

# A Biological Wildfire!

## Let's control noxious weeds

*Like an unwanted wildfire, noxious weeds can drastically affect wildland plant and animal communities, damage watersheds, increase soil erosion, and adversely impact recreation. However, unlike the temporary negative impacts of wildfire, ecological damage from extensive noxious weed infestations is often permanent. Lands affected by wildfire are self-healing, whereas lands invaded by noxious weeds don't return naturally to their pre-invasion condition.*

*Weeds continue to spread and the damage worsens. When considering long-term ecological effects on the land, invasion by aggressive non-indigenous noxious weeds is far more damaging than any wildfire. – Steven A. Dewey, Utah State University*

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Much of our effort at FENW is directed at reversing the ongoing "loved to death" deterioration caused by human visitors. Unfortunately, there is another visitor to the wilderness that follows rules less than humans – Noxious Weeds. These invasive species can become a rampant problem that could destroy the treasures we are trying to protect. Right now, this insidious aggressor is gaining ground, figuratively and literally. Thirty-six noxious, aggressive, invasive weeds are invading our wilderness areas. And they will crowd out the valuable native plant species and ruin the forage for the native fauna.

FENW has been battling this invasion since 2007. Hundreds of volunteers have spent thousands of hours picking weeds, and over \$100K of grants to FENW (mostly from the National Forest Foundation Ski Area Conservation Fund) have financed professional treatment of weed infestations. In 2019 and beyond, FENW will continue these efforts a new effort to measure and map the actual locations of weed infestations. We will also use a large grant from the NFF to treat 8 known infestations. The combination of treatment and measurement will ensure we make progress against these spreading invasive species.

We encourage Volunteer Wilderness Ranges to add Noxious Weed Awareness to their hike agendas. It is fun, because who doesn't like looking at flowers when they're hiking?

## What You Can Do – “Spread the word, not the weeds”

Preventing the spread of weed infestations is the key to stopping this threat and there are many simple actions for preventing new weed invasions. Prevention is most effective because control and elimination of weed infestations is extremely time-consuming, expensive and, in most cases, virtually impossible. We know new infestations are most likely to occur where people have been. So, it is very important for visitors to know how to stop the spread of weeds. As a FENW VWR you will have the opportunity to educate the public about best practices. As a VWR you should:

- Follow “Leave No Trace” principles for weeds so you don’t spread weeds yourself.
- Educate the public about invasive weeds and “Leave no Trace” Principles.
- Document any observed infestations in your patrol reports.
- Join the FENW VWR Weed Mapping Crew if you want to do more.

### How you can talk to the public about invasive weeds?

Weeds may seem mundane, so you need to be both brief and creative. Depending on the group, you might try linking a discussion of noxious weeds to the more widely known issue of invasive species or begin with parallels between “Leave No Trace principles” for hiking and camping and “Leave No Trace principles” for weeds.

There will be few obvious opportunities to begin a discussion:

- Someone standing in a weed patch or holding a weed.
- Finding dogs off leash who may be carrying seeds.
- Finding horses or pack animals may not have certified weed-free feed.
- Discovering a camp site near a patch of Canadian thistle

Here are essential points for your discussion about invasive weeds:

- People, pets and livestock introduce and spread invasive weeds.
- Invasive and noxious weeds can spread rapidly. Eradication and control is difficult, costly and nearly impossible.
- Wildlife habitat and food are reduced when noxious weeds take over

There are simple things everyone can do to prevent the introduction and spread of invasive weeds, which you can do even if you’re not good at identifying the weeds.

- Avoid weedy areas – stay on the trail. Weeds establish easily in overused areas.
- Keep pets and stock out of weedy areas.
- Inspect and clean your vehicles, boots, tack and equipment. Remove seeds.
- Camp away from areas with weeds.
- Inspect, brush, and clean animals (especially hooves and legs) for weed seeds.

- If you bring a pack animal use only weed-free feed during your trip and for 48 to 72 hours before. All feed must be certified as weed-free and marked with the approved label from the state of origin.
- Tie stock to minimize soil disturbance and loss of native plants. Choose shady areas away from water to reduce weed growth.

