

ZERO SPREAD



Gallatin/Big Sky
NOXIOUS WEED COMMITTEE

Gallatin/Big Sky Noxious Weed Committee

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Gallatin/Big Sky Noxious Weed Committee

2013 Annual Report

By Jennifer Mohler, Coordinator



Ophir School 2nd Grade Noxious Weed Pull at Big Sky Community Park

Gallatin/Big Sky Noxious Weed Committee

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2013 Annual Report Summary

Under the Northern Rocky Mountain RC&D, the citizen-led Gallatin/Big Sky Noxious Weed Committee is actively working to combat invasive plant species in the Big Sky Community and along the Gallatin River corridor. By bringing federal, state, and local partners together, the Committee has facilitated a successful multi-faceted campaign against noxious weeds that includes education/outreach, weed pulls, one-on-one landowner assistance, and weed mapping and monitoring.



Community Events & Partnership Efforts

Gallatin County Farm Fair May
 Gallatin Gateway Youth Group Weed Pull
 Stillwater County Stewardship Series & Rangeland Tour
 5th Annual Gallatin River Weed Pull & Clean Up
 3rd Annual Bighorn Sheep Winter Range Weed Treatment
 Reflector Trail Volunteer Weed Pull
 Big Sky Owners Association Appreciation Tent
 1st Annual Big Sky Community Weed Pull

Madison & Gallatin County Weed District Spray Day
 Big Sky Fly Fishing Festival: Blue Water Task Force
 Big Sky Landscaping Presentation
 Jack Creek Preserve Camp
 Big Sky Farmers Market
 Big Sky Owners Association Annual Meeting
 Ophir School Weed Education Event and Pull
 Volunteer Noxious Weed Treatment



5th Annual Gallatin River Weed Pull



	2009	2010	2011	2012	2013
# Volunteers	55	38	28	22	30
Pounds collected	---	850 lbs	1060 lbs	1120 lbs	720 lbs

Proud to partner with the Madison-Gallatin Chapter of Trout Unlimited



In 2013, the Committee was funded by the Big Sky Resort Area District.

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Ophir School Weed Education Event and Pull

Since 2008, the Committee has worked with teacher Brittany Ellis of Ophir School to educate second graders about noxious weeds and their impact on natural resources. On September 27, 27 students and 9 volunteers learned to identify several species of noxious weeds, mapped noxious weeds in the Big Sky Community Park, utilize the “What’s in Your World?” field kits, collected and disposed of 11 large bags of noxious weeds. Mike Jones from the Gallatin County Weed District and GPS specialist Megan Gorder assisted with the event.



Bighorn Sheep Winter Range Noxious Weed Treatment

For the third year in a row, the Gallatin/Big Sky Noxious Weed Committee, Montana Department of Transportation, Gallatin National Forest Service, and Gallatin County Weed District worked together to treat noxious weeds on bighorn sheep winter range northwest of US Highway 191 and Lone Mountain Trail. On June 17 & 19, crews climbed steep slopes with backpack sprayers and used 300 foot long hoses to combat the noxious weeds that dominate the area. The level of cooperation and additional treatment efforts by Committee partners indicates a high level of commitment to the project. With such strong support by all involved, the Committee will continue to improve and expand the effort on the Bighorn Sheep Winter Range.



1st Annual Big Sky Community Weed Pull

1st annual Big Sky Community Weed Pull in Kircher and Big Sky Community Park on July 23. The weed pull was a partnership with Big Sky Owners Association, Yellowstone Club, Big Sky Resort Area District, Big Sky Community Corporation, Big Sky Natural Resource Council, Northern Rocky Mountain R&CD, and Gallatin County Weed. Twenty seven people volunteered and pulled 680 lbs of noxious weeds. The event included a barbeque following the event at the community park pavilion, with food and beverages being donated by event partners.



Big Sky Farmers Market

On every Wednesday from July 10th through September 4th, the Committee hosted an educational booth at the Farmers Market. Samples of noxious weeds were mounted for easy identification, and various natural resource handouts were available for free. Locals were able to ask questions, identify noxious weeds that they may have on their property, and schedule a site visit with the coordinator. Visitors learned more about the ecology of Big Sky and the greater Yellowstone region.



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NOXIOUS WEED COMMITTEE

Property Inspection Summary

Year	# Properties Inspected	Total Acres Inspected
2008	120	2026
2009	84	691
2010	98	369
2011	170	957
2012	49	617
2013	37	868

Inspections by Area

Area	2008	2009	2010	2011	2012	2013
Big Sky	89	51	46	122	36	33
191	23	12	38	10	9	2
Four Corners	0	14	3	0	0	0
Gallatin Gateway	8	7	11	38	4	3
Total	120	84	98	170	49	38

Percentage of Properties Inspected with Noxious Weed Species

	2008	2009	2010	2011	2012	2013
bull thistle		5		5	4	
canada thistle	60	58	78	76	73	82
common tansy	9	5	35	5	2	16
curly dock				4	31	37
dalmation toadflax			1	1		
field bindweed		1			2	
hoary alyssum	25	39	75	51	80	66
houndstongue	48	41	45	27	39	53
leafy spurge				1		
musk thistle	8	43	27	35	47	55
orange hawkweed					2	3
oxeye daisy	17	27	48	48	43	39
poison hemlock				1	16	11
scotch thistle					6	5
spotted knapweed	53	49	51	30	43	29
sulfur cinquefoil		7		3	4	5
tall buttercup				1	2	
tansy ragwort				1		
yellow toadflax	9	7	3	11	14	24

Cost Share: funds distributed to landowners

2013
Total funds available: \$1,750
Coverage: ½ up to \$150
Total distributed = \$256.63
5 landowners
28.56 acres
0 miles of roadsides

Volunteer Treatment by Committee Volunteers

	2010	2011	2012	2013
Estimated # of Acres Treated by Committee Volunteers	235	175	225	250

