Tri-State Weed Management Area
2002 End-of-Year-Report

CHANGE IN 2002!!! This phrase best describes the past year in the Tri-State WMA on more than one front. We had more change in individual participants than in any year prior. The core strength and stability of the WMA has allowed us to adapt and find positives in this movement. Positives include implementation of the Hells Canyon project by The Nature Conservancy and great ideas and energy in the addition of cooperators from Lewis County, Idaho. The departure of some key folks from Oregon and Washington is of concern, as some have yet to be replaced. We look forward to working with the individuals moving into those jobs in the future. This summer, Tri-State played host to a congressional tour promoting federal legislation in support of weed control efforts. Cooperators presented the benefits of working together in planning and implementation of a weed management strategy. We also trialed some cutting edge technology in remote weed sensing and made progress toward recording the institutional memory of the group with a common GIS and database system.

EDUCATION/AWARENESS:

- Snake and Salmon River Congressional Education field trip hosted by Idaho Cattle Association, Oregon Cattlemen's and the Nature Conservancy in support of federal legislation to provide weed funding for States.

- Arrival of a Student Conservation Association Team to work on weed education and awareness on all applicable fronts. They worked in schools, at county fairs, volunteer efforts, and adult awareness.

- First annual *Herbicide Application and Safety Workshop.* Over 20 participants learned about herbicide safety, proper mixing and application. The workshop gained applicators licensed by the Idaho Department of Agriculture five recertification credits.

Applicators Learning to Calibrate

- *Hell's Canyon Weeds* aired on Idaho's Public Radio Stations and a follow up piece, *Public Enemy # 1,* a segment discussing weeds in Hells Canyon, debuted October 25 on National Public Radio's *Living on Earth* program. Cooperators provided information on weeds, their threats to native flora and fauna, and activities occurring to battle the threat.

- *Plant's out of Place part II* – Tri-State Cooperators provided interviews and footage for the second installment of this widely distributed piece which will air on CNBC. The segment featuring Tri-State focuses on yellow starthistle biological control methods.

Spalding's silene

- Educational materials provided by cooperators for the Idaho Weed Awareness Campaign toolkits.

- Tri-State served as a study area for three graduate research projects. The second year of Carolyne Menke's study looked at the impact of weed competition and fire on the Federally listed plant Spalding's silene. Studies by Corey Gucker and Kathy Sampselle looked at fire impacts to native plant communities in relation to weediness and soil crust recovery post fire.

- Over 100 volunteers assisted with weed control and learned about noxious weeds in the process.

INVENTORY:

- Consolidation of weed databases held in different systems into the Tri-State GIS system by the Nature Conservancy and digitizing of existing "paper" inventory. Partners contributing existing GIS data were BLM, IDFG, Nez Perce Bio-Control Center, Wallowa-Whitman NF, and TNC. This winter we will be assisting county weed supervisors and others to digitize and/or convert to GIS format their existing weed inventories.

- Acquisition of Quickbird™ satellite digital imagery for 54,600 acres of the WMA supplying imagery at 70 cm resolution in black and white and 2.5 m color resolution. The purpose of this acquisition was to determine if yellow starthistle could be detected from very-high-resolution multispectral satellite imagery and to test the efficacy of using satellite imagery to aid ground management efforts.

- Multispectral imagery acquired through the use of an aircraft mounted sensor for 12,000 acres at 80 cm resolution. The purpose of this acquisition was to test the usefulness of using an aircraft-mounted sensor similar to QuickBird to gather imagery for specific areas with shorter lead-times and quicker turn-around.

- Low altitude aerial photos were acquired for 13,000 acres of the WMA. These photos allow observers to digitize weeds on a computer screen. They also allow managers to locate potential weed sites for treatment as quick as a week or two after the imagery is taken.

- Inventory of 364 acres utilizing IPAC type handheld computers and GPS units. Plants inventoried included the well established yellow starthistle as well as a concentrated effort to map new sites of rush skeletonweed, leafy spurge and common bugloss.

- Cooperators worked on development and standardization of a common database to aid in transferring information from the field iPAQ and other handheld systems to the centralized GIS system. This database was being developed and tested during this summer and is expected to be deployed next summer with field crews applying treatments.

- Initial work started to compare the various types of remote sensing images taken during the

summer to determine usefulness and applicability in the topographically challenging Hells Canyon area. This project will assess the ability of remote sensing techniques to detect infestations of yellow starthistle. We will examine the role of spatial and spectral resolution in the detection of weed infestations and the cost effectiveness and accuracy of these techniques. See appendix 1 for an example of this great work!!

- On-the-ground personnel utilized laptops and GPS units to inventory 10,000 acres of the WMA for white top and yellow starthistle.

- Grande Ronde inventory for rush skeletonweed covering 5,500 acres from the Washington-Oregon state line to Schumaker and in the Rogersburg area.

- Twenty thousand acres inventoried in Hell's Canyon for yellow starthistle.

PREVENTION:

Weed Seeds Caught in a 4-wheeler Belly Pan.

- Continued weed control in parking areas and gravel sources.

- Discussion of new invader weeds between cooperators.

