

War-on-Weeds Project 2005

Introduction

The Environmental Surveillance, Education and Research Program (ESER) conducts, manages and coordinates ecological and environmental research, offsite environmental surveillance, and environmental education for the Idaho National Engineering and Environmental Laboratory (INL). To further ESER's environmental education objective, the ESER Program created the War-on-Weeds Project to involve local high school students in identifying and mapping noxious weeds on the INL and surrounding counties. In 2005, two teams from Butte County High School were recruited for the War on Weeds projects



Noxious Weeds

A weed is designated noxious when it is considered by a governmental agency to be injurious to public health, agriculture, recreation, wildlife, or property. In Idaho, noxious weed regulations are covered by Title 22, Chapter 24 of the Idaho Code.

Noxious weeds, by definition:

- Have the ability to spread rapidly
- Reproduce in high numbers
- Crowd out native plants
- Tend to be very difficult to control

The Noxious Weed Law requires landowners, including the Department of Energy, to eradicate noxious weeds on their land. Of the 35 Idaho weeds that have been defined as noxious, 12 are found on the INL.

Detection of noxious weed infestation is an early step in their control. Mapping weed locations helps weed control agents develop effective strategies to eliminate these biological invaders.

Project Description

The War-on-Weeds project encourages students to identify and solve local community problems. In order to provide War-on-Weeds interns with real-life problems and real-life solutions, the ESER Program has developed collaborative agreements with government agencies including Bingham County and Lost River Cooperative Weed Management Areas, the Department of Energy, the Idaho National Engineering and Environmental Laboratory (INL), the National Park Service (Craters of the Moon), and the Department of Agriculture.

The War on Weeds Project is a “learn by doing” project that employs students for a six-week period. The students map noxious weeds on the INL and surrounding communities using Global Positioning System (GPS) units to establish weed locations and identities for the Idaho State Department of Agriculture (ISDA) and INL. The GPS locations are then integrated into Geographic Information System (GIS) technology for map production. The maps identify noxious weed species and their specific locations, enabling efficient treatment or control

Selection of student team members is based on academic achievement and commitment to complete the program.

During the War on Weeds Project interns learned:

- Why noxious weeds are of such great concern.
- To identify noxious weeds found on INL and surrounding areas.
- To manipulate Global Positioning System (GPS) units and gather data.
- To use ISDA-established data dictionaries to synchronize data collected by the War-on-Weeds team with other data collection agencies in the State of Idaho.
- To manage data collected for inclusion in Idaho State Department of Agriculture and INL noxious weed maps.
- To produce weed maps using GIS.
- To develop marketable job skills (GPS/GIS technology).
- To work together as a team.
- To gather, analyze and present data.
- To perform basic science research techniques.
- To develop critical thinking and problem solving skills.



War-on-Weeds 2005

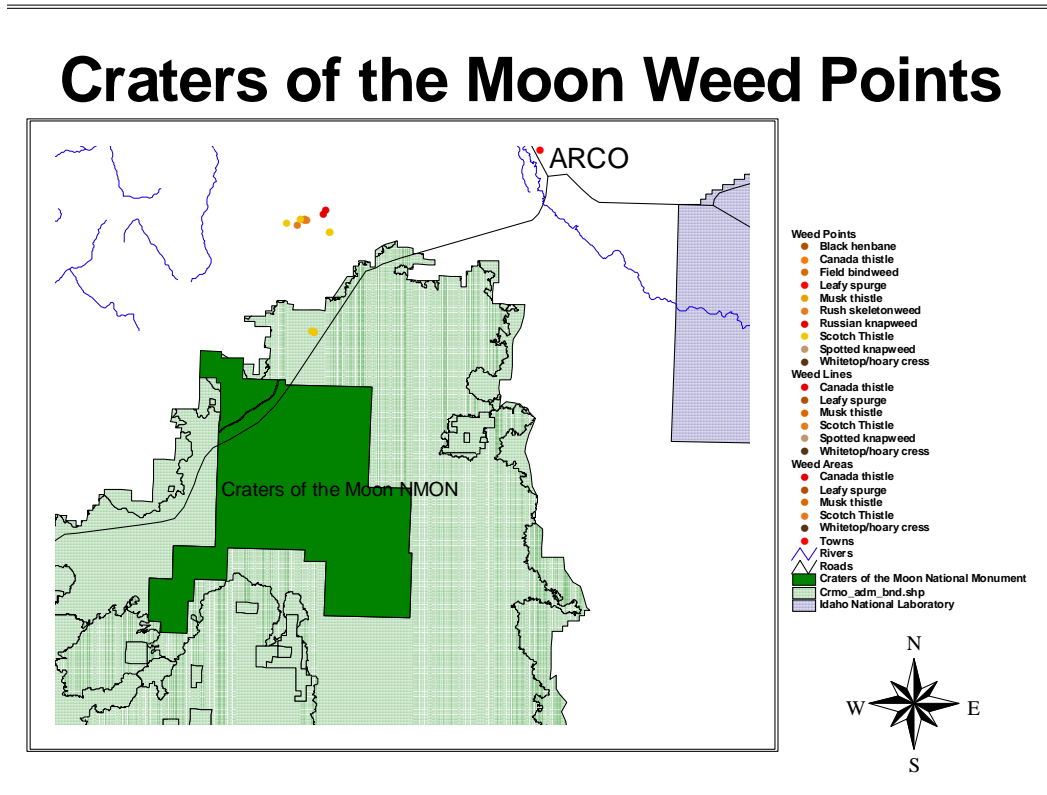
Six team members were recruited from Butte County High. College students acting as team leaders were recruited from Brigham Young University-Idaho and Idaho State University. The 2005 War on Weeds program began June 13th and ended July 21st.