**Helping protect wildlife habitat, water resources,
& native plants by promoting management of noxious weeds.**

Table of Contents

Table of Contents	i
Introduction.....	1
Project Area	1
Land Use	1
Gallatin / Big Sky Noxious Weed Committee	1
Purpose.....	2
2013 Accomplishments.....	2
Education/Outreach.....	3
New logo:.....	3
Advertising:.....	3
Newspaper Coverage of Events:	5
Road Signs:	5
Big Sky Owners Association Newsletter Articles:	5
Big Sky Natural Resource Guide	6
Website Update	6
Community Events.....	7
Gallatin County Farm Fair	7
Gallatin Gateway Youth Group Weed Pull.....	7
Stillwater County Stewardship Series & Rangeland Tour	8
5th Annual Gallatin Weed Pull and River Clean Up	8
3 rd Annual Bighorn Sheep Winter Range Noxious Weed Treatment.....	9
Reflector Trail Volunteer Weed Pull	12
Big Sky Owners Association Appreciation Tent at the Music in the Mountains Series	12
1 st Annual Big Sky Community Weed Pull	13
Madison & Gallatin County Weed District Spray Day in Big Sky.....	13
Big Sky Fly Fishing Festival: Blue Water Task Force.....	14
Big Sky Landscaping Presentation.....	14
Jack Creek Preserve Camp.....	14
Big Sky Farmers Market	15
Big Sky Owners Association Annual Meeting	15
Ophir School Weed Education Event and Pull	16
Landowner Assistance	17
Cost Share Program.....	19
Mapping & Monitoring	20
Committee Efforts.....	21
Volunteer Treatment of Noxious Weeds.....	21
Database	21
Quickbooks	22
Partnership Efforts	22

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 and is grant funded.

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

2013 Accomplishments

This report details the activities and accomplishments of the Gallatin/Big Sky Noxious Weed Committee for the 2013 field season. A number of goals for the Committee were established at the February 19, 2013 meeting, which can be broadly categorized into the following four major areas: Education/Outreach, Land Owner Assistance, Partnership Efforts, and Committee Efforts.

Education/Outreach

New logo:

The Committee needed to get business cards, and during that process worked with Printing for Less to update the Committee logo, taking advantage of the Community Sponsorship program. In return for including a link to Printing for Less on the Committee's website, Printing for Less provided a \$200 discount used towards logo design, resulting in a cost effective re-design.



Advertising:

The 2013 advertising campaign was initiated in two local newspapers, Lone Peak Lookout and Big Sky Weekly. The ads focused on landowner assistance (site visits), general weed education, and highlighted our presence at the Big Sky Farmers Market. Once the cost share program, a cooperative program with the Gallatin Conservation District, was in place, ads were updated to include cost share information. The ads included logos of committee sponsors and where possible, partners.

Lone Peak Lookout ads ran weekly for 16 weeks starting June 4 and ending September 3. Big Sky Publishing (Lone Peak Lookout) donated 10% of the advertising costs for the 1/8 page black and white ads (original color version is shown below). Due to the small size, only one ad design was implemented until the cost share program was confirmed. Once the program was implemented, ads were updated to include program information.

Got Noxious Weeds? We can help!

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

Visit us at our booth at the Big Sky Farmers Market!

Help protect wildlife habitat, water resources, & native plants by controlling noxious weeds!

Got Noxious Weeds? We can help!

For **free** assistance & cost-share (\$ to treat noxious weeds - funded by the Gallatin Conservation District), contact Jennifer Mohler at 406-209-0905 or bigskyweeds@gmail.com.

Visit us at our booth at the Big Sky Farmers Market!

www.bigskyweeds.org

Big Sky Weekly ads ran biweekly (the paper is distributed every 2 weeks) in 8 spots from June through September. Outlaw Partners (Big Sky Weekly) donated 50% of the summer advertising campaign (total ad cost was \$1520, thus \$760 was donated) for a total of \$760 for ¼ page color ads (shown below). Three versions of the ads ran, each highlighting a different noxious weed with specific information for that weed.



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

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

We provide **free onsite assistance**, including identifying weeds on your property & recommending treatment methods.

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

Noxious Weed Spotlight: Hoary Alyssum

Hoary alyssum, commonly called whitetop, is an annual, biennial, or perennial in the mustard family and can grow up to three feet tall. It's proven to be highly invasive, as it's particularly adapted to dry conditions. All parts of the plant are covered with short, star-shaped hairs that give the plant a silver-grayish appearance. You can find it almost everywhere: along roads, trails, gravelly stream banks, in lawns, vacant lots, and overgrazed pastures. It's toxic to horses, and remains toxic in cured hay. More photos & information @ www.bigskyweeds.org.



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Noxious Weed Spotlight: Oxeye Daisy

Oxeye daisy is a perennial, resembling Shasta daisy, that's common in meadows, roadsides and along trails in Big Sky and the Gallatin Canyon. This aggressive invader can form dense stands that displaces native plants. Because of the plant's beauty and showiness, conscientious management is often neglected. Unfortunately, some of Montana's state listed noxious weeds are still offered for sale in wildflower seed mixes. Be on the lookout when purchasing seeds for your garden or landscaping. More photos & information @ www.bigskyweeds.org.



Visit us at our booth at the Big Sky Farmers Market!

Help protect wildlife habitat, water resources, & native plants by controlling noxious weeds!




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

The Gallatin/Big Sky Noxious Weed Committee provides **free onsite assistance**, including identifying weeds on your property & recommending treatment methods.

We provide **cost-share funding** (monetary reimbursement) for landowners treating noxious weeds. Program is funded by the Gallatin Conservation District.

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

Noxious Weed Spotlight: Yellow Toadflax

Yellow toadflax, commonly called butter & eggs, is a non-native perennial that was introduced as an ornamental plant. Reproducing from seed and creeping roots, it alters and simplifies the species composition of natural communities and can lead to serious erosion problems. It's invading pristine areas, including Yellowstone National Park. Control toadflax by cutting, pulling, or spraying seed stalks prior to seed set. Learn more at www.bigskyweeds.org.



Visit us at our booth at the Big Sky Farmers Market!

Help protect wildlife habitat, water resources, & native plants by controlling noxious weeds!