- Seeding of disturbed roads used in post-fire timber salvage.

- Contract stipulations for contractors utilizing heavy equipment in the WMA to clean weed seeds and debris from their equipment prior to entering the area.

- Best Management Prevention Practices for cooperators to include cleaning undercarriages of vehicles to avoid spread of weed seed.

- Wallowa County hay station on a major road into hunting areas where hay potentially contaminated with weed seeds was exchanged for certified weed free hay.

CONTROL:

Due to problems securing aircraft, aerial treatment was not accomplished on the Idaho side this year. Aerial application was utilized in Washington and Oregon.

Weed Species	Type of Treatment	Acres	Cost*
Yellow starthistle	Herbicide – Aerial	121	$4,840
	Herbicide – Pickup	600	$36,000
	Herbicide – ATV	194	$15,520
	Herbicide – Backpack	115	$17,250
	Herbicide – Horse sprayer	400	$60,000
	Hand pulling	30	$6,000

Weed Species	Type of Treatment	Acres	Cost*
Scotch thistle	Herbicide - Aerial	72	$2,880
	Herbicide – Pickup	140	$8,400
	Herbicide – ATV	125	$10,000
	Herbicide – Backpack	15	$2,250
Leafy spurge	Herbicide – ATV	30	$2,400
	Herbicide – Backpack	36	$5,400
	Herbicide – Horse sprayer	10	$1,500
Dalmation toadflax	Herbicide – Pickup	65	$3,900
	Herbicide – ATV	24	$1,920
	Herbicide – Backpack	11	$1,650
	Herbicide – Horse sprayer	30	$4,500
	Hand pulling	5.6	$1,120
Rush skeletonweed	Herbicide – Pickup	30	$1,800
	Herbicide – ATV	80	$6,400
	Herbicide – Backpack	20	$3,000
	Herbicide – Horse sprayer	10	$1,500
	Hand pulling	10	$2,000
Spotted knapweed	Herbicide – Pickup	110	$6,600
	Herbicide – ATV	40	$3,200
	Herbicide – Backpack	5	$750
Diffuse knapweed	Herbicide – Pickup	45	$2,700
	Hand pulling	5	$1,000
Sulfur Cinquefoil	Herbicide - Aerial	121	$4,840
	Herbicide - Backpack	2	$300
Russian knapweed	Herbicide – Backpack	5	$750
White top	Herbicide – Pickup	70	$4,200
	Herbicide – ATV	30	$2,400
	Herbicide – Backpack	10	$1,500
Crupina	Herbicide – Pickup	70	$4,200
	Herbicide – ATV	50	$4,000
	Herbicide – Backpack	24	$3,600
	Hand pulling	1	$200
Perennial pepperweed	Herbicide – Backpack	1	$150
Canada thistle	Herbicide – ATV	4	$320
	Herbicide – Backpack	1	$150

Weed Species	Type of Treatment	Acres	Cost*
Common bugloss	Herbicide – ATV	4	$320
	Herbicide – Backpack	1	$150
Totals		**2,772.6**	**$241,560**

*Costs were estimated utilizing a standard cost per acre for each application method. Estimates were $40/ac for aerial, $60/ac for pickup, $80/ac for ATV, $150/ac for horse sprayer and backpack, and $200/ac for hand pulling.

BIOCONTROL:

Work continued to quantify damage caused by yellow starthistle biological control agents. The more experienced we become at recognizing the effects of agents, the more outlooks are gaining a cautious optimism.

Cooperative biocontrol collection for yellow starthistle is the norm. Cooperators met at nursery sites, collected, sorted, packaged, and transported more than sixty releases of *Eustenopus villosus* and fifty releases of *Larinus curtis.* Each release contained approximately one-hundred insects. In Idaho, many of the *Eustenopus* were released in a neighboring WMA – Joseph Plains as we feel most of the Craig Mountains are adequately covered. Initial *Eustenopus* releases were made in the Hells Canyon National Recreation Area (HCNRA) and in the Grande Ronde River corridor on private and State lands in both Idaho and Oregon. The *Larinus* were placed at our previous release sites for *Eustenopus* to get a compliment of insects working against the weeds in the three states. The list of private landowners participating in the biocontrol releases continues to grow.

Other weed species targeted with biological control releases were purple loostrife, diffuse knapweed, and dalmation toadflax. One thousand *Galerucella pusilla* were released on purple loostrife at Pittsburg Landing. *Larinus minutus* was released for diffuse knapweed on the HCNRA and in the Grande Ronde drainage. These insects appear to be providing very good control of the host plant. One of the most recently available agents *Mecinus janthinus* was released to do battle on dalmation toadflax by Wallowa Resources in the Grande Ronde River drainage. Initial reports of this insect's effects are promising.

Cooperators are now looking at other weed players and will assess the availability of biocontrol agents for those species. The Oregon Department of Agriculture, biocontrol program, Nez Perce Tribe Biocontrol Center, and University of Idaho, Plant Soil, and Entomological Sciences Department have been instrumental in providing expertise in this field. On the radar screen is development of nursery sites for leafy spurge, diffuse knapweed, and dalmation toadflax biocontrol insects.

