Holding the Line Project

2010 End of the Year Report

HIGH COUNTRY RESOURCE CONSERVERATION & DEVELOPMENT

December 2010

Holding the Line Project

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Introduction

The "Holding the Line" Project emerged out of a shared conviction that invasive plants, such as leafy spurge, must be prevented from expanding their ranges in Eastern Idaho and invading Yellowstone National Park. As invasive species do not respect jurisdictional boundaries; to be most effective, local, state, and federal need to coordinate and collaborate their management efforts. As the partners worked together, the geographic scope of the project grew to include the entire Greater Yellowstone Ecosystem (GYE), see map – Attachment #2. The project is active in SE Idaho, and the team is working to expand the partnership into Wyoming and Montana.

Purpose

This project works across jurisdictions and state-lines. It brings together landowners, land managers and those responsible for weed management in the Greater Yellowstone Ecosystem. It is managed by an interdisciplinary steering committee composed of federal, state, and local land managers, private citizens and country weed authorities. The Steering Committee develops:

- Common weed management objectives
- Sets realistic weed management priorities
- Facilitates effective weed treatment
- Coordinates weed mapping, monitoring, and education efforts within the GYE

The Project Steering Committee assists the partnership planning efforts by:

- Coordinating weed management efforts across jurisdictional boundaries
- Facilitating the pooling of resources
- Seeking out and field testing new technologies (digital mapping, Google Earth, spread prediction models, monitoring protocols, etc).
- Finding existing bio-control vectors and makes them available locally, e.g. establishing insectories.
- Ensuring inventory and monitoring data are collected yearly and data bases are maintained
- Coordinating needed training.
- Providing information and tools to partners for effective planning

Funding

This effort is funded in part by grants from the US Forest Service State and Private Forestry Noxious Weed Program, The Greater Yellowstone Coordinating Committee (GYCC), and the Caribou-Targhee National Forest. The Partners provide substantial in-kind support through staff time, use of equipment and purchase of supplies.

Table 1 Funding by Agency- 2010

2010 FUNDERS	DOLLAR AMOUNT
US Forest Service State and Private Forestry	$30,000
GYCC	$3,500
Caribou Targhee National Forest	$4,000
Partner In-Kind Match	$28,401
Collected & Redistributed Flea Beetle "in-kind"	$260,160

Progress toward meeting 2010 Goals

The project suffered a set-back this year when we lost Steve Smart (High Country RC&D Coordinator) who made sure that all the partners were kept informed about project activities, coordinated those activities with the partners involved, and facilitated the cooperation between partners, so crucial to this effort. Several partners stepped up to fill the role vacated by Steve, enabling the following accomplishments to happen this year. They were: Bryce Fowler- Fremont County Weed Department (Project Leader), Steve Hobley – Madison County Mosquito and Weed Control, Becca Schneiderhan – MIA Consulting, Kyle Moore – US Forest Service Ashton/Island Park Ranger District, and Heidi Heyrand – US Forest Service Caribou-Targhee NF Supervisor's Office.

1. **Establish a "Holding the Line" steering committee comprised of partners with a state in "Holding the Line.**

The partnership established an eight person steering committee that represents all the partner groups in November 2010. The Steering Committee was charged with developing a five year

strategic plan, and an annual plan of work for the review and approval of the partnership. It was also tasked with the day-to-day operation of the project.

Members of the Steering Committee are as follows:

• Project Leader	Bryce Fowler - Fremont County Weed Department
• CWMA's	Steve Hobley – Madison County Mosquito & Weed
• State Agencies*	Paul Faulkner – ID Fish and Game
• US Forest Service	Heidi Heyrand – Caribou-Targhee NF
• National Park Service	Sue Salmons - Yellowstone National Park
• GYCC	Erika Edmiston – Teton County, WY Pest & Weed

*Currently only Idaho State Agencies are active in the project, additional representatives will be added from Montana and Wyoming, as the project expands across State Boundaries.

High Country RC&D NRCS Coordinator Pam Herdrich, facilitates and coordinates the Steering Committee and Partnership meetings.

2. **Establish a "Holding the Line" multi-state network of RC&D Council's in the Target Area.**

The High Country RC&D Coordinator's position was vacant from January 1st through June 21st. Pam Herdrich, the new coordinator, has made contact and started preliminary discussions with Western Wyoming RC&D. In addition, Bryce Fowler and Steve Hobley made contact with and recruited Erika Edmiston of the Teton County, WY Pest & Weed Department. Erika is also a member of the GYCC.

High Country RC&D will make contact with the following RC&D's over the winter

- Headwaters – MT
- Northern Rocky Mountain – MT
- Beartooth – MT
- Big Horn Basin – WY

3. **Identify priority work items for mapping and website development and complete contract negotiations.**

High Country RC&D contracted with MIA Consulting to:

- Develop and maintain a website for Holding the Line
- Develop protocols and technology for partners to collect and share inventory, release, and monitoring information via Google Earth application.
- Train project crew to use the above protocol
- Maintain the data base of inventory results, biological release sites, and monitoring data.

See the attached report from MIA – Exhibit #1 for the details on accomplishments.

Check out the Holding the Line website at www.helpholdtheline.com/index.html

4. **Expand the Leafy Spurge flea beetle harvest program at local insectaries with a target of at least 2 million insects collected and redistributed throughout the target area in Eastern Idaho.**

This year we had a late spring and a cool summer, which delayed the Leafy Spurge Flea Beetle collection season to August. Despite the late season, Steve Hobley, the Holding the Line Crew, crews from several partners, and landowners, collected and released over 6.5 million flea beetles. That translates to about 1300- beetle containers (about 5000 beetles/container) each container results in the bio-saturation of about 5 acres of spurge resulting in about 6500 acres of spurge treated this year. (See Appendix D: Leafy Spurge Flea Beetle Collection Record).

