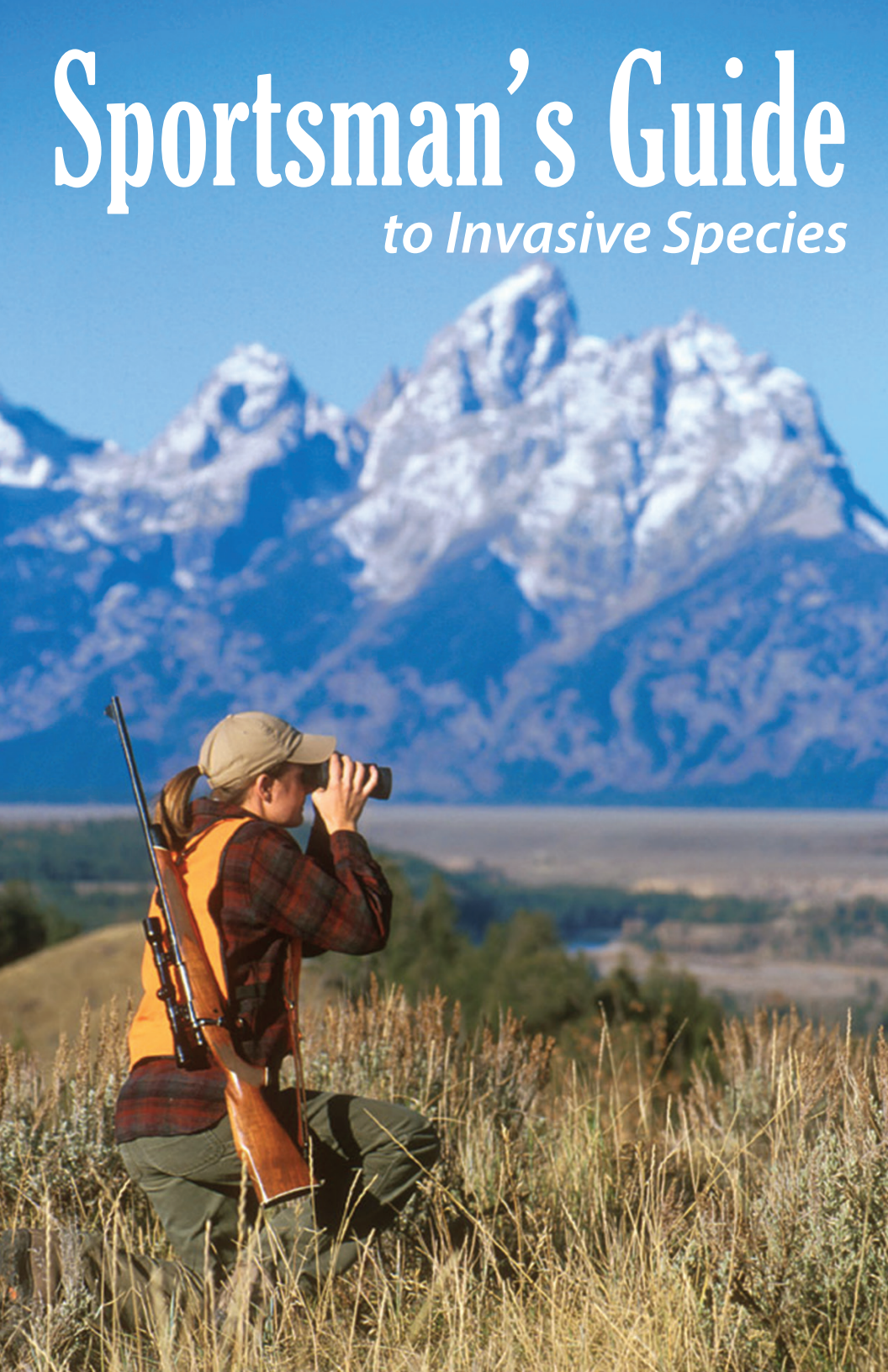
Sportsman's Guide

to Invasive Species



WHAT'S AT STAKE

People have depended on the Missouri River for water and sustenance for over 12,000 years. Today, the Missouri River and its hundreds of tributaries offer some of the best fishing access in the United States, and provide thousands of acres of hunting areas. As more and more invasive species become established, the stability of the entire region is threatened.

