

# ADA COUNTY WEED CONTROL



Noxious Weed Control Action Plan 2019-2020

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## **Ada County Weed Control Vision:**

"To be a premier governmental entity, demonstrating fiscal responsibility and professional excellence, and to be recognized for providing innovative and proactive solutions for our communities through open and accessible government."

## **Ada County Weed Control Mission:**

The mission of Ada County Weed Control is to control or eradicate noxious weeds throughout Ada County pursuant to Idaho Statute Title 22, Chapter 24, and to provide effective and efficient weed control services that enhance our community's quality of life.

## **Introduction**

Ada County Weed Control (ACWC) is responsible for enforcing Title 22, Chapter 24 of Idaho Statute in the entirety of Ada County is the weed control authority in accordance to Idaho Statute. Our primary responsibilities are to detect, record, treat and monitor noxious weed infestations, and to conduct compliance activities when noxious weeds are detected on public and private lands.

**Idaho State Department of Agriculture (ISDA)-** Develops the Idaho Noxious Weed Rules and these rules identify those noxious weeds which have been officially designated by the ISDA Director as Noxious Weeds in the state of Idaho, designates articles capable of disseminating noxious weeds, requires treatment of articles to prevent dissemination of noxious weeds and provides authority to designate cooperative weed management areas for management of noxious weeds (IDAPA 02.06.22.001.02).

**Weed Control Authority-** Each county in Idaho is statutorily obligated to employ a Noxious Weed Superintendent, who is the weed control authority for the county. In Ada County, the ACWC Director is appointed by the Board of County Commissioners, and serves as the Noxious Weed Superintendent.

The following categories of weed control response have been established by the Idaho Noxious Weed Law and Rules (Idaho Statute Title 22, Chapter 24, IDAPA 02.06.22):

**Early Detection and Rapid Response (EDRR).** Finding invasive plant species during the initial stages of colonization and then responding within the same season to initiate eradication of the invasive plant species.

**Statewide Control Noxious Weed List.** Weeds listed in the control list are known to exist in varying populations throughout the state. The concentration of these weeds is at a level where control or eradication, or both, may be possible. A written plan for weeds

on the Statewide Control Noxious Weed List shall be developed by the control authority that specifies active control methods to reduce known populations in not more than five (5) years. The plan shall be available to the ISDA upon request.

**Statewide Containment Noxious Weed List.** Weeds listed in the containment noxious weeds list are known to exist in various populations throughout the state. Weed control efforts may be directed at reducing or eliminating new or expanding weed populations while known and established weed populations, as determined by the weed control authority, may be managed by any approved weed control methodology, as determined by the weed control authority. Enforcement actions for this species are determined by the Compliance Officer on-site.

Ada County has a number of noxious weed issues. First and foremost, there are thousands of acres that are infested with Rush skeletonweed in the northern half of the county. We also have large Whitetop infestations in the Southern half of the county. We have Poison hemlock that has spread along the irrigation ditches throughout the county. Eurasian watermilfoil has invaded private and public waterways, and the infestations continue to grow. Canada thistle, Puncturevine, and Field bindweed are somewhat ubiquitous in Ada County.

While ACWC does not have the resources to treat all of these infestations, we do intend to follow the guidelines set by the State of Idaho as related to weeds listed in the Containment category, and that is to work diligently to prevent new infestations, reduce existing populations, and prevent transmission onto new lands.

As outlined in the ACWC Strategic Plan 2020-2024, ACWC has set the following department priorities:

- Reorganize and restructure the Weed Control department to better fit the needs of the community, and to create efficiencies that will allow us to increase production and minimize waste.
- Update all GIS information related to the current scope of noxious weed issues throughout the county, including aquatic noxious weed infestations.
- Develop new strategies to combat noxious weed infestations by species and location.
- Organize and implement new community and interagency partnerships as related to the control of noxious terrestrial and aquatic weeds in Ada County.
- Implement new methods to educate and provide assistance to the public as related to noxious, nuisance and invasive weed control.

## Ada County Noxious Weed Action Plan

The ACWC Action Plan is intended to help guide our actions when confronted with specific weed management issues, and will also serve to help guide the creation of land management plans (LMPs) by ACWC and landowners within Ada County.

When considering actions to be taken regarding noxious weed infestations, ACWC follows an Integrated Weed Management (IWM) approach. IWM is characterized by a combination of strategies based on what works best for achieving specific management goals, while maintaining economic and environmental stability. One of the key components of IWM is to establish a threshold for the amount of weeds that can be tolerated before it becomes more efficient to treat the weeds than to allow the weed presence to interfere with the agricultural or ornamental landscape. However, because ACWC is tasked with enforcing the noxious weed law in Ada County, any noxious weed infestation that is identified must employ an active response, as the mere presence of the weed is illegal. The goal of ACWC is to reduce or eliminate new or expanding noxious weed infestations through public and landowner education and compliance.

### **IWM activities are classified as follows:**

#### *Prevention*

Prevention is the most important tactic of IWM. Prevention includes careful monitoring of circumstances and equipment to ensure that noxious weed seeds and fragments are not transferred from one location to another. If not carefully cleaned, farm equipment, hand tools, boots, manure, and crop seed can all be dispersal agents for noxious weed seed. Prevention also includes education, because as more people become aware of the problems caused, and damage done by noxious weed infestations, the more can be done to prevent such infestations from occurring.

#### *Mechanical controls*

Mechanical controls include using common mechanical tools to disrupt weed growth, including tillage, burning, and hand-weeding. Mechanical controls are most effective when implemented as part of a larger IWM program, or to combat smaller weed infestations. This method can be very labor intensive and require multiple actions, consistently, over a long period of time, and may not be an option for all weed species due to reproduction processes.

