2021 National Invasive Species Awareness Week (https://www.nisaw.org/)

Article #3 in a series of articles emphasizing awareness of noxious weeds and proven management practices

Noxious Weeds – Prevention and Control Strategies

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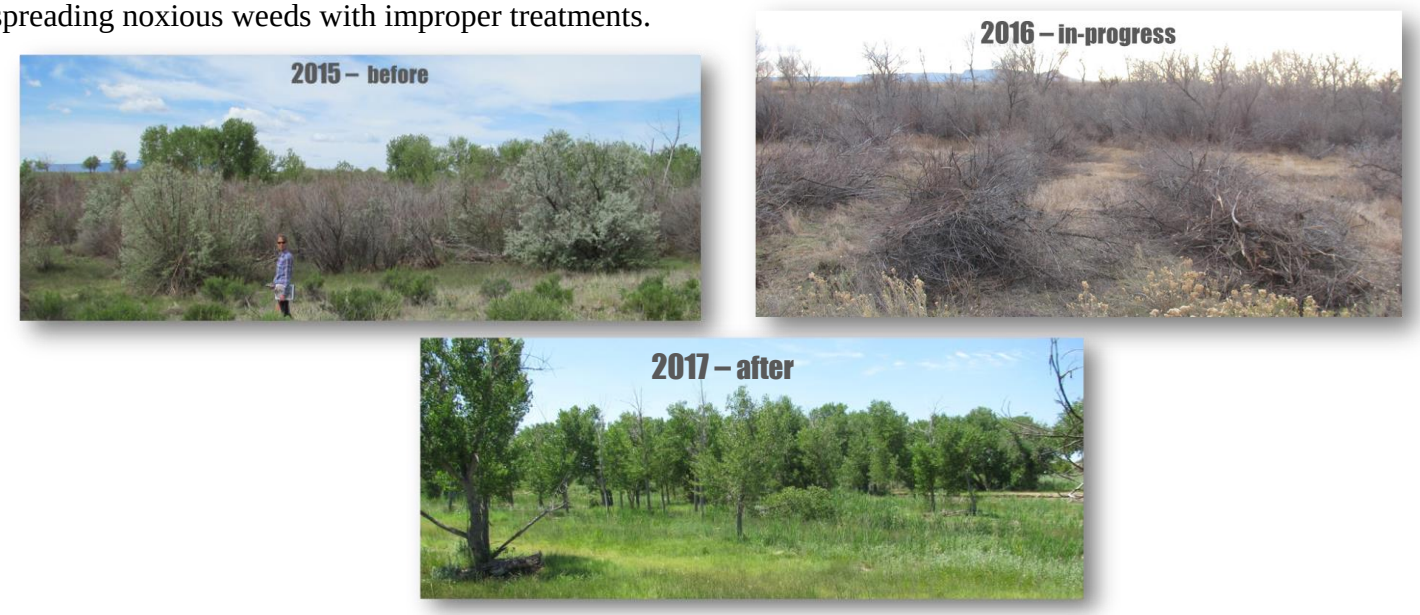
Integrated Pest Management (IPM)

IPM means utilizing, to the best extent possible, multiple methods to prevent and control weeds. Often, successfully controlling noxious weeds will depend upon implementing a variety of management tools, including proactive measures to *prevent* weed infestations.

Additionally, every weed species is different and will require tailored treatment methods, based on many factors such as how a plant grows and reproduces. "One size fits all" treatment methods are not recommended. This is why is it very important to consult with a professional to avoid wasting time and money, and inadvertently spreading noxious weeds with improper treatments.



IPM methods are used to control tamarisk and Russian-olive and restore the Purgatoire River corridor. A combination of mechanical removal of noxious trees, mulching of woody debris, targeted herbicide application and revegetation all work together to control noxious weeds and restore river habitat.

Early Detection and Rapid Response

One of the most important management tools is being proactive. The quicker a noxious weed infestation is identified, the more likely that population can be successfully eliminated. This is called Early Detection and Rapid Response, or EDRR. One of the keys to EDRR is proper plant identification. If a new plant shows up on your property, enlist the help of a natural resource professional to identify it. Once the plant is properly identified, move forward with *professional* recommendations for control.

Soil Disturbance and Overgrazing in Pastures

Weeds love bare soil caused by too much disturbance. A weakened native plant community with bare soil provides the perfect opportunity for weeds to outcompete native vegetation. The climate in most areas of Las Animas County (LAC) is semi-arid; this means the climate is generally warmer and drier and annual precipitation limits plant growth. Being proactive with grazing management is *essential* to maintaining a healthy native plant community and preventing weed infestations.