SPORTSMEN:

America's Original Conservationists

Hunting and fishing are two of the oldest human traditions. For tens of thousands of years, hunting and fishing were essential for human survival. The sportsmen of today hunt and fish for a variety of reasons. For some, hunting and fishing are family traditions that have been passed down over generations. Others are drawn to these sports for the sense of adventure they provide. No matter the reason, hunting and fishing are important activities because they allow people to enjoy nature and feel connected to the land around them.

Sportsmen and Conservation

In the late 1800s, many factors led to a decline in wildlife populations, such as overhunting and habitat loss. Sportsmen saw what was happening and agreed that wildlife and habitat were worth saving. They began to fight for laws and regulations to protect wildlife. The outcomes of their efforts included limits on the numbers and types of animals and birds that could be killed, regulated hunting seasons, and protected habitat areas.

Sportsmen continue to be a driving force behind conservation efforts. Hunters and anglers help fund state wildlife conservation efforts through the purchase of hunting and fishing licenses, tags, and stamps. Federal excise taxes on ammunition and hunting and fishing equipment are used to support state wildlife management programs and purchase lands that can be used by all sportsmen. As a result, tens of millions of acres of wildlife habitat have been conserved throughout the United States, ensuring the survival of hunting and fishing traditions for future generations.

Today, wildlife face another threat: invasive species. Sportsmen must follow in the steps of past generations and take a stand against this increasing threat. The future of hunting and fishing depends on you.

LIBRARY OF CONGRESS

Theodore Roosevelt, an avid hunter and conservationist, placed more than 200 million acres of American lands under federal protection during his presidency.

ALDO LEOPOLD FOUNDATION

Aldo Leopold was an ecologist, author, conservationist, and hunter who developed and promoted new methods of wildlife management.

"Of all the questions which can come before this nation, short of the actual preservation of its existence in a great war, there is none which compares in importance with the great central task of leaving this land even a better land for our descendants than it is for us." — *Theodore Roosevelt (1910)*

INVASIVE SPECIES:

A Major Threat to Hunting and Fishing

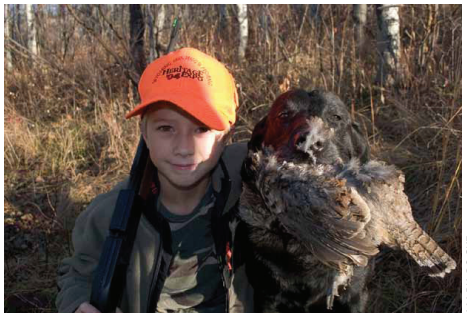
What Sportsmen Need to Know

All sportsmen depend on the existence of healthy ecosystems to hunt and fish. Wildlife require adequate habitat—food, shelter, water, and adequate space—to reproduce and maintain healthy populations. Fish and birds require plentiful clean water to thrive. Invasive species pose a serious threat to all of these things.

What Are Invasive Species?

The term "invasive species" refers to an organism that has been introduced, accidentally or intentionally, into an environment in which it is not native, and causes or is likely to cause environmental or economic harm.

Invasive species are able to increase in number and spread rapidly because they have no natural predators, diseases, or competitors to control their populations. When invasive species invade a natural ecosystem, they disrupt the food chain, displace native species, and alter the balance that makes the ecosystem function. Wildlife and fish cannot thrive without healthy ecosystems. Hunters and anglers cannot hunt and fish without healthy wildlife and fish populations. Fortunately, there are many things you, as a sportsman, can do to help prevent the spread of invasive species, and reduce their impacts.



MARK GOCKE

CHAD COPPESS, SOUTH DAKOTA TOURISM

Invasive species destroy fish and wildlife habitat, and pose a significant threat to hunting, fishing, and other outdoor activities.

> "The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land."
> *— Aldo Leopold (1949)*

Why Hunters Should Care About Invasive Species:
Invasive species can damage wildlife habitat, negatively impact game populations, limit access to areas used for hunting, and increase the risk and frequency of wildfires.

