



Gallatin/Big Sky Noxious Weed Committee

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Gallatin/Big Sky Noxious Weed Committee

2011 Annual Report

By Jennifer Mohler, Coordinator



Moose twins photographed at Portal Creek Flats in the Gallatin Canyon.

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Introduction

Project Area

The project area encompasses the portion of the Gallatin River Watershed south from Four Corners to the border of Yellowstone Park. Elevation ranges from 5000 feet near Four Corners to over 11,000 feet in the highest peaks. Annual precipitation ranges from 12-15 inches near Four Corners to 45 inches in the higher elevations. Most precipitation falls as snow, particularly above 6000 feet. Average temperatures range from 6° F in winter to 78° F in summer but can vary from over 100° F in summer to -40° F in winter. Soils are medium to moderately coarse with abundant rock fragments and are shallow in mountainous terrain and deeper in valley bottoms.

Valley floors are drier and are primarily shrub steppe/grassland. Lodgepole Pine with an understory of grouse whortleberry, pine grass, heartleaf arnica, or Oregon grape is the most common cover type found in the mid-elevations (5500-9500 feet). Douglas fir and Engelmann Spruce are common as well. Alpine vegetation includes whitebark pine, subalpine fir, sheep fescue, and alpine bluegrass.

The majority of property within the project area is National Forest System lands managed by the U.S. Forest Service. Private lands are concentrated in the Big Sky area, between Gallatin canyon and Four Corners. Montana Fish, Wildlife, and Parks maintain the Gallatin Game Range, which has parcels in the Buffalo Horn Creek and Taylor Fork Drainages as well as parcels adjacent to Big Sky. Yellowstone National Park is not included in the Project area.

Land Use

The U.S. Forest Service is the largest land owner in the project area, which is managed for multiple uses including: timber production, recreation, wildlife habitat, and watershed protection. Land from Four Corners south to the mouth of the canyon is mostly privately owned and land use is a mixture of agriculture, residential subdivisions, and businesses. Highway 191, which runs through Gallatin Canyon, is also a major transportation route connecting southwestern Montana and eastern Idaho.

The Gallatin Canyon and Big Sky area are known for world class outdoor recreation such as skiing, fishing, hunting, whitewater rafting, rock climbing, horseback riding, and backpacking. The natural amenities and proximity to the city of Bozeman and Yellowstone National Park draw a wide variety of outdoor enthusiasts from around the world.

Increased recreational use of the area has led to a high degree of residential and commercial development in the Big Sky area. Development of the area includes many subdivisions, homes, condominiums, businesses, and 2 major ski resorts. These pressures on the area have led to the inevitable introduction of noxious weed seeds from a variety of sources, and major development projects have provided ideal habitat for noxious weeds to thrive.

Gallatin / Big Sky Noxious Weed Committee

In 2004, a group of concerned citizens, local organizations, and state and federal agencies formed the Gallatin/Big Sky Noxious Weed Committee (hereafter known as the Committee) to address the proliferation of spotted knapweed, oxeye daisy, and other noxious weeds along Highway 191 and in the Big Sky area. The Committee operates under the Northern Rocky Mountain RC&D. Historically, funding is primarily received from grants obtained through the

Montana Noxious Weed Trust Fund, Gallatin Conservation District, and the Big Sky Resort Area District.

The Gallatin/Big Sky Noxious Weed Committee's project area encompasses some of the most ecologically and economically important resources in the state. The Gallatin River is a centerpiece within the Greater Yellowstone Ecosystem and provides vital habitat and water for plants, wildlife, and the people who live and recreate in the area. Those of us who live in this area of Montana choose to do so because of the abundance of recreational opportunities, the amazing and unique wildlife that resides here, and the stunning beauty of the landscape.

Continued spread of noxious weeds will negatively impact wildlife, fisheries, water quality, downstream agricultural water users, and scenic beauty. In essence, our love of wilderness and wildlife can have a direct impact on its health, and working to address the negative effects of our actions is a reflection of our core community values. Working to protect native ecosystems and natural resources is a tangible way to reduce our impact on the land.

Noxious weeds replace native plants, disrupt plant diversity, and remove much-needed food sources for wildlife. The U.S. Forest Service and the Gallatin County Weed District have identified this corridor as a high priority area for noxious weed management. In addition, Yellowstone National Park (YNP) identified the spread of noxious weeds as the #1 threat to the Park's health. Montana State University surveys show that weeds are spreading in this area more rapidly than in other areas of the state. Continued spread of weeds will impact wildlife, increase erosion, degrade water quality, and distract from scenic beauty.

Montana State University researchers point out that:

- Noxious weeds out compete and displace most native plants. Their invasion changes the way ecosystems work and degrades habitat for native wildlife and fish.
- For most recreationists, spiny weeds, such as Canada thistle and musk thistle, limit river access.
- Loss of habitat for game animals and fish decreases success of hunters and anglers.
- Noxious weed infestations have reduced the appraised value of land. In Oregon, a \$2 million land transaction was reduced by \$200,000 because of the level of sulfur cinquefoil infestation.
- In 1994, knapweeds alone cost Montanans \$14 million. Currently, weeds cost farmers over \$100 million each year in expenses and crop production losses in Montana.

Purpose

The primary responsibilities of the Committee include:

- Providing technical assistance to private landowners and other land managers
- Educating the local community about noxious weeds and their impacts
- Assisting with noxious weed control activities
- Coordinating noxious weed control efforts among existing weed control entities

2011 Accomplishments

This report details the activities and accomplishments of the Gallatin/Big Sky Noxious Weed Committee for the 2011 field season. A number of goals for the Committee were established at the April 5, 2011 meeting, which can be broadly categorized into the following

four major areas: Education/Outreach, Land Owner Assistance, Partnership Efforts, and Committee Efforts.

The season started with the committee formalizing goals and a work plan at the April committee meeting. In early March, news came that Federal funding for RC&Ds would be eliminated. Due to the uncertainty of funding for the Northern Rocky Mountain RC&D, the work plan was put on hold and the situation was monitored. The BSRAD grant due in April was prepared in hopes that the RC&D would remain viable. In early May, after a couple months of uncertainty, the Northern Rocky Mountain RC&D made plans to continue its mission and remain open. At that point, the coordinator returned to the work plan. Although this delayed the usual start to the season, much was accomplished during the 2011 season.


