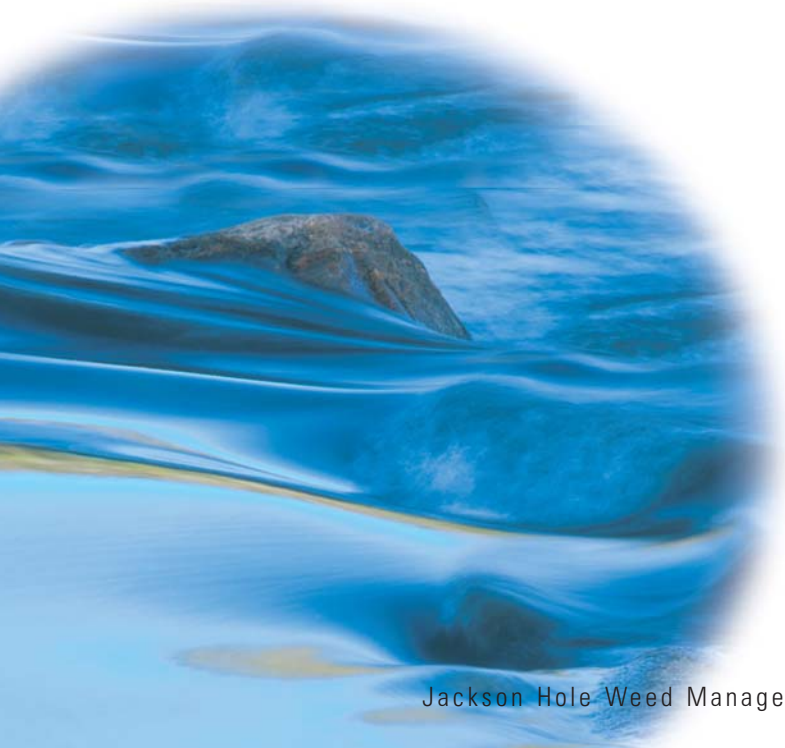



Snake River project

Restoring native wildlife habitat for today and tomorrow.



HOW NOXIOUS WEEDS EFFECT:

Hunting
Fishing
Wildlife
Visitors
Landowners
Myths/Facts

Jackson Hole Weed Management Association

What is the

Snake River project?

From rafters to hunters, virtually everyone in Teton County has utilized the Snake River. Whether you are a fisherman, a kayaker, or a wildlife watcher the Snake River has provided a place for recreation as well as lush wildlife habitat.

spotted knapweed

yellow toadflax

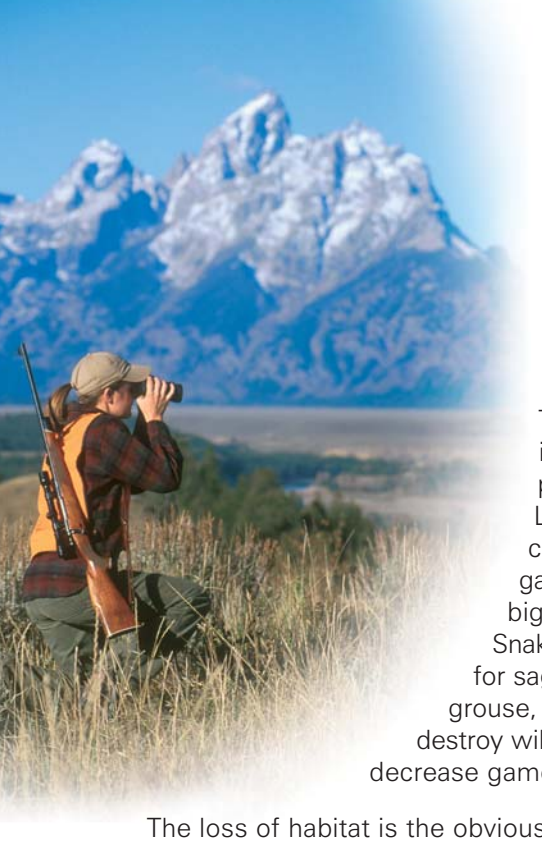
saltcedar (tamarisk)

The Snake River in Teton County is being threatened by silent invaders called NOXIOUS WEEDS. Noxious weeds are non-native plants (mostly from Europe and Asia) that are invading our native forage and wildlife habitat. These invasive species have been called an "explosion in slow motion" or a "biological wildfire" and they are growing and thriving along the corridor of the Snake River. What makes these plants invasive is their ability to spread very quickly. In the West they are spreading at approximately 4,600 acres per day on federal lands. They compete with native plants for water, food, and sunlight. They do not have the same enemies they had in their native lands, so they thrive as they push out native vegetation. Spotted knapweed, dalmatian toadflax, and saltcedar or tamarisk are some examples of noxious weeds infesting the Snake River.

