

War-on-Weeds Project 2002

Alana Jensen
ESER Program
1780 First Street
Idaho Falls, ID 83401
208-525-9358
ajensen@stoller.com

Introduction

In November 2000, the Environmental Surveillance, Education and Research Program (ESER) assumed the Department of Energy contract to conduct the Idaho National Engineering and Environmental Laboratory (INEEL) Offsite Environmental Surveillance Program. One goal of the ESER Program is environmental education. To further this 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. The ESER Program recruited three teams in 2001 from local high schools (Shelley, Sho-Ban, and Mackay) to participate in the War-on-Weeds Project. One team of students from Butte County High School was recruited in 2002.

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, 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.



Project Description

The War on Weeds Project is a “learn by doing” project that employs students for a six-week period to 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.

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), and the Department of Agriculture.

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 communities.
- 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 2002

The 2002 War on Weeds program began June 10th and ended July 19th. Three team members were recruited from Butte County High School’s Envirothon team

(www.envirothon.org/index.html). A team leader was recruited from the University of Idaho.

During the first three weeks of the internship, the team mapped the Sagebrush Steppe Reserve on the INEEL for noxious weeds. Because of concerns about infestations of halogeton and cheatgrass on the Reserve, the students also mapped infestations of these plants, though they are not designated as noxious weeds. The Sagebrush Steppe Reserve, located in the northern part of the INEEL, consists of 74,000 acres of high-desert land. The "Sagebrush Steppe Reserve" is managed by the Bureau of Land Management. This reserve covers approximately 13 percent of the INEEL (See Attachment 1).

During the second three weeks of their internship, the Butte High School team mapped noxious weeds and headgates for the Big Lost River Irrigation District under the direction of Bob Shaffer. Approximately 16 miles of canals were mapped for noxious weeds (See Attachment 2 and 3).

In addition to mapping noxious weeds, the team worked with the Lost River Weed Management District (Butte County) in collecting flea beetles for two days. These beetles were used as biological control agents for leafy spurge infestations in Butte County.



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.

At the conclusion of the program, the Butte County High School team gave a presentation on the things they had learned during the project to about 75 local politicians, ISDA officials, media, and interested members of the public. The presentation was part of an event sponsored by the Bingham County weed internship program on August 13th at the North Bingham County Park.

Lessons Learned

The program was very successful. Teams became proficient at GPS/GIS technology, worked well together, and compiled useful data. Lessons learned from last year's program averted some of the problems we experienced during our initial trial.

- The team leader was a college student who worked well with the high school students and kept them motivated. Last year's War-on-Weeds Project used

teachers as team leaders, but we found that using college students was more cost-effective and equally as efficient.

- Data was collected by the ESER Program at the conclusion of every week and problems in data collection, such as the omission of nested points or problems with the data dictionary, were solved as the data was compiled.
- An informal meeting was held between the Team Leader and the ESER coordinator at the conclusion of every working day to discuss concerns and to plan the next day's activities.
- The extended internship period (6 weeks as compared to 4 weeks in 2001) enticed more students to take part in the program.
- Support from local agencies was invaluable.
 - Bob Shaffer from the Big Lost River Irrigation District supplied direction and supervision during the last three weeks of the internship.
 - Francis Perks from the Butte County Soil and Water Conservation District supplied a computer and office space for downloading of GPS unit data.
 - Chad Cheney , Butte County Weed Superintendent, supplied direction for the Lost River CWMA flea beetle collection.

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 come up with 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 2002, 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 both the INEEL and the Lost River Irrigation System fulfills its obligation to administer the State Noxious Weed Law. As one War-on-Weeds intern said, "If we all work together, we can get a lot done."