Education/Outreach

Post Card Mailer: Over 3,850 (an increase of 950 from 2010) color postcards were direct mailed at the beginning of June to landowners in the project area urging them to become educated and manage their noxious weeds. The membership mailing list from Big Sky Owners Association was combined with the existing mailing list, aiding the Committee in reaching more landowners in the target are. The ads featured a vigilante theme with the text: “Be a Vigilante! Take justice in your own hands!” Also included on the postcard was a list of committee sponsors: Rocky Mountain RC&D, Big Sky Resort Area Tax District, Gallatin County Weed District, and Gallatin Conservation District.



Advertising: An advertising campaign was initiated in two local newspapers, the *Bozeman Daily Chronicle* and *Big Sky's Lone Peak Lookout*. The ads (shown below and on the left) focused on landowner assistance (site visits) and cost share assistance. The ads included logos of committee partners. There were seven 3"x5" *Chronicle* ads in black and white. There were 14 ¼ page ads (see example below) that ran every week for 14 weeks in the *Lone Peak Lookout*.

Donated advertising by Big Sky Publishing: The color ad (shown below on the right) was from 2010. This template was used for the half page donated by the *Bozeman Daily Chronicle* and ran on July 24, 2011.



**Got Noxious Weeds?
We can help!**

Now is a great time to manage the noxious weeds on your property, and the Gallatin/Big Sky Noxious Weed Committee can help!

- Free one-on-one assistance, including identifying weeds on your property & recommending treatment methods.
- We provide cost-share funding (money) for landowners treating noxious weeds.
- Wildflower and Weed Hikes 9am to noon, July 9 Porcupine Creek, July 30 Ousel Falls, Aug 13 Crail Ranch Trail, Sept 10 Porcupine Creek

For more information, contact Jennifer Mohler at 406-209-0905 or bigskyweeds@gmail.com, and visit www.bigskyweeds.org.

Gallatin/Big Sky Noxious Weed Committee
www.bigskyweeds.org

Committee Partners
Big Sky Area Resort District
Northern Rocky Mountain RC&D
Gallatin Conservation District
Gallatin County Weed District



WANTED

KNAPWEED **OXEYE DAISY**

Be a Vigilante! Take justice in your own hands!
Phumier and his gang stole gold. Noxious weeds are stealing our land.
Weeds like spotted knapweed and oxeye daisy are taking our wildlife habitat and the scenic beauty we all love.
It's time to Hang 'em!

The Gallatin/Big Sky Noxious Weed Committee is a citizen-led group working to combat noxious weeds along the Gallatin River Corridor from Yellowstone Park and Big Sky to Four Corners. The Committee offers free noxious weed assistance and cost share to landowners in the area.
For more information, contact Jennifer Mohler at 406-209-0905 or bigskyweeds@gmail.com.
The Gallatin/Big Sky Noxious Weed Committee is sponsored by the Big Sky Area Resort District, Northern Rocky Mountain RC&D, Gallatin Conservation District, and Gallatin County Weed District.

BOZEMAN DAILY CHRONICLE



Newspaper coverage of events:

- Belgrade news published Jennifer's write up of the June 25 weed pull on July 5
- Big Sky Weekly and Lone Peak Lookout published articles about the cooperative Bighorn Sheep winter range treatment on July 28 and 29.
- Lone Peak Lookout published an article about the Ophir School weed event on September 29.

Community Events

Wildflower and Weed Hikes 2011

The Gallatin/Big Sky Noxious Weed Committee hosted education wildflower and weed hikes throughout the summer. Wildflowers are abundant in the Big Sky area and hike participants can expect to identify and learn about a wide variety of native plants. The hike also will include discussion of noxious weeds and what residents can do to help eradicate them. The event is free and open to the public. The hike starts at 9am and will finish at noon.

Saturday, July 9th @ Porcupine Creek – no participants showed up.

Saturday, July 30th @ Ousel Falls Trailhead – 2 participants showed up.

Saturday, August 13th @ Crail Ranch – 9 participants showed up to hike the Crail Ranch and Reflector Trail. The group was very keen on plant identification, taking a lot of time to stop and smell the flowers.



Saturday, September 10th @ Porcupine Creek – no participants showed up.

Gallatin County Farm Fair May 10-12

In its seventh year, the Farm Fair has grown to three days and provides about 900 fourth graders from 20 schools in Gallatin County a hands-on experience at 17 booths dedicated to farm life. Every public school in Gallatin County attended this year, except West Yellowstone and Willow Creek. The goal is to introduce kids to all the agri-sciences and where our food comes from and how it gets to our tables. Teaches appreciate the opportunity to get the kids out of the classroom and learn about all the careers and possibilities in the agriculture world. The fair helps students to foster an appreciation for Montana farmers and ranchers.

The fair is being held on a working ranch, owned by Ed and Punky Brainard, off East Manhattan Oil Road. Various groups and agencies participate in the all volunteer event, and the fair consists of 18 different agriculture stations. Some of the stations will include dairy cows, goats, pigs, beef cattle, draft horses, pleasure horses, bees and pollination, forestry, noxious weeds, irrigation, farm safety, crops, wheat, potatoes, weeds, 4-H, and, the ever popular, "homemade ice cream".

Jennifer Mohler joined Mike Jones and John Ansley from the Gallatin County Weed District to host a Noxious Weed booth. A new class of students visited the booth every 15 minutes, so presentation time was short. After covering basic noxious weed education points (what is a noxious weed, how did they get here, where did they come from, why are they bad, how do you work to control/manage them, etc.), students were challenged to see if they could spit sunflowers seeds as far as leafy spurge explosively dehisces its seed. The student that "spit" the farthest received a prize of a weed ID booklet, plastic noxious weed plant, or a temporary tattoo. The activity was a hit, as students, teachers, and volunteers seemed to enjoy the seed spreading challenge.



5-17-11 Weed Education Event and Weed Pull with Gallatin Gateway Youth Program

Jennifer Mohler and Michelle Passmore, from the Gallatin Conservation District, presented a Noxious Weed Education Event and Weed Pull for the Gallatin Gateway Youth Program. After a 20 minute educational talk about noxious weeds, the group proceeded to pull weeds around the Gallatin Gateway Community Center and to the west of the Gallatin Gateway Inn for an hour and a half. Spotted knapweed and hoary allysum were the most abundant weeds pulled. The kids decided to compete for who pulled the weed with the largest root. After pulling, the bagged weeds were disposed of.



