

Weed Spotlight

St. Johnswort

Hypericum perforatum

By: Brandon Hunt and
Amber Mendenhall

St. Johnswort (*Hypericum perforatum*) has been grown for medicinal uses to treat depression. But this invasive weed is much more dangerous than it has been given credit. It can cause extreme photosensitivity in light colored livestock. This rhizomatous plant is usually associated with disturbances. St. Johnswort is native to Europe. Because of the high toxicity, it was judged to be the cause of the heaviest financial loss to pasture and range in California. St. Johnswort is only found in small, isolated patches in Utah and is considered a class 1B noxious weed to be treated through Early Detection and Rapid Response (EDRR).

St. Johnswort is an herbaceous, tap-rooted perennial that grows two to three feet tall. Stems begin woody at the base and become branched and leafy. The Latin name "perforatum" refers to the appearance of holes in the leaves. Foliage is dotted with tiny translucent oil glands that are noticeable when held up to the light. Flowering occurs from June to September. Small yellow flowers have five petals and many stamens. The fruit is a sticky 3-celled capsule that can hold many seeds. St. Johnswort can produce up to 34,000 seeds per plant. Seeds may remain viable for 50 years.

Given St. Johnswort's taproot and ability to regenerate, hand-pulling or digging is not practical. Mowing and tilling are ineffective. Grazing is not recommended because of the potential for livestock poisoning.

Many herbicides are approved for St. Johnswort. Common herbicides are 2,4-D, Picloram (Tordon), Metsulfuron (Escort), and Aminopyralid (Milestone). Glyphosate is also effective in controlling St. Johnswort. Chemical control should be applied postemergence when target plants are small and rapidly growing before bloom.

(Continued on Page 2)>>>



Photos: Jerry Caldwell



Photo: Jerry Caldwell

St. Johnswort in Davis County

There are ten known patches of St. Johnswort in Davis County. Since this is an EDRR weed, we treat all patches whenever possible. We treat St. Johnswort with Round-Up at 2 oz/gallon or Weedmaster at 2 pints/acre. We also got several releases of the biological control agent, the Klamathweed beetle, in 2017 from Amber Mendenhall. We monitored the biocontrol site in 2018 and found damage caused by the beetle.

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Biological Control in St. Johnswort



Biological control of St. Johnswort is regarded as a great success story. Australian experiments led to the discovery of *Chrysolina quadrigemina*, known as the Klamathweed beetle. The first beetles were released in 1946. In just over a decade beetles reduced St. Johnswort to less than one percent of its former level in California. A statue was erected in Humboldt County celebrating the beetle and this became one of the first known examples of classical biological control.



St. Johnswort (Continued from Page 1)

Current biological control agents include Klamathweed beetles (*Chrysolina hyperici* and *quadrigemina*). In addition, St. Johnswort root borer (*Agrilus hyperici*) provides excellent control, whereas the St. Johnswort inchworm (*Aplocera plagiata*) and the St. Johnswort gall midge (*Zeuxidiplosis giardia*) usually provide only fair control.

Project Journal

Rush Skeletonweed in Box Elder County

By: Mark Anderson



Photo: Corey Ransom

Box Elder County received the first ISM Rush Skeletonweed grant in 2013. The project has grown to a five person crew each riding an ATV with a sprayer. The invasion is concentrated on the Promontory range and each year the crew finds new locations. Infestations on the Promontory peninsula are mapped and treated from May until mid July. Later efforts are made in the eastern portion of Box Elder County.

Rush Skeletonweed prefers rocky to sandy soils but is not restricted to those areas. The invader is a prolific seed producer. Parachute seeds can travel on the wind over large distances. Early spraying prior to flower is the best approach since seeds are not yet present. The down side is that plants are more difficult to recognize before the small yellow flowers appear.

2017 was an excellent growing year for Rush Skeletonweed due to the wet spring and the hot, dry summer. Aerial spraying was accomplished by helicopter in June on 1330 acres on the Promontory Mountains. The ground crew sprayed 240 acres from ATV's and backpacks. Biological control has been found successful but is not feasible due to Rush Skeleton's ability to rapidly invade.