The War-on-Weeds Projects benefits both the interns involved in the project and the surrounding community. These benefits include:

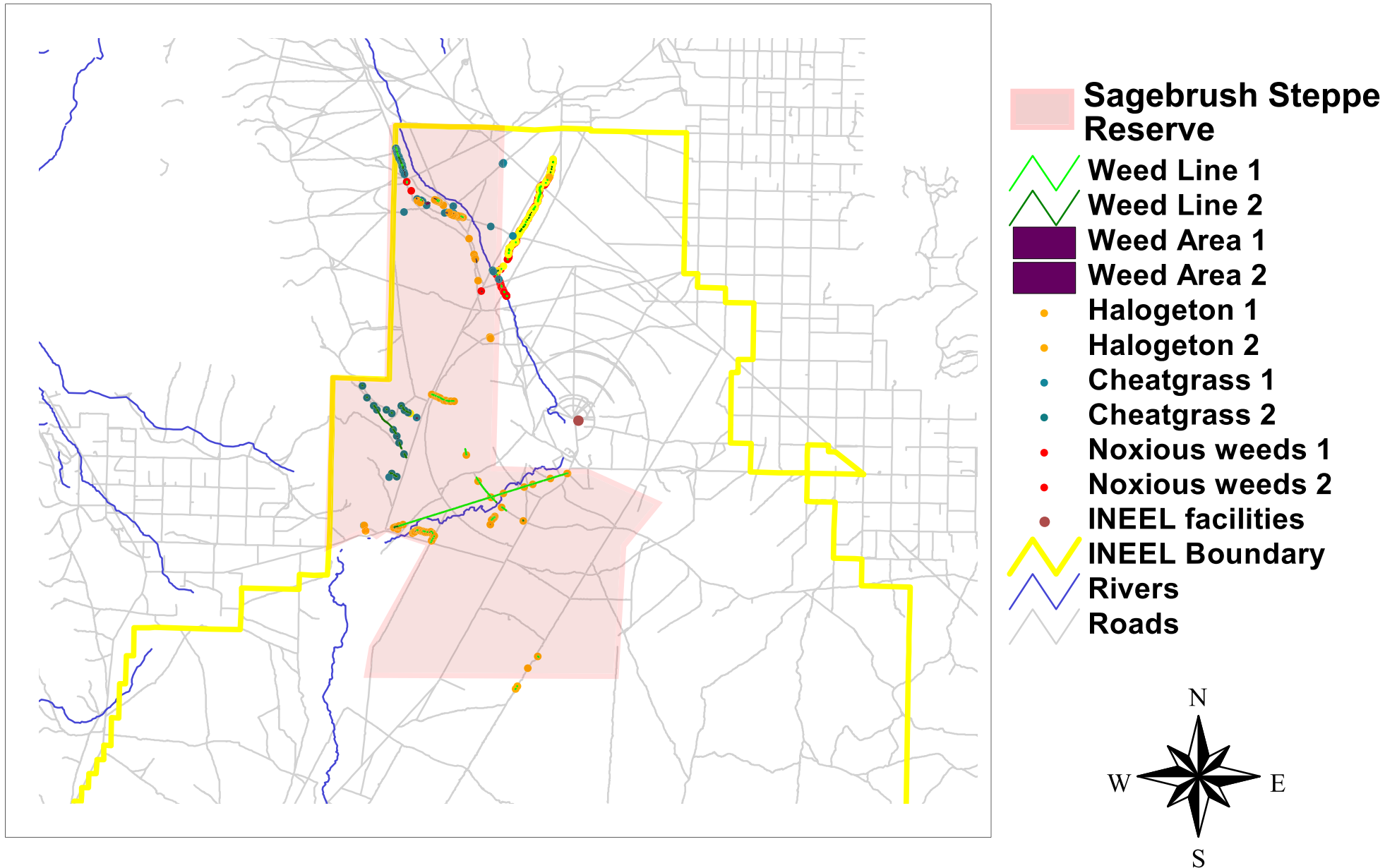
1. Public awareness of ecological concerns at INEEL and surrounding communities, specifically noxious weeds.
2. Student involvement in learn-through-doing science projects.
3. Student participation in solving a real-world, local community problem.
4. Collection of scientific data that is useful to government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