The Snake River Project is a direct, on the ground approach to the increasingly serious problem of noxious weeds in the Jackson Hole area. Teton County Weed & Pest and the Jackson Hole Weed Management Association (JHWMA) designed this project after noxious weed mapping was completed in the summer of 2000. It was found that some of the most serious weed infestations in Teton County originated along the Snake River. Although the Snake River has some of the worst infestations, funding for control along this well-known river has been very limited.

To truly make an impact and save the Snake River from being invaded by noxious weeds, the JHWMA needs help from all residents and visitors in Teton County.

The Jackson Hole Weed Management Association has developed the Snake River Project in hopes of not only raising awareness of noxious weeds, but also motivating the public to take action and get involved. Noxious weeds are creeping into areas of the west without many people realizing the destruction they will cause.



If I am a

HUNTER

why should I care?

Teton County is well known for its scenic beauty, but it is also a popular attraction for hunters. Lush vegetation and healthy forests combine to provide habitat for big game such as elk, mule deer, moose, big horn sheep and antelope. The Snake River area also provides habitat for sage grouse, ruffed and blue grouse, ducks, and geese. Noxious weeds destroy wildlife habitat and thus directly decrease game populations.

The loss of habitat is the obvious example of how noxious weeds can ruin a hunting season or business. Plants such as spotted knapweed can spread very quickly and excretes its own herbicide that kills surrounding plants. A single knapweed plant can produce over 4.7 billion plants and over 5.1 trillion seeds over a 10-year period, which could cover 36,513 acres if left unchecked. Less nutritious forage and the loss of habitat will eventually mean a reduction in wildlife populations. On native bunchgrass sites in Montana, dense spotted knapweed populations reduced available winter forage for elk by 50 to 90 percent" (Sheley, Olson, and Hoopes 2001). Fewer animals in an area, mean fewer hunting licenses issued by the Wyoming Game and Fish Department, which could mean loss of revenue and less people traveling to Jackson for guided hunting trips.

If I enjoy

WATER SPORTS

why should I care?

The Snake River provides serenity for many individuals and a livelihood for numerous Teton County residents. Noxious weeds threaten these values by muddying waters, destroying wildlife habitat and scenery and altering the flow of rivers and streams. Noxious weeds have more shallow or less dense root systems than native plants and thus do not hold the soil in place as well. This makes infested areas more susceptible to erosion and floods that can damage or alter the river system.

Noxious weeds, such as musk thistle, Canada thistle and saltcedar, can also make access to rivers and streams very difficult. In some areas on the Green and Colorado rivers in southern Utah, thick groves of saltcedar keep rafters from beaching their boats.

Saltcedar can cause more problems than just inaccessibility to the river. A single adult plant can use up to 200 gallons of water a day! The density of noxious weeds such as saltcedar can change a river channel. Studies conducted in 1941 and 1979 along the Brazos River in Texas revealed that by 1979 the river's depth had changed from 18.4 to 10.2 feet and the width changed from 515 to 220 feet (Di Tomaso 1998 and Weisenborn 1996).

Problems such as these are already being experienced along the Snake River here in the Jackson area and will only get worse if left untreated. Boaters and kayakers can easily spread noxious weeds from river to river if the proper precautions are not taken. Our first infestation of saltcedar in the Jackson area was established at a boat launch after an unknowing boater cleaned out their boat contaminated with saltcedar seeds.

NOXIOUS WEEDS

MYTHS AND FACTS

MYTH #1: By not taking care of the noxious weeds on my property, I'm letting nature take its course and leaving my land "natural."

FACT: Ignoring the situation will only make it worse. Land must be managed correctly or the most aggressive, non-native plants will move in, displacing native plants, wildflowers and grasses.

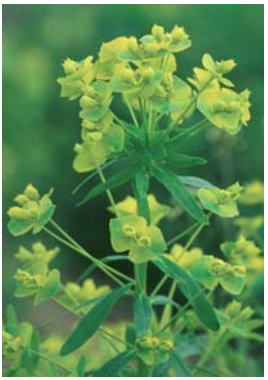
musk thistle

MYTH #2: Thistles such as musk and Canadian are examples of the worst noxious weeds.