Why Anglers Should Care About Invasive Species:
Invasive species can destroy fish habitat, negatively impact game fish populations, affect water quality and flow, limit access for fishing, destroy boating equipment, and result in closures of lakes and rivers.

WILLIAM CIESLA, BUGWOOD.ORG

Prevention is Essential

The above photo of a field infested with leafy spurge is an example of what can happen when invasive species prevention steps are not taken. By incorporating prevention steps into your outdoor activities and reporting invasive species sightings, you can help protect your favorite areas.

WILD DAKOTA OUTDOOR TV

Sportsmen's Fight Against Invasives Video Series

Learn more about how invasive species affect all sportsmen by watching the *Sportsmen's Fight Against Invasives* video series from Wild Dakota Outdoor TV. Episodes feature big game hunting, waterfowl hunting, fishing, and more. Watch the videos for free at weedcenter.org/mrwc/wild-dakota.html or scan the code below.

WATCH THE VIDEOS:
To watch the videos for free online, scan this code using any QR code reader app on your smartphone.

HOW ARE INVASIVE SPECIES SPREAD?

In addition to natural methods of dispersal such as wind, water, and wildlife, humans are a major factor in the spread of invasive species.

SHOES & CLOTHING Invasive plant fragments and seeds hitchhike on socks, clothing, shoes, and packs.

BOATS Aquatic invasive species are transported to new water bodies via contaminated boats and boating equipment.

VEHICLES Invasive plant fragments and seeds get in stuck in tire treads, and hitchhike in truck beds an vehicle undercarriages.

LIVE BAIT Invasive species are transported in contaminated bait and bait buckets.

ATVs Invasive plant seeds and fragments get stuck in crevices and tire treads.

WADER BOOTS Invasive species hitchhike on waders and felt-soled wader boots.

DOGS AND HORSES Invasive plant seeds and fragments get caught in fur, hair, and feet.

STRAW AND HAY Invasive plant seeds and fragments are transported to new areas in contaminated straw, hay, and other forage products.

FIREWOOD Invasive insects and diseases can be transported to new areas inside of contaminated firewood.

TAKE A STAND:

Help Prevent the Spread of Invasive Species

TIP #1 BE AWARE

Get to know what invasive species are a problem in the areas where you hunt and fish. Keep your eye out for changes in your favorite hunting and fishing spots. If you see a plant that wasn't there last season, identify it and do a little research. If you think the plant is invasive, report it (see Tip #3).

TIP #2 AVOID INFESTED AREAS

One of the biggest factors in the spread invasive species is human activity. Avoid driving, walking, and boating through areas that are infested with invasive species. Find a different route and don't forget to report your sighting.

TIP #3 REPORT SIGHTINGS

Before your next hunting or fishing trip, download the free MRWC–EDDMapS invasive species reporting app for Android and iPhone. If you spot an invasive species when you're in the field or on the river, use the app to report it. It's fast and easy, and can make a big difference. Reports are instantly sent to the appropriate authorities for verification. Visit apps.bugwood.org/mrwc.html to download the app, or scan the code below.

GET THE APP: To download the free MRWC–EDDMapS app, scan this code using any QR code reader app on your smartphone.

AMY COLLETT

A truck drives down a road infested with invasive spotted knapweed. When you drive, hike, or boat through an area infested with invasive species, you are going to spread that species into new areas.

TIP #4 BUY WEED FREE

The next time you plan to pack up your horses and mules and head into the backcountry, begin feeding your animals certified weed free forage products at least three days before and throughout your trip. In fact, many public lands require the use of certified weed free hay, straw, and grain. For a list of certified weed free forage suppliers, visit your state Department of Agriculture's website.

TIP #5 DON'T MOVE FIREWOOD

Invasive insects and diseases kill many millions of trees every year. These invaders are easily transported to new areas in firewood and aren't always visible to the naked eye. To help protect our nation's forests and trees, always buy your firewood as close as possible to where you will burn it. Visit dontmovefirewood.org to learn more.

TIP #6 WHEN USING LIVE BAIT, ACT RESPONSIBLY

Follow these simple guidelines to avoid spreading invasive species when using live bait: Buy your bait from a licensed dealer. Dispose of unused bait by throwing it in a trash can at the launch site. Observe restrictions on using live bait; it's illegal in some water bodies. And remember—NEVER release fish, bait, or plants into a body of water that they didn't come from.