Advertisements for the 5th Annual Gallatin River Clean Up & Weed Pull with Madison-Gallatin Trout Unlimited were placed in both the Lone Peak Lookout and Bozeman Daily Chronicle.

VOLUNTEERS WANTED

Got gloves and a free Saturday morning?

Help cleanup your favorite fishing access & recreation sites along the Gallatin River with Trout Unlimited & Gallatin/Big Sky Noxious Weed Committee, and enjoy coffee and muffins on us!

When: Saturday, June 15th, 9am–Noon

Where: Rendezvous in the Simms parking lot at Four Corners, 177 Garden Dr.

Bring: Gloves and sun block.

RSVP: by Wednesday June 13th to Jennifer Mohler @ 406-209-0905 or bigskyweeds@gmail.com. For more information, visit www.bigskyweeds.org

The Gallatin/Big Sky Noxious Weed Committee is funded by the Big Sky Resort Area District and Cress Charitable Foundation




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Got gloves and a free Saturday morning?

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When: Saturday, June 15th, 9am–Noon

Where: Rendezvous in the Simms parking lot at Four Corners—177 Garden Drive

Bring: Gloves and sun block.

Simms, Montana Fish, Wildlife and Parks, and the Greater Gallatin Watershed Council have donated items that volunteers will be eligible to win!

RSVP: by Wednesday June 13th
Jennifer Mohler @ 406-209-0905
or bigskyweeds@gmail.com

For more information, visit www.bigskyweeds.org
The Gallatin/Big Sky Noxious Weed Committee is sponsored by the Northern Rocky Mountain RCO&D.

EVENT SPONSORS ARE:
Madison-Gallatin Trout Unlimited,
Gallatin/Big Sky Noxious Weed Committee,
Big Sky Resort Area District,
Cress Charitable Foundation, and
Northern Rocky Mountain RCO&D

EVENT PARTNERS ARE:
Simms,
Gallatin County Weed District,
Greater Gallatin Watershed Council,
Gallatin National Forest and
Montana Fish, Wildlife and Parks




Advertising for the 1st Annual Big Sky Community Weed Pull in the Big Sky Weekly and Lone Peak Lookout, and was paid for by event partner Big Sky Owners Association.



Newspaper Coverage of Events:

Additional educational and outreach goals were achieved with the assistance of Lone Peak Lookout. Jolene Keller met with those participating in the Bighorn Sheep Winter Range Noxious Weed Treatment and wrote an article detailing the effort. This year wildlife biologist Julie Cunningham joined the group during a lunchtime break to educate the volunteers about bighorn sheep and the importance of healthy, native winter range. The article appeared in the June 26, 2013 edition of the Lone Peak Lookout, as well as being posted on their on-line edition.

http://www.lonepeaklookout.com/news/article_389e931e-d91e-11e2-b4f5-001a4bcf887a.html

Road Signs:

Roadside signs continue to educate those traveling highway 191. The two signs were erected in 2005 by the Committee. One is located at the canyon entrance, another near Storm Castle. These signs are within view of everyone who drives the canyon, helping deliver the “Zero Spread” word.



Big Sky Owners Association Newsletter Articles:

The GBSNWC Coordinator provided four newsletter articles to inform BSOA members about noxious weeds management. The articles were included in their e-newsletter and were reportedly very well received. The Committee plans to continue to assist BSOA with noxious weed education and newsletter articles.

May: Noxious Weed 101

June: Now is the Best Time to Pull Weeds

September: Fall is a Great Time to Manage Noxious Weeds (example below)

October: Now is the Time to Plan for 2014 Noxious Weed Management.

Gallatin/Big Sky Noxious Weed Committee

We provide free onsite assistance, including identifying weeds on your property & recommending treatment methods.

For assistance, contact Jennifer Mohler at 406-209-0963 or bigskyweeds@gmail.com & visit www.bigskyweeds.org.

Fall is a great time to manage noxious weeds!

The air is cooling, all are starting to hibernate, and fall is an excellent time to treat perennial, deep-rooted dicotyledonous species like Canada thistle and yellow foxtail. Why? Because in fall, the plant begins moving carbohydrates produced by photosynthesis to the roots for storage instead of to upper plant parts for continued growth. If herbicides are applied at this time, the chemicals are transported to the roots along with the carbohydrates, killing the entire plant instead of just the parts above the soil surface. This process flows the opposite direction in spring and summer, when carbohydrates produced are normally sent to the leaves and upper parts of the plant.

Canada thistle (*Cirsium arvense*)

Canada thistle can reach heights of four feet and forms deep and extensive root systems, making it difficult to control. Cutting horizontal roots sprout new plants and can reach more than fifteen feet in one season. These roots can also go as deep as 22 feet!

2 years of root growth

Canada thistle produces both female and male flowers and both genders must be present for the plant to go to seed. One plant is capable of producing over 3,000 seeds annually. Seeds can remain viable in the soil up to 20 years. The plant produces both seed and root, but primarily from the roots. These facts dictate that management efforts must be directed towards long-term planning.

Management and control efforts must be planned for several consecutive growing seasons in order to prevent seed formation/depot and to maintain the existing sites for any new plants that emerge vegetatively and to treat them appropriately.

Help protect wildlife habitat, water resources, & native plants by controlling noxious weeds!

Gallatin/Big Sky Noxious Weed Committee

Yellow foxtail (*Liatris vulgaris*)

Yellow foxtail, commonly called butter and eggs, was introduced as an ornamental flower. It is a quality seedling producer and flower bulb, and is growing in Montana. Although the plant is attractive, it is extremely difficult to control and easily out-competes native vegetation for water and nutrients.

Yellow foxtails grow to a height of one to two feet, and plants have multiple stems. Seedlings of yellow foxtails resemble leafy sprouts at young stages, but do not produce a milky sap when broken. Leaves are numerous, pale green to grey-green in color, narrow and pointed at both ends and have smooth margins. They are alternately arranged on the stem.