We estimate that the bug collection and redistribution effort cost about $25,000 (combination of grant and in-kind dollars). Based on this estimate each beetle container cost $19.25 to produce. Each container treats five acres, so it cost about $3.85/treated acre.

While we collected and distributed over 6.5 million beetles, we were only able to capture GPS release site data for 4.56 million. Not knowing where 400 containers (2000 treated acres) were released hampers our targeting, tracking and monitoring efforts for future years. We realized that we need to improve the record keeping, follow-up with partners who receive and release beetles, and develop an incentive system for private land owners to provide the release data to us.

Next year we will incorporate the following steps:

- Develop a tracking system for beetle containers including container numbering system, a sign-out street with contact information for the people/agencies that received the containers.
- Require a deposit from local landowners, which will be returned when we receive the GPS coordinates, or a map of the release site(s).
- Follow up with agencies/counties that received beetles, but did not forward on the release site GPS data.

5. **Establish three new flea beetle insectaries that will provide future collection sites in three counties within the HTL target area. Each location will be monitored yearly for long term establishment.**

Five insectaries new insectaries were established this year, with another six identified as potential insectaries. The insectaries are located in Fremont and Madison County

- Conant Creek (Spurge Valley) - Fremont
- Two sites along Fall River - Fremont
- One site in Moody Creek (IDL) – Madison
- One site in Summer Canyon - Madison

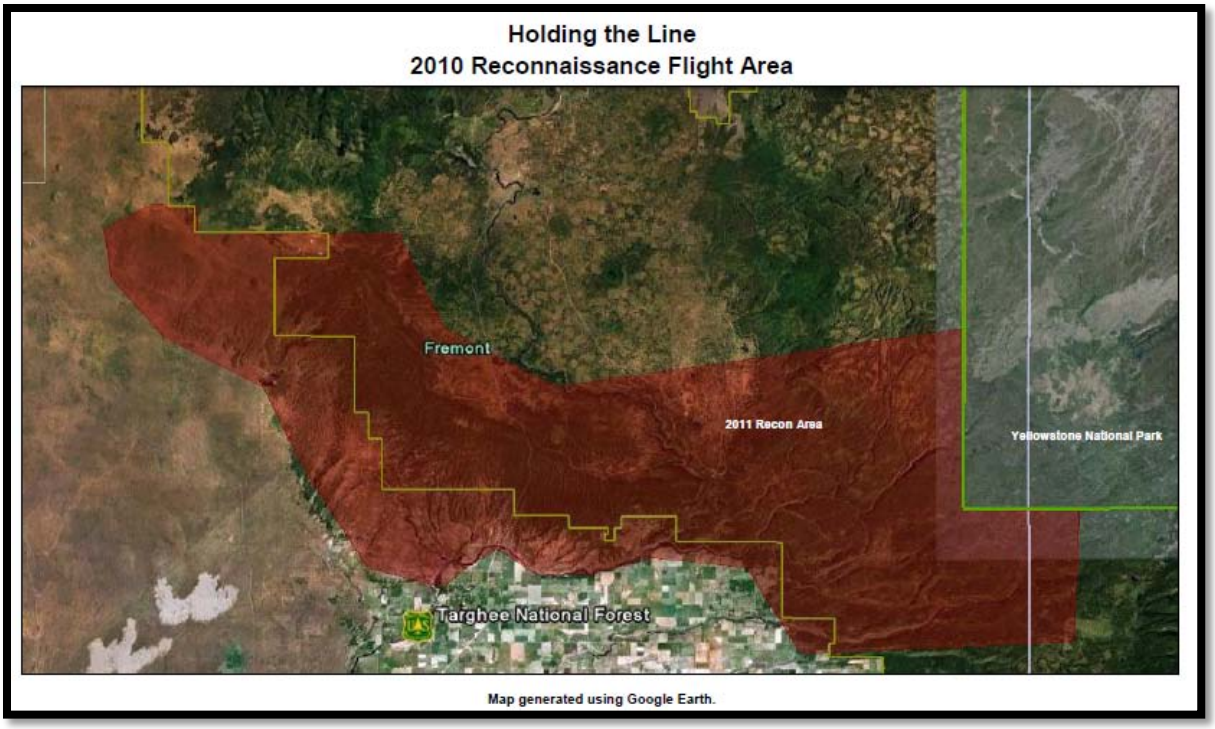
We were not able to fully develop these sites this year. Permanent monitoring transects will be established during the 2011 season, and detailed data will be collected. We believe that at least three of these sites will produce enough beetles to warrant using them as collection sites in 2011.

6. **Continue to map leafy spurge within targeted sub-watersheds. Including 4 hours of aerial reconnaissance mapping coupled with air photo analysis and ground based mapping to identify current leafy spurge infestations. The reconnaissance flight will target the Yellowstone National Park boundary, Fall River Watershed, Big Bend Ridge, Bitch Creek, and Moody Creek.**

Heidi Heyrand and Kyle Moore (US Forest Service, Caribou-Targhee National Forest) scheduled the Forest Service Helicopter and crew to complete the aerial reconnaissance and bug drops. Kyle flew with the crew to complete the mapping and oversee the beetle (bub bombs) drops. The reconnaissance flight was two hours.

During their reconnaissance flight they covered Big Bend Ridge, the Mesa Falls area and the buffer zone along the west and south boundary of Yellowstone National Park. We were unable to complete an aerial reconnaissance flight of the Bitch and Moody Creeks, because of the reduced flight time.