TIP #7 INSPECT, DRAIN, DRY

Before leaving a body of water, take a few minutes to ensure that you don't spread invasive species.

INSPECT: Thoroughly check waders, boots, fishing gear, lures, decoys, boat, trailer, dogs, clothing, and anything else that came into contact with water. Remove and dispose of all plant parts, mud, and seeds in a trash can at the access point. If you have access to a power sprayer, hose everything down with the hottest water possible.

DRAIN: Remove water from motors, live wells, bait buckets, waders, boots, and any other item that may have collected water.

DRY: all equipment in direct sunlight before entering a new water body.

USDA FOREST SERVICE

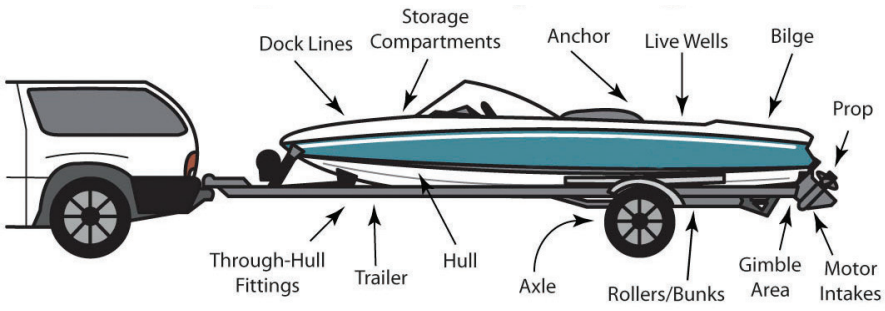
Boat inspections are free, quick, and go a long way toward protecting our nation's lakes and rivers from invasive species.

TIP #8 STOP FOR INSPECTION

Boat inspection stations and checkpoints exist to keep lakes and rivers free from invasive species. When you come across an inspection station, cooperate. The inspection won't take more than a few minutes of your time and you can rest assured that your boat and trailer are free of invasive species.

TIP #9 SPREAD THE WORD

Tell your friends and family about the problems invasive species pose to wildlife and fish habitat and let them know what they can do to help. History has shown that sportsmen will take action when our nation's ecosystems are in danger.



100TH MERIDIAN INITIATIVE

Invasive species can go unnoticed in many parts of your boat and trailer. Make sure to do a thorough inspection before transporting.

{GET TO KNOW}

Upland Invaders

Help protect wildlife habitat from invasive species

WATCH OUT FOR

Yellow Starthistle

This invader has long, sharp spines that can injure wildlife and humans. It grows up to 5 feet tall and forms dense patches that destroy wildlife habitat.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Houndstongue

Houndstongue is known for its Velcro-like seeds, which stick to clothing and animal fur. It has velvety leaves and purple flowers, and grows up to 4 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Spotted Knapweed

This invader crowds out native plant species, limiting available food for wildlife. It has small pinkish-purple flowers and grows up to 4 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Rush Skeletonweed

Named for its skeleton-like appearance, this invader has numerous wiry branches with small leaves and bright yellow flowers. It grows up to 4 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Dyer's Woad

Dyer's woad can be identified by its bright yellow flowers and the dark purple seed pods that remain in the fall and winter. It grows up to 4 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Medusahead

Named for its twisted, spiky heads, this invasive grass can injure wildlife that try to eat it. From a distance, it looks yellowish-green and shiny.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Prevention Tips ➔ Before leaving an area, remove all visible seeds and plant parts from clothing, shoes, dogs, packs, equipment, and truck and ATV tire treads and undercarriages. ➔ Avoid driving and hiking through areas infested with invasive plants. ➔ If you spot an invasive species, report it!