During the first three weeks of the internship, the teams mapped the Big Lost River drainage and surrounding area north of Highway 20/26 that lies within the Idaho National Laboratory (INL) and Butte County for noxious weeds, as shown in the following map. The teams mapped approximately 20 miles of Big Lost River drainage and 64,000 acres while working on the INL. Alana Jensen,

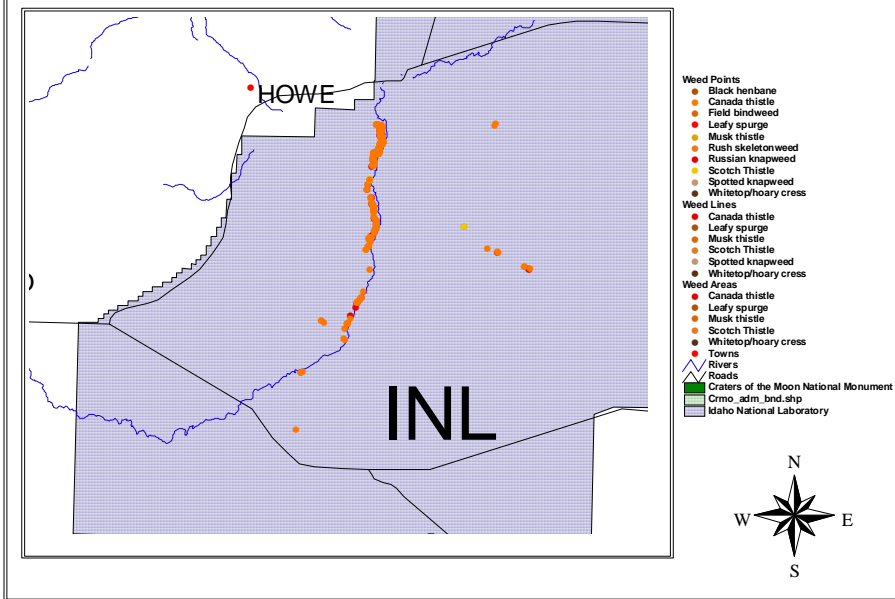


Environmental Surveillance, Education and Research Program, supervised this portion of the program and provided training.

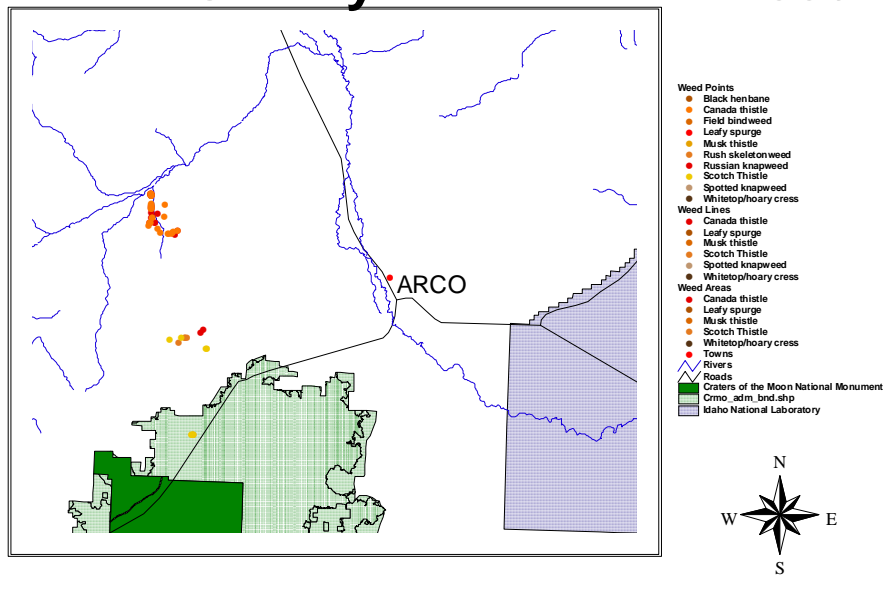
The last three weeks of the internship, the teams spent time mapping noxious weeds on the Craters of the Moon National Monument and within Butte County. Approximately 75,000 acres of Butte County and 26,000 acres of Craters of the Moon were mapped. Brad Gamett, superintendent of Butte County Noxious Weed Department, and Paige Wolken, Craters of the Moon National Monument botanist, provided supervision during this portion of the project.