Kyle also had them fly over some of last year's bug bomb drops, to visually assess the results. Most of the areas he checked showed some signs that the beetles were making a difference.



7. **Complete four hours of aerial "bug bomb" drops in two high priority sub-watersheds as determined by reconnaissance mapping and air photo analysis. Intially target areas will include the Big Bend Ridge, and Fall River Watershed in Fremont County if money and time allow HTL steering committee will select other needed drop sites.**

Using the mapping reconnaissance (paper map) that Kyle made during the original flight; he identified about 120 sites to drop bug bombs on the second flight. Some areas were large enough that he dropped multiple bombs in different areas of the site.

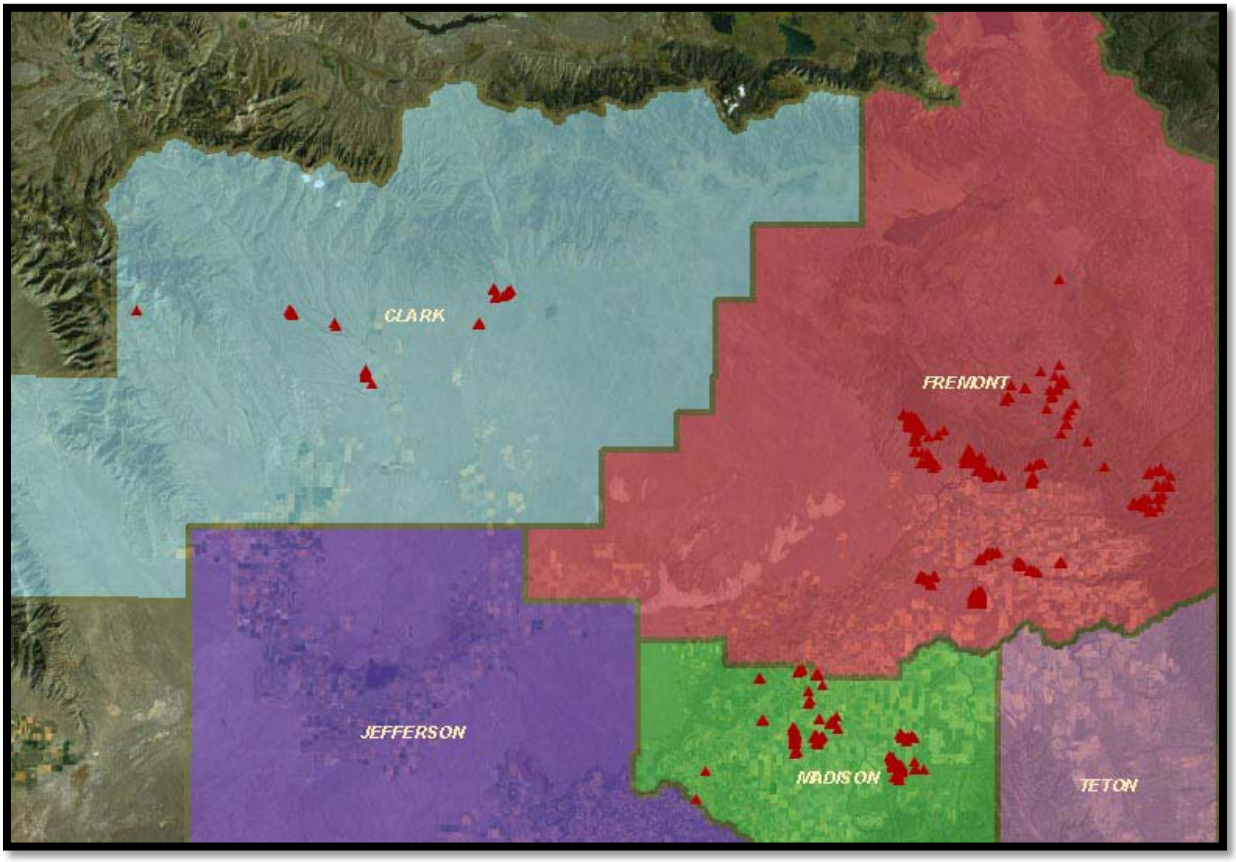
Thanks to the Caribou-Targhee National Forest and US Forest Service Region Four Office for covering the cost of both helicopter flights.

8. **Expand the ground based distribution of bio-agents by utilizing the paid local student team county weed crew and private landowners. The student team will consist of 5 students who will work for twelve weeks at numerous locations harvesting, separating, packaging, and redistributing Leafy Spurge flea beetles. This task will first target the lower Fall River Watershed from Idaho State Highway to the confluence with the Snake River. We will expand the bio-saturation of private lands along Conant Creek and Squirrel Creek in Fremont County. In Madison County we will continue the bio-saturation of the Moody Creek Watershed and the Rexburg Bench. A special focus will be placed in bio-saturation in the lower Teton River to its confluence with the Snake. In Clark County there will be a focus on the Medicine Lodge Watershed.**

Fremont County Weed Control hired the Holding the Line student crew. Two students attend Fremont High Schools and two attend Madison High Schools. The Team Leader was a student at BYU- Idaho. The crew worked for 14 weeks. Their first few weeks were spent conducting ground-based inventory, mapping new infestation. In late July/early August they began collecting and distributing Leafy Spurge flea beetles to new sites. (See map below).

The crew focused release efforts in Conant, Squirrel and Moody Creeks and the Rexburg Bench. They expanded release program into the Ashton Hill and Caldera areas releasing beetles at about 40 new sites. The crew also worked with some land owners releasing about 25 bombs in the lower Teton River. This level of release was much lower than we had planned for the Teton. We will need to continue to educate landowners along Teton River, showcase existing release sites to encourage better participation in the future.