### Cultural controls

Cultural controls are decisions and actions that help prevent noxious weeds from becoming established, as well as helping beneficial crops or plants out-compete noxious weeds in a managed setting. Common examples of cultural controls in farm settings are timely scouting, row spacing, crop rotation, crop selection and cover cropping. Commonly-employed cultural controls in ornamental settings include using weed barriers, promoting healthy and well-irrigated turf grass, and maintaining an adequate layer of mulch in flower beds.

### Chemical controls

Chemical controls are the appropriate use of herbicides to control or prevent weed infestations. ACWC often employs the use of chemical controls because it is the most time efficient and scientifically proven and effective method of suppressing noxious weeds. Often, the landowners that we file compliance actions against do not wish to employ preventative, mechanical, or cultural controls to their lands, and are now faced with using herbicides to treat the symptoms of poor land management.

### Biological controls

Biological control is the reduction of weed populations by natural enemies, and typically involves an active human role. Human roles include the scientific selection, rearing, and environmental damage analysis of biocontrol agents that have the potential to control specific species of noxious weeds, and is closely monitored and approved only through USDA-APHIS-PPQ. Biocontrol agents that are not approved by USDA-APHIS are illegal to introduce or distribute in the USA and Canada. Biocontrol agents, or natural enemies, used in classical biological control of weeds include different organisms, such as insects, mites, nematodes, and fungi (Winston, et. Al. 2014). It can take years of research, testing, and upwards toward a million dollars to get a biological agent approved when discovered as an option for invasive plant species.

Biological agents approved for use in the USA may attack a specific weed's (host) flowers, seeds, roots, foliage, and/or stems. While some biological agents can be effective and important tools in IWM, they do not work in all cases, and there are limited options for species that have shown success controlling noxious weeds in Ada County. According to the USDA Field Guide to Biological Control of Weeds, even in most successful cases, biocontrol often requires many years before impacts become noticeable, and biological control should be used with other IWM practices to be successful in controlling weed infestations.



## General Action Procedures

In order to tackle high-priority weed control issues within the treatable window of each season, we must prioritize the actions we take. In general, we will follow the following matrix guideline for weed control responses in order of complaint action, public land weed control, and then private requests for weed spray services. This is a general guide; exceptions can be made by the Weed Superintendent for special circumstances.

Weed Control Priority	EDRR	Control	Contain	Nuisance
Compliance	1	4	5	10
Public Works	2	6	7	11
Private	3	8	9	12

## Ada County Nuisance Weed Actions

Nuisance weeds are considered invasive, non-native weeds (not designated by ISDA as noxious) in Ada County. Ada County has a Nuisance Ordinance (Ord. 236, Title 5, Chapter 9: 5-9-4) that states a public nuisance is a condition or use of premises or property which allows the growth of weeds, grasses, bushes or other plant life to such a size (over 1 foot in height) and/or in such a condition as to cause, or reasonably threaten to cause, a fire hazard because of their dried and unkempt condition, or a safety hazard because they obstruct sight at intersections or other points at which driveways, lanes or highways come together, or a health hazard because they provide nesting areas for rodents, vermin and/or insects, or the growth of weeds to such a size or in such condition as to interfere with the free and comfortable use of adjacent and neighboring premises and property.

ACWC will inspect nuisance complaints and take action in accordance with Ada County Ordinance 5-9-5. If nuisance weeds are in violation of the code, we will send a compliance letter to the landowner and take necessary action per Ada County Ordinance 5-9-6, dependent on the species and nature of the violation. Commonly found nuisance weeds in Ada County are prickly lettuce, kochia, russian thistle, tumble mustards, and annual grasses like cheatgrass and medusahead rye.

## Noxious Weed Free Forage Straw and Hay (NWFFS)

Ada County Weed Control will certify hay and straw fields Noxious Weed Free in compliance with ISDA's NWFFS Program for private landowners. Hay producing fields may be certified as conforming to the Idaho Certified Noxious Weed-Free standards, or the more stringent North American Invasive Species Management Association (NAISMA) Noxious Weed-Free standard.

Hay or straw fields that conform to the NAISMA standard will allow for the transport, use, or export of certified hay or straw to other NAISMA participating states (22 total), and may be used on US Forest Service (USFS) and Bureau of Land Management (BLM) lands. Transport and use of non-certified hay or straw onto federal ground is prohibited by law.

Hay or straw fields that conform to the Idaho certification standard will allow for the transport and use of the product on federal ground within Idaho only.

## **Pollinator Protection Awareness and Habitat Improvement**

ACWC is aware of the dangers of pollinator decline, and completely supports the improvement of pollinator habitat. We use best management practices with every application we make, and within each environmental situation.

Noxious weeds might, at times, harbor foraging pollinators. When we are called to help control noxious weeds at the request of a landowner, or by nature of the enforcement process, we follow all EPA-approved label directions and restrictions. Many, if not all, of the herbicides we use have been evaluated by the EPA to determine risk to pollinators, and labels direct us how to use the herbicides effectively, as well as how to reduce pollinator exposure. We support the [ISDA Pollinator Protection Plan](#), and often refer to it as a guide for landowners to incorporate into common practice.

Our overall IWM approach for protecting pollinators, and protecting our lands in Ada County, is to eradicate noxious weeds and replace them with native, pollinator-friendly plants to increase vegetative biodiversity and provide a healthy habitat for both humans and pollinators.

Ada County Weed Control encourages landowners to plant native vegetation whenever possible to improve pollinator habitat. Healthy, native plant populations will reduce water use, increase biodiversity, reduce the risk of invasive plant infestation, reduce the potential of devastating wildfires, and improve pollinator habitat and populations throughout Ada County.