Livestock stocking rates per acre in LAC, and Southeastern Colorado in general, are very low. Stocking rate is the relationship between the number of animals (forage demand) and the amount of forage resource (forage supply) on which they are placed. Thus, it is imperative to understand how many animals can be placed on a certain number of acres without weakening existing native vegetation and creating bare ground – Bare ground is a welcome mat for noxious weeds.

Stocking rate is influenced by many variables: The type of livestock and how much they weigh; the ecological site (i.e. the specific vegetative community and soil type at that site); the current weather conditions (is there an active drought, are precipitation levels normal or above average?); and how pastures are utilized (is there year-round grazing, or are livestock being rotated through different pastures, providing a resting period for native vegetation to recover?).

In Southeastern Colorado, generally speaking, one lactating cow with a calf (i.e. a "pair") will require 60-85 acres for a year with normal precipitation. More acres are required for horses, at about 65-113 acres for one horse. Your local Natural Resources Conservation Service can provide technical assistance for determining recommended stocking rates on your property.

Mechanical Control

Mechanical control consists of methods that kill or suppress weeds through physical disruption. These may include pulling, digging, tilling, mowing and cutting off flower heads before seeds mature. Mechanical methods are often very time-consuming and not cost effective if tackling large weed infestations. Some weed species respond well to mechanical methods, especially *small* infestations of biennial plants (i.e. plants with a two year life cycle, such as Scotch thistle). However, mechanical methods may actually spread some species, especially perennial plants (long-lived) with spreading root systems. Russian knapweed and Canada thistle are examples of plants that will actually spread if they are tilled, dug, or disked as those methods stimulate their massive root systems.

Cultural Control

These methods include practices that suppress weeds or provide competition against weed invasion, such as livestock grazing, fire, and/or revegetation applied during specific seasons or weather conditions. Cultural control methods are rarely effective on their own, and are usually part of a comprehensive IPM plan.

Biological Control

Biological control is the use of living organisms (insects, fungi, or bacteria) to suppress vigor of weeds, and thus their spread. Insect use is the most common form of biological control, typically requiring up to five years for establishment. Biological control will not eradicate weed populations, but it can be very effective at weakening some weed populations, allowing for re-establishment of desirable vegetation. Again, biocontrol is rarely effective on its own, but should be considered as part of an IPM plan. PWWMC has been working with the Colorado Department of Agriculture's Insectary to establish several species-specific biocontrol agents in Las Animas County: Tamarisk leaf beetle, Canada thistle rust fungus, Russian knapweed stem galling wasp and flower gall midge.

Canada thistle rust fungus releases in the Upper Purgatoire Watershed. The rust fungus inoculum (left) is placed on small rosettes of Canada thistle plants (right) in hopes the fungus will infect the plant, causing decreased vigor and decline in populations.

Chemical Control (Herbicide)

Herbicides target plants. By far, herbicide is the most effective control method in most scenarios, generally being very cost and time efficient. And contrary to media-hype, herbicides have a very safe environmental and human safety profile, as they have undergone extensive testing and approval by the US Environmental Protection Agency. Additionally, many of the herbicides used for noxious weed control have *extremely low use rates, at 10 ounces to the ACRE or less!* However, this safety profile is all dependent upon the user *following the instructions on the container label!* Herbicide application requires user responsibility and compliance with all product label instructions for handling, application and clean-up. **The label on the container is literally the LAW**, and must be adhered to.

Many weed species require specific selective herbicides applied during specific seasons. For example Russian knapweed and Canada thistle can be successfully eliminated if the proper herbicide is applied at the ideal time of year.

Additionally, selective herbicides specifically target specific weed populations, while releasing and promoting native plant populations.

Where Can You Get Help?

The PWWMC Coordinator or the SPPRCD Noxious Weed Technician can provide landowners with professional technical assistance for the identification and management of noxious weeds or other weedy plant species, land restoration practices, and information regarding PWWMC/SPPRCD noxious weed cost share programs:
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Helpful Information about Noxious Weeds -

- Local Information – www.purgatoireconservation.org (click on the "Noxious Weed" tab)
- Las Animas County Noxious Weed Guide - https://www.purgatoireconservation.org/las-animas-county-weed-guide.html
- CO Weed Management Association - https://cwma.org/noxious-weed-awareness-campaign/