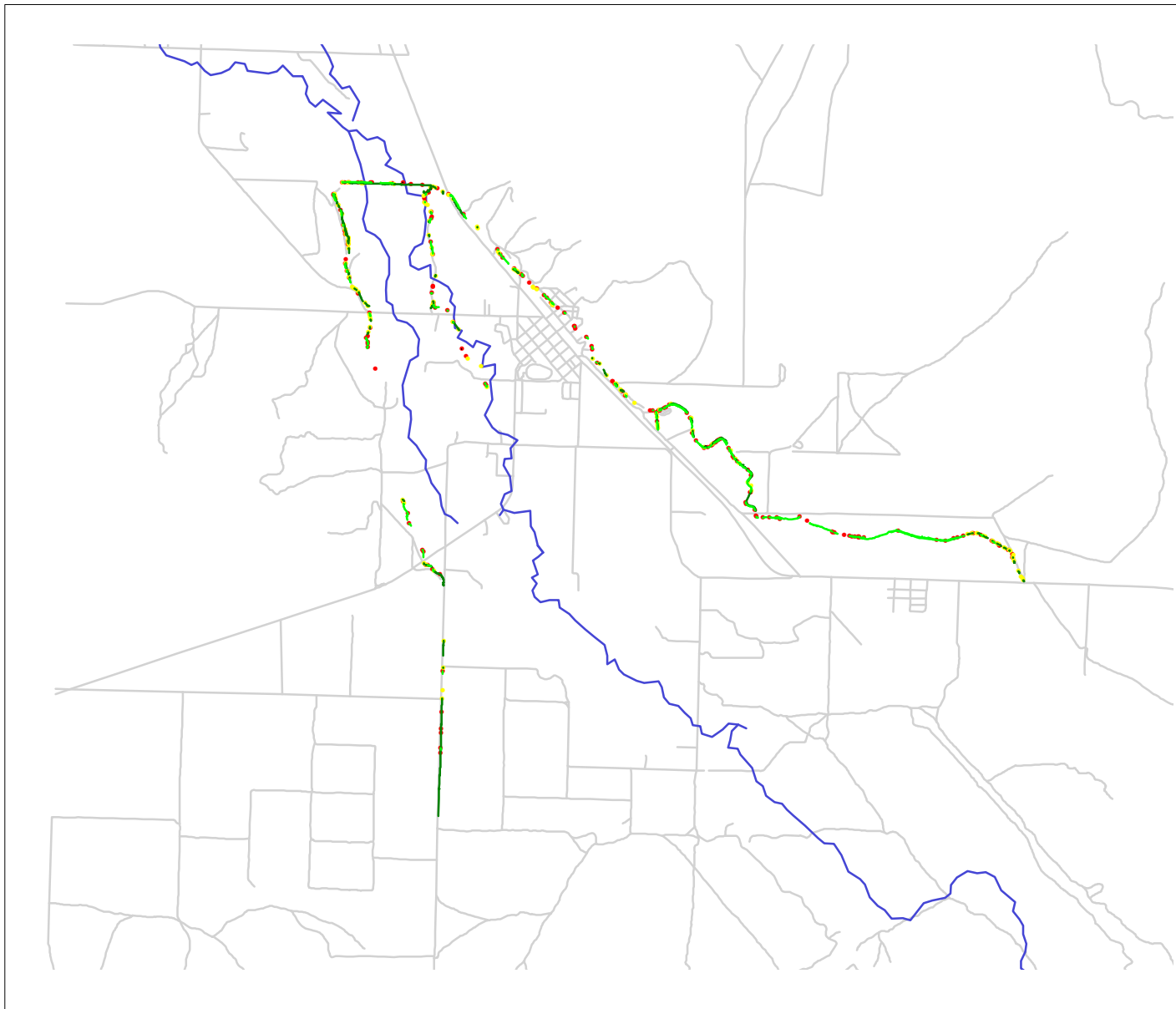
Acknowledgements

- ESER Program – Training, supervision and recruitment
- Big Lost River Irrigation District - Supervision
- Idaho State Department of Agriculture – Funding
- U. S. Department of Energy – Funding
- Butte County Soil and Water Conservation District – Office space and computer
- Associated Western Universities – Administering of internship and insurance
- Lost River CWMA – Supervision and funding support
- Mike Winston (Shelley High School teacher) and Bingham County CWMA– Presentation invitation