## Statewide Prohibited Genera (4)

All plants, plant parts, and subtaxa of listed genera are prohibited in Idaho. These plants are most likely to be imported into Idaho through retail establishments. If any of these prohibited genera are detected for sale in Ada County, notify ISDA Plant Inspections, and the Idaho State Noxious Weed Coordinator. If any of these prohibited genera are found growing in the wild, they will be treated as an EDRR infestation. If any of these prohibited genera are found growing in managed landscapes, an LMP must be created with the goal of removal within 2 to 4 years of detection.

### Prohibited broom genera:

*Genista* spp.



Photo credit: Robert Vidéki, Doronicum Kft., Bugwood.org

*Chamaecytisus* spp.



Photo credit: Saxifraga-Jasenka Topic

*Cytisus* spp.



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

*Spartium* spp.



Photo credit: John M. Randall, The Nature Conservancy, Bugwood.org

## **Statewide EDRR Weed Species: (18)**

Detection of the following species statewide will prompt notification to ISDA, U of I Extension, concerned federal partners, and other stakeholders throughout the county. A comprehensive eradication and monitoring program shall be implemented with guidance from concerned stakeholders and with ACWC as the designated weed control authority.

Brazilian elodea	Purple starthistle
Common/European frogbit	Squarrose knapweed
Fanwort	Syrian beancaper
Feathered mosquito fern	Tall hawkweed
Giant salvinia	Variable-leaf milfoil
Giant hogweed	Water chestnut
Hydrilla	Water hyacinth
Iberian starthistle	Yellow devil hawkweed
Policeman's helmet	Yellow floating heart

## Ada County EDRR Species (48)

In addition to the Idaho State listed EDRR weeds, Ada County has designated the following noxious weeds as an EDRR category if found within Ada County. Detection of the following species in Ada County will prompt the creation of an eradication and ongoing monitoring program, or LMP, to be implemented immediately upon approval from the Ada County Weed Superintendent. These species must be treated as approved by ACWC in the year they are positively identified and a two (2) year eradication plan developed with compliance held to the landowner.

Black henbane	Johnsongrass
Bohemian knotweed	Leafy spurge
Brazilian Elodea	Matgrass
Buffalobur	Meadow knapweed
Common crupina	Mediterranean sage
Common/European frogbit	Milium
Dalmatian toadflax	Musk thistle
Diffuse knapweed	Orange hawkweed
Dyer's woad	Oxeye daisy
Fanwort	Perennial sowthistle
Feathered mosquito fern	Plumeless thistle
Flowering rush	Policeman's helmet
Giant hogweed	Purple starthistle
Giant knotweed	Scotch broom
Giant Salvinia	Small bugloss
Hoary alyssum	Squarrose knapweed
Hydrilla	Syrian beancaper
Iberian Starthistle	Tall hawkweed
Japanese Knotweed	Tansy ragwort

Variable leaf milfoil	Yellow devil hawkweed
Viper's bugloss	Yellow floating heart
Water chestnut	Yellow hawkweed
Water hyacinth	Yellow toadflax
White bryony	Yellow starthistle

### **Ada County Control Species (8)**

These noxious weed species have been previously detected in Ada County; however the concentrations of weeds are limited in abundance or distribution and control and/or eradication may be possible. When these species are detected in Ada County, acceptable control measures must be taken within the growing season with the goal of a significant reduction and/or eradication within 5 years.

Common reed (Phragmites)	Perennial pepperweed
Eurasian watermilfoil	Russian knapweed
Jointed goatgrass	Scotch thistle
Parrotfeather milfoil	Spotted knapweed

## **Ada County Containment Species (11)**

The following weeds have established populations throughout Ada County. Landowner actions must be taken to keep populations from spreading in distribution and abundance. High traffic areas (such as pathways, roads trailheads, etc.) are treated as a priority, and aggressive actions must be taken to control. . Measures must be taken to reduce or eliminate reproduction within the growing season.

Canada thistle

Purple loosestrife

Curlyleaf pondweed

Rush skeletonweed

Field bindweed

Salt cedar

Houndstongue

Whitetop

Poison hemlock

Yellow flag iris

Puncturevine

## Idaho Noxious Weed List

The following is a comprehensive list of weeds that are currently included on the Idaho Noxious Weed list (as designated by ISDA) and are listed in alphabetical order. Biology and acceptable control measures per ACWC for those weeds are included. All noxious weeds that have not been detected in Ada County are considered EDRR species, and must be eradicated. For best control options or to create an LMP, consult with an ACWC specialist.

The noxious weed information pages will have links to more specific biological information, as provided by ISDA's noxious weed website. All of the listed weeds will show basic biological information, and some will have notes and or graphics that will address special considerations.

The following graphics represent:



Poisonous to humans and/or livestock



Toxic or caustic: do not touch with bare hands



**Black henbane (*Hyoscyamus niger*)**



*Photo credit: Steve Dewey, Utah State University, Bugwood.org*

**Family:** Solanaceae, the nightshade family

**Life cycle:** Annual or biennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Plant Characteristics:** [Black henbane](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Hand pulling (CAUTION ADVISED) Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** This is a highly poisonous plant, personal protective equipment is strongly advised when handling.

