

War-on-Weeds Project 2004

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 (INEEL). 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 INEEL and surrounding counties. In 2004, 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, 10 are found on the INEEL.

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 (INEEL), 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 INEEL and surrounding communities using Global Positioning System (GPS) units to establish weed locations and identities for the Idaho State Department of Agriculture (ISDA) and INEEL. 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 how to:

- Understand why noxious weeds are of such great concern.
- Identify noxious weeds found on INEEL and surrounding areas.
- Manipulate Global Positioning System (GPS) units and gather data.
- 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.
- Manage data collected for inclusion in Idaho State Department of Agriculture and INEEL noxious weed maps.
- Produce weed maps using GIS.
- Develop marketable job skills (GPS/GIS technology).
- Work together as a team.
- Gather, analyze and present data.
- Perform basic science research techniques.
- Develop critical thinking and problem solving skills.



War-on-Weeds 2004

Six team members were recruited from Butte County High. College students acting as team leaders were recruited from Brigham Young University. The 2004 War on Weeds program began June 14th and ended July 22th.

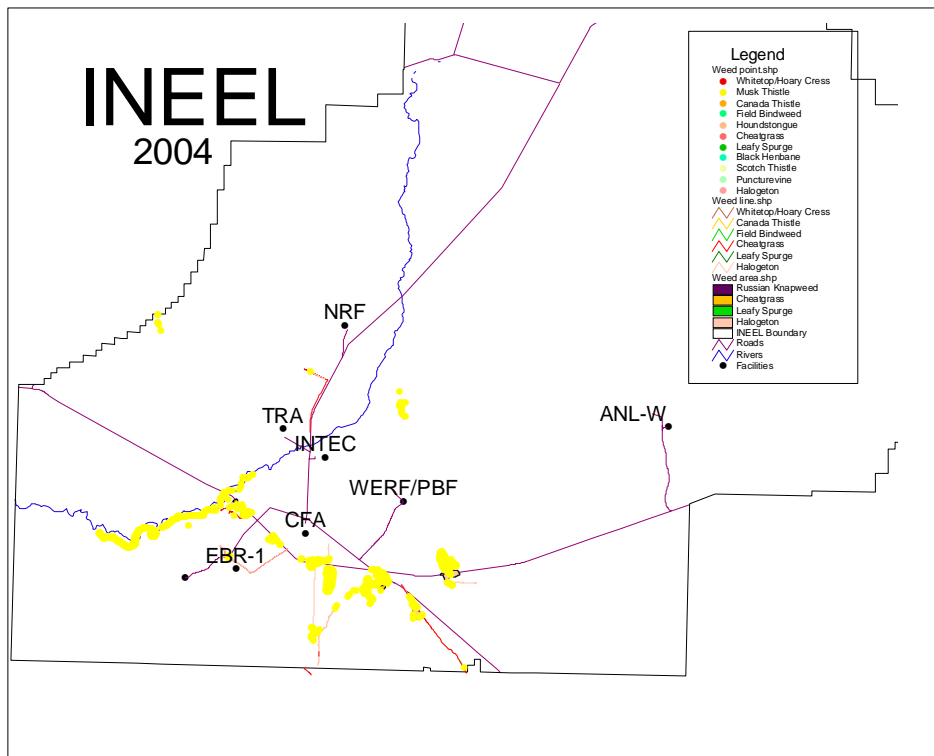
During the first three weeks of the internship that were completed, the teams mapped the southwestern part of the INEEL falling within Butte County for noxious