FIGURE 1 FIELD RELEASE SITES- COUNTY MAP2010



9. **Using our existing locally trained student team we will monitor previous bio-control release sites that are at least three generations old to document where bio-agents have fully established or failed.**

The vacancies and change in personnel, created some confusion, and as a result, some goals were only partially completed, or missed; as was the case with Monitoring. In September, the crew made 50 site visits to prior year release sites, taking notes on observation of spurge "kill" and a photo of the site.

This year's monitoring effort was solely qualitative. It did not target three year or older sites. It was done later in the season, after the beetle activity had declined. In the future we need quantitative data, during the peak of the season to:

- Determine if the site has adequate populations to be a good insectaria
- Correlate population levels of beetles with control levels of spurge.
- Determine longevity of bio-saturation techniques
- Determine optimum release numbers to create a balanced predator/prey relationship, which will result in sustainable populations of beetles in the ecosystem. (This may be critical to deal with plants resulting from the seed bank created by the original infestation.)

10. **Present data collection, monitoring, mapping, bio-harvest, and bio redistribution lesson to local high school students in Madison and Fremont Counties to expose and excite students about the Holding the Line Project.**

Fremont County Weed Control made a presentation to the South Fremont H.S. Ag students. The talk included basic noxious weed identification, information on how they impact the environment, and control methods. The presenters also demonstrated the equipment used to collect bugs, and the GPS units used for mapping, and discussed the importance of monitoring.

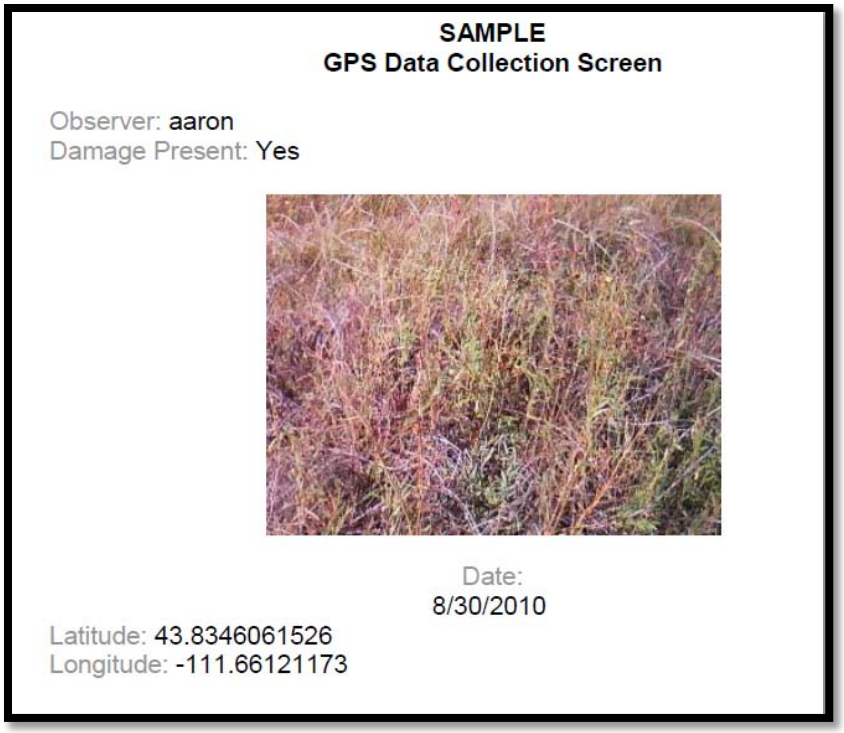
Madison County Mosquito & Weed Department visited with the second graders in Rexburg and talked about the Holding the Line project, noxious weeds, why it's important to control them, and some of the impacts to the environment.

The CWMA's and weed departments from Fremont, Madison, Jefferson, Bonneville and Bingham Counties developed an Invasive/Noxious weed traveling display (Weed Trailer) which was on display at the County Fairs, and the SE Idaho State Fair.

Steve Hobley made contact with the Sugar City High School FFA teacher. We will be working to implement a short training series to educate the FFA members about the project and bio-control in general in the spring of 2011.

11. **Purchase five new CPS units with built in camera and software to download site locations and pictures.**

Fremont County Weed Control purchased the GPS units which were capable of taking and transmitting pictures at each recorded GPS location. This will enable us to develop a visual history/record of each site. The GPS units were used by the crew and loaned out to partners as needed. An example of the data recorded for each site is located on the next page.



12. **Contract with MIA Consulting to update and maintain GIS data base, generate maps, and update Website. Contractor will also renew Website Domain name and hosting for 2010.**

See MIA Consulting's year-end report Exhibit #1. This year, Becca developed an application to be used with Google Earth that is very promising, and should streamline identifying areas to inventory, monitor, and release beetles for the 2011 season.

13. **Create and print brochures and signs to inform and educate public about leafy spurge infestations.**

We were unable to complete this item. We lost the expertise to create brochures and signs, and didn't regain the ability until late in the year.

14. **Train all project affiliates on Idaho's statewide biological control and noxious weed monitoring protocol.**

The change in partner personnel and the start of the beetle collection season prevented us from implementing this item. It is scheduled to take place early in the season next year.

Challenges/Lessons Learned

1. **Personnel transitions**

This project has many partners; each completing a piece of the work. The loss of the project's coordinator/communicator highlighted just how important this role is. S/he ensures that each of the partners knows what their piece of the project is; when it needs to be done; and who the partners are that need to work in conjunction to accomplish the big picture. It's more time than any one partner can provide.