**Bohemian knotweed** (*Polygonum X bohemicum*)



*Photo credit: Courtesy of King County Noxious Weed Control Program*

**Family:** Polygonaceae, the buckwheat family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Plant Characteristics:** [Bohemian knotweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Hand pulling Tillage Mechanical options for small populations only, repeated as necessary
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Ornamental and wild populations wild populations treated as EDRR. Ornamental plantings will be treated as a compliance issue, and a 2-year plan must be made to remove. For identification information please see: <https://www.techlinenews.com/articles/2013/identification-and-management-of-invasive-knotweeds>

**Brazilian elodea (*Egeria densa*)**



Photo credit: Kristian Peters, 2006

**Family:** Hydrocharitaceae, the waterweed family

**Life cycle:** Aquatic perennial (grass)

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, mechanical follow-up

**Plant Characteristics:** [Brazilian elodea](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic Non-selective aquatic	Hand pulling Dredging
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use	None accepted

**Buffalobur** (*Solanum rostratum*)



*Photo credit: Russel Kleinman and Karen Blisard, Western New Mexico University Department of Natural Sciences*

**Family:** Solanaceae, the nightshade family

**Life cycle:** Annual

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Plant Characteristics:** [Buffalobur](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Hand pulling (PPE recommended) Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** This plant is commonly vectored by bird feed.

**Canada thistle** (*Cirsium Arvense*)



Photo credit: Jan Samanek, Phytosanitary Administration, Czech Republic, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Deep-rooted perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Canada thistle](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
Weed barrier	None accepted

**NOTE:** Canada thistle exists throughout Ada County. Compliance actions will be determined by the Compliance Officer on-site, and will be focused on reducing spread and containing existing infestations.

**Common crupina** (*crupina vulgaris*)



Photo credit: Courtesy of Idaho Weed Awareness Campaign

**Family:** Asteraceae, the sunflower family

**Life cycle:** Annual

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Common crupina](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Common reed** (*Phragmites australis*)



*Photo credit: Caleb Slemmons, National Ecological Observatory Network, Bugwood.org*

**Family:** Poaceae, the grass family

**Life cycle:** perennial

**Statewide Category:** Control

**Ada County Category:** Control

**Primary Control Options:** Herbicide

**Characteristics:** [Common reed, Phragmites](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
Mowing Burning	Grazing

**NOTE:** Control measures for this plant cannot be cultural or biological alone. This is a highly-invasive plant; multiple control measures must be employed.

**Common/European frogbit** (*Hydrocharis morsus ranae*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Hydrocharitaceae, the tapegrass family

**Life cycle:** Annual

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, consultation required

**Characteristics:** [Common/European frogbit](#)

Herbicide options	Mechanical options
Selective aquatic (systemic only) Non-selective aquatic	Hand pulling
Cultural options	Biological options
Permanent de-watering based on water use	None accepted



**Curlyleaf pondweed** (*Potamogeton crispus*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Potamogetonaceae, the pondweed family

**Life cycle:** Aquatic perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide, mechanical follow-up

**Characteristics:** [Curlyleaf pondweed](#)

Herbicide options	Mechanical options
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Hand pulling Mechanical harvesting/removal
Cultural options	Biological options
Permanent de-watering based on water use Benthic barriers Seasonal water drawdown	Grass carp

**Dalmatian toadflax** (*Linaria dalmatica* ssp. *dalmatica*)



*Photo credit: Courtesy of Idaho Weed Awareness Campaign*

**Family:** Scrophulariaceae, the figwort family

**Life cycle:** Perennial with rhizomes

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Dalmatian toadflax](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural = options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Dalmatian toadflax exists in limited quantities in Ada County and shall be eradicated wherever found. Tillage is not an acceptable option as rhizomatous root fragments will be spread and continue to grow and create new plants.

**Diffuse knapweed** (*Centaurea diffusa*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Annual, biennial to short lived perennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Diffuse knapweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage
Cultural options	Biological options
None accepted	None accepted currently

**NOTE:** Burning stimulates seed germination and is not an acceptable control option. Mowing will not completely control seed production and is not an acceptable control option. Biological controls are not a viable option currently for control actions due to EDRR status in AC.

**Dyer's woad** (*Isatis tinctoria*)



Photo credit: Steve Dewey, Utah State University, Bugwood.org

**Family:** Brassicaceae, the mustard family

**Life cycle:** Biennial, winter annual or short lived perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, hand pulling follow-up

**Characteristics:** [Dyer's woad](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Hand-pulling (removal of root and seeds required)
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Eurasian watermilfoil** (*Myriophyllum spicatum*)



*Photo credit: Tom Woolf, US Department of Agriculture*

**Family:** Haloragaceae, the watermilfoil family

**Life cycle:** Aquatic perennial

**Statewide Category:** Control

**Ada County Category:** Control

**Primary Control Options:** Herbicide, mechanical removal follow-up

**Characteristics:** [Eurasian watermilfoil](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Hand pulling Mechanical harvesting/removal
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use Benthic barriers Seasonal water drawdown Modification of littoral zone/slope	Grass carp

**Fanwort** (*Cabomba caroliniana*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Cabombaceae, the water shields and fanwort family

**Life cycle:** Aquatic perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, consultation required

**Characteristics:** [Fanwort](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	None accepted
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use Benthic barriers Seasonal water drawdown Modification of littoral zone/slope	None accepted

**NOTE:** Dewatering or benthic barriers are acceptable if all the plants can be eradicated within one year.

**Feathered mosquito fern** (*Azolla pinnata*)



Photo credit: David Nicholls, dcnicholls.com, Bugwood.org

**Family:** Azollaceae, the mosquito fern family

**Life cycle:** Aquatic annual (fern)

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, consultation required

**Characteristics:** [Feathered mosquito fern](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Hand pulling Mechanical removal
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use	None accepted

**Field bindweed (*Convolvulus arvensis*)**



Photo credit: Howard F. Schwartz, Colorado State University, Bugwood.org

**Family:** Convolvulaceae, the morning glory family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Field bindweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
Crop rotation with tillage and herbicide treatments	None accepted

**NOTE:** Efforts to prevent this weed from spreading onto neighboring properties must be made.



**Flowering rush** (*Butomus umbellatus*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Butomaceae, the flowering rush family

**Life cycle:** Aquatic perennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Consultation required

**Characteristics:** [Flowering rush](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal is very difficult (root structures must be entirely removed)
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering	None accepted

**Giant hogweed** (*Heracleum mantegazzianum*)



Photo credit: Terry English, USDA APHIS PPQ, Bugwood.org



Do not touch this plant with bare skin, it is caustic and can contribute to **severe** skin burns!