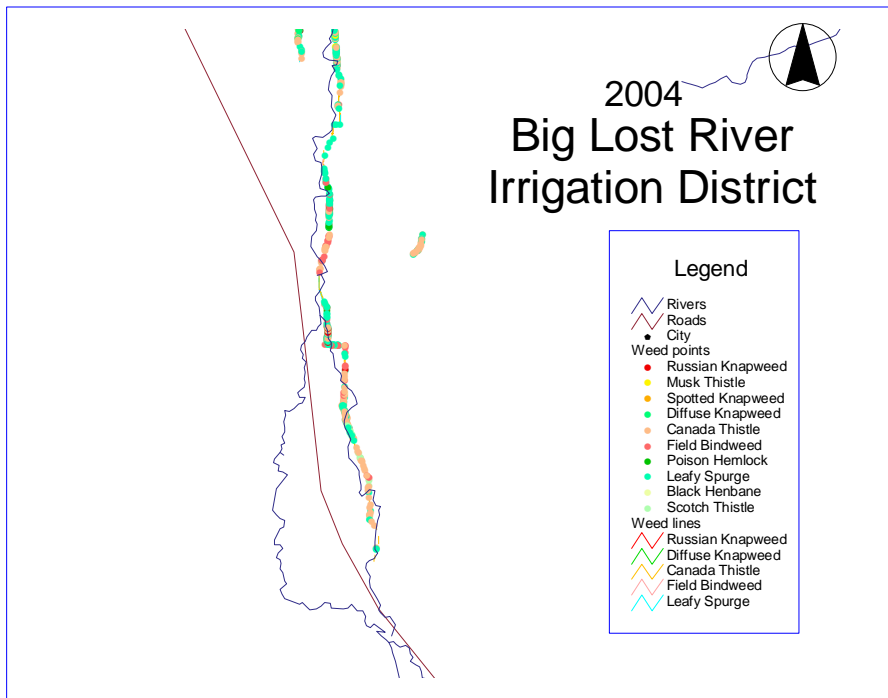
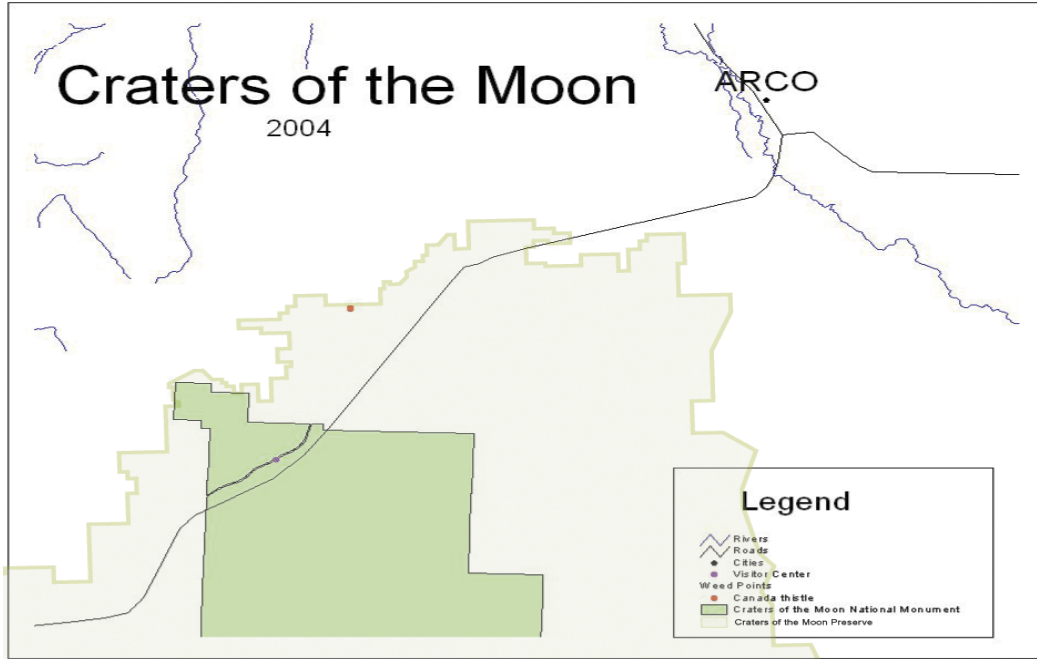
weeds, as shown in the following map. The teams mapped approximately 95,880 acres of the INEEL. Alana Jensen, Environmental Surveillance, Education and Research Program, supervised this portion of the program and provided training.



The last three weeks of the internship, the teams spent time mapping noxious weeds on the Craters of the Moon National Monument and Big Lost River Irrigation District canals. Approximately 19 miles of canals and 6,000 acres of Craters of the Moon

were mapped. Bob Shaffer, Big Lost River Irrigation District, and Paige Wolken, Craters of the Moon National Monument, provided supervision during this portion of the project.





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

Students also participated in Education Days this year with Bingham County War-on-Weeds teams. Education days included:

- Wetlands Day on the Blackfoot River – Students were trained to identify wetlands plants and their importance to a healthy stream. We also learned to measure the slope and velocity of a stream.
- Rattlesnake Day – Students spent the day with Chris Jenkins, ISU graduated student, who is studying the effect of habitat on the size and fecundity of rattlesnakes on the INEEL.
- Craters of the Moon Day – Students were given an in-depth tour of Craters of the Moon’s natural geology.
- Knapweed Biological Control – Mark Schwarzlaender, University of Idaho, talked to the students about knapweed bio-control and we released bio-agents in two spotted knapweed infestations—one in Bingham County and one in Butte County.



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.
- Vehicles with higher clearance were used for the WOW project this year than in past years.
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Plan for Next Year’s Program

- Funding will be sought for additional weed mapping teams.
- Teams will be given opportunity to conduct weed control research projects under the direction of ESER scientists. Students will be encouraged to develop their own research projects.

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 2004, 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 INEEL'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 INEEL, 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 INEEL 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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- U. S. Department of Energy – Funding and loan of a GPS unit
- Associated Western Universities – Administering of internship and insurance
- Lost River CWMA – Supervision and funding support
- Bingham County War on Weeds teams – Education days coordination

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