INL Weed Points 2005



Butte County Weed Points 2005



Noxious weed data collected by the War-on-Weeds teams is submitted to the ISDA- and INL-noxious weed databases. INL will follow the student team with chemical and mechanical weed control, using the GPS locations collected by the students.

Students also participated in four Education Days this year. Education days included:

- Knapweed Biological Control – Mark Schwarzlaender, University of Idaho, taught about knapweed bio-control. Bingham County War on Weeds interns were also invited to the session. After the lecture, students toured the Gay Mine on the Fort Hall reservation to see results of past knapweed biocontrol releases.
- Craters of the Moon Day – Students were given a tour of Craters of the Moon's Arco tunnel.
- Geology Day – Students toured lava tube caves on the INL and hiked Big Southern Butte to observe local geological history.
- MFC Tour – Students toured the Materials and Fuels Complex with INL tour guide, Don Miley.

Lessons Learned

Teams became proficient at GPS/GIS technology, worked well together, and compiled useful data during this project.

WOW teams receive extensive safety training on the first week of the project:

- Teams were trained in weed identification and GPS/GIS systems.
- Teams were trained on safe dirt road driving, including checking under vehicle for trapped weeds and staying on-road.
- Teams were trained in fire safety, rattlesnake safety and first aid.
- Teams were required to have a safety meeting and to sign and turn in a safety checklist daily.
- A vehicle with higher clearance was used for the WOW project again this year.

Plan for Next Year's Program

- Funding will be sought for additional weed mapping teams.
- Teams will be given opportunity to conduct biological weed control research projects under the direction of University of Idaho biological weed control professor, Mark Schwarzlaender.

Conclusion

"Idaho, like many states in the West, has a serious noxious weed problem. Often called a resource issue, it is in reality, like many "issues", mostly a "people" problem. Noxious weeds, like floods and wildfires, respect no ownership or jurisdictional boundaries. The negative impacts of noxious weeds are equally felt on private, state and federal lands. Likewise, the ability to turn the tide on noxious weeds will depend on the ability and willingness of local people of many stripes to work together under the umbrella of common goals, priorities, and genuine commitment. The best known and tested way to do this is through the mechanism of a Cooperative Weed Management Area (CWMA). Following any one of several existing

models, the CWMA concept can unleash the creative power and action of local people. Real change rises up. “

Glen Secrist, Idaho State Department of Agriculture

War-on-Weeds 2005, working under the umbrella of the Lost River CWMA, was successful in uniting federal and state agencies to work together for a common goal. The Department of Energy is required by the State of Idaho, as a landowner, to control noxious weeds within the INL's boundaries. The War on Weeds Project helps accomplish this obligation, while providing educational opportunities to area students. Data collected for the Idaho State Department of Agriculture from the INL, the National Park Service and the Lost River Irrigation System fulfills its obligation to administer the State Noxious Weed Law.



The War-on-Weeds Projects benefits the interns involved in the project, the DOE, ISDA, and the surrounding communities. These benefits include:

1. Public awareness of ecological concerns at INL and surrounding communities, specifically noxious weeds.
2. Student involvement in learn-through-doing science projects.
3. Student participation in solving a real-world, local community problem.
4. Collection of scientific data that is useful to government agencies.

Acknowledgements

- ESER Program – Training, supervision and recruitment
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- Craters of the Moon National Park --Supervision
- Idaho State Department of Agriculture – Funding
- U. S. Department of Energy – Funding and loan of a GPS unit
- Associated Western Universities – Administering of internship and insurance
- Lost River CWMA – Funding support
- Bingham County War on Weeds teams – Education days coordination

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