FACT: Although the thorns on these plants make them especially annoying, they are not the most difficult to control or the most invasive. Some of the most serious weeds have pretty flowers and no thorns such as the knapweeds, leafy spurge, and yellow and Dalmatian toadflax.

MYTH #3: Wildlife will eat noxious weeds.

FACT: This depends on the animal and type of noxious weed. Elk prefer native plants and grasses, and will starve to death on range infested with spotted knapweed and leafy spurge. Deer and cattle will graze spotted knapweed, but leafy spurge and houndstongue are poisonous to cattle.



oxeye daisy

MYTH #4: Oxeye daisies are beautiful wildflowers that do not cause serious damage to landscapes or wildlife.

FACT: This perennial plant can spread very quickly. In pastures its spread is increased because large herbivores avoid eating it and turn to the grasses. The ungrazed oxeye daisy is then free to expand in the area while the grasses are pushed out. Instead of oxeye daisy, which is illegal to plant in Wyoming, plant Shasta daisy instead.

MYTH #5: Thick weed infestations help hold soil and prevent erosion.

FACT: Research has proven this assumption to be misleading. In one study conducted in Wyoming on native prairie bunch grass & spotted knapweed, native bunch grass lost 12.5 pounds of soil per acre in a simulated thunderstorm, while spotted knapweed lost over 125 pounds per acre. Tap rooted weeds will always increase soil erosion when compared to healthy stands of grass.

perennial pepperweed

MYTH #6: Cutting, hand-pulling, or mowing are the best ways to control noxious weeds.

FACT: This is true in some instances. Plants such as musk thistle can be chopped off at the base of the plant. However, perennials such as Dalmatian toadflax and Canada thistle should not be cut or pulled; this will only stimulate growth and produce more plants.

NOXIOUS WEEDS

MYTHS AND FACTS

MYTH #7: Biological control methods such as insects are the answer to noxious weed problems.

FACT: There is no miracle fix for the problem noxious weeds pose. Never rely on a single method to control weeds. The best way to approach the situation is with an integrated management plan that includes a combination of chemical control (herbicides), biological control (insects), and mechanical control (pulling/cutting.)

MYTH #8: Biological controls are bad because we are releasing a non-native insect to control a non-native plant and thus the insect could damage native plants too.

FACT: This might be true except for the fact that biological controls are highly regulated and tested prior to their release in the U.S. All biological controls are tested on plants native to the U.S. over a period of years in a lab on foreign soil. If the potential biological control does not feed on native plants and shows itself to be specific to the target weed species, then it is approved. If however, it feeds on a native plant during the tests, the insect is banned from release in the U.S.

St. Johns Wort is another noxious weed.

purple loosestrife

houndstongue

Dalmatian toadflax

Russian knapweed growing from hay in Bridger-Teton National Forest.

NOXIOUS WEEDS

to be aware of

Saltcedar or **tamarisk**

(Tamarix ramosissima)

Saltcedar is a deciduous, evergreen plant that grows from about 5 to 20 feet tall. Its bark is a reddish-brown and it has small scale like leaves. Saltcedar is native to Eurasia and Africa. It was planted as an ornamental bush in the early 1800's, and is now widespread throughout the United States covering more than a million acres of river banks and streams. Its long tap roots allow the plant to obtain water from deep water tables while interfering with natural riparian systems and transpiring up to 200 gallons of water per day. Salt secreted from salt glands falls to the ground around the plant, killing surrounding vegetation.

Wildfires and floods can become more frequent in dense stands of saltcedar. Dense stands of saltcedar contribute to a heavy fuel load for fires and as their density increases, they also narrow river channels and decrease water depth. All of these factors together make the river more susceptible to fires and floods.

There is only one known infestation of saltcedar along the Snake River and Teton County Weed and Pest is working to eradicate it. Please be on the lookout for this extremely invasive bush. It has been known to dry up small streams. Take precautions if you have brought any equipment or a boat from an infested area and take time to wash your gear down before traveling to the Snake River. Please be on the lookout for saltcedar as you enjoy the river and contact Teton County Weed & Pest if you find this plant anywhere. Call (307)733-8419.

Spotted knapweed

(Centaurea maculosa)

Spotted knapweed is a biennial or short-lived perennial that grows 1 to 3 feet tall. It has pinkish-purple flowers and the bracts underneath the flowers have dark spots tipped with fringe.

Originally from Eurasia, knapweed was introduced in the early 1900's as a contaminant of alfalfa and clover seed. It prefers disturbed soil where they out compete other plants for moisture and nutrients. It now covers millions of acres of land, and is the number one weed problem on rangeland in western Montana. Methods of control for spotted knapweed include herbicide application, mechanical control such as hand pulling, and biological control. It has been found that it is most effective to use a combination of these three methods when controlling spotted knapweed. Along with the other two methods, biological control on spotted knapweed will be an integral part of the Snake River Project.

According to the Washington State Noxious Weed Board, "Knapweed infestations increase production costs for ranchers, impair the quality of wildlife habitat, decrease plant diversity, increase soil erosion rates on valuable watershed areas, decrease the visual quality and appeal of recreational lands, and pose wildfire hazards."

Spotted knapweed is the most prevalent of the noxious weeds along the Snake River. You can find it on most of the islands growing and thriving. Due to the placement of this plant, herbicides can not be applied to most areas. This plant can be pulled, but gloves are recommended. Spotted knapweed is particularly invasive due to the fact that it produces a chemical in its roots that kills all plants around it, making more room for it to thrive.

MORE NOXIOUS WEEDS TO BE ON THE LOOKOUT FOR...

Perennial pepperweed
(Lepidium latifolium)

A perennial from southern Europe and western Asia, perennial pepperweed grows 1 to 3 feet tall. The flowers are white and in dense clusters near the end of the branches. It is declared noxious in a number of western states including Wyoming. Very deep root stalks make this weed very difficult to control. Perennial pepperweed invades roadsides and cropland, but is a particular threat to riparian areas and rangelands. This plant also forms dense patches that destroy plant biodiversity and wildlife habitat.

Purple loosestrife *(Lythrum salicaria)*

Growing 6-8 feet tall, this perennial prefers moist or marshy sites. Rose-purple flowers have 5-7 petals. It was introduced as an ornamental from Europe and has escaped, reducing wildlife habitat, particularly waterfowl habitat. Dense patches of loosestrife in shallow water have been known to ruin fish spawning grounds. A single plant can produce 2.5 million seeds annually. Purple loosestrife has not been found in Teton County yet, however, that does not mean it is not present on the Snake River. Fireweed, which is a native plant here in Teton County is often mistaken for purple loosestrife. If found this plant must be eradicated at once! Please report any possible infestations to Teton County Weed & Pest immediately.

Leafy spurge *(Euphorbia esula)*

Leafy spurge is a perennial that grows up to 3 feet tall with yellowish-green flowers arranged in heart-shaped clusters. When the seed heads explode they can project seeds as far as 15 feet. In North America leafy spurge infests almost 2.5 million acres! This species has been reported to cause severe irritation of the mouth and digestive tract in cattle which may result in death. The economic impact of leafy spurge in Montana, North and South Dakota, and Wyoming is approximately $144 million per year (USDA-ARS TEAM Leafy Spurge).

Oxeye daisy *(Chrysanthemum leucanthemum)*

Oxeye daisy is a perennial with daisy-like flowers that grow 10-24 inches tall. This species is a native of Eurasia that has escaped cultivation and was introduced as a seed contaminant. Most large herbivores avoid eating oxeye daisy and feed instead on grasses, causing more open ground to be infested. Oxeye daisy is being sold in wild-flower seed mixes, which is illegal in Wyoming. Make sure to check the label carefully before purchasing so you will not contribute to its spread.

Houndstongue *(Cynoglossum officinale)*

Houndstongue is a biennial that grows 1 to 4 feet tall. Introduced from Europe, houndstongue is toxic and contains a pyrrolizidine alkaloid that causes liver cells to stop reproducing. Animals may survive 6 months or longer after consuming a lethal amount.

Due to its Velcro-like seeds, houndstongue is one of the weeds that is most easy to spread. If your cloths or pets become covered with these seeds, please pick them off and dispose of them in the garbage or a fire. Throwing them on the ground will only start a new infestation.

Also Watch for these Invaders...

Dalmatian toadflax *(Linaria genistifolia)*

Dalmatian toadflax is a perennial that can grow up to 3 feet tall. It reproduces by seeds and extensive root stalks. One plant can produce up to 500,000 seeds annually. Dalmatian toadflax was introduced from southeastern Europe as an ornamental. It is aggressive and has become a serious problem throughout the West. The extensive root system combined with a waxy leaf make it extremely difficult to control. Hand pulling this weed species will only encourage its spread.