When the project lost Steve Smart, many of the partners stepped forward to fill the different roles that Steve performed. The job these people did was exemplary. They kept the project going under trying circumstances, and ensured that the major goals/objectives were accomplished. However, due to the project complexity, press of the inventory/collection/monitoring season, time limitations, and the number of people each trying to coordinate their piece of the job:

- Pieces of the big picture were temporarily lost, lesser goals and objects were not completed, or only partially completed.
- The technology available for planning field season work went largely unused.
- It took most of the field season to identify and fix field application of technology for inventory, monitoring and bio-release sites.
- Needed training was cursory.

In 2011, the Steering Committee will be exploring funding options to enable the project to hire a one-half to three-quarters time Project Coordinator which will improve communication about and coordination of project activities. This should result in improving the timeliness of completing goals and objectives, partner coordination and cooperation, and identification/recruitment of additional partners for the project.

2. **Lag time for technology developed for the project to it being deployed/tested in the field**

Due to the funding cycles, the technology developed/adapted for the project has become available for use by the project in the early spring and during the field season. This technology takes time for project personnel and the partners to learn, work out the "bugs" (technological & user) and adapt to field uses. The best time for learning the technology is during mid-winter. This means that some technology will be ready for use, but is not utilized during the field season in which it was developed.

However, we believe, that a project coordinator could learn and apply much of the technology in the same field season, based on the history of what Steve Smart did in the first two years of the project. The project coordinator would work out the "bugs", find the best ways to adapt the technology to the field work, and analyze the usefulness of the technology. The coordinator

would then train the partners and crew, in the off season, so all were utilizing the technology that passed muster in the next field season.

3. **Expansion to other States**

Expansion to other states was put on hold until late in the season. It takes time and a coordinated effort to find the right contacts, develop a good working relationship, and bring new partners into the project. The partnership appointed a Steering Committee for the project in September 2010.

The Steering Committee developed a strategy to identify and then recruit new partners for the project in Montana and Wyoming. They will be utilizing the members of the GYCC and others to identify potential partner contacts. Members will then meet with the potential partners one-on-one and recruit them to the project.

4. **Helicopter reconnaissance/sketch mapping**

The project has relied upon the Forest Service helicopter and crew for the aerial reconnaissance and the bug bomb drops for the last two years. We have been extremely lucky that there have been no major fires during the height of the beetle collection and release season. Since the FS helicopter and crew's first priority is fighting fire, it is conceivable that one of these seasons we would not be able to complete aerial reconnaissance and or the beetle drops. The Forest Service limits staff flying the missions to Forest Service employees, which has precluded our testing of digital aerial sketch mapping.

We will be requesting bids from several private companies that provide digital sketch mapping and bug drops. We hope to hire one of these companies to complete the aerial reconnaissance and bug drops for the 2011 season. If we are successful, we will be evaluating the service to determine if it is worth the cost, or if we should continue to utilize the FS helicopter and crew in the future.

5. **Monitoring**

This year we learned that monitoring needs to be completed during the beetle collection and release season. The monitoring that we completed in the fall of the year only gave us information about the relative "health" of the treated leafy spurge community. It didn't give us reliable data on the health/activity levels of the beetle community.

In addition, we need to develop some way of monitoring at least a portion of the aerial drop sites along Big Bend Ridge and the Park Boundary. These areas are challenging to get to by foot due to the terrain (Big Bend Ridge) and the likelihood of bear encounter (Park Boundary). In 2011, we will be investigating possible remote sensing techniques and identifying safe methods of "getting boots on the ground" to verify/ground truth the remote sensing data.

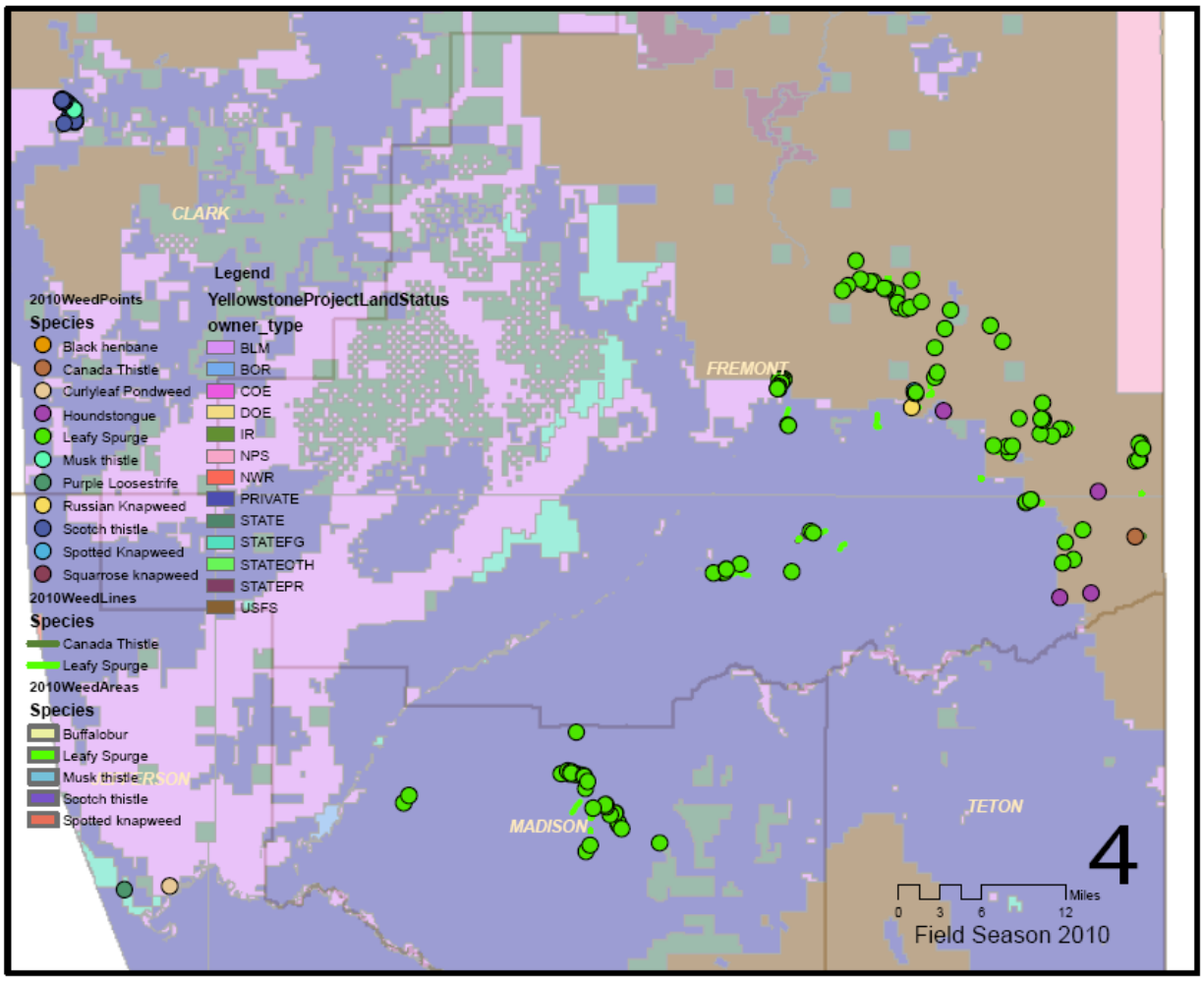
6. **Collection and Record Keeping.**

This last season pointed out the need for better record keeping. We weren't able to track where about 2 million beetles were released. The "lost" releases included containers given to private landowners in Madison and Fremont Counties, along with containers given to some of the project partners. We needed to follow up with the partners who received beetle containers, but did not forward to the project their release site coordinates. With most of our partners, an email or a phone call would gather the "missing" data. We need to adopt a protocol/procedure to ensure that the follow-up happens during the field season, as the beetles are being released.

Private landowners are another "challenge". They have little incentive to provide the project with the coordinates for their release sites. We will begin charging private landowners with a "deposit" when they pick up their beetle containers in 2011. The deposit will be returned to the landowners in exchange for drop coordinates, or a paper map showing the location of the drop. We can convert the paper map location to coordinates using Google Earth.

In addition, we will be numbering each container, logging it into the storage cooler and logging it out with the contact information for the person/agency that received it.

Appendix A: 2010 Ownership Map and Releases



Appendix B: Standard Journal News Article

Fighting weeds with beetles

▶ County mosquito and weed department wants to educate residents on eliminating leafy spurge

NATE SUNDERLAND
nsunderland@uvsj.com

REXBURG — About 500,000 leafy spurge flea beetles are caught each day that the Madison County Mosquito and Weed department goes on a bug harvest.

On Tuesday, the department had a particularly good day and caught more than 750,000 of the small beetles, all in the name of fighting weed encroachment.

These tiny flea beetles are biological weapons in the hands of Madison County Mosquito and Weed personnel, providing a natural controlling agent to combat leafy spurge, the most prolific noxious weed in the area.

Typically the beetles are caught in nets as people sweep areas where the bugs have been released in previous years. After collection, the bugs are put into a measuring container to be counted and are then put in transport boxes to be given to Madison County residents, or used directly by county personnel to fight noxious weeds.

But because the issue of weed control is so large in the upper valley, officials need the public's help to fight encroachment.

"(Weeds) are a major problem, they keep moving, infesting more and more ground," said Steve Hobley, general services manager for Madison County. "They invade and they don't stop."

The weed department is trying to educate residents on what the weeds look like and how to get rid of them. They are also encouraging residents to contact the department if they need help eradicating weeds on their property.

Hobley said that it's important that residents remember that controlling and killing noxious weeds on their property is a requirement under Idaho State law. Failure to control weeds can result in a fine from Madison County, or at least a bill if the department has to come and spray a resident's property on their own.

Thus far Hobley says they have not had to fine anyone, and says that they work well with residents.

"We try to work with land owners to educate them and help them any way we can," said Hobley. "We can help them control weeds through chemical, mechanical and biological means."

Generally, Madison County will spray one acre of property at a time and charge based on a cost-sharing program with the county.

For more information about getting rid of your weeds, contact the Madison County Mosquito and Weed department at 356-3139.

On the Web: www.idahoweedawareness.com.

COURTESY PHOTOS

Madison County Mosquito and Weed employees sweep leafy spurge weeds on Tuesday with nets to gather Leafy Spurge Flea Beetles. The beetles are then put into containers and used to fight the spread of noxious weeds. Containers each hold about 5,000 bugs.