YELLOW STARTHISTLE: STEVE DEWEY/UTAH STATE U./BUGWOOD.ORG; **HOUNDSTONGUE:** KRISTI PAUL; **SPOTTED KNAPWEED:** ADRIANNE PETERSON; **RUSH SKELETONWEED:** CLINTON SHOCK/OREGON STATE U.; **DYER'S WOAD:** AMY COLLETT; **MEDUSAHEAD:** STEVE DEWEY/UTAH STATE U./BUGWOOD.ORG

{GET TO KNOW}

Wetland Invaders

Help protect fish and wildlife habitat from invasive species

WATCH OUT FOR

Reed Canarygrass

This invader forms dense infestations that reduce biological diversity in wetlands. It grows up to 6 feet tall and its flowers can be green, purple, or brown.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Purple Loosestrife

Purple loosestrife rapidly takes over wetland areas, destroying wildlife and waterfowl habitat. It has wrinkled purple flowers and grows from 6 to 10 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Yellowflag Iris

Although beautiful to look at, all parts of this invader are poisonous. It has large yellow flowers, long fan-like leaves, and grows up to 4 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Saltcedar

Saltcedar is an invasive tree or shrub that degrades wildlife habitat. It grows up to 20 feet tall and has scale-like leaves and tiny pale pink flowers.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Phragmites

This invader forms dense stands that eliminate wildlife habitat. It has large, feathery flower heads and its thick, cane-like stems can reach up to 20 feet tall.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Flowering Rush

Triangular stems are the best way to identify this invader, which doesn't always flower. It grows up to 5 feet tall along shorelines, but can also grow underwater.
IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Prevention Tips ➔ Inspect, drain, and dry boots, waders, clothing, decoys, equipment, boat, and trailer before transporting. ➔ Never release fish or bait into a body of water that it didn't come from. ➔ Observe boat inspection stations. ➔ If you spot an invasive species, report it!

REED CANARYGRASS: LESLIE MEHRHOFF/U. OF CONNECTICUT; **PURPLE LOOSESTRIFE:** JOHN BYRD/MISSISSIPPI STATE U.; **YELLOWFLAG IRIS:** NANCY LOWENSTEIN/AUBURN U.; **SALTCEDAR:** MISSOURI RIVER WATERSHED COALITION; **PHRAGMITES:** JOSEPH DITOMASO/U. OF CALIFORNIA-DAVIS; **FLOWERING RUSH:** LESLIE MEHRHOFF/U. OF CONNECTICUT. ALL PHOTOS COURTESY OF BUGWOOD.ORG

{GET TO KNOW}

Aquatic Invaders

Help protect fish and wildlife habitat from invasive species

WATCH OUT FOR

Zebra & Quagga Mussels

These tiny mussels form large, cluster-like colonies on water pipes, boating equipment, and other hard surfaces. They cause serious damage to aquatic ecosystems.

IF YOU SEE IT Call 877-STOP-ANS

Rock Snot (Didymo)

This invasive algae forms thick mats that damage fish and insect habitat. It can be brown, grey, or white, and its texture resembles wet toilet paper.

IF YOU SEE IT Call 877-STOP-ANS.

Asian Carp

Due to their large size, huge appetite, and ability to reproduce rapidly, Asian carp (including: black, grass, common, and silver carp) pose serious threats to native fish species.

IF YOU SEE IT Call 877-STOP-ANS.

Hydrilla

Hydrilla forms dense, floating mats that reduce water flow and damage fish habitat. It grows primarily underwater and has numerous feathery green leaves.

IF YOU SEE IT Report it with the MRWC–EDDMapS app.

New Zealand Mudsnail

Despite its tiny size, this invader can reproduce rapidly, crowding out the native species that fish and wildlife depend on for food and shelter.

IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Eurasian Watermilfoil

Much like hydrilla, this invader forms dense, floating mats that alter water quality and destroy fish habitat. It has long, floating stems with thread-like leaves.

IF YOU SEE IT Report it with the MRWC–EDDMapS app.

Prevention Tips ➔ Inspect, drain, and dry waders, boots, fishing equipment, decoys, bait buckets, boat, and trailer before transporting. ➔ Never release fish or bait into a body of water that it didn't come from. ➔ Always dispose of live bait properly. ➔ If you see an invasive species, report it!

ZEBRA & QUAGGA MUSSELS: US FISH & WILDLIFE SERVICE; **ROCK SNOT:** TIM DALEY/PENNSYLVANIA DEPT. OF ