



People and Nature: Our Future is in the Balance

National Wildlife Federation®

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**Alaska Pacific University
Anchorage, Alaska
Spring 2004, Transportation**

BACKGROUND

Campus Profile

Alaska Pacific University (APU) is a small private university of approximately 600 students, located in Anchorage, Alaska, which, at 250,000 people, is Alaska's largest city. APU bills its pedagogical philosophy as "active learning," placing students in problem-solving situations under personal guidance by professors, to encourage students to "learn by doing." Degrees offered by the school include both an undergraduate and a graduate program in Environmental Science, as well as an undergraduate major in Outdoor Studies. APU recently affiliated itself with Eco-League, an intercollegiate consortium committed to the promotion of ecological sustainability, in which participating schools adhere to certain environmental ethics in addition to offering students study-exchange opportunities.

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GOALS AND ACCOMPLISHMENTS

Goals

The purpose of this project was twofold. First, APU established a biodiesel workshop for undergraduate and graduate students as part of the Summer Field Session on Sustainability. The Session on Sustainability offers a series of two classes and a practicum with the goal of exposing students to the concept of integrating ecological sustainability into economic development. Students live and work cooperatively on APU's Kellogg Campus, affectionately known as "the farm," a 700-acre retired dairy farm near Palmer, Alaska, 40 miles north of Anchorage in the Matanuska Valley. In their practicum, students apply what they learn in class by focusing on specific project areas, such as sustainable agriculture, alternative energy and construction, and community planning.

Students enrolling in the workshop will be taught in a way consistent with APU's vision of active learning. The workshop will offer both a lecture and a practical component. Students will learn the ecological benefits of alternative fuels and make batches of biodiesel, which will be

used in a diesel vehicle or generator. Other topics that will be discussed in the practicum include global petroleum dependence and the benefits and limits of alternative fuels.

Second, this project hopes to establish an alternative source of fuel for both students and communities in South-Central Alaska by launching a biodiesel cooperative. Students will produce biodiesel and promote biodiesel in the community by establishing a biodiesel co-op in South-Central Alaska, the first of its kind in the state. Biodiesel produced by students in the practicum and beyond will be used in campus vehicles and generators.

Accomplishments

A workshop description and syllabus have been developed for the workshop, and a date has been set for the event. Additionally, a biodiesel processor was constructed, and to date, one successful batch of biodiesel has been produced. A partnership has been created with a local restaurant to supply the project with a continuous, reliable source of used vegetable oil. Further, dialogue with the Anchorage public school system has begun and has ranged from topics such as classroom PowerPoint presentations to hands-on workshops. Community response to this project has been very encouraging. In addition to interest from the Alaskan bush community in using biodiesel in diesel generators to lower high fuel costs, local greenhouses have expressed enthusiasm about the idea of using biodiesel generators to lengthen the short Alaskan growing season. An incipient state-wide biodiesel association, composed of people interested in producing biodiesel on a large scale, has also been developed through the course of this project. In anticipation of this occasion, we are in the process of trying to assemble a 500-gallon biodiesel processor.

The overall long-term environmental results of the project will be (1) to introduce students at the Kellogg farm to the techniques and rationale for producing a sustainable produced alternative fuel, (2) to expose students and residents of Anchorage to biodiesel and the ecological benefits associated with it, (3) to reduce the high levels of smog and air pollution in Anchorage and (4) to reduce unsustainable dependence on fossil fuels.

Challenges and Responses

The biggest challenge during the course of this project was securing supplies in a state where certain materials are hard to obtain. This was encountered on several occasions while we were constructing the biodiesel processor (a 55-gallon drum outfitted with a motorized mixer, a filter and a heating element), mostly by trial and error, which was a problematical process.

Troubleshooting was, well, a lot of trouble, especially when all that was needed at times was a certain size of hose or a fitting that seemed to be unavailable anywhere in Alaska and had to be ordered from the Lower 48. This not only was an unforeseen expense, it also extended the project timeline. In this case, the only resolution available was to order the part and hope that it would fit. Another challenge was budgeting time for a burgeoning project that rapidly began to demand large amounts of attention and energy, while also attempting to find time to focus on a graduate course load and a full-time job. A solution to this particular problem was to encourage community and student involvement. Signs were posted around campus advertising for "biodiesel assistants," especially those students interested in using involvement with the workshop as a senior project or an independent study. Consequently, three other students committed to various aspects of the project and have contributed greatly to the initial vision.

ENGAGEMENT AND SUPPORT

Leaders and Supporters

In terms of contacts, advice and potential funding opportunities, the Alaska Center for Appropriate Technology has been an enormous source of support throughout the course of this enterprise. Mark Masteller, the director of the center, has been of particular help. Additionally, Polly Carr, of the National Wildlife Federation's Alaska Regional Office, has also assisted with networking activities and project outreach. Furthermore, Alaska Pacific University was indispensable to the success of this project in the form of donated materials and supplies.

Funding and National Wildlife Federation's Campus Ecology® Program

Funding for this project was acquired through the National Wildlife Federation's Campus Ecology Fellowship program. Additional sources of funding were difficult to obtain, largely because this is a very hands-on project, not a research project. Supplementary funding sources are still being pursued. To date, total project costs are around \$1,200. Auxiliary support has come from Matt Hughey and Jeff Heys, colleagues at Alaska Pacific University. Matt's insights and mechanical skills (particularly those involving the building of the biodiesel processor) were vital to the continuation of the project. Also imperative was Jeff's chemistry background, and perhaps most helpful, his managerial and networking skills.

CLOSING COMMENT

Receiving the National Wildlife Federation's Campus Ecology Fellowship grant has kept my preliminary idea alive, nurturing it with frequent e-mails chock full of advice, contacts and suggestions. Continued support in the form of assigned project reports and conference calls have buttressed this project and allowed it to grow in different directions than what I first anticipated. My advice for anyone undertaking a similar sort of project is to think creatively when encountering setbacks (and to expect them to happen!), involve as many people with disparate skills as possible, and do not be hesitant to commit yourself, but be careful not to commit too much at any one time.