Ophir School Property Native Plant Project with Jessie Wiese from Big Sky Institute & Ron Downer, Ophir School's Facilities Director/Transportation Supervisor

On Thursday, May 19, Jennifer met with Jessie Wiese and Ron Downer to inspect the site of the Native Plant Garden project for noxious weeds. During a tour of the site, a high school

class joined us to learn about noxious weeds and their impact on the environment. The project area covers 1 acre and will consist of an informative sign, multiple native gardens (wildflower garden, butterfly garden, native grass garden) with the goal of educating students and residents about the many benefits of native plants.

The site has been disturbed by recent construction and contains many noxious weed species along with introduced grasses.

Ron, Jessie, Jennifer, and the students then toured the rest of the Ophir School property identifying noxious weeds, native plants, and discussing issues related to land reclamation, disturbance, and ecology.

On June 13, Jennifer joined 15 or so volunteers in stage 1 of construction of the native plant garden. Before a storm hit, volunteers created the walking path, prepared the soil for the gardens, and put up the interpretive sign.

On June 22, noxious weeds on the site were treated by a professional applicator, and cost share from the committee helped pay for that treatment.

This fall, fourth and fifth grade students helped transplant larger perennial wildflowers, and seeded wildflowers and native grasses. Further plans include additional seeding and planting, and creating a phenology garden.



Wildfire Preparedness Event in Big Sky

On June 23, the Big Sky Natural Resource Council hosted their second annual Big Sky Wildfire Preparedness event at Town Center Park. The Gallatin/Big Sky Noxious Weed Committee hosted an information table at the event to educate the public about noxious weeds and available assistance. Many Big Sky residents and visitors turned out for the event, which featured information on natural resource issues in the area, a free BBQ, and special appearances by Smokey Bear and Elvis.

Volunteers from the Fire Department cooked burgers and hot dogs for over 300 people, while council member Seth Barker gave a presentation and answered questions from homeowners on how to create survivable space. Forestry vendors held a trade show, highlighting the equipment and techniques they use to maintain healthy forest stands in Big Sky.



Annual Weed Pull with Trout Unlimited

On June 25, the Gallatin/Big Sky Noxious Weed Committee in partnership with Trout Unlimited held the third annual weed pull and river clean up day. Twenty-eight volunteers from the weed committee, Trout Unlimited, Gallatin National Forest Service, Gallatin County Weed District, and master gardener students helped set a new record by collecting 1060 pounds of noxious weeds!

Volunteers met at the Castle Rock Inn in the Gallatin Canyon for a light breakfast and then split up into 2 teams to collect trash and noxious weeds. Due to the high river flows, certain locations were either not accessible or too dangerous, so organizers selected Portal Creek Flats and the pullout at the canyon entrance as the two priority areas. These two sites were visited last year, and returning volunteers noticed fewer weeds due to their efforts. This trend will likely continue as over a half ton of noxious weeds were collected, bagged, and disposed of this year.

After a morning of pulling weeds, volunteers were treated to a lunch buffet at Castle Rock Inn catered by Pratt’s Palate Catering. Special thanks go out to Trout Unlimited, Gallatin County Weed District, Gallatin National Forest Service, Castle Rock Inn, and Pratt’s Palate Catering for helping the Gallatin/Big Sky Noxious Weed Committee make a difference in our efforts of zero spread.

WANTED

The Gallatin River is a blue ribbon trout fishery and provides crucial habitat for wildlife, water resources and recreational opportunities. Noxious weed infestations are increasing! These infestations are threatening to degrade water quality by increasing sedimentation and the potential for flooding. Native plants that provide cover and food sources for wildlife are in danger of being displaced by noxious weeds. You can help!

3rd Annual Gallatin River Clean Up & Weed Pull with Trout Unlimited
 Saturday, June 25 9am - 1pm
 9 am: Meet @ Castle Rock Inn (65840 Gallatin Road)
 for a short briefing and light breakfast

Volunteers will break into teams to clean garbage and pull weeds along the Gallatin River

Noon: Re-convene at the Castle Rock Inn for a free lunch buffet!

RSVP by Wednesday, June 22nd For more information, visit www.bigskyweeds.org
 Terry Evans @ 580-8100 or The Gallatin/Big Sky Noxious Weed Committee is
mgrtroutunlimited@gmail.com sponsored by the Northern Rocky Mountain RC&D.

SUPPORTING OUR COMMUNITY
BOZEMAN DAILY CHRONICLE

Gallatin / Big Sky
ZERO SPREAD
 Change War on Weeds



Table 1. Annual Weed Pull Data 2009-2011

	2009	2010	2011
# Volunteers	55	38	28
Pounds collected	---	850 lbs	1060 lbs

Bighorn Sheep Winter Range Noxious Weed Treatment

Cooperative Project with Gallatin County Weed District,
Gallatin National Forest Service and Montana Department of Transportation
July 18-20

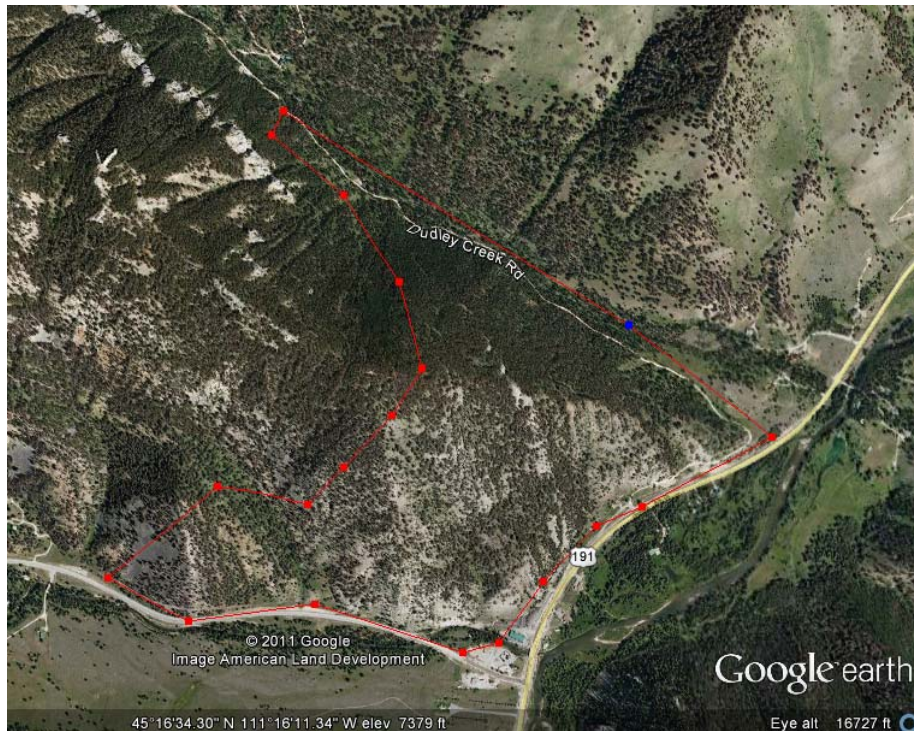
Bighorn sheep are high-country ungulates that thrive on steep mountainsides and require a combination of four habitat elements: ample wild grasses and forbs, reliable water sources, wide visibility so they can see predators, and steep, bare slopes nearby for escaping danger. Such habitat exists northwest of US Highway 191 and Big Sky Spur Road. As many locals know, it's common to see bighorn sheep along these roads during winter, proving this area to be critical winter range.