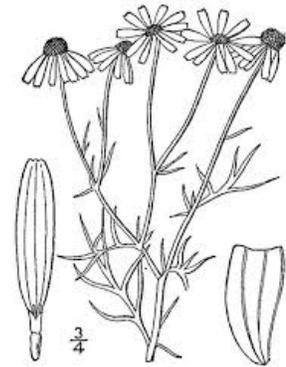
### **Should I pick weeds?**

*Yes and no.* Most weeds you see should not be picked because they respond by growing back stronger. Some should not be picked because the native and invasive species are hard to tell apart.

A couple species can be picked because they are only spread by seed. In 2019, FENW is recommending only two types of weeds should be picked – Musk Thistle and False Chamomile. Carry a garbage bag with you, put the weeds in them and carry them out. If the seed heads are left in the wild, they may spread the weed even more!



*Musk Thistle*



*False Chamomile*

### **See a weed? Take a picture!**

In 2019 a major goal of the FENW Invasive Plant Program is to locate, identify and map out weed infestations. It is important for our program to get an accurate measure of the extent of weed populations in the Wilderness. If you see anything you think is a weed when you are in the wilderness (especially far back in the wilderness), report it to us. This will be invaluable in planning future treatment of weed populations and justify future grant applications.

If you see suspected weed, report it to us as soon as possible. Since none of us are trained botanists, we're using a simple procedure. Take a picture with your cell phone and e-mail it to [weeds@fenw.org](mailto:weeds@fenw.org). Cell phone pictures include the GPS location of the picture, and we can use it to add your report to our database. For the best reporting:

- 1) Set your phone so location services are enabled on the camera (before you leave home):
  - Apple: <https://support.apple.com/en-us/HT207092>
  - Android: <https://www.wikihow.tech/Turn-on-GPS-on-Android>
- 2) Take pictures of the suspected weeds from the top (flowers) and side (stem and leaves). If there is a big area of the weed take a picture that shows the size of the infestation.
- 3) Take some notes – Date, Trail and approximate location, What weed you think it is, Size of infestation.
- 4) E-mail your report to [weeds@fenw.org](mailto:weeds@fenw.org) with the notes in the body of the e-mail.

Even if you don't have a GPS enabled phone send in as much information as you can gather, we'll research it.

10 weeds to watch for



Diffuse knapweed



Oxeye daisy



Dalmatian toadflax



Spotted knapweed



Plumeless thistle



Houndstongue



Chamomile



Absinth wormwood



Leafy spurge



Black henbane

## Deeper in the weeds

*We thank the Poudre Valley Wilderness Association for the original version of this section*

Invasive species, including noxious weeds, are one of the top four threats to the health of the nation's forests and grasslands in the 21st century. In 2000, it was estimated that introduced weeds were responsible for about 28 billion dollars in economic losses per year in the U.S. More than 40% of the species listed by the federal government as endangered or threatened are at risk primarily because of nonnative plant and animal species. Furthermore, many other species not currently having formal endangered or threatened status are also being negatively affected by invasive weeds. These weeds crowd out native plants, changing our wild lands forever. In some cases, a single invasive plant species can overrun a complete ecosystem (Yellow Starthistle has overrun 15 million acres of northern California grassland).

Invasive weeds are typically a “trace” of humans —introduced and spread by visitors. As anyone who has a garden or lawn knows, weeds are hard to kill. Prevention and public awareness are the keys to combating this threat. As such, one of our most effective activities as FENW Wilderness Volunteer Rangers may be educating ourselves and the public about the adverse effects of invasive weeds and how simple steps can prevent or help control their introduction and spread.

### **What are These Weeds?**

A weed is “a plant growing where it is not desired” or for the more technically minded, “a plant that interferes with management objectives for a given area of land at a given point in time” (Western Society of Weed Science).

Invasive weeds are nonnative plants that spread rapidly and can permanently crowd out native plants. Most invasive weeds in North America have come from Europe or Asia and were introduced either accidentally or intentionally as ornamentals. These plants have an advantage over native plants because the insects, diseases, and animals that would normally control their populations and the plants that would compete with them are not naturally found here. Weeds have characteristics that allow them to colonize disturbed areas rapidly and compete effectively for water, nutrients and sunlight.

Most produce huge quantities of seeds or reproduce easily by small fragments of roots or stems. Their seeds stick to fur or feathers, survive passage through the digestive tracts of animals, or are adapted for spread by wind and water. Many of these weeds have roots that grow deep into the soil, and some even produce chemicals that are harmful to other plants.