Photo: Mark Anderson

Town Hall meetings were held in four locations where Rush Skeletonweed is invading. The Utah Noxious Weed list was discussed and the current field guide offered while questions were answered.

Our priority is to prevent seed production and to find, treat and monitor new infestations. We have found that once the weed is established, it is difficult to eradicate due to prolific seed production, dispersal with wind, deep extensive root system and regenerative capabilities. Successful eradication of Rush Skeletonweed requires repeated visits to infested areas regular evaluation and monitoring. Timing is critical and depends on various attributes such as the location, age, density, terrain, soil type, moisture, and other plants in the area.

Utah Weed Supervisor's and Utah State University Publish Noxious Weed Posters

By: Jerry Caldwell, Kevin Bailey and Amber Mendenhall



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The Utah Weed Supervisors Association Published a poster detailing identification for the Utah noxious weed list. Many county weed supervisors contributed to the creation of the poster. Special thanks to our collaborators, Utah State University and the US Forest Service. Corey Ransom and Heather Olsen helped edit and format the poster. Posters are available through your local county weed supervisor.



Galls formed by Russian
knapweed gall midges,
Jaapiella ivannikovi



Russian knapweed gall midges,
Jaapiella ivannikovi
Photo: Jerry Caldwell



Galls formed by the Russian
knapweed gall wasp, *Aulacidea*
acroptolonica

Biocontrol Today

Russian Knapweed Biocontrol Expands in 2018

By: Amber Mendenhall

Russian knapweed biological control began in Utah in 2012. We started with a proposed insectary site in Grand County. The first biocontrol agent released was *Jaapiella ivannikovi*, the Russian knapweed gall midge. *J. ivannikovi* established and began spreading throughout the county. Multiple release attempts have been made throughout the state. In 2018, we confirmed establishment in two of those sites. We have learned from our efforts and identified ideal release locations for continued progress. Our plan is to increase to four new insectary sites in 2019.

We released a second biocontrol agent in Moab in 2016. The Russian knapweed gall wasp, *Aulacidea acroptolonica*, was confirmed in 2017 at the Moab site. As the gall wasp population expands, we will attempt to mirror our success by spreading this agent to additional sites in Utah.

Ask the Experts

Vegetation Monitoring Helps Invasive Species Mitigation

By: Jan Reinhart, Brittany Duncan and Aaron Eagar



Monitoring with Wasatch County
Photo: Jan Reinhart

success is to define measureable goals. Monitoring data can be collected in numerous ways, but understanding the desired end result helps to identify what types of data to collect. (Continued on Page 5)>>>

Monitoring is the collection of meaningful information that shows changes in land conditions over time. Collecting monitoring data before, during, and after a weed control project can quantify the results of a treatment and can help land managers know what actions need to be taken into the future. The first and most important step in designing a project and deciding how to monitor its

Vegetation Monitoring (Continued from Page 4)

For most Invasive Species Mitigation (ISM) projects, measureable goals include reducing weed density, and increasing desirable plants. Repeatable landscape photography is the simplest way to monitor. When more detailed data are needed, Utah Department of Agriculture and Food (UDAF) staff establish transects and use line-intercept to determine weed cover, density belt method to quantify the number of weeds, and camera-on-a-stick to evaluate the area.

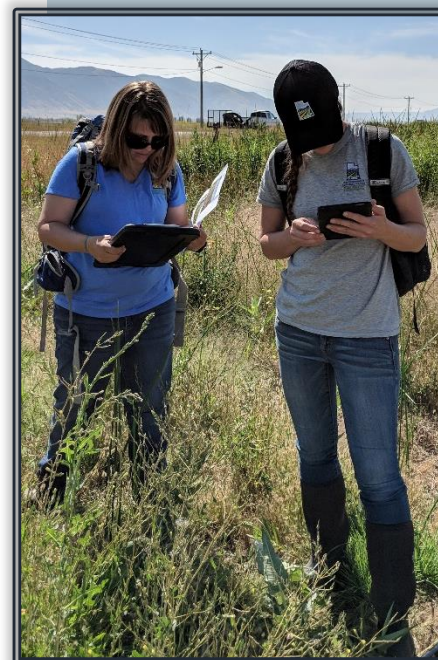
Typically, projects are monitored during the growing season, before treatment. Data are collected annually. Although monitoring for biennial species twice during the season can provide information on population dynamics. By monitoring garlic mustard twice a year, we noticed that although a spring treatment caused cover to decrease into summer, by the following spring, cover would increase.