The dense, upright panicle flower grows on stalks in dense clusters of fifteen to twenty at the ends of the stems. Flowers are pale to bright yellow with orange bracts and a downward pointing yellow style that can be up to an inch long. Each individual plant can produce up to 30,000 seeds annually. Each seed can sit dormant in the soil for up to 15 years before germinating, which makes control of this plant a long term commitment.

Yellow foxtail has an extensive horizontal root system and it reproduces through creeping roots or by seed. Yellow foxtail plants as young as 2-3 weeks old have been observed producing root buds. Once a stand is established it will have an extensive root system. A single plant can have roots up to 3 feet deep and several yards wide. Yellow foxtails can adapt to a wide variety of soil types and moisture conditions. All of these factors make Yellow foxtail extremely difficult to control.

Although hand pulling or mowing will not kill the plant, it can reduce the amount of seeds produced. Herbicides can work moderately well if used properly. An extensive, deep root system along with a waxy coating on the leaves (inhibiting herbicide uptake) make yellow foxtails difficult to control. Because of the extensive root system and longevity of viable seeds, (up to 10 years) long term control efforts will be necessary.

Don't let yellow foxtails infestations reach this size! Early detection, rapid response, and committing to yearly treatments until it's gone makes all the difference.

Gallatin/Big Sky Noxious Weed Committee

Fall Weed Control

If we have the ideal combination of weather and timing, the control results can be very good. It doesn't happen every time, but here are some things to consider when you go out there working.

For the best results, treatments should be applied to new shoots actively growing from underground parts. Treating old leaves or stems proves to be less effective. Plan to spray when the growth is 6 to 8 inches. The more new green growth present at the time of treatment improves the chances for good results.

If a frost occurs before the treatment is made, it is advised to wait at least 24 hours to evaluate the foliage. This would be after temperatures fall to below 30-20 degrees. The leaves will be wilted and turning black if damaged. If you apply herbicides after this occurs success will be diminished. If you can spray after a frost try to apply herbicides when the expected high will be over 60 degrees on that day.

You can also increase the success of a fall spraying program by mowing or tilling areas two to four weeks before the herbicide application. This sets the stage for the regrowth to develop and open up the area for the spray to be applied.

It is also important to plan ahead for next year. One treatment does not eradicate noxious weed species, especially those with extensive root systems!

Are you ever asking yourself "why didn't I include herbicide recommendations?" Because it's critical to ensure you've identified the weed species correctly, have information on how to properly handle and use herbicides, and have a long term plan to manage noxious weeds. I've met many people who mistakenly weeds, which result in less than effective treatments and money well spent. The Gallatin/Big Sky Noxious Weed Committee is here to help every landowner within our project area with their identification and long term management plans. Call or email, I'm here to help!

Thank you for helping protect wildlife habitat, water resources, & native plants by controlling noxious weeds!

Jennifer Mohler
Coordinator, Gallatin/Big Sky Noxious Weed Committee
(406) 209-0963
bigskyweeds@gmail.com

Big Sky Natural Resource Guide

In collaboration with the Big Sky Natural Resource Council, the Committee's coordinator created a natural resource guide in 2013 to educate the community about the council and local natural resource organizations. The guide remains available in print form at local Big Sky spots (i.e., Big Sky Chamber of Commerce, local grocery stores, etc.) and on the web at www.bigskynrc.org, on the resource library page.

Website Update

In 2011, Elizabeth Galli-Noble, the Director of the Center for Invasive Plant Management at Montana State University, offered to provide free assistance to the committee to re-design and update the committee's website. In 2012 and 2013, Kitty Weiss, the E-Communications Coordinator, managed the website updates.

Kitty continued to assist the Committee with the website throughout the year, updating it frequently with events and news links.

On October 10, 2013, Kitty informed Jennifer via email that the funding situation has changed at the Center and she will no longer be able to continue making edits to the website.

Big Sky's Natural Resource Guide

Big Sky Natural Resource Council

The mission of the Big Sky NRC is to protect, preserve, and enhance the natural resources of the Big Sky area. The Council is a non-profit organization that provides information, education, and advocacy for the protection and preservation of the Big Sky area's natural resources.

Fire Safe & Forest Health Grant Program

Call for Proposals - Forest Health Grant Program

Blue Water Task Force

Blue Water Task Force

Gallatin/Big Sky Noxious Weed Committee

Jack Creek Preserve Foundation

Big Sky Community Corporation

HERO SPREAD

Gallatin/Big Sky Noxious Weed Committee

Under the leadership of Jennifer Mohler, the extended Gallatin/Big Sky Noxious Weed Committee is actively working to combat invasive plant species in the Big Sky area. Community and citizen participation is essential to the success of this effort. We are currently seeking volunteers for field work, including weed pulling, monitoring, and data collection. If you are interested in helping, please contact Jennifer Mohler at 406-209-0963 or bigskyweeds@gmail.com.

Why Should I Care?
Why Should I Care?
Why Should I Care?

Project Area Map Coming Soon

Community Events

Gallatin County Farm Fair

May 7-9, 2013

In its ninth year, the Farm Fair has grown to three days and provides over 976 fourth graders from 20 schools in Gallatin County a hands-on experience at 16 booths dedicated to farm life. The goal is to introduce kids to all the agri-sciences and where our food comes from and how it gets to their tables. Teachers 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, demonstrating to the kids the importance of agriculture and how it relates to them in our community and in the world. The fair is being held on a working ranch, owned by Ed and Punky Brainard, north of Belgrade. The Bozeman Chamber of Commerce and the Belgrade Chamber of Commerce sponsored the event, along with Carrie Taylor and the Gallatin Valley Agriculture Committee organized the fair. Those adding to the success of this experience are the valley businesses that financially supported the Farm Fair and over 75 volunteers and presenters who made sure the kids had a great time.



The fair consists of 16 different agriculture stations. Some of the stations 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 sunflower 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.



Gallatin Gateway Youth Group Weed Pull

May 24, 2013

Jennifer Mohler joined Mike Jones and John Ansley from the Gallatin County Weed District in providing 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 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, resulting in some sore hands. After pulling, the bagged weeds were taken to the landfill.