Yellow toadflax *(Linaria vulgaris)*

This is a perennial that grows 1-2 feet tall. Its flowers are yellow and resemble snap dragons. It reproduces by seeds and extensive roots. Commonly known as "Butter and Eggs", this plant was originally brought from Eurasia as an ornamental. Its extensive root system makes this plant extremely difficult to control. Yellow toadflax is still illegally planted in the Jackson area.

Russian knapweed *(Centaurea repens)*

A native of Eurasia, this creeping perennial was probably introduced to North America around 1898. The flowers can be pink, purple, or white. Russian knapweed is widely established in the western United States. It spreads by black, deep growing roots which penetrate to a depth of over 8 feet. Russian knapweed is toxic to horses, causing nigropallidal encephalomalacia or "chewing disease" when sufficient quantities are consumed. Russian knapweed does not spread as quickly as the other knapweeds, however the deep root systems make it more difficult to control.

If I am a

FISHERMAN

why should I care?

The Snake River provides wonderful scenery and healthy habitat for cutthroat, rainbow and brown trout. Noxious weeds could change all this. Some species of invasive plants such as saltcedar and purple loosestrife grow in shallow water, ruining spawning grounds for trout. Noxious weeds can also increase the risk of flooding and soil erosion which means cloudy water, lower water quality and poor spawning beds. Thick stands of noxious weeds such as mullein, musk thistle, saltcedar, purple loosestrife, and houndstongue can make access to the river very difficult. Also, much like whirling disease, fishermen can spread noxious weed seeds from river to river if the proper precautions are not taken. Our first infestation of saltcedar in the Jackson area was established at a boat launch after an unknowing boater cleaned out their boat contaminated with saltcedar seeds.

Fishermen have the opportunity to view a lot of areas of the Snake River no one else sees. Adopt your favorite section of river by pulling annual and biennial invasive species when possible and report any other infestations to Teton County Weed and Pest.

If I am a

WILDLIFE ENTHUSIAST

why should I care?

The Snake River attracts many different species of animals and birds. The lush vegetation and excellent variety of plants are the main reason this is such a wonderful habitat. However, noxious weeds have already destroyed this habitat in some areas along the river. Weeds such as spotted knapweed and Dalmatian toadflax have pushed out all other plants, making it an undesirable habitat for animals and birds. Loss of native plants to noxious weeds can mean less palatable forage for wildlife which can result in less wildlife viewing opportunities. Water foul and other birds, including trumpeter swans, rely on native vegetation for nesting and cover. Bald eagles and osprey rely on the Snake River as a source of food. Noxious weeds threaten all of this by altering the natural process that these animals rely upon to produce food and cover for them. Larger animals are also affected. Saltcedar easily pushes out willows which moose heavily utilize. In one study in Montana, dense spotted knapweed populations were found to reduce available winter forage for elk by 50 to 90 percent. If noxious weeds win, wildlife lose.

If I am a visitor

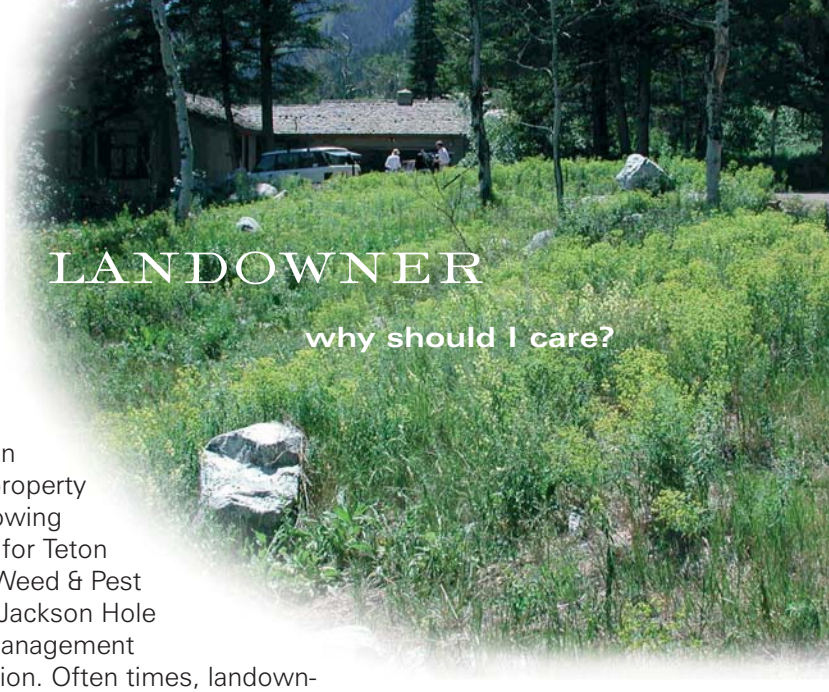
TO JACKSON HOLE

why should I care?