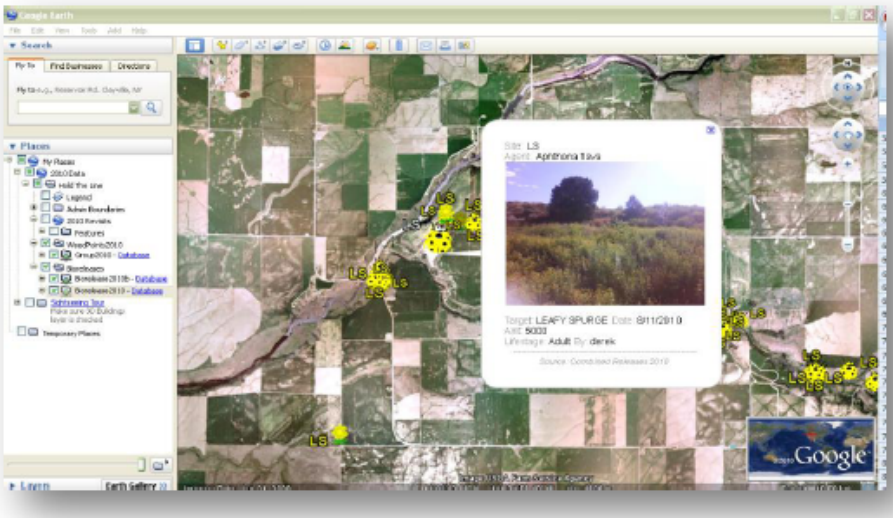
Appendix C: MIA Consulting Year End Report

MIA Consulting 2010- Hold The Line End of Year Report

LIVE MAPPING SYSTEM

In the 2009 field season we learned some important things about the data collection and sharing to the project partners. It was time consuming to get the data post processed and added to the existing data collection. Maps were only being able to be produced from one central database and the turnaround time was 1-2 days. This posed a problem for quick decision making on the ground. For 2010 field season, we created a new mapping system that was cutting edge and streamlined the data process.

A. The new Google live system is built on a free open source code which helps eliminate expensive licenses. It is also built on Google Earth which is the leading industry standard for maps and aerial imagery. The project partners all have access to the data in their own offices without having to know anything about ArcMap. Land managers can make their own decisions in real time as to various treatment methods and ground control activities. Our company has coded the software so we can share the access links with other project partners for free.
B. The software is all tied to one central database which is updated several times a week. As land managers collect their data they upload the data to their own synced accounts. Our company then converts the data into a format that is readable in Google Earth, links the images that were taken in the field, and adds it to the central project database. This simultaneously updates the projects on everyone's computer in real time without any steps on their end. The land managers always have access to the most current data. This has helped speed up the data sharing and helps the land managers see what is being done in the field.



With our new mapping system in place we have solved the data sharing problem but we have many more things to set in place before it becomes a turnkey solution for helping stop the spread of leafy spurge.

Future work in the mapping application steps need to incorporate a way for the mappers to upload data from the field, have real time access to susceptibility data and maps, and to be more thoroughly trained as to how to use it as a planning tool. The initial focus and accomplishments came from creating a central database of all users data, but has expanded now to include a way for all partners to use it on a day to day level.

VISIT EACH AGENCY TO SET UP COMPUTERS AND UNITS FOR LIVE DATA

In order to have all of the data and programs ready for the field season, I travelled to each agency to prepare them. At each agency's office I installed the Google Earth program and the LIVE mapping system. I also configured a Dropbox app where they could sync their data to me. Each agency uses a different system in house so I had to adopt the Hold The Line system accordingly. Each agency now has their own customized application for uploading and downloading their data, as well as for viewing and printing the maps.

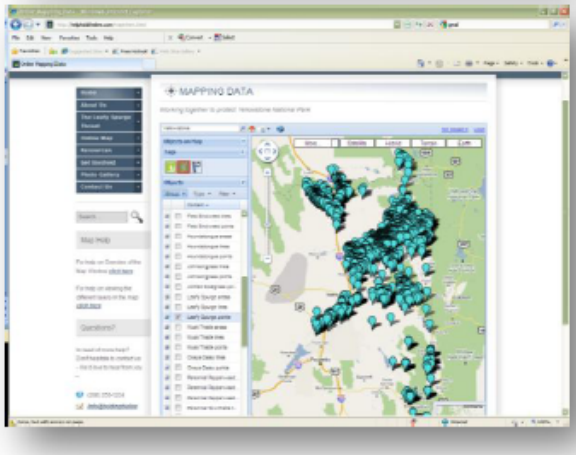
TRAIN PROJECT MAPPING CREW ON DATA EXPORTING AND IMPORTING

We started out the field season with the central place of downloading data to be in Fremont County. For the first 3 weeks of data collection, we had numerous problems with the equipment, software, and scheduling. The mapping crew also went through different team leaders. To circumvent the problems, we switched the downloading hub to be Madison County instead. This had a very positive effect on the data process and it sped up the turnaround times. Madison County is equipped with a large office and several dedicated machines. I would recommend using their office for the 2011 field season data processes.

TROUBLESHOOTING DURING FIELD SEASON

During the field season there will always be problems and small issues that need to be addressed. This field season we were able to troubleshoot issues such as data uploading, site coordinates, camera problems and site revisits. All problems were handled and solved within the required 2 hours. This helps ensure that crews are not being slowed down or hung up on issues in the field. They are able to make one phone call and get the issue resolved. Troubleshooting this field season included Bonneville, Jefferson, Madison, Clark, and Fremont County.

WEBSITE UPDATING, HOSTING www.helpholdtheline.com



To keep our website updated and full of useful resources, regular maintenance has to be performed. This means that all data has to be added to it on a regular basis and our data needs to properly reflect our progress on our project. As new resources are made they are added to the site. As we collect the different weed data, the map needs to stay updated. By allocating a small amount of resources to the website, we are always offering the public the most up to date information.

CREATE PASSWORD MODULE ON WEBSITE FOR MAP VIEWING

Users now can register for a password to view our mapping data online. This helps us create a way to monitor who is looking at our data, and what access they have to it.

COMPILE DATA AT END OF SEASON-RUN ANALYSIS

Geodatabase

At the close of field season for year 2 of the project, we have a large and expansive geodatabase consisting of every known bio release and weed infestation documented in our 21,607,939 acre project boundary.