Invasive best describes the characteristics of these plants and their impacts. An invasive weed is defined as a nonnative plant that establishes and spreads rapidly and causes harm. And, not all invasive weeds are noxious weeds. Plants may be designated as noxious due to their negative impacts on crops, livestock, human health, and/or native plant communities. Most jurisdictions require specific eradication and/or management actions for noxious weeds.

All the weed species that FENW VWRs are expected to look for on their patrols and report are designated as noxious by the State of Colorado.

### **Why Invasive Weeds are a Problem**

As introduced weed populations increase, native plant populations decline and the diverse communities of native plants that we enjoy (and that constitute the basis for many healthy ecosystems) can be permanently replaced. Wildflowers and beautiful views may be replaced. Essential wildlife habitat and food may be lost. Some weeds are poisonous to stock and spiny weeds may irritate or injure stock and people. The worst weeds can even change the character of entire habitats. Plant diversity is lost when large areas are overtaken by a single weed species.

Plant diversity is necessary to sustain the cycling of nutrients and water for the long-term health of a habitat, and to ensure the presence of genetic material for adaptation and resilience to disruptions. Invasive weeds often have different characteristics than the plants they replace. Areas may become vulnerable to more intensive or frequent fires or become permanently drier. Some invasive weeds may not hold and protect the soil the way native plants do, so erosion and sedimentation of streams increase. Invasive aquatic weeds can sharply reduce light and oxygen levels in the waters they occupy, impacting both fish and aquatic plant populations.

### **Controlling Invasive Weeds**

Invasive weeds are being managed. You may see the same patch of weeds for several years (after you have repeatedly reported it!) because eradication (complete removal) of infestations is constrained by limited budgets and the ability of weeds to persist and spread. Many weeds are prolific seed producers, and some weed seeds can survive in the soil for more than 50 years. Eradication may take several – many years and if the infestation becomes large enough, it may never be possible.

Then the goal becomes containing and suppressing the infestation. Just as limited budgets mean trail maintenance must be prioritized, weed management must also be prioritized. The Forest Service, the Canyon Lakes Ranger District, and Larimer County have weed management plans. Priority for complete control of infestations and whether to even attempt complete control depends on the size of the infestation, how long the weed has been in an area, the weed's ability to spread, the potential damages the weeds cause, the likelihood of reintroduction and the effectiveness of possible management options. Priority is usually given to small infestations of weeds that are new to an area.

All this means that FENW VWR can play a very important role documenting and controlling invasive weeds in our patrol area. The best way to control invasive weeds is to prevent their introduction (public education) and to detect them early (reporting).

### **Noxious Weed Management in Colorado**

The State of Colorado, through the Colorado Noxious Weed Act, prioritizes the management of noxious weeds according to the following

- List A: Removal of all plants and plant parts. Populations of noxious weeds that not previously found in Colorado, or are only in small areas, they need to be eradicated.

- List B: Suppress weeds found in substantial numbers in some parts of the state but not others. A “line in the sand” has been drawn to establish management areas. It may be feasible to eventually eradicate small outlier populations.
- List C: Some weeds are found in such large numbers that it is no longer realistic to think we will eradicate them. Instead we aim contain their spread.

Summit and Eagle Counties have published lists of species targeted in those two counties –

Summit: <http://www.co.summit.co.us/993/Summit-County-Noxious-Weeds>

Eagle: [https://www.eaglecounty.us/Weeds/Weed\\_Information/](https://www.eaglecounty.us/Weeds/Weed_Information/)

## FENW Invasive Species Program Overview

The FENW Noxious Weed Program will develop strategic programs that make use of FENW's limited resources – volunteers and funding sources. Weed eradication requires a huge time commitment from trained people, spreading herbicide under the supervision of the USFS. FENW does not have many volunteers who can participate in such eradication programs, but it does have a large number of volunteers who can identify, and map weed infestations. Mapping infestations is an important need for the USFS because it will help the USFS – who does have resources for eradication – justify a focus on problem infestations in the wilderness areas.

The 2019 FENW program will concentrate upon mapping and assessment of weed infestations by using its volunteers and technology (GPS, Cell Phones, etc.). As we gather clear facts and data on Wilderness infestations, we help focus USFS effort on those areas, raise money to supplement USFS efforts with professional eradication teams (approved by USFS), and the few FENW volunteers qualified for eradication efforts can do targeted 'SWAT' hits on weed hotspots (for example, a thistle outbreak miles back a trail). This combination will ensure the Weed program has measurable effectiveness.