Monitoring -

We continue to quantify the impacts of biocontrol agents at established sites. This yearly monitoring is still showing the insects attacking in excess of 80% of the yellow starthistle buds. Cooperators discussed establishment of density transects to begin tracking the number of yellow

starthistle plants at release sites. A protocol for monitoring vegetation around release sites has been developed by the Nez Perce Tribe Biocontrol Center and was shared with cooperators.

Two years post Maloney Creek Fire, cooperators noticed biocontrol insect damage approaching pre-fire levels. Recovery has seemed much quicker than expected or feared. Cooperators also noticed some very heavy damage of yellowstar in areas where insects had not been released. This range expansion by the insects is occurring at a much faster rate than we were led to believe it would. "Are there areas where insects are not present?" is the next question to be answered. In 2003 we will be working together to answer this question so we can assure insects are working in all hidden corners of the WMA.

REHABILITATION:

Rototilling the Common Garden Site

- **Timber Salvage Roads** (11 miles) - Post Maloney Fire timber salvage has been occurring over the past two years. This activity is mostly complete and roads utilized during this operation were seeded then harrowed to provide seed coverage this fall. The seed mix used was one proven to work best through previous revegetation trials in Tri-State. We were not able to provide herbicide suppression of annual species so this will provide an interesting contrast to the powerline seeding where an Oust™ herbicide treatment was implemented prior to the same seed mix and harrowing treatment.

- **Native Plant Garden** (3 acres) - This mid-elevation farm field was sprayed with a non-selective herbicide in early spring to arrest seed production of on-site weeds. It was sprayed again in mid June with a broadleaf herbicide to kill the re-emerging morning glory. After fall rains in October, the site was rototilled to work up the soil for a seedbed and also to stimulate any fall germinating weeds. The site is now ready for planting of native plant species plugs in the spring.

- **Precious Lands** (60 acres) - Nez Perce Tribe personnel were busy working with the Natural Resource Conservation Service to plant farm fields in the Precious Lands to native species.

- **Snake River Benches** (85 acres) – Baker BLM aerially seeded benches above the Snake River that were dominated by annual vegetation. This is a preemptive attempt to establish perennial grasses in disturbed areas before yellow starthistle invades these sites.

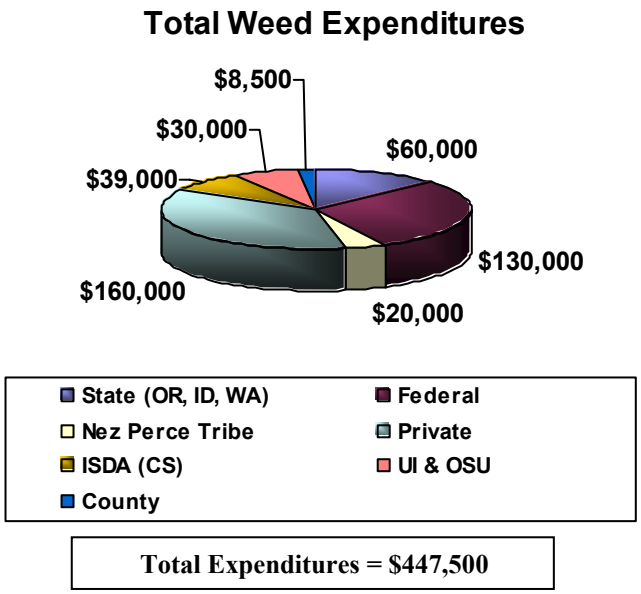
REHABILITATION MONITORING

- **-Power line seeding** (70 acres) - After the Maloney Creek Fire, burned power poles had to be replaced along a major power line and approximately forty miles of access roads to the lines were opened, pre-treated with Oust™ , seeded with a hearty mixture of wheatgrass and

fine fescue, then harrowed. A majority of the seedbed was harsh due to the compacted nature of the soil. Cooperators noticed numerous seedlings, much first year seed production, and the success of this project exceeded all expectations. Seedlings even produced seed on the most harsh, gravelly soiled areas. The stands obtained should compete quite well with the yellow starthistle along this travel corridor.

- **-Cave Gulch** (60 acres) - This is another area where Oust™ pre-treatment was used. TNC donated approximately two-hundred and fifty pounds of local bluebunch wheatgrass seed which was planted as a single species mix on approximately twenty acres. Seedlings appeared to do quite well. Of concern was an area where cheatgrass competition was quite intense. Observers were quite pleased to see seedlings survived the intense summer heat into fall. The success seemed fairly consistent over the entire 20 acres, except for what appeared to be some seed skips. Numerous seedlings were also observed on the other two areas. A seed mix of native species was planted on a different field and an introduced mix was planted on yet another area. The highly competitive introduced mix appeared to have the best success. Monitoring of all areas showed at least one seedling per square foot and above.

- **-Precious Lands** (30 acres) - The Nez Perce Tribe returned former farm fields to native species utilizing seed from the locally collected bluebunch wheatgrass along with Idaho fescue, Junegrass and forbs.



Total Expenditures = $447,500

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