Unfortunately, noxious weeds have also found a niche here, and are spreading rapidly. Spotted knapweed, hoary alyssum, houndstongue, oxeye daisy, canada thistle, and musk thistle are among the noxious weeds that are thriving on this steep hillside, crowding out native plants that the bighorn rely on.

From July 18-20, the Gallatin/Big Sky Noxious Weed Committee, Montana Department of Transportation, Gallatin National Forest Service, Montana Conservation Corps, and Gallatin County Weed District worked together to treat noxious weeds on the winter range. For three days, crews climbed steep slopes with backpack sprayers and used 300 foot long hoses to reduce the amount of noxious weeds that dominate the winter range. While crews made a huge difference, this area will require treatment for consecutive years in order to ensure bighorn sheep can rely on healthy winter range.

Articles about the cooperative project appeared in the Lone Peak Lookout and Big Sky Weekly.





Above is the area treated highlighted by red outline. The terrain is incredibly difficult to navigate and access, with steep slopes and unstable footing. Spray trucks with long hoses were used for the slopes adjacent to the roads, but for the remainder of the area, backpack sprayers were used. Treatment of the area is very physically demanding and difficult, a likely reason why this area has not received the attention it needs.

Meeting with Meadow Village Landowners

On August 10, a few concerned landowners that live adjacent to the Big Sky Golf Course met to discuss the perennial problem of noxious weeds on the golf course property. Darius & Cindy Larsen, Rumsey Young, Jeff & Karen Strickler, & Jennifer Mohler were present. At the start of the meeting, Jennifer explained the nature of Committee work and that the Gallatin/Big Sky Noxious Weed Committee paid \$2000 to a private applicator to treat noxious weeds on golf course property (with Sam Woodger's approval) in 2010. The applicator donated additional time and materials to treat the golf course property. Providing funding to the golf course was in response to the high number of complaints about the golf course for multiple years. The goal of this grant was to provide incentive and motivation for the golf course to step up their noxious weed management. After a lengthy discussion, the group came to consensus on efforts to tackle noxious weed issues in the community. Jennifer emailed the group notes from the meeting and will follow up with Taylor Middleton at the BSOA meeting on September 2.

Big Sky Owners Association Meeting

The BSOA is Big Sky's oldest and largest home owner's association comprising over 8,000 acres; 29 condominium associations; 14 subdivisions; multiple certificate-of-surveys and other land tracts. BSOA's membership consists of 2,350 property owners - 85% of which are not full-time Big Sky residents. Mary Jane McGarity, Executive Director of BSOA, and Michele Geppert, Big Sky Architectural Committee Coordinator, have worked closely with Jennifer all year to tackle invasive plant species in BSOA's territory. Besides enrolling in the cost share program, BSOA has cooperated with GBSNWC in many ways. Committee information is

currently in the BSOA office, an article about GBSNWC and noxious weeds was in their August newsletter to their membership, and BSOA staff is in regular communication with Jennifer about properties of concern or in need of assistance.

Jennifer Mohler attended the Big Sky Owners Association Meeting and reception on September 2. The meeting was held at the Talus Room in the Summit Hotel, and upon adjournment, everyone moved over to the reception at Whisky Jack's.

Jennifer set up a table with weed information, handouts, brochures, weed identification mounts, and contact cards. A power point presentation of noxious weeds in Gallatin County played automatically on a laptop computer.



Pictured at left is Darious Larsen, a resident in Meadow Village actively working with the committee on noxious weed issues, and Crystal Hagerman, Natural Resources Field Tech with Gallatin County Extension.

Roughly 15 people engaged Jennifer with their concerns or questions regarding noxious weeds.

Many others moved by quickly and gathered handouts and information. Darious Larsen introduced Jennifer to Taylor Middleton, Boyne's general manager. The three briefly discussed noxious weed issues on golf course property. While Taylor did reassure that Boyne wants to be a good neighbor, it was clear that much more work remains to assist and encourage noxious weed control on the Big Sky golf course and other Boyne properties. But the highlight of the event was a story about a local elementary age girl who sold oxeye daises at the Big Sky Farmers Market with a note that told customers to enjoy the pretty flowers in a vase, and then properly dispose of them as oxeye daisy is a noxious weed.

Ophir School Weed Education Event and Pull

Since 2008, the Gallatin/Big Sky Noxious Weed Committee has worked with Brittany Ellis of Ophir School to educate second graders about noxious weeds and their impact on natural resources.

Prior to the field trip, Jennifer procured a "What's In Your World?" field kit from MSU Extension Publications, containing the resources and tools for kids to explore the environment. The kits were delivered to Ophir School a week before the field trip. Each activity tool kit contains: canvas Pouch, What's In Your World? student booklet, Zero Spread: Identifying Montana's Greatest Weed Threats, biological control information cards (set of 12), aspirator and insect collection containers, sketchbook, hand lens, safety scissors, ruler, pencil sharpener, and tweezers.



This year's field trip was held on Friday, September 23. Sixteen Ophir School second grade students, along with teachers and parents, participated in a field trip to Big Sky Community Park. The objectives of the field trip were to educate the students about noxious weed identification, the impacts of noxious weeds, weed mapping using GPS technology, and noxious weed management options.

The event was coordinated by Jennifer, who was unfortunately sick and unable to attend. Mike Jones, assistant coordinator/foreman of the Gallatin County Weed District stepped in and led the event.