Projects are monitored once a year for the first 3 years, and in the 5th year. Monitoring annually helps the project planner evaluate the effectiveness of treatment and make any changes early on. For example, if there is no change in invasive species cover from year 1 to year 2, perhaps the herbicide or rate needs to be changed. Also, if the target species is decreasing in density, but it is being replaced by other undesirable species, perhaps native species should be seeded.

After monitoring the squarrose knapweed project in Tintic on years 1, 2, 3, and 5, we were able to identify transects that still had knapweed present or had increased in knapweed cover after 5 years of treatment. The project planners used this information to be more efficient in the following year's treatments. They concentrated efforts in areas that needed it rather than wasting time and chemicals in areas where the knapweed had not been detected.

Monitoring information not only provides feedback to land managers, but it also informs the state legislature of the success of the ISM program. By demonstrating that the program is accomplishing what it was intended to do, we can justify requesting a continuous or an increased allocation of project funding each year.

UDAF staff have been monitoring ISM projects since 2012. Statewide projects are too numerous to visit all, so we are in the process of developing a ranking system to help decide which projects should be monitored. Large-scale, multiple-year projects with measureable goals that involve high priority weeds will be ranked highest for UDAF monitoring.



Mark Your Calendars:

The 2018 North American Invasive Species Management Association (NAISMA) will hold a joint conference with the Upper Midwest Invasive Species Conference on October 15-18, 2018.

For more information visit www.naisma.org.





The Invader -Utah Weed Supervisor's Association Newsletter

Editor: Amber
Mendenhall

For questions, comments,
article submissions or
ideas please email:

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-or-
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Vegetation Monitoring (Continued from Page 5)

Some of the criteria/questions that we are planning to use include:

1. What species is the project designed to treat and how is it categorized (e.g., Class IB vs. Class III)?
2. Does the project have clearly-defined, measureable goals?
3. Has the project planner identified the desired future use of the area?
4. How much funding will be dedicated to the project?
5. What is the longevity of the project, and are there additional restoration activities planned?

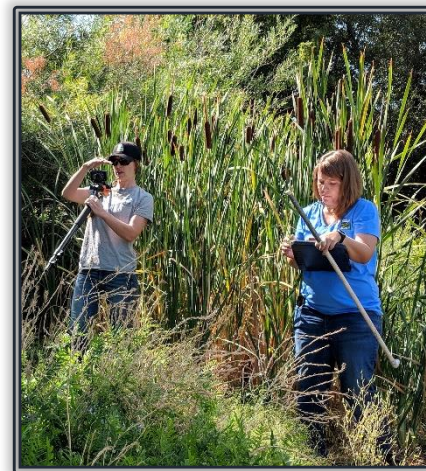
UDAF will be taking on the monitoring for some of the ISM projects, but planners need to be involved and engaged. They should meet with UDAF staff in the field to tour the project area, talk about their goals, and help identify monitoring locations and collect data. Planners should review the data and use information to make management decisions. Communication and collaboration are vital to project planning and monitoring, and will contribute to the success of the ISM program.

Getting to Know

Invasive Species Mitigation Gets a New Monitoring Specialist

By: Amber Mendenhall

The Utah Department of Agriculture (UDAF) has hired a new Vegetation Monitoring Specialist. Brittany Duncan will be the primary monitoring specialist for the Invasive Species Mitigation Program (ISM). Brittany will work closely alongside Jan Reinhart. Jan has been monitoring the ISM projects since the program began. Jan splits her time between the ISM and the Grazing Improvement Program (GIP). We are fortunate to have Brittany come on board. Cooperators will be able to get help monitoring ISM projects with Brittany and Jan.