### Program Goals

Noxious weeds have certainly crossed the borders of areas FENW is responsible for – Eagles Nest Wilderness, Ptarmigan Peak Wilderness and Holy Cross Wilderness Areas – invading and changing the pristine environment. FENW is working closely with the USFS to manage the forest health in the Wilderness. These noxious weeds affect the forest in several ways. Currently there are 37 noxious weeds in Summit and Eagle Counties that endanger our Wilderness. A major part of this program is to locate infestations and to control the spread of invasive plants that are harmful to the forest.

Inside the wilderness, the program will identify the top ten threats to each of the wilderness areas and develop plans to manage these threats. Management will come at 3 levels: monitor, casual treatment, and aggressive elimination. The program will build the aggressive elimination programs in a way that can support 3 or more years of ongoing attention to get through complete weed growth cycles.

Outside the wilderness, FENW will work with groups responsible for the entrance vector of the weeds and work with them to raise funds and programs for those areas

## Our 2019 grant from NFF

In 2019, FENW won a grant from the National Forest Foundation's Ski Conservation fund (financed by Vail Resorts and Copper Mountain). This grant – the *FENW 2019 Infestation Management Project: Effective Suppression of Noxious Weeds in three Wilderness Areas* – will allow us to resume aggressive treatment of known weed infestations that threaten the wilderness. Details below:

- \$15,000+ Grant from NFF's Ski Conservation Fund.
- Treatment for 8 infested areas:
  - Squaw Creek & Elk Park - Holy Cross Wilderness.

- Martin Creek Trail Corridor – Holy Cross Wilderness
- Lake Creek – Holy Cross Wilderness
- Piney Meadow Creek and Piney Trail – Eagles Nest Wilderness
- Slate Lakes – Eagles Nest Wilderness
- Harrigan Creek – Eagles Nest Wilderness
- Brush Creek – Eagles Nest Wilderness
- Acorn Creek – Ptarmigan Wilderness

Our 2019 Weed Mapping Team will map out noxious weed infestations, with a partner. Each team member will “adopt an infestation” from a list of targeted weed infestations in Summit and Eagle Counties, then hike to and measure the size of the infestation for USFS records. We need volunteers to measure the infestations before and after (June/July, September).

*For more information on the FENW Invasive weeds program contact Jim Alexander, [jimofcolorado@gmail.com](mailto:jimofcolorado@gmail.com).*

## Noxious weed facts & figures

- In Montana, spotted knapweed has decimated three million acres of elk habitat, contributing to a severe decline of 50-90% in the elk population.
- In North Dakota's Theodore Roosevelt National Park, leafy spurge has contributed to severe declines in bison (83%) and deer (70%) populations.
- Throughout the West, eight million acres have been negatively impacted by the Star thistle.
- According to the US Department of Agriculture, eleven western states have lost a total of ten million acres, covering national, state, and private lands.
- In Colorado, 500 of our three thousand native species (seventeen percent) have been replaced by invasive weeds.
- Within the past five generations, over 1 million acres in Colorado have become infested by invasive weeds, with an associated cost of over \$10 million annually in lost productivity alone.
- Since Russian knapweed was first reported in 1922, it has spread to infest over 160,000 acres. Similarly, since first reported in Colorado in 1962, Diffuse knapweed has spread to infest over 90,000 acres.
- Leafy spurge, which was first reported in the State in 1970, currently infests about 85,000 acres. Infestations of invasive weeds not only have a substantial economic impact on farming and grazing, but they also have negative effects on native plant and wildlife species in natural areas and National Forests and Parks.
- Tamarisk infestations along the Colorado River have virtually eliminated the native cottonwood riparian ecosystem in some places and have reduced nesting habitat for native songbirds by up to 41% in some areas.
- Hoary cress infestations near Craig have reduced winter forage for elk and mule deer.
- Purple loosestrife in the Colorado, South Platte, and FENW watersheds has negatively impacted wetland species such as ducks, cranes, turtles, and fish.
- Noxious weeds have displaced at least 10% of Colorado's native plant species and severely degraded important native plant communities that are essential habitat for more than 85% of Colorado's wildlife species.