Stillwater County Stewardship Series & Rangeland Tour

June 14, 2013

Jennifer was invited by Stephanie Naftal of the Stillwater County Weed District to present at their community workshop. After a day focused on noxious weeds (identification & management), including a tour of KeyO Ranch with NRCS Range Specialist Matt Ricketts, Jennifer closed the day by presenting “Protecting Your Resources on Small Acreages.”



5th Annual Gallatin Weed Pull and River Clean Up

June 15, 2013

Under sunny skies, thirty volunteers made a difference in the fight against noxious weeds along the much recreated Gallatin River. On Saturday, June 15, the Gallatin/Big Sky Noxious Weed Committee in partnership with Madison-Gallatin Trout Unlimited held the fifth annual weed pull and river clean up day. Volunteers came from various groups to collect 720 pounds of noxious weeds and trash. While the overall amount collected is down from last year, it’s still an extremely positive result. Many volunteers reported that they are observing fewer noxious weeds at the selected sites, indicating the yearly effort is having a positive impact in the reduction of noxious weeds.

Volunteers met in the parking lot of Simms for coffee and muffins, and were treated to a volunteer prize drawing of donated items from Simms, Greater Gallatin Watershed Council, Sola Cafe, Bridger

Brewing CO, and Montana Fish, Wildlife & Parks. Because of the generosity of these donors, nearly every volunteer walked away with a gift.

After distributing the prizes, thanking donors and sponsors, including the Bozeman Daily Chronicle, Lone Peak Lookout and Big Sky Weekly for donating partial advertising for the event, volunteers split into 5 teams and headed to various locations along the Gallatin River to collect noxious weeds and trash. Each team had a leader who helped with plant identification, so only noxious weeds were pulled.

The cleanup sites chosen were heavily used recreation sites on public land and were the same as last year: Cameron Bridge Fishing Access site; 30 acres of forest service property located just north of Rock Haven Camp; unnamed boat launch just south of Storm Castle bridge; Storm Castle River Access; and Portal Creek Flats. Portal Creek Flats has been a pull site for the past four years, and while returning volunteers noticed fewer weeds due to their efforts, a few patches of spotted knapweed were extremely healthy this year, highlighting a well known issue about noxious weeds: it takes multiple years of aggressive treatment to eliminate established noxious weed patches.

Special thanks go out to Madison-Gallatin Trout Unlimited; Greater Gallatin Watershed Council; Simms; Montana Fish, Wildlife and Parks; Gallatin County Weed District; Gallatin National Forest Service; Big Sky Resort Area District; Simms; Sola Café; Bridger Brewign CO; Northern Rocky Mountain RC&D; Big Sky Weekly; Bozeman Daily Chronicle; and Lone Peak Lookout for helping the Gallatin/Big Sky Noxious Weed Committee make a difference in our efforts of zero spread along the beloved Gallatin River.

Volunteers needed for the 5th Annual Gallatin River Clean Up & Noxious Weed Pull

Got gloves and a free Saturday morning? Help cleanup your favorite fishing access & recreation sites along the Gallatin River with Trout Unlimited & Gallatin/Big Sky Noxious Weed Committee, and enjoy coffee and muffins on us!

When: Saturday, June 15th 9am – Noon
Where: Rendezvous in the Simms parking lot at Four Corners - 177 Garden Drive
Bring: Gloves & sun block.
RSVP: by Wednesday June 13th Jennifer Mohler @ 406-209-0905 or bigskyweeds@gmail.com

Volunteers are eligible to win donated items from Simms, Greater Gallatin Watershed Council, and Montana Fish, Wildlife & Parks!

Table 1. Annual Weed Pull Data 2009-2013

	2009	2010	2011	2012	2013
# Volunteers	55	38	28	22	30
Pounds collected	---	850 lbs	1060 lbs	1120 lbs	720 lbs

3rd Annual Bighorn Sheep Winter Range Noxious Weed Treatment

June 17 & 19, 2013

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 Lone Mountain Trail. 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 needed by the bighorn.

For the third year in a row, the Gallatin/Big Sky Noxious Weed Committee, Montana Department of Transportation, Gallatin National Forest Service, and Gallatin County Weed District worked together to treat noxious weeds on the winter range. This year wildlife biologist Julie Cunningham joined the group during a lunchtime break to educate the volunteers about bighorn sheep and the importance of healthy, native winter range.

For two 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. A total of 160 gallons of herbicide were used over the two days.

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.



Above, outlined by red, is the primary area of focused treatment. 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.



In addition to the primary area, crews traveled to Portal Creek Flats and Deer Creek as Gallatin National Forest employee Jeremy Rose expressed interest in revisiting a spotted knapweed infestation treated in previous years. The area is a part of the Bighorn winter range, as evident by multiple trails throughout the area (outlined below). While Jeremy reported an overall improvement, returning to treat was beneficial as many young plants were managed at an ideal stage of growth.



In addition to the treatment by project partners, \$450 in cost share funds, secured by GBSNWC from a foundation grant, assisted a local property owner in treating over 20 acres of a dense spotted knapweed infestation on an extremely steep hillside. The total cost of noxious weed treatment came to \$1729.39.

This particular patch has been identified by GBSNWC, Forest Service, and wildlife biologists as a high priority for treatment due to its location and proximity to the West Fork of the Gallatin.

Additional educational and outreach goals were achieved with the assistance of Lone Peak Lookout. Jolene Keller met with those participating in the Bighorn Sheep Winter Range Noxious Weed Treatment and wrote an article detailing the effort. The article appeared in the June 26, 2013 edition of the Lone Peak Lookout, as well as being posted on their on-line edition.

http://www.lonepeaklookout.com/news/article_389e931e-d91e-11e2-b4f5-001a4bcf887a.html

The level of cooperation and additional treatment efforts of Committee partners indicates a high level of commitment to the project. With such strong support by all involved, the Committee will continue to improve and expand the effort on the Bighorn Sheep Winter Range.