**Family:** Apiaceae, the carrot or parsley family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Giant hogweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Mechanical removal of roots
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Giant knotweed** (*Polygonum sachalinense*)



Photo credit: Jan Samanek, Phytosanitary Administration, Bugwood.org

**Family:** Polygonaceae, the buckwheat family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, mechanical removal follow-up

**Characteristics:** [Giant knotweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Mechanical removal of roots (see Note)
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Wild populations will be treated as EDRR. Ornamental plantings will be treated as a compliance issue, and a 2-year LMP must be made to remove. For mechanical removal-rhizomatous root structures can reproduce when disturbed and not completely removed.

**Giant salvinia** (*salvinia molesta*)



Photo credit: Troy Evans, Great Smoky Mountains National Park, Bugwood.org

**Family:** Salvinaceae, the floating fern family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, consultation required

**Characteristics:** [Giant salvinia](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Hoary alyssum** (*Berteroa incana*)



Photo credit: Richard Old, XID Services, Inc.

**Family:** Brassicaceae, the mustard family

**Life cycle:** Annual, biennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Hoary alyssum](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Houndstongue** (*Cynoglossum officinale*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Boraginaceae, the borage family

**Life cycle:** Biennial, short-lived perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Houndstongue](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Hydrilla** (*Hydrilla verticillata*)



Photo credit: Robert Vidéki, Doronicum Kft., Bugwood.org

**Family:** Hydrocharitaceae, the waterweed family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Consultation is required

**Characteristics:** [Hydrilla](#)

Herbicide options	Mechanical options
Selective aquatic (systemic only) Non-selective aquatic	Hand removal
Cultural options	Biological options
Permanent de-watering based on water use	None accepted

**Iberian starthistle** (*Centaurea iberica*)



Photo credit: Eitan F, Wikipedia Commons

**Family:** Asteraceae, the sunflower family

**Life cycle:** Annual or biennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide with follow-up grubbing

**Characteristics:** [Iberian starthistle](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Conventional grazing will promote Iberian starthistle and is not an option for control; additionally cattle will avoid this plant and this contributes to abundance. Burning is not effective.



**Japanese knotweed (*Polygonum cuspidatum*)**



Photo credit: Jan Samanek, Phytosanitary Administration, Bugwood.org

**Family:** Polygonaceae, the buckwheat family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Japanese knotweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Wild populations will be treated as EDRR. Ornamental plantings will be treated as a compliance issue, and a 2-year plan must be made to remove.

**Johnsongrass (*Sorghum halepense*)**



Photo credit: Ohio State Weed Lab , The Ohio State University, Bugwood.org

**Family:** Poaceae, the grass family

**Life cycle:** Rhizomatous annual or perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, tillage

**Characteristics:** [Johnsongrass](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage, with herbicide due to rhizomatous root structures
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Jointed goatgrass (*Aegilops cylindrica*)**



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Poaceae, the grass family

**Life cycle:** Annual, winter annual

**Statewide Category:** Containment

**Ada County Category:** Control

**Primary Control Options:** Herbicide

**Characteristics:** [Jointed goatgrass](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated Mowing
<b>Cultural options</b>	<b>Biological options</b>
Plant/Replanting of desirable species Manage irrigation to favor desirable species of plants	None accepted

**Leafy spurge** (*Euphorbia esula*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Do not touch this plant; it is caustic. Milky latex can cause blindness in humans if contact is made to eyes.

**Family:** Euphorbiaceae, the spurge family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Leafy spurge](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	None accepted
Cultural options	Biological options
None accepted	None accepted

**Matgrass (*Nardus stricta*)**



*Photo credit: Gil Wojciech, Polish Forest Research Institute, Bugwood.org*

**Family:** Poaceae, the grass family

**Life cycle:** Perennial bunchgrass

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Matgrass](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
<b>Cultural options</b>	<b>Biological options</b>
Plant/Replanting of desirable species Manage irrigation to favor desirable species of plants	None accepted

**Meadow knapweed** (*Centaurea debeauxii*)



Photo credit: Eric Coombs, Oregon Department of Agriculture, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Meadow knapweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
Cultural options	Biological options
None accepted	None accepted

**Mediterranean sage (*Salvia aethiopsis*)**



Photo credit: Lloyd Andres, USDA Agricultural Research Service, Bugwood.org

**Family:** Lamiaceae, the mint family

**Life cycle:** Biennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Mediterranean sage](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage
Cultural options	Biological options
None accepted	None accepted

**NOTE:** The use of adequate surfactants when using herbicide is essential for control of this plant.

**Milium** (*Milium vernale*)



Photo credit: Enzo De Santis, Acta Plantarum

**Family:** Poaceae, the grass family

**Life cycle:** Winter annual

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Milium](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage
Cultural options	Biological options
None accepted	None accepted



**Musk thistle** (*Carduus nutans*)



Photo credit: Steve Dewey, Utah State University, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Biennial, or winter annual

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Musk thistle](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
<b>Cultural options</b>	<b>Biological options</b>
Plant/Replanting of desirable species Manage irrigation to favor desirable species of plants	None accepted

**Orange hawkweed** (*Hieracium aurantiacum*)



*Photo credit: Michael Shephard, USDA Forest Service, Bugwood.org*

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Orange hawkweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Oxeye daisy** (*Leucanthemum vulgare*)



Photo credit: Terry Spivey, USDA Forest Service, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Oxeye daisy](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Repeated tillage has shown success in eradication of this plant.