INEEL Sagebrush Steppe Reserve

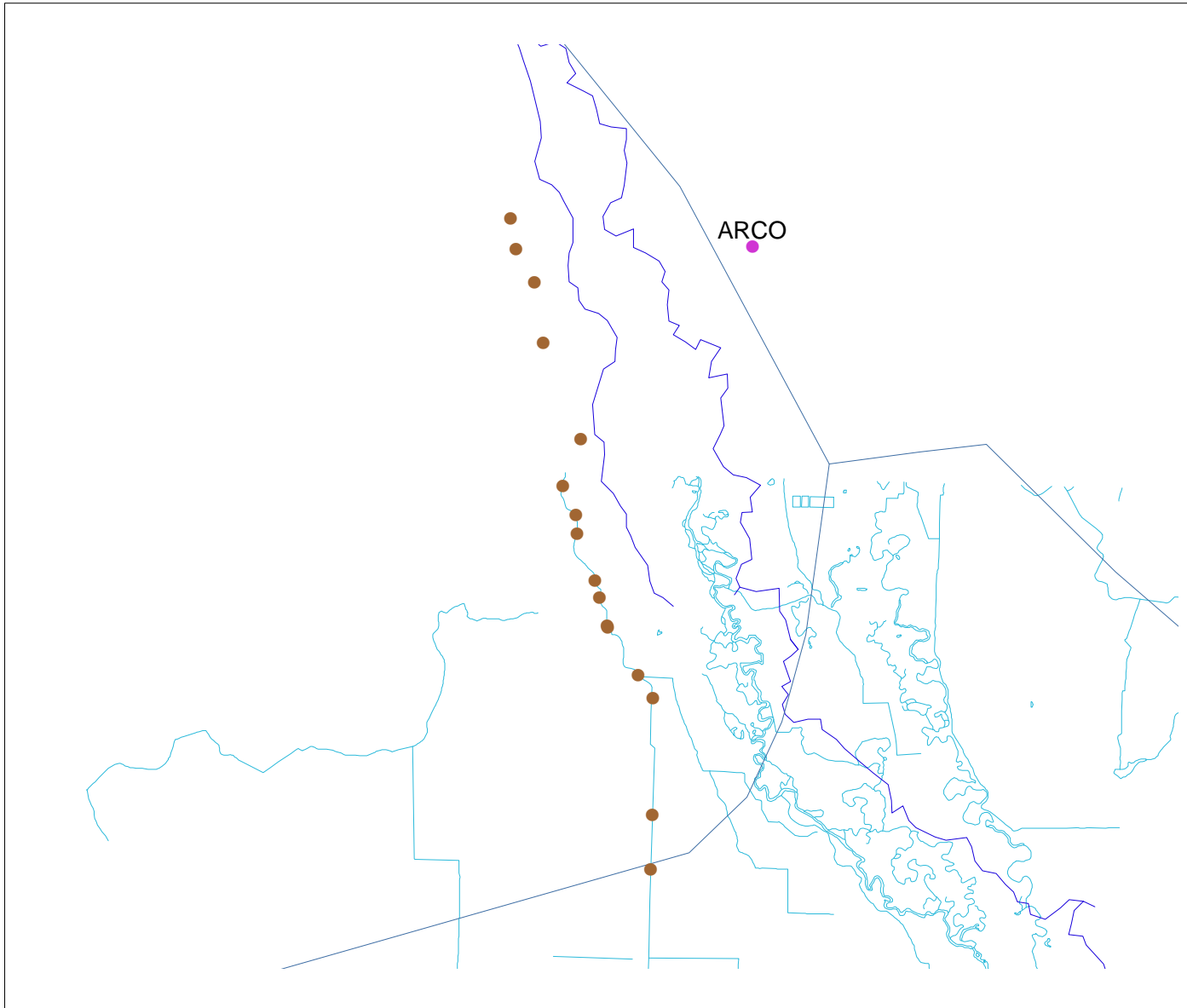


Lost River Irrigation District



- Weed Line 1
- Weed Line 2
- Weed Area 1
- Weed Area 2
- Halogeton 1
- Halogeton 2
- Cheatgrass 1
- Cheatgrass 2
- Noxious weeds 1
- Noxious weeds 2
- INEEL facilities
- INEEL Boundary
- Rivers
- Roads

Irrigation District Headgates



- Headgates
- ⚡ Roads
- ⚡ Rivers
- ⚡ Streams
- Cities