Reflector Trail Volunteer Weed Pull

July 16, 2013

The Coordinator was contacted by Big Sky residents interested in pulling noxious weeds to fulfill their volunteer hour requirement for the master gardener class taught by MSU Extension. The 4 volunteers converged on the Reflector trailhead, finding plenty of noxious weeds to pull. After 2.5 hours, the volunteers collected multiple trash bags estimated to weigh over 250 lbs.



Big Sky Owners Association Appreciation Tent at the Music in the Mountains Series

July 18, 2013

BSOA was the sponsor of the July 18th concert at the Town Center Park and invited GBSNWC to host a table in their tent. From 5 to 9 pm, the tent was full of Big Sky residents asking questions, looking at weed mounts, and taking home noxious weed guides. The coordinator schedule 3 sites visits that evening.



1st Annual Big Sky Community Weed Pull

July 23, 2013

The GBSNWC held its 1st annual Big Sky Community Weed Pull in Kircher and Big Sky Community Park on July 23. The weed pull was a partnership with Big Sky Owners Association, Yellowstone Club, Big Sky Resort Area District, Big Sky Community Corporation, Big Sky Natural Resource Council, Northern Rocky Mountain R&CD, and Gallatin County Weed. Twenty seven people volunteered and pulled 680 lbs of noxious weeds. The event included a barbeque following the event at the community park pavilion, with food and beverages being donated by event partners.



Madison & Gallatin County Weed District Spray Day in Big Sky

July 31, 2013

On Wednesday, July 31, Madison and Gallatin County Weed Districts participated in treating noxious weeds in the Big Sky area. Both the mountain and meadow areas were targeted. Due to the late notice, the coordinator was unable to participate that day. However, Jennifer assisted by scoping locations for crews to treat and provided a list of locations with noxious weed infestations that crews should consider treating, including the Big Sky Fire Department mountain station.

Gallatin County Weed District provided 6 people, four wheelers, and a spray truck. Madison Country Weed District provided 8 people, four 4-wheelers, a spray truck, and two 6-wheelers. Madison crews focused on the spur road as well as the list that Jennifer had provided. Additionally, they worked to help Moonlight with some of those roads. Gallatin County crews treated roads near the Community Park, areas near Kircher Park and along the trail that follows Lone Mountain Trail Road, and along Ouzel Falls Road. New leafy spurge stems were seen near the pond (been treated yearly since its initial discovery in 2011) and treated.

All who participated agreed it was a successful event and looked to make it an annual work day.

Big Sky Fly Fishing Festival: Blue Water Task Force

August 4, 2013

On the afternoon of Sunday August 4th from 12 to 4, Blue Water Task Force hosted a family friendly outdoor event in Town Center. Booths were set up with product demonstrations, casting clinics, casting competitions, kid's games, fly-tying, and river and trout conservation. GBSNWC coordinator hosted a noxious weed booth.



Big Sky Landscaping Presentation

August 14, 2013

Jennifer was contacted by Megan Gorder with Big Sky Landscaping and asked to present a noxious weed talk to the public and BSL employees. Roughly 15 people attending the talk that included noxious weed basics, weed ID, and ecology.

Jack Creek Preserve Camp

August 8, 2013

Jennifer was contacted by Jacquelyn Kline, Big Sky Watershed Corps Member with the Jack Creek Preserve Foundation, to educate young campers (age 12-18) about noxious weeds on July 18 and August 8. Jack Creek Youth Camp is a multi-day overnight camp to learn about wildlife and habitat conservation. Activities include archery, elk bugling, wilderness safety, weed identification, outdoor photography, fishing, and much more. Camp is staffed by volunteers from the community and partner organizations.

Jennifer had a previous commitment to BSOA for July 18, but attended the August 8th camp. Jennifer spoke in three sessions for approximately 1.5 hours. The presentation included general noxious weed information and identification (using weed mounts), after



which the campers played weed jeopardy, and concluded by pulling noxious weeds near the camp.

Big Sky Farmers Market

Wednesday Evenings, July 10- September 4

The Big Sky Farmers Market was held every Wednesday from 5-8pm at the Fire Pit Park in Big Sky from July 10th through September 4th. There were between 30 and 90 vendors, featuring fresh produce, herbs, plants and flowers, baked goods, woodworking, log furniture, antler art, photography and fine art, jewelry, clothing, and food vendors.

The Committee hosted a table with weed mounts, educational handouts, business cards, posters, and the GBSNWC banner.

The booth proved very popular, as many were drawn by the “pretty framed flowers” only to learn they were noxious weeds.

Both locals and visitors visited the booth, engaged in conversation, and many walked away with weed ID booklets, along with more insight into how noxious weeds affect the greater Yellowstone ecosystem. Many visitors expressed their appreciation that outreach and education about noxious weeds was a priority for the community.

Many wonderful connections were made and multiple property inspections resulted from it. Overall, the Farmers Market proved to be a great opportunity to engage with locals and visitors about noxious weeds.



Big Sky Owners Association Annual Meeting

August 30, 2013

Summit Hotel, Big Sky Mountain Village

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. Suzan Phillips Scott, Executive Director of BSOA, has worked closely with Jennifer all year to assist property owners and tackle invasive plant species within BSOA’s territory.

Jennifer Mohler attended the Big Sky Owners Association Meeting and reception on August 30. The meeting was held at the Missouri Ballroom of the Huntley Lodge, and upon adjournment, BSOA members and guests moved over to the reception in the dining room of the Huntley Lodge.



Jennifer set up a table with weed information, handouts, brochures, weed identification mounts, and contact cards. Many landowners asked questions, took handouts, and 3 site visits were scheduled.

Ophir School Weed Education Event and Pull

September 27, 2013

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.

In years past, 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. 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. The kits are no longer sold, thus the kits delivered in 2012 are now “classroom” kits, remaining in the class year after year.



This year’s field trip was held on Friday, September 27. Twenty seven Ophir School second grade students, along with 9 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.



Assisting Jennifer and Brittany in leading student mapping groups were Mike Jones from the Gallatin County Weed District and GPS specialist Megan Gorder.