Others who assisted with the event were:

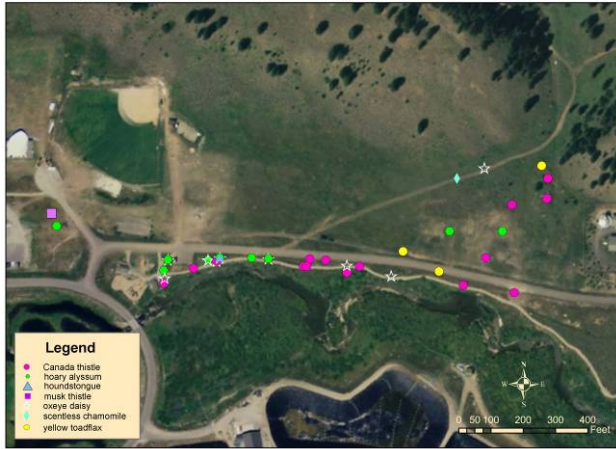
- Keith Mainwaring & John Councilman, board members of the Gallatin Big Sky Noxious Weed Committee
- Michelle Passmore, Small Acreage Field Technician with Gallatin County Extension
- Karen Kitchen, Biological Technician with Gallatin National Forest
- Carla Hoopes, Owner/Partnerships Coordinator

Both kids and adults enjoyed the field trip and learned to identify several species of noxious weeds, use the GPS units to map noxious weeds, and utilize the “What’s in Your World?” field kits. After mapping weeds on the Frisbee golf course, kids were challenged to identify noxious weeds from weed mounts (samples of noxious weeds mounted in a case) in which they did very well. The final activity was to pull noxious weeds around the picnic area, primarily hoary alyssum, and dispose of them into garbage bags. In all, 4 full large garbage bags were collected.



Karen Kitchen volunteered to take mapping data collected by the kids and create a map. Jennifer delivered the map to the school and the kids made a noxious weed display in the hall for all students to see.

Ophir School 2nd Grade Noxious Weed Mapping Project - Sept 23, 2011



Jennifer visited the class the following Tuesday with reporter Jolene Keller from the Lone Peak Lookout. Four students were interviewed about the field trip and what they learned. Jennifer brought 10 weed mounts that remained in the classroom for a week to further help with identification. When leaving, the field kits from MSU Extension Publications were seen hanging on each kid's coat hook.

Lone Peak Lookout printed an article in the September 29th edition.



Pasture Management Class for Small Acreage Landowners


The growing number of smaller acreage landowners, many of which are horse owners, mirrors the rapidly growing population in the Gallatin Valley. The increased number of "ranchettes" is resulting in many small-acreage landowners who lack the background in land stewardship needed to properly manage their land. Conserving natural resources can best be accomplished when landowners are provided with the knowledge and tools to enable them to make wise decisions about land management.

Participants receive aerial photos, soil survey maps, and a variety of soil reports designed to educate the landowner about the capabilities and limitations of their soils from a pasture production perspective. Participants learn about weed ecology, weed identification, and methods for weed control. They gain knowledge of the basics of plant growth, plant response to grazing/mowing, common pasture plant species, and how to improve their grass production.

Participants also receive guidance about grazing principals and management, which will form the basis for creating a grazing management plan suitable for their property. All of this resource information will help the landowner formulate achievable goals for their property designed to result in a sustainable grazing system for their animals.

The class is a cooperative project with Michelle Dammen, the Small Acreage and Horticulture Agent for Gallatin County Extension. Michelle coordinated and made arrangements for advertising the class, and Jennifer taught the class. The goal of the cooperative project was to train Michelle so she could coordinate and teach the class on her own in the future. Jennifer was mentored in 2003 by Wendy Williams, NRCS Soil Scientist, who created the course from Living on the Land materials. After assisting Jennifer for one class, Wendy retired and Jennifer has taught 11 classes since 2003. This cooperative project ensures the continuation of a successful educational program and an opportunity for landowners to get in depth, comprehensive assistance in management of natural resources.

The last Pasture Management Class for Small Acreage Landowners was held on October 17. Participants of the class had their field trip on Tuesday, September 27 where they identified grasses and weeds, along with experiencing a sustainable grazing system. The class was held in room 138 of the new Animal Bioscience Building at Montana State University in Bozeman.



Pasture Management Class for Small Acreages

Mondays Sept 12 – Oct 17
6:30 to 8:30 pm
\$80 for 1 notebook & 2 seats

Sponsored by: Gallatin County Extension, Gallatin Conservation District, Northern Rocky Mountain RC&D, & Gallatin/Big Sky Noxious Weed Committee

TOPICS INCLUDE:
Soils, Grasses, Water, Poisonous Plants, Weeds, & Grazing Systems

Whether you have 2 acres or 200, horses or cows, sustainable pasture management can help reduce costs, increase forage, protect water quality, control weeds, and improve animal health.

To enroll contact: Michelle Dammen
209-2180 or gallatin2@montana.edu



Fall 2011 GYCC Invasive Species Meeting

The Greater Yellowstone Coordinating Committee (GYCC) was formed to allow representatives from the National Park Service, US Forest Service, and the US Fish and Wildlife Service to pursue opportunities of mutual cooperation and coordination in the management of core federal lands in the Greater Yellowstone area.

The GYA Weed Committee includes invasive species coordinators from each GYA unit, county weed and pest staff, BLM and other state, county and federal weed managers who work together on common inventories, establishment of cooperative weed management areas, development of best management practices, creation of education and information materials, and integrated management to manage and prevent the spread of noxious weeds.

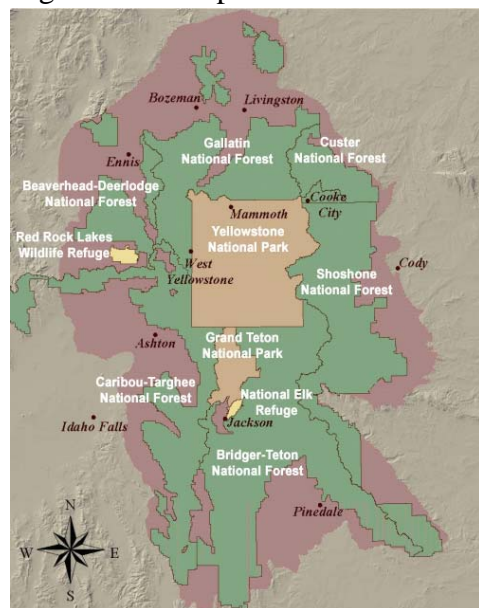
Jennifer attended 2 days of the meeting on October 4th and 5th. The first sessions were dedicated to terrestrial invasive species and included working group sessions on Best Management Practices, Mapping, Education, Funding/Legislative, and Early Detection and Rapid Response. A presentation by Andy Currah about treating Austrian fieldcress proved very informative. This invasive species favors areas that are impacted by water for most of the year, i.e. irrigation ditches, marshes, etc. Every attendee gave an update on their season's activities, participated in committee workings and strategic planning.