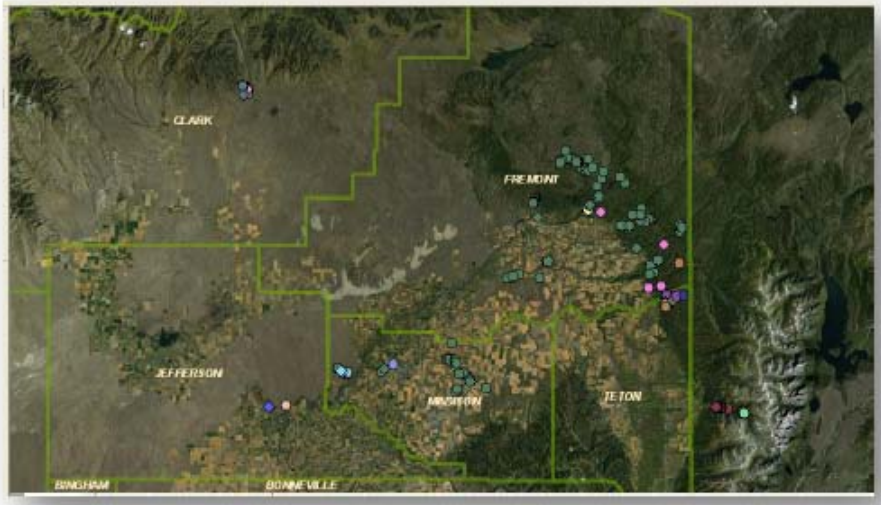
A. Numbers of total of infestations and bio releases accumulative

This has all been built inside ArcGIS and can be used to model the landscape over time. We now have a clear idea of what the areas are inside of the project that have not been monitored or treated. We also know more about the existing infestations and their rate of spread through the years. We are now documenting the infestations and treatments

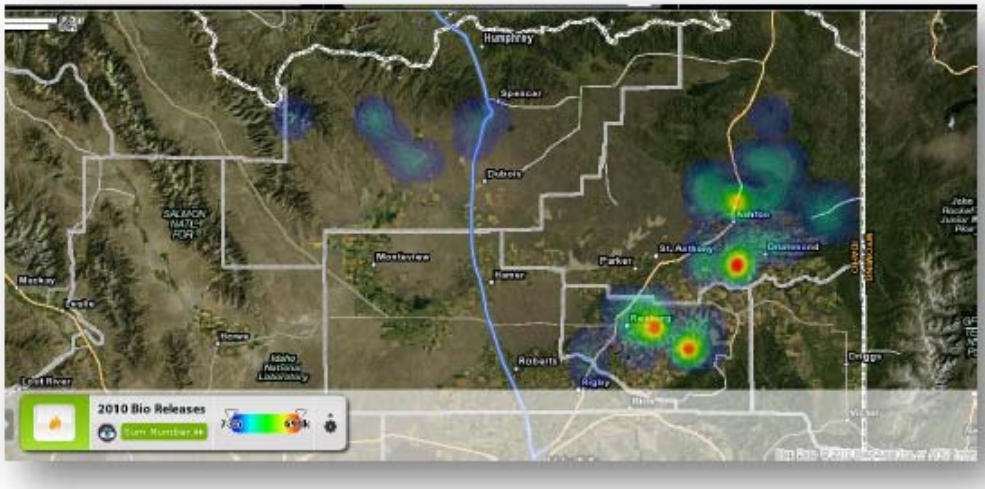
with photographs. This will give everyone a visual representation of whether the weed patches are increasing or decreasing in size based on the treatment methods.

Analysis numbers for field season 2010:

A. New weed AREA infestations: 48
    a. Total new acres 13.5
B. New points mapped: 315
    a. Total new acres 538



C. New weed LINES mapped: 60
    a. Total length: 60,646 feet
D. Number of insects released: 4,560,360



E. Number of site revisits done: 53

2009/2010 Combined Releases

Appendix D: Leafy Spurge Flea Beetle Collection Record

Madison County *2010* Bug Collection Record

Date	Personnell	Area	# of bugs	
7/14/2010	HTL - Madison	Madison Site 1	115,000	
7/19/2010	HTL	Madison Site 1	180,000	
7/20/2010	HTL	Madison Site 1	250,000	
7/21/2010	HTL	Madison Site 1	240,000	
7/22/2010	HTL	Madison Site 1	280,000	
7/26/2010	HTL - Bonneville Weed	Madison Site 1	529,000	
7/27/2010	HTL	Madison Site 1	750,000	
7/28/2010	HTL	Madison Site 1	240,000	
7/29/2010	HTL - Teton Cnty Forest Service	Madison Site 1	280,000	
8/2/2010	HTL	Madison Site 1	495,000	
8/3/2010	HTL	Madison Site 1	325,000	
8/4/2010	HTL & Chief	Madison Site 1	240000	
8/5/2010	HTL	Madison Site 1	190,000	
8/9/2010	HTL & Chief	Madison Site 1	375,000	
8/10/2010	HTL	Madison Site 1	445,000	
8/11/2010	HTL	Madison Site 1	465,000	
8/16/2010	HTL	Madison Site 1	475,000	
8/23/2010	HTL	Madison Site 1	105,000	
8/24/2010	HTL	Madison Site 1	160,000	
8/25/2010	HTL	Madison Site 1	225,000	
8/26/2010	HTL	Madison Site 1	125,000	
9/1/2010	HTL - Bannock Co.	Madison Site 1	15,000	
TOTAL#	**Leafy Spurge Flea Beetle**		**6,504,000**	