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, kids spread out across the park pulling noxious weeds. Eleven very large garbage bags were collected, with an estimated weight of 500 pounds.



After the event, Megan volunteered to download the GPS data and make a map for the class. Jennifer provided the class with a color poster of the map.



Landowner Assistance

A total of 37 site visits covering 868 acres were conducted in 2013, with the first site visit being on May 16, and the last on October 1. 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 statistics for the 2013 field season and prior years are presented in Table 2.

Table 2. Property Inspection Summary 2008-2013

Year	# Properties Inspected	Total Acres Inspected
2008	120	2026
2009	84	691
2010	98	369
2011	170	957
2012	49	617
2013	38	868

The overall lower number could be attributed to the 2012 and 2013 absence of a post card mailer being sent to property owners within the project area, which directly contacts landowners and explains the assistance the Committee offers.

Table 3. Number of Property Inspections by Month

	2008	2009	2010	2011	2012	2013
May	27	2	0	3	2	2
June	30	23	1	6	4	7
July	28	31	10	14	3	15
August	19	23	10	79	25	9
September	14	5	55	46	12	4
October	0	0	22	22	3	1
November	2	0	0	0	0	0
Total	120	84	98	170	49	38

Table 4. Percentage of Properties Inspected with Noxious Weed Species Present 2008-2013

	2008	2009	2010	2011	2012	2013
bull thistle		5		5	4	
canada thistle	60	58	78	76	73	82
common tansy	9	5	35	5	2	16
curly dock				4	31	37
dalmation toadflax			1	1		
field bindweed		1			2	
hoary alyssum	25	39	75	51	80	66
houndstongue	48	41	45	27	39	53
leafy spurge				1		
musk thistle	8	43	27	35	47	55
orange hawkweed					2	3
oxeye daisy	17	27	48	48	43	39
poison hemlock				1	16	11
scotch thistle					6	5
spotted knapweed	53	49	51	30	43	29
sulfur cinquefoil		7		3	4	5
tall buttercup				1	2	
yellow toadflax	9	7	3	11	14	24

Of note this year was a patch of orange hawkweed identified at a residence on Rainbow Trout Run. It was planted many years ago on purpose by a landscaper and comprised roughly a 10 x 15 foot garden. The

renter and property owner both expressed their intent to work to eradicate the patch. GBSNWC was so interested in seeing this patch eliminated that it provided the appropriate herbicide to the property owner.

Table 5. Inspections by Area

Area	2008	2009	2010	2011	2012	2013
Big Sky	89	51	46	122	36	33
191	23	12	38	10	9	2
Four Corners	0	14	3	0	0	0
Gallatin Gateway	8	7	11	38	4	3
Total	120	84	98	170	49	38

As illustrated in the above table, the overwhelming majority of inspections occur in the Big Sky area.

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, the Committee’s cost share program assisted 33 landowners for a total reimbursement of \$4682.42.

In 2012, the Committee worked to continue the successful cost share program requesting funds again from the Gallatin Conservation District and was denied. The Committee tried unsuccessfully to obtain additional funds from various other sources.

In 2013, the Committee again approached the Gallatin Conservation District in March of 2013 to provide funding for cost share for property owners. Notice of approval of \$1750 of cost share funds was given on July 8 and advertising for the program was initiated. Due to the late notice, much of the season had passed and the amount of funding and acres treated was much lower than in past years.

As stated previously in the report, \$450 in cost share funds, secured by GBSNWC from a foundation grant, assisted a local property owner in treating over 20 acres of a dense spotted knapweed infestation on an extremely steep hillside in Bighorn sheep winter range. The total cost of noxious weed treatment came to \$1729.39. This particular patch has been identified by GBSNWC, Forest Service and wildlife biologists as a high priority for treatment due to its location and proximity to the West Fork of the Gallatin.

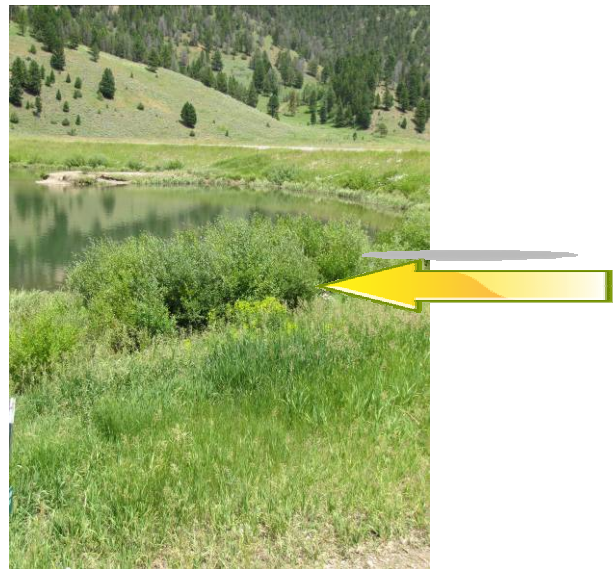
Table 6. Cost Share: funds distributed to landowners

2010	2011	2012	2013
Total funds available: \$5,500	Total funds available: \$8,075	NA	Total funds available: \$1,750
Coverage: ½ up to \$500	Coverage: ½ up to \$500	NA	Coverage: ½ up to \$150
Total distributed = \$2,123.21	Total distributed = \$4682.42	NA	Total distributed = \$256.63
10 landowners	33 landowners	NA	5 landowners
122.40 acres	224.75 acres	NA	28.56 acres
5 miles of roadsides	28.78 miles of roadsides	NA	0 miles of roadsides

Mapping & Monitoring

Due to the increase educational and landowner assistance efforts, limited mapping and monitoring efforts were conducted in 2013.

The main weed patch the Committee monitored was a leafy spurge patch next to the fishing pond in the Meadow Village. After confirming the infestation on July 25, 2011, the property owner, Big Sky Owners Association was immediately notified. Initially, there were four to five large patches of leafy spurge observed in the area.



