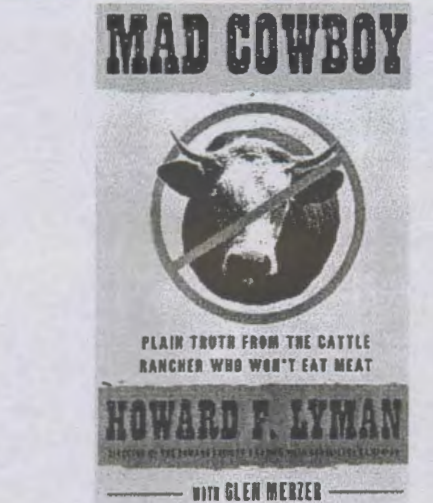
Cow Disease by feeding cows the remains of animals, including other cows.

"I believe the disease is here," Lyman said. "Mad Cow disease is a problem. But we don't want to tell the American people that they are being lied to."

He denounced the use of chemical compounds such as herbicides, pesticides, and carcinogens and warned of the effects they have on humans.

Weaving in his own personal history, Lyman spoke of how he used to feed his cattle food filled with antibiotics and hormones such as recombinant bovine growth hormone (RBGH) to enhance milk production. He covered his farm with herbicides and pesticides. This chemical farming technique is common practice throughout the United States.

Lyman recounted a study conducted in the Great Lakes region. Evidence of PCB's and dioxins, two lethal chemicals, was found in women's breast milk. The chemical



Mad Cowboy and author Howard Lyman spoke about the trouble with meat.

traces were linked to fish the women had eaten that were taken from the Great Lakes. When tested, researchers discovered that the fish had concentrations of carcinogens that were 100,000 to 1 million times higher than the surrounding water.

"The higher on the food chain a species is, the more chemicals and carcinogens it ingests," Lyman said. This is a reminder of the repercussive effects of chemical use in sphere of life. By lacing livestock diets with hormones and pesticides, humans in turn ingest the same chemicals, only in increasingly concentrated amounts.

Lyman summed up his crusade's message by saying, "No animal has to die for me to live."☼

Professor lectures on dirt

By Matt Parker

How much time have you spent thinking about dirt lately?

Are your weekends filled with intense conversations about nitro-

gen, microbes and decomposing banana peels?

Even if you did ponder the essence of this ubiquitous brown substance, you might end up disappointed. After all, according to Huxley Associate Professor Peter

Homann, it is very challenging to study soil and come out with clean conclusions (pun intended).

In a seminar Wednesday entitled "Soils in the Global Change Context: Observation, Experimentation, Modelling" Dr. Homann discussed the possible relationships between carbon levels in soil and air temperature; re-

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Mission Statement:

Ecotones is a student publication devoted to providing a voice of the Huxley community and reporting on current events and issues affecting everyone.

Dirt

(continued)

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relationships that could have important implications for plant and animal life facing global temperature increases in the future.

Homann, who worked for the EPA during his college years, explained some of his research, including discoveries regarding the relationship between carbon levels

in Pacific Northwest soils and temperatures. His findings, which showed a direct relationship between surface temperature and carbon level, contrasted the findings of similar research done in different regions by other soil scientists, showing just how difficult it is to reach conclusions.

Despite the challenges of soil studies, Homann was confident of one thing; current models that use soil factors for predictions are not

good enough. Soil data used by policy makers, including that which is used in dozens of computer models, has important policy implications. It is used for economic planning, like timber productivity forecasts in Montana, thus it is important to create the most accurate models possible.

Homann summed it up, "All along, I've tried to bring up uncertainties. No one path (of research) is going to lead to a conclusion."☀

What's Up?

Tuesday, May 1

Spring Quarter Blood Drive: Come get free cookies and juice! Viking Union 565, 10:00AM-4:00PM.

May Day Festival For Global Solidarity: Food, music, games, and dancing. Maritime Heritage Park, begins at 5:00PM.

Backpacking 101: Learn proper backpacking skills by John Bobovski as he teaches about pack differences, gear, and clothing. 6:00PM, REI (400 A 36th St.). Free.

Sunset Kayaking Around Larrabee Park: Sponsored by the Outdoor Center. Meet at Outdoor Center Office, 3:00PM. \$18 students, \$27 non-students.

Defying Gravity: The Wonders of Flight: Interactive exhibit featuring wing structures and flying patterns of birds, bats, seeds, and insects. 12:00PM-5:00PM Sundays, Tuesdays and Wednesdays, and 10:00AM-5:00PM Thursdays through Saturdays. Whatcom Children's Museum (227

Prospect St.) \$2.50 non-members. Free for members.

Wednesday, May 2

"Mikado" Lecture: Native Tricksters and Pranksters: Juanita Jefferson, head of Lummi Archives and 1984 Fairhaven alumni, shows how native cultures use satire and humor to expose human weaknesses. Fairhaven College 307, 5:15PM. Free.

Spring Quarter Blood Drive: Viking Union 565, 10:00AM-4:00PM.

Thursday, May 3

National Missile Defense System Forum: The Green Party of Skagit County present information at the Unitarian Universalist Church (500 W. Section St., Mt. Vernon), 7:00PM-9:00PM. Free.

Land-Use Effects on Carbon Flux in Pacific Northwest Forests: Dr. David Wallin, professor from Huxley's Center for Environmental Science, discusses how local land-use contributes to global climate change. Science Lec-

ture 140, 12:00PM. Free.

Spring Quarter Blood Drive: Viking Union 565, 10:00AM-4:00PM.

Friday, May 4

Creating Memories for the New Millennium: In celebration of Western's Showcase Family Weekend, come make free use of kayaks; canoes, rowboats, sailboats, BBQ equipment, windsurfing equipment and more. 2035 Lake Whatcom Blvd, 10:00AM. Free.

Sunday, May 6

Galeraith Afternoon Ride: Provide own bike and helmet. Sponsored by the Outdoor Center. Meet at Outdoor Center Office, 3:00PM. \$5 students.



Recycle Me!

E-mail Ecotones with your calendar event: contact_ecotones@hotmail.com