Pat Perrotti gave an update on Yellowstone National Parks progress on invasive species. One item of note was tall buttercup was becoming a problem in the horse corrals, both those of the rangers and concessionaires. There currently is no quarantine requirement of horses entering the park for the season, and the Park is working on this issue.

Mid-day on the 5th, the Aquatic Invasive Species committee joined the group. After a history of the AIS committee was presented, the attendees gave season updates. Next was a lively and fascinating discussion about mapping and record keeping, which provided new insight regarding aquatic species.

The meeting proved extremely informative and beneficial. Besides meeting and connecting with committee participants, it was learned that Kevin Suzuki may be implementing a mapping project along the Gallatin River. In addition, there may be funding opportunities for the Bighorn Winter Range Project. Both items are on the coordinator's agenda to pursue.

Attendance was beneficial on many levels, including increased knowledge of agency efforts on invasive species management throughout the GYC, increased networking opportunities, and a greater understanding on cooperative projects/funding opportunities.

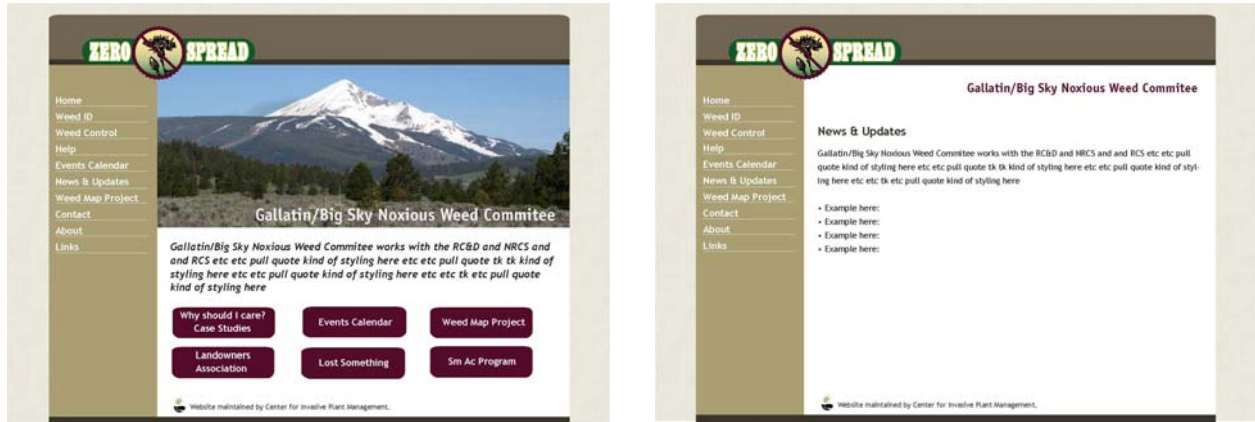


Map of Greater Yellowstone Area

Website Renovation

Larry Holzworth and Jennifer Mohler met with Elizabeth Galli-Noble, the Director of the Center for Invasive Plant Management at Montana State University, in April. Liz offered to provide free assistance to the committee to re-design and update the committee's website. Jennifer had met with Kitty Weiss, the E-Communications Coordinator, several times in the spring. Thus far, an overall re-design has been initiated and individual pages are being created (see draft mock-ups below). Two issues slowed the project down. First, Kitty had a child at end of July and was on maternity leave for a couple months. Additionally, the Northern Rocky Mountain RC&D has had a challenging time producing the necessary information (log in information and passwords) for Kitty to access the site. This is a direct result of staff changes/losses that the RC&D has incurred this past year. Currently, the RC&D executive director is changing hosting to save the Committee money and will provide the necessary log in information once completed. Jennifer will be meeting with Kitty mid-January 2012 to provide

the final details and information. Once Kitty is able to make changes and provide a working copy, final edits can be made, with the goal of a fully functioning site by mid-March of 2012.



Landowner Assistance

Land Owner Assistance Field Season to date

A total of 47 site visits were conducted in 2011, with the first site visit being on June 9, and the last was conducted on October 18. Site visits entail meeting with landowners on their property to identify noxious weeds, provide information and materials regarding noxious weed management, and assist landowners with land management questions. The property inspection categories for the 2011 field season are presented in Table 1.

Table 2. Property Inspection Summary for 2011

Inspection Category	# Properties Inspected	Total Acres Inspected
Requested by Property Owner	47	592
Complaint	70	172
Observation	43	143
Follow Up	8	50
Total	17	957

Table 3. Property Inspection Summary 2008-2011

	2008*		2009*		2010		2011	
Inspection Category	# Properties Inspected	Total Acres Inspected	# Properties Inspected	Total Acres Inspected	# Properties Inspected	Total Acres Inspected	# Properties Inspected	Total Acres Inspected
Requested by Property Owner	28	1965	16	351	21	89	47	592
Complaint	16	64	68	340	30	93	70	172
Observation	76	--	--	--	46	167	45	143
Follow Up	--	--	--	--	1	20	8	50
Total	120	2026	84	691	98	369	170	957

*Please note that in 2008 and 2009, inspection categories were slightly different. Every effort was made to place inspections into the corresponding category per the categories developed for the database in 2010.

Table 4. Properties to be contacted in 2012

Reason for Contact	# Properties
Weed Problem	99
Assistance	1
Cost share	56
Total	168

Table 5. Number of Property Inspections by Month

	2008	2009	2010	2011
May	27	2	0	3
June	30	23	1	6
July	28	31	10	14
August	19	23	10	79
September	14	5	55	46
October	0	0	22	22
November	2	0	0	0
Total	120	84	98	170

Table 6. Percentage of Properties Inspected with Noxious Weed Species 2008-2011

	2008	2009	2010	2011
bull thistle		5		5
canada thistle	60	58	78	76
common tansy	9	5	35	5
curly dock				4
dalmation toadflax			1	1
field bindweed		1		
hoary alyssum	25	39	75	51
houndstongue	48	41	45	27
leafy spurge				1
musk thistle	8	43	27	35
oxeye daisy	17	27	48	48
poison hemlock				1
spotted knapweed	53	49	51	30
sulfur cinquefoil		7		3
tall buttercup				1
tansy ragwort				1
yellow toadflax	9	7	3	11

Cost Share Program

In 2010, the Committee initiated a cost share program to provide monetary incentive for landowners in the project area (within Gallatin County) to work together in stopping the spread of invasive weeds. Through strengthening on-the-ground management, the major economic and environmental impacts of weeds can be more effectively mitigated.