**Parrotfeather milfoil (*Myriophyllum aquaticum*)**



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Haloragaceae, the watermilfoil family

**Life cycle:** Aquatic perennial

**Statewide Category:** Control

**Ada County Category:** Control

**Primary Control Options:** Herbicide, mechanical follow-up

**Characteristics:** [Parrotfeather milfoil](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal – remove all parts of the plant
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use Benthic barriers	None accepted

**Perennial pepperweed** (*Lepidium latifolium*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Brassicaceae, the mustard family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** Control

**Primary Control Options:** Herbicide

**Characteristics:** [Perennial pepperweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	None accepted
Cultural options	Biological options
None accepted	None accepted

**Perennial sowthistle (*Sonchus Arvensis*)**



Photo credit: Theodore Webster, USDA Agricultural Research Service

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Perennial sowthistle](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	None accepted
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Tillage will spread and increase Perennial sowthistle from fragmented rhizomes.

**Plumeless thistle** (*Carduus Acanthoides*)



Photo credit: Todd Pfeiffer, Klamath County Weed Control

**Family:** Asteraceae, the sunflower family

**Life cycle:** Winter annual, biennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, follow-up with mechanical control

**Characteristics:** [Plumeless thistle](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
Cultural options	Biological options
None accepted	None accepted

**Poison hemlock (*Conium Maculatum*)**



Photo credit: Eric Coombs, Oregon Department of Agriculture, Bugwood.org

**Family:** Apiaceae, the carrot or parsley family

**Life cycle:** Biennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Poison hemlock](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – PPE required
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Poison hemlock is very toxic; sheep, cattle, swine, horses, and other domestic animals are poisoned by eating small amounts of green or dried plants. It is also extremely poisonous to humans.



**Policeman’s helmet** (*Impatiens Glandulifera*)



*Photo credit: Photo courtesy of King County Noxious Weed Control Program*

**Family:** Balsaminaceae, the impatiens family

**Life cycle:** Annual

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Policeman's helmet](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
Cultural options	Biological options
None accepted	None accepted

**Puncturevine** (*Tribulus terrestris*)



Photo credit: Utah State University, Bugwood.org

**Family:** Zygophyllaceae, the caltrop family

**Life cycle:** Summer annual

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide, seed removal

**Characteristics:** [Puncturevine](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
Cultural options	Biological options
Planting alternative vegetation Weed barriers Adequate irrigation for competitive plants	None accepted

**NOTE:** Puncturevine shall be removed from sidewalks and other high-traffic areas. Seed management of Puncturevine is an Ada County priority.

**Purple loosestrife (*Lythrum salicaria*)**



Photo credit: Linda Wilson, University of Idaho, Bugwood.org

**Family:** Lythraceae, the loosestrife family

**Life cycle:** Perennial, Semi-aquatic

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Purple loosestrife](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
<b>Cultural options</b>	<b>Biological options</b>
Planting alternative vegetation Weed barriers	Possible with other IWM strategies

**NOTE:** Biological agents may be effective. Enforcement actions are based upon severity of infestation, and are determined by Compliance Officer on-site. If biological agents are employed, populations must be verified to avoid compliance action.

**Purple starthistle (*Centaurea calcitrapa* L.)**



*Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org*

**Family:** Asteraceae, the sunflower family

**Life cycle:** Annual to perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, mechanical follow-up

**Characteristics:** [Purple starthistle](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage - repeated until plant is eradicated Grubbing - repeated until plant is eradicated
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Conventional grazing will promote Purple starthistle and is not an option for control due to cattle avoiding this plant and contributing to an increased abundance. Burning is not effective.

**Rush skeletonweed** (*Chondrilla juncea*)



Photo credit: Steve Dewey, Utah State University, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide, seed prevention

**Characteristics:** [Rush skeletonweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage - repeated until plant is eradicated Grubbing - complete removal of root
Cultural options	Biological options
Crop rotation Irrigation management	None accepted

**NOTE:** Enforcement actions are determined by Compliance Officer on-site. Populations in southern Ada County (south of I-84) will be treated as EDRR infestations.

**Russian knapweed** (*Acroptilon repens*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** Control

**Primary Control Options:** Herbicide

**Characteristics:** [Russian knapweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage - to remove all top growth for the entirety of the growing season Grubbing - complete removal of root
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Russian knapweed is not well established in Ada County and all known infestations are treated with herbicides. Tillage, if performed as to eliminate all top growth for the entirety of the growing season, is an acceptable control in agricultural settings.

**Salt cedar** (*Tamarix spp.*)



Photo credit: Steve Dewey, Utah State University, Bugwood.org

**Family:** Tamaricaceae, the tamarisk family

**Life cycle:** Perennial, deciduous tree

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Cutting and removal, follow-up with herbicide if necessary

**Characteristics:** [Salt cedar](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Cutting/removal
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**Scotch broom** (*Cytisus scoparius*)



*Photo credit: Courtesy of King County Noxious Weed Control Program*

**Family:** Fabaceae, the pea family

**Life cycle:** Perennial, evergreen shrub

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Cutting and removal, follow-up with herbicide if necessary

**Characteristics:** [Scotch broom](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Cutting/removal
Cultural options	Biological options
None accepted	None accepted



**Scotch thistle** (*Onopordum acanthium*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Biennial

**Statewide Category:** Containment

**Ada County Category:** Control

**Primary Control Options:** Herbicide, or mechanical removal for small populations

**Characteristics:** [Scotch thistle](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – repeated until plant is eradicated
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Scotch thistle exists in scattered populations throughout Ada County. Seed management is an Ada County priority with this species; infestations must be adequately controlled.