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

The coordinator visited the site several times in 2012 and 2013, keeping in communication with BSOA. Frequent observations indicate multiple treatments by BSOA’s contractor, with an additional treatment during the Madison-Gallatin cooperative spray days in 2013.



Overall, there has been good control on the patch, with the presence of single to few isolated stems. This indicates a continued effort to eradicate the weed, but due to location and nature of this particular noxious weed, it's critical to remain vigilant. The photo to the right was taken September 4, 2013.

Committee Efforts

Volunteer Treatment of Noxious Weeds

Committee volunteers treated previously identified and mapped noxious weed infestations. Over 225 acres were sprayed with a backpack sprayer and chemical, which were provided by the Forest Service. Areas targeted were:

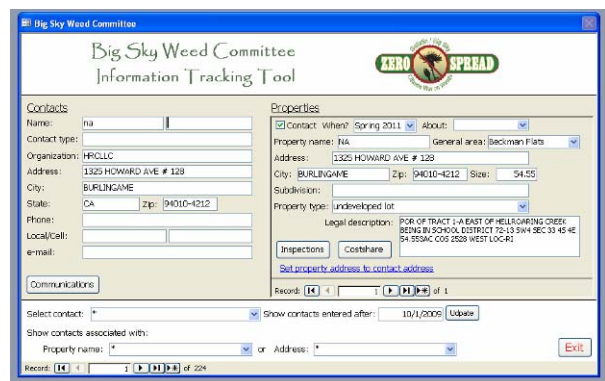
- Twin Cabin trailhead and areas on the east side of the river, north to the MDOT maintenance property. The horse trails east of the trail head. Approximately 1.5 miles on one trail, 0.75 miles on the other.
- Areas north and south of the Half Moon Saloon, approximately 20-25 acres. This area was mapped by the Committee in 2009 where large patches of yellow toadflax were identified. This area was treated twice in 2012, and again in 2013.
- Approximately 2 miles of Doe Creek road (both sides), along with treating multiple weed patches within 160 acres in section 20.
- Approximately 1 mile of Rainbow Ranch Road (both sides).
- Areas within the Bighorn Sheep Winter Range, which lies northwest of US Highway 191 and Big Sky Spur Road.
- Along the east side of the Gallatin River between Rainbow Ranch and Red Cliff campground.
- Various noxious weed patches within the state game range at porcupine basin.

Table 8. Volunteer Treatment by Committee Volunteers

	2010	2011	2012	2013
Estimated # of Acres Treated by Committee Volunteers	235	175	225	250

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, 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. All landowner visits and communication in 2013 were entered into the database, furthering the Committee's efforts to maintain a comprehensive database. With most data management systems, it is likely that the database will routinely be improved upon to better facilitate the management of data collected by the Committee.

Quickbooks

The coordinator continues to maintain a GBSNWC quickbooks account, which began in 2011, in order to facilitate the accessibility of financial information, especially in regards to preparing grants. All information is shared with NRM RC&D in order to ensure accuracy.

Partnership Efforts

The Gallatin Big Sky Noxious Weed Committee spends significant time and effort toward its 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.

Personnel from these organizations assisted with community events, education and outreach, noxious weed treatments, logistical support, and funding. Cooperators this field season included:

Big Sky Community Corporation

- Assisted with the Reflector Trail Weed Pull by disposing of noxious weeds
- Assisted with the 1st Annual Big Sky Weed Pull at Kircher & Community Park
- Assisted with Ophir School Weed Education Event and Pull
- Cooperated with the Committee on noxious weed issues in the community park and local trails

Big Sky Natural Resource Council

The Big Sky Natural Resource Council formed in the spring of 2010 and aims to provide sustainable solutions for natural resource issues in the Big Sky community through a collaborative ecosystem approach. 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. In 2011, the coordinator from the Committee became a council member.

- Assisted with the 1st Annual Big Sky Community Weed Pull

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. Suzan Phillips Scott, Executive Director of BSOA, continues to work closely with Jennifer all year to tackle invasive plant species in BSOA's territory. BSOA:

- 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
- Initiated a BSOA Weed Committee
- Publishes educational newsletter articles
- Partnered with the 1st Annual Big Sky Community Weed Pull

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 County Extension

- Worked cooperatively to assist landowners in natural resource issues.

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
- Donated 2 containers of herbicide for Committee use – one given to a volunteer treating multiple areas (including trailheads) and the other to a resident with a garden of orange hawkweed
- Provided personnel and equipment for the 5th Annual Gallatin River Weed Pull
- Assisted with the Bighorn Winter Range Noxious Weed Treatment
- Provided personal and equipment for the 1st Annual Big Sky Community Weed Pull
- Provided personnel and equipment for the Madison-Gallatin Spray Day
- Assisted with the Ophir School Weed Education Event and Pull
- Cooperated with landowner assistance in project areas to reduce duplication of efforts

Greater Yellowstone Coordinating Committee, Weed Subcommittee

- Provided expertise and educational materials

Montana Department of Agriculture, Montana Noxious Weed Program, Shantell Frame-Martin

- Provided expertise and educational materials
- Assisted with the Ophir School Weed Education Event and Pull

Montana Department of Transportation

- Provided information on various noxious weed infestations
- Assisted with the Bighorn Winter Range Noxious Weed Treatment

Montana Fish Wildlife and Parks

- Provided expertise
- Provided prizes for the 5th Annual Gallatin River Weed Pull

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

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 5th Annual Gallatin River Weed Pull

U.S. Forest Service, Gallatin National Forest

- Provided expertise and technical knowledge
- Assisted with the 5th Annual Gallatin River Weed Pull
- Assisted with the Bighorn Winter Range Noxious Weed Treatment & Planning

Volunteers

- Provided expertise
- Assisted with the 5th Annual Gallatin River Weed Pull
- Assisted with the Bighorn Winter Range Noxious Weed Treatment
- Assisted with the Reflector Trail Weed Pull
- Assisted with the 1st Annual Big Sky Weed Pull at Kircher & Community Park
- Assisted with the Ophir School Weed Education Event and Pull
- Conducted noxious weeds treatments on 225 acres in the Gallatin Canyon