Multiple reasons exist for the focused and aggressive assistance for property owners in the Project area:

- a large number of undeveloped/vacant lots
- many property owners are not full time residents
- high volume of traffic in the Gallatin Canyon due to tourism and recreation
- many subdivisions in the Gallatin Canyon do not have a homeowners association

In 2011, 33 landowners submitted completed applications for a total reimbursement of \$4682.42. The cost share program is funded from the Big Sky Resort Area District and Gallatin Conservation District grants.

Table 7. Cost Share: funds distributed to landowners

2004-2009		2010		2011	
No program		Coverage: ½ up to \$500		Coverage: ½ up to \$250	
-----	-----	Total distributed = \$2,123.21		Total distributed = \$4682.42	
-----	-----	10 landowners		33 landowners	
-----	-----	122.40 acres		224.75 acres	
-----	-----	5 miles of roadsides		28.78 miles of roadsides	
-----	-----	Amount Submitted	Amount Paid Out	Amount Submitted	Amount Paid Out
-----	-----	High	High	High	High
-----	-----	\$972	\$486	\$3991	\$250
-----	-----	Low	Low	Low	Low
-----	-----	\$139	\$69.25	\$65.50	\$31.25
-----	-----	Average	Average	Average	Average
-----	-----	\$424.64	\$212.32	\$497.31	\$141.89

It is expected that more landowners will submit cost share applications in 2012, as many learned of the program late in the season when treatment would not have been ideal. Table 7 illustrates that as 56 individual landowners requested to be contacted in 2012 about the cost share program. In addition, 99 properties are marked to be contacted due to weed infestations that were either observed by the coordinator or were complained about.

Mapping & Monitoring

Mapping efforts for 2011 focused on Big Sky Golf Course due to the sheer number of complaints from neighboring landowners over the course of many years. Mapping was not conducted with GIS as it would have been too time consuming. Hand drawn maps were created and provided to Sam Woodger and Taylor Middleton with Boyne / Big Sky Golf Course. Maps were also provided to BSOA as the entire golf course resides in their jurisdiction. A multitude of noxious weed management and control information were also provided to Sam and Taylor. The noxious weed infestations on this property have and will continue to be a focus of committee efforts.

Monitoring efforts included committee partners informing the coordinator of observed weed patches. The most important finding was by Montana Department of Transportation. On July 22, Steven Lowell with MDOT informed the coordinator of a leafy spurge patch located at the fishing pond in the meadow village of Big Sky. Considering the close proximity to the pond and West Fork of the Gallatin, it is critical to treat in an effort to eliminate the noxious weed. After confirming the infestation on July 25, the property owner, Big Sky Owners Association was immediately notified. They responded quickly and had their contracted applicator treat the

site. The coordinator revisited the site on September 13 and found several of the patches were treated and were dead, but a patch next to the water's edge looked healthy and untreated (shown in picture below right). Again, BSOA was notified and had their applicator treat the site. This patch will be closely monitored by the committee for the next few years.



The photo above left, taken 7-25-11, shows the largest patch of leafy spurge at the pond, with Big Sky Chapel in the background. The photo on the right from 7-25-11, shows the patch located next to the pond that was missed by the first application.

Partnership Efforts

The Gallatin Big Sky Noxious Weed Committee has a goal of coordinating efforts and working cooperatively with various federal, state, and local agencies in noxious weed education and control within in the project area.

A large part of the program this field season included working and cooperating with a number of State, Federal, local and private organizations. Personnel from these organizations assisted with community events, noxious weed treatments, logistical support, and funding. Cooperators this field season included:

Big Sky Natural Resource Council

The mission of the Big Sky Natural Resource Council is to provide sustainable solutions for natural resource issues in the Big Sky community through a collaborative ecosystem approach. BSNRC Goals:

- Preserve and enhance Big Sky's natural resources for future generations.
- Provide economically and environmentally sound natural resource solutions for landowners.
- Educate the community on natural resource issues and encourage landowner responsibility.
- Collaborate with neighboring public and private landowners in and around Big Sky.

- Partner with local, state, federal, and other organizations that specialize in natural resource issues.

The Big Sky Natural Resource Council began with local businesses, landowners, and organizations in the Big Sky area taking action and addressing their forest health issues as a whole. The Big Sky Natural Resource Council is made up of landowners, resort managers, businesses, and local organizations. There are eleven voting members and over 100 non-voting members and technical advisors. The technical advisors are from various agencies and organizations that specialize in natural resource issues.

The Big Sky Natural Resource Council is a sub-committee of the Northern Rocky Mountain Resource Conservation & Development's (NRM-RC&D) Natural Resource Committee. The council works under the umbrella of the NRM-RC&D's bylaws and 501c3 status. Crystal Hagerman, Gallatin County Extension Natural Resource Agent, is the project coordinator.

Jennifer attended the September 30th meeting as both coordinators for Blue Water Task Force and Gallatin/Big Sky Noxious Weed Committee were asked to join the committee board. The presence of GBSNC on this board will be beneficial in many ways, including increased awareness of the Committee, increased opportunities to get the message out, and increased networking opportunities.

Big Sky Owners Association

The BSOA is Big Sky's oldest and largest home owner's association comprising over 8,000 acres; 29 condominium associations; 14 subdivisions; multiple certificate-of-surveys and other land tracts. BSOA's membership consists of 2,350 property owners - 85% of which are not full-time Big Sky residents. Mary Jane McGarity, Executive Director of BSOA, and Michele Geppert, Big Sky Architectural Committee Coordinator, have worked closely with Jennifer all year to tackle invasive plant species in BSOA's territory. Besides enrolling in the cost share program, BSOA has cooperated with GBSNWC in many ways. Committee information is currently in the BSOA office, an article about GBSNWC and noxious weeds was in their August newsletter to their membership, and BSOA staff is in regular communication with Jennifer about properties of concern or in need of assistance.

- Treats right of ways in subdivisions under their jurisdiction
- Alerts the Committee to noxious weed infestations on properties in their management area
- Provides information on ongoing projects in the area
- Displays Committee ads and literature

Big Sky Resort Area District

The Big Sky Resort Tax is a 3% sales tax passed in 1992 to improve the community of Big Sky, Montana. The revenue derived from the Resort Tax is appropriated annually by the District Board for the funding of services and programs including tourism development, infrastructure facilities, post office services, ambulance and emergency services, public transportation systems, parks and trails, community library, and other services that provide for the public health, safety and welfare within the Big Sky Resort Area District.