**Small bugloss** (*Anchusa arvensis*)



Photo credit: Stefan Lefnaer, Wikipedia Commons

**Family:** Boraginaceae, the borage family

**Life cycle:** Annual

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Small bugloss](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
Plant/Replanting of desirable species Manage irrigation to favor desirable species of plants	None accepted

**Spotted knapweed** (*Centaurea maculosa*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Biennial, short-lived perennial

**Statewide Category:** Containment

**Ada County Category:** Control

**Primary Control Options:** Herbicide

**Characteristics:** [Spotted knapweed](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
Cultural options	Biological options
None accepted	Some available, but not established in AC

**Squarrose knapweed** (*Centaurea virgata* ssp. *squarrosa*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide and consultation required

**Characteristics:** [Squarrose knapweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
<b>Cultural options</b>	<b>Biological options</b>
Plant/Replanting of desirable species Manage irrigation to favor desirable species of plants	None accepted

**Syrian beancaper** (*Zygophyllum fabago*)



Photo credit: Joseph M. DiTomaso, University of California - Davis, Bugwood.org

**Family:** Zygophyllaceae, the caltrop family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Syrian beancaper](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Controlling Syrian beancaper with herbicides will require specialized adjuvants for leaf penetration. Mechanical control not allowed, as this plant reproduces by seed, vegetatively, by creeping lateral roots and root fragments.

**Tall hawkweed** (*Hieracium piloselloides*)



Photo credit: Peter M. Dziuk, Minnesota Wildflowers

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Tall hawkweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Tall hawkweed has fibrous roots with multiple bud formation. Tillage will control/eradicate this plant if continued throughout the growing season.

**Tansy ragwort** (*Senecio jacobaea*)



Photo credit: Michael Rasy, University of Alaska, Bugwood.org

**Family:** Asteraceae, the sunflower family

**Life cycle:** Biennial, short-lived perennial

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Tansy ragwort](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Tansy ragwort may be controlled through tillage if tillage is maintained throughout the growing season. Biological controls are available for this species, but eradication is required in Ada County.

**Variable-leaf milfoil** (*Myriophyllum heterophyllum*)



Photo credit: Graves Lovell, Alabama Department of Conservation and Natural Resources, Bugwood.org

**Family:** Haloragaceae, the watermilfoil family

**Life cycle:** Aquatic perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Variable-leaf milfoil](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal (all plant structures must be entirely removed from water)
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering Benthic barriers	None accepted

**NOTE:** Mechanical control could spread populations of this species unless all fragments are recovered.



**Viper's bugloss (*Echium vulgare*)**



*Photo credit: Bill Hargrave, Kootenai County Noxious Weed Control*

**Family:** Boraginaceae, the borage family

**Life cycle:** Winter annual or biennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Vipers bugloss](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Tillage may be used to control/eradicate Vipers bugloss if thorough tillage is maintained throughout the growing season.

**Water chestnut (*Trapa natans*)**



*Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org*

**Family:** Trapaceae, the water caltrop family

**Life cycle:** floating annual

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, mechanical removal as follow-up

**Characteristics:** [Water chestnut](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal (all plant structures must be entirely removed)
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering	None accepted

**NOTE:** This plant is an annual that reproduces by seed; seeds must be removed from the aquatic environment to adequately control.

**Water hyacinth** (*Eichhornia crassipes*)



Photo credit: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

**Family:** Pontederiaceae, the pickerel-weed family

**Life cycle:** floating annual

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, mechanical removal as follow-up

**Characteristics:** [Water hyacinth](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal (all plant structures must be entirely removed)
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering Benthic barriers	None accepted

**White bryony (*Bryonia alba*)**



*Photo credit: Courtesy of University of Idaho Extension Service*

**Family:** Cucurbitaceae, the cucumber family

**Life cycle:** Perennial, herbaceous vine

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [White bryony](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** All parts of this plant are poisonous.

**Whitetop (*Cardaria draba*)**



*Photo credit: Courtesy of Idaho Weed Awareness Campaign*

**Family:** Brassicaceae, the mustard family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide

**Characteristics:** [Whitetop](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
Weed barrier Crop rotation Irrigation management	None accepted

**NOTE:** Mechanical controls do not adequately destroy rhizomatous roots. Enforcement actions are dependent on severity, and possible movement of plants and seed. Populations in northern Ada County (north of I-84) may be treated as EDRR infestations.

**Yellow devil hawkweed (*Hieracium glomeratum*)**



*Photo credit: Konstantin Ryabitsev, Montréal, CA*

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide, follow-up with tillage

**Characteristics:** [Yellow devil hawkweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage, with herbicide due to rhizomatous root structures
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Yellow devil hawkweed may or may not have rhizomes and/or stolons that could propagate new growth in Ada County climates. The hawkweeds exhibit great morphological diversity depending on environmental conditions, and has been known to hybridize readily.

**Yellow flag iris (*Iris pseudacorus*)**



Photo credit: John M. Randall, The Nature Conservancy, Bugwood.org

**Family:** Iridaceae, the iris family

**Life cycle:** Perennial

**Statewide Category:** Containment

**Ada County Category:** Containment

**Primary Control Options:** Herbicide, dredging, permanent de-watering

**Characteristics:** [Yellow flag iris](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	Mechanical removal (root structures must be entirely removed) Dredging
<b>Cultural options</b>	<b>Biological options</b>
Permanent de-watering based on water use	None accepted

**NOTE:** Yellow flag iris reproduces from seeds and rhizomes. Fire promotes seed germination so burning is not an effective control method.