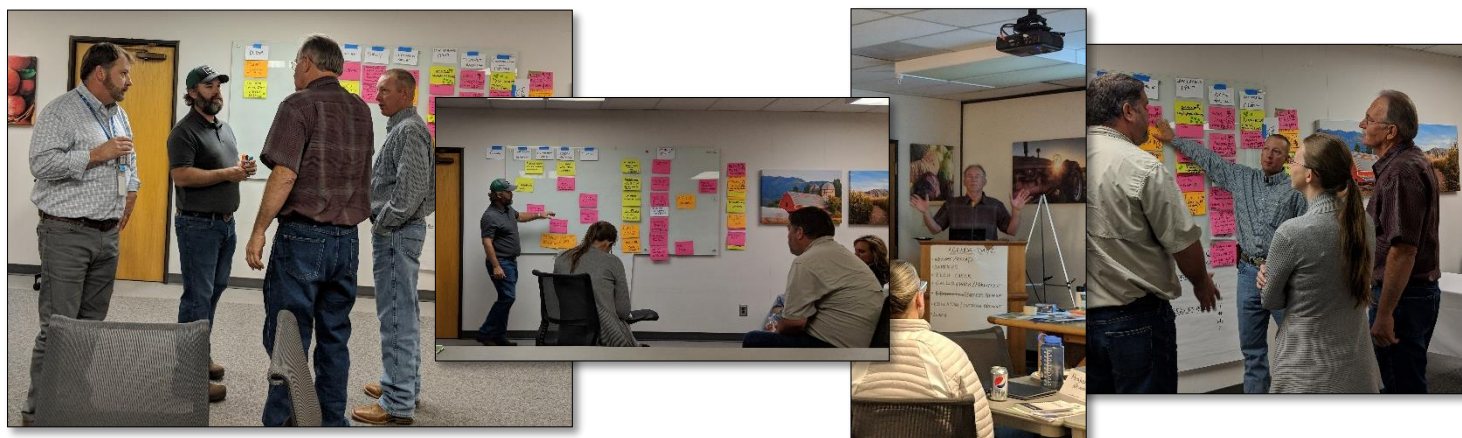
Brittany is a Utah native and graduated from Utah State University (USU) with a Master's Degree in Ecology. She has spent significant time at USU on rangeland monitoring including Phragmites. Brittany says she never expected that she would be monitoring noxious weeds but she is enthusiastic about the opportunity to work in such a unique program. Brittany's experience will bring a new perspective to our ISM program. When Brittany is not at work she is busy spending time with her family and her two girls ages one and seven.

Conference Review

Utah Department Of Agriculture Hosts Mapping Summit

By: Amber Mendenhall

The Utah Department of Agriculture and Food hosted the Strategic Planning Meeting for Further Development of EDDMapS in the Western United States in Salt Lake City in September. This meeting was facilitated by Todd Neel of the US Forest Service. In attendance were State Noxious Weed Specialists from ten western states as well as mapping experts from EDDMapS. During the two day meeting, cooperators discussed plans to guide the development of EDDMapS and EDDMapS Pro as our primary noxious weed mapping tools. This important meeting helped create a strategic plan to direct coordinated noxious weed mapping efforts among western states.



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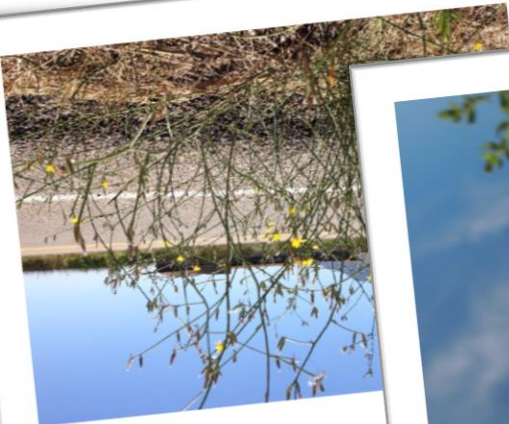
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Utah Weed Supervisors Association Newsletter

The Invader

*Rush Skeletonweed
Photo: Justin Stubbs*

*St. Johnswort
Photo: Jerry Caldwell*



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