

War-on-Weeds Project 2001

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Background

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, ten are found on the INEEL.

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

History

In November 2000, the Environmental Surveillance, Education and Research Program (ESER) assumed the Department of Energy contract to conduct the INEEL Offsite Environmental Surveillance Program. One goal of the ESER Program is environmental education. To further this objective, the ESER Program recruited three teams from local high schools (Shelley, Sho-Ban, and Mackay) to participate in the War-on-Weeds Project.

Selection of student- and teacher-team members was based on academic achievement and commitment to complete the program. Team members were required to complete approximately 15 hours unpaid training during the spring of 2001. This training taught team members to use Global Positioning System (GPS) receivers and Geographic Information System (GIS) mapping software.

War-on-Weeds 2001

The War on Weeds program began June 18th and ended July 12th. Three teams, consisting of 3 teachers and 11 students, mapped approximately 6 percent of the INEEL site. In addition to mapping noxious weeds, teams worked with the Cultural Resources Department of the INEEL to map artifacts in the southeastern part of the site. Teams also assisted the Lost River Weed Management District

(Butte County) in collecting flea beetles. These beetles were used as biological control agents for leafy spurge infestations in Butte County.

As part of the War on Weeds Project, students learned:

- To work as a team.
- Basic science research techniques.
- To be able to address a real-life problem with real-life solutions.
- Marketable skills (GPS/GIS technology, mapping software).
- To gather, analyze and present data.
- To progress within the program to leadership positions.

Noxious weed data collected by the War-on-Weeds teams will be submitted to the Department of Agriculture- and INEEL-noxious weed databases.

At the conclusion of the program, each team gave a presentation on the things they had learned during the project.

- Shelley Team – (2 presentations) S. M. Stoller employees and Department of Energy employees
- Sho-Ban Team – Fort Hall Tribal Council
- Mackay Team – (presentation pending) Butte County Soil Conservation District

Lessons Learned

Overall the program was very successful. Teams became proficient at GPS/GIS technology, worked well together, and compiled useful data. However, some difficulties require that modifications be made in the program.

- Poor work ethic, excessive absences and lack of motivation among a few students.
- Shortage of GPS units.
- Relatively short 4-week duration of program discouraged some students from participating.
- Single focus of program (GPS/GIS technology) didn't meet the interests of all participants.

Plan for Next Year's Program

To resolve the problems addressed above, the following modifications will be added to next year's program.

Improve Work Ethic

Good work habits and basic work skills will be a major focus of the 2002 War-on-Weeds Program. To encourage work ethic among the participants, the following 5-part Screen and Reward System will be implemented.

- Exposure – Students will be introduced to the program and those interested will be given basic training.

- Mini-Project – Students completing training will participate in a mini-project designed to screen those students whose strengths or interests lie in different fields.
- Unpaid Work Experience – Students will be encouraged to participate in a longer duration project directed by the ESER Program or of their own design.
- Paid Work Experience – Students participating in ESER's summer internship will have already shown dedication and ability sufficient to complete the project.
- Mentorship: Students completing the internship will be encouraged to mentor students during the coming years.

Obtain Additional GPS Units

Funding will be obtained for additional GPS units for field teams. To obtain optimum results, retain interest among the students and give each student an opportunity to practice skills, one GPS unit for each two students will be required.

Lengthen Duration of Summer Project

Many students looking for summer employment were unable to take part in the four-week program. War-on-Weeds 2002 will expand to 8-weeks long.

Diversity Focus of Program

The ESER Program wishes to attract intern candidates having a range of interests and abilities. Though the focus of the first year of the War-on-Weeds Program was intentionally limited to GPS/GIS technology, other fields of interest will be added to the program as funding permits. For the summer of 2002 project, War-on-Weeds will recruit a research team to assist ESER scientists and a computer/communications team, in addition to our field GPS/GIS teams.

Conclusion

War-on-Weeds 2001 was a learning experience for both the ESER Program and our War-on-Weeds teams. Surprises and glitches are common in the first year of any new project, but, as one of our student team members said, "We had fun and learned a lot, too!"

INEEL

2001

Legend

- INEEL facilities
- INEEL boundary
- Weed points
 - foamy cross
 - milk thistle
 - spotted knapweed
 - Canada thistle
 - field bindweed
 - leafy spurge
 - black heabare
 - Scotch thistle

- Weed lines
 - Black Heabare
 - Canada Thistle
 - Leafy Spurge
 - Milk Thistle
 - Scotch Thistle
 - Spotted Knapweed

- Weed Areas
 - Milk Thistle
 - Canada Thistle
 - Black Heabare