**Yellow floating heart** (*Nymphoides peltata*)



Photo credit: David Cappaert, Bugwood.org

**Family:** Menyanthaceae, the buckbean family

**Life cycle:** Perennial

**Statewide Category:** EDRR

**Ada County Category:** EDRR

**Primary Control Options:** Dredging (removal of entire plant), herbicide follow up, de-watering of site. Consultation is necessary.

**Characteristics:** [Yellow floating heart](#)

Herbicide options	Mechanical options
Selective aquatic (systemic) Non-selective aquatic (contact and systemic)	None accepted
Cultural options	Biological options
Permanent de-watering Benthic barriers Seasonal water drawdown Modification of littoral zone/slope	None accepted



**Yellow hawkweed** (*Hieracium caespitosum*)



Photo credit: Photo courtesy of King County Noxious Weed Control

**Family:** Asteraceae, the sunflower family

**Life cycle:** Perennial

**Statewide Category:** Control

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Yellow hawkweed](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	Tillage, with herbicide due to stolon root structures
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Mowing will not keep Yellow hawkweed from seeding. Yellow hawkweed reproduces by stolons and seeds.

**Yellow starthistle (*Centaurea solstitialis*)**



*Photo credit: Steve Dewey, Utah State University, Bugwood.org*

**Family:** Asteraceae, the sunflower family

**Life cycle:** Winter annual

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Yellow starthistle](#)

Herbicide options	Mechanical options
Selective systemic Non-selective systemic Long term residual	Tillage Grubbing – removal of entire plant is necessary, avoid seed dispersal
Cultural options	Biological options
None accepted	None accepted

**NOTE:** Mowing Yellow starthistle is not an acceptable control measure, as the plants may produce flowers and seeds from very short stems. Eradication of Yellow starthistle populations (new and existing) is an Ada County priority.

**Yellow toadflax (*Linaria vulgaris*)**



Photo credit: Steve Dewey, Utah State University, Bugwood.org

**Family:** Scrophulariaceae, the figwort family

**Life cycle:** Perennial with rhizomes

**Statewide Category:** Containment

**Ada County Category:** EDRR

**Primary Control Options:** Herbicide

**Characteristics:** [Yellow toadflax](#)

<b>Herbicide options</b>	<b>Mechanical options</b>
Selective systemic Non-selective systemic Long term residual	None accepted
<b>Cultural options</b>	<b>Biological options</b>
None accepted	None accepted

**NOTE:** Yellow toadflax exists in limited quantities in Ada County and shall be eradicated wherever found. Tillage is not an acceptable option as rhizomatous root fragments will be spread and continue to grow and create new plants. This plant readily hybridizes with Dalmatian toadflax.

## Control Definitions:

- **Benthic barriers:** Systems designed to prevent the establishment of plants and to control existing plants by placing mats on the bottom layer of soil in the water body.
- **Crop rotation:** The successive cultivation of different crops in a specified order on the same fields, in contrast to a one-crop system or to haphazard crop successions.
- **Cut-stump treatment:** To cut the tree or bush down, remove the vegetative matter, and to treat the stump of the tree root with herbicides so that they can be absorbed by the cambium layer.
- **De-watering:** To remove water from the site semi-permanently or permanently, in efforts to remove necessary environmental requirements for the noxious weed to grow.
- **Dredging:** The removal of sediments and debris from the bottom of lakes, rivers, harbors, and other water bodies, to include buried plant root structures.
- **Grubbing:** To remove plant matter with hand tools (such as a pick or hoe) below the base of the root crown so that sprouting buds are eliminated.
- **Hand-pulling:** To remove the plant with your hands by pulling vegetative matter and removing root structures.
- **Mowing:** The activity of mowing plant vegetation to an approved height of less than 12 inches.
- **Seed Management:** Seed management is defined by the removal of seeds when possible; and preventing plants from producing seed, prevention of seed distribution, and/or the destruction of seeds.
- **Tillage:** The agricultural preparation of soil by mechanical agitation of various types, such as digging, stirring, and overturning. Examples of human-powered tilling methods using hand tools include shoveling, picking, mattock work, hoeing, and raking.

## Herbicide classifications:

- **Non-selective systemic:** An herbicide that is designed to kill all vegetation (all plant parts and species) by translocating throughout the plant and killing the root structures.
- **Selective systemic:** An herbicide that is designed to selectively kill undesirable species by translocating throughout the plant and killing the root structures.
- **Long term residual (LTR):** An herbicide that is designed to kill all vegetation by treating the soil where the plants are growing, or could germinate.
- **Selective aquatic:** An herbicide that is designed to selectively kill plants and is approved for aquatic use.
- **Non-selective aquatic:** An herbicide that is designed to kill all vegetation (all plant parts and species) by translocating throughout the plant and killing the root structures, and is approved for aquatic use.
- **Non-selective aquatic contact:** An herbicide that is designed to kill all vegetation it comes into contact with, and is approved for aquatic use.

## References:

Ada County Nuisance Ordinance Chapter 9: 5-9-1 (Ord. 236, 5-2-1991, eff. 5-20-1991)

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Idaho Pollinator Protection Plan. *Idaho State Department of Agriculture*. Published December 15, 2016.

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Winston, Rachel, et al. Field Guide for the Biological Control of Weeds in the Northwest, USDA and University of Idaho. May 2014.