Wyoming's State flower the Indian Paintbrush

Many people look to recycling, cleaning up the ocean, and conserving our natural resources as a way to preserve the world we live in. Some of the problems that plague the world's animals and forests were not noticed until they were too big of a problem to solve with one simple solution. Here's an example; In 1920 Montana had just a few spotted knapweed plants. That small infestation grew to more than 5 million acres in 1995. Just think what could have been saved had they known about the invasiveness of spotted knapweed in the 1920's. Of the approximately 350 million acres of federal public lands in the West, more than 90% are <u>not</u> infested with exotic weeds - yet. Teton County has the opportunity to stop the destruction of our land and animal habitat before it is too late. As scenic as this area is, it would be a pity to see it ruined by the silent crawl of noxious weeds.

As a visitor to the Snake River you can help us by making sure you are not contributing to the spread of the weed infestations that are already present on the river by washing your vehicles or gear before you go to the river to recreate. We do not want you to take these invaders back home with you either, so wash everything before you leave. Maintenance of this beautiful area depends on people who will help take care of it and who care about the habitat and the animals who call this area home.



If I am a

LANDOWNER

why should I care?

Noxious weeds on private property are a growing concern for Teton County Weed & Pest and the Jackson Hole Weed Management Association. Often times, landowners do not even realize that these invaders are slowly choking out their native plant community. Noxious weeds are not only reducing the resale value of land all over the West, they can be expensive to control if not caught early. As people become more and more aware of noxious weeds and their costs, individuals trying to sell infested property will find it more difficult to sell their property at a price that does not reflect the future cost of weed control.

Noxious weeds also increase soil erosion and the impacts of flooding. By pushing out native species, noxious weeds reduce the land's ability to absorb the impacts of floods and hold the soil in place. Erosion is always a concern for property owners along the Snake River, allowing noxious weeds to prosper on your property will only increase the likelihood of flood damage.

So what can you do if you are a landowner? Early detection and eradication of small infestations provide the most cost effective ways to manage weeds. You can help your neighbors by taking on the responsibility of weed control on your property and educating them about its impacts. For no charge, Teton County Weed & Pest will come look at your property with you and consult you on what the best methods of weed control might be for your property. They also provide herbicides at a reduced cost, and loan out spray equipment to make the job easier for you. If you wish, they can also supply a list of weed control businesses in the area.

Here's how you can help...

- Learn how to identify the weeds that are in this brochure.
- Make sure that seeds are not stuck to your clothes or gear. You don't want to introduce these plants to other areas!
- Do not camp in or hike through weed infested areas.
- If you have mud or dirt on your vehicle wash it off before going onto public lands.
- Wash out your boat before going on the river if you have been recreating outside the Jackson area.
- Drive on established roads and hike on designated trails.

If you would like to make a tax-deductible contribution to the Snake River Project, please contact Teton County Weed & Pest.

- Pass it on!!! Tell your friends and family about this problem.
- If you are interested in helping out with weed pulls or by adopting an area, please call Teton County Weed & Pest at 733-8419 for more information.
- To learn more, please visit Teton County Weed & Pest's web site at **www.tcweed.org** or Jackson Hole Weed Management Association's web site at **www.jhwma.org**. Early detection and eradication of small infestations and prevention of new infestations provide the most cost effective ways to manage weeds. We need your help locating and eradicating the weed species that have been described on the previous pages. Be on the lookout for these plants while enjoying your time on the river, and help Teton County Weed & Pest and the JHWMA fight the "War on Weeds."

To report infestations please contact...

TETON COUNTY WEED & PEST
(307) 733-8419

this brochure was produced by

The Jackson Hole Weed Management Association

Members of the JHWMA include…
Bridger-Teton National Forest
Bureau of Land Management
Bureau of Reclamation
Grand Teton National Park
Jackson Hole Conservation Alliance
Jackson Hole Land Trust
Jackson Hole Wildlife Foundation
National Elk Refuge
Natural Resources Conservation Service
Pinto Ranch
Rocky Mountain Elk Foundation
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