- Since 2004, the District's funding has been the foundation of this Committee.

Gallatin Conservation District

- Provided funding 2088-2011
- Provided gloves and trash bags for the 3rd Annual Weed Pull

Gallatin County Extension

- Assisted with the Weed Education Event and Weed Pull with Gallatin Gateway Youth Program
- Assisted with the Ophir School Weed Education Event and Pull
- Coordinated the Small Acreage Pasture Management Class that was taught by the Committee's coordinator
- Coordinated landowner assistance in project areas to reduce duplication of efforts

Gallatin County GIS Department

- Provided expertise with GPS and GIS technology
- Produced Maps for use in presentations and at events
- Assisting with providing data to GYCC Weed Subcommittee & EDDMaps

Gallatin County Weed District

- Provided critical assistance and support, including collecting cost share applications sent via mail
- Provided personnel and equipment for the 3rd Annual Weed Pull
- Lead the Ophir School Weed Education Event and Pull (due to Coordinator being ill)
- Assisted with the Bighorn Winter Range Noxious Weed Treatment and coordinated landowner assistance in project areas to reduce duplication of efforts

Greater Yellowstone Coordinating Committee, Weed Subcommittee

- Provided expertise and educational materials

Montana Department of Transportation

- Provided information on various noxious weed infestations, including identifying leafy spurge at the fishing pond in Big Sky
- Assisted with the Bighorn Winter Range Noxious Weed Treatment

Montana Fish Wildlife and Parks

- Provided expertise

Montana Noxious Weed Control Association

- Provided educational information
- Allowing links from GBSNWC's website to theirs to reduce duplication of efforts

Montana State University

- Provided expertise and educational information
- Assisted with the Gallatin County Farm Fair

Montana Statewide Noxious Weed Campaign

- Provided educational materials for Ophir School

MSU Extension

- Provided expertise and educational information

Natural Resources Conservation Service

- Provided expertise and technical knowledge

Tout Unlimited

- Provided resources, funding and volunteers for the 3rd Annual Weed Pull

U.S. Forest Service, Gallatin National Forest

- Provided expertise and technical knowledge
- Assisted with the 3rd Annual Weed Pull
- Assisted with the Ophir School Weed Education Event and Pull
- Assisted with the Bighorn Winter Range Noxious Weed Treatment

Volunteers

- Provided expertise
- Assisted with the 3rd Annual Weed Pull
- Assisted with the Ophir School Weed Education Event and Pull
- Assisted with the Bighorn Winter Range Noxious Weed Treatment
- Conducted noxious weeds treatments on 175 acres in the Gallatin Canyon

Committee Efforts

Volunteer Treatment of Noxious Weeds

Committee volunteers treated previously identified and mapped noxious weed infestations. Over 175 acres were sprayed with a backpack sprayer and chemical, which were provided by the Forest Service. Areas were targeted were:

- Twin Cabin trailhead and areas on the east side of the river, north to the MDOT maintenance property.
- The horse trails east of the trail head. Approximately 1.5 miles on one trail, 0.75 miles on the other. These trails were treated twice.
- Areas north and south of the Half Moon Saloon, approximately 20-25 acres. This area was mapped by the Committee in 2009 where large patches of yellow toadflax were identified. This area was treated twice.
- Approximately 2 miles of Doe Creek road (both sides).
- Trail leading out of the parking lot south of the Corral Bar, approximately 1.25 miles.

Table 9. Volunteer Treatment by Committee Volunteers

	2010	2011
Estimated # of Acres Treated by Committee Volunteers	235	175

Database

In 2008, a database with landowner information was created. In 2010, the database was improved to manage ongoing communications with landowners and property inspections, while tracking the efforts of prior years. In 2011, the database underwent further refinement to address various issues that the Coordinator ran into, including the ability to search by name or property address, include and track landowners enrolled in the cost share program, and allow for multiple names for one property. With most data management systems, it's likely that the database will routinely be improved upon to better facilitate the management of data.

The screenshot shows a web application window titled "Big Sky Weed Committee Information Tracking Tool". The interface is divided into several sections:

- Header:** "Big Sky Weed Committee" and "Information Tracking Tool" text, along with a logo that says "ZERO SPREAD" with a circular emblem.
- Contacts Section:** A form with fields for Name (containing "na"), Contact type, Organization (containing "HRCLLC"), Address (containing "1325 HOWARD AVE # 128"), City (containing "BURLINGAME"), State (containing "CA"), Zip (containing "94010-4212"), Phone, Local/Cell, and e-mail. There is a "Communications" button below.
- Properties Section:** A form with fields for Contact When? (Spring 2011), About, Property name (NA), General area (Beckman Flats), Address (1325 HOWARD AVE # 128), City (BURLINGAME), Zip (94010-4212), Size (54.55), Subdivision, and Property type (undeveloped lot). It includes a "Legal description" field with text: "POR OF TRACT 1-A EAST OF HELLROARING CREEK BEING IN SCHOOL DISTRICT 72-13 SW4 SEC 33 45 4E 54.553AC COS 2528 WEST LOC-R1". There are buttons for "Inspections" and "Costshare", and a link "Set property address to contact address".
- Navigation and Search:** Record navigation controls (1 of 1) and search filters: "Select contact: *" and "Show contacts entered after: 10/1/2009 Update". Below that, "Show contacts associated with: Property name: *" or "Address: *". A second record navigation control shows "Record: 1 of 224". An "Exit" button is in the bottom right.

Grant Search

The executive committee acquired the assistance of April Johnson with Terra Mater Consulting to assist the coordinator in searching for grants. April conducted grant and foundation research and presented the results to Jennifer in a spreadsheet. Jennifer used this information to apply for two grants. The first grant to the Jerry Metcalf foundation was not accepted, and the second grant was halted due to the unknown status of the NRM RC&D this spring. It was determined that the pursuit of additional grant funding will be resumed once the RC&D is functioning again.

Quickbooks

The 2011 Committee costs were entered into Quickbooks by Jennifer to facilitate the knowledge and accessibility of financial information, especially in regards to preparing grants. With information obtained from the NRM RC&D, 2011 is now complete for the Committee. The next step is to incorporate the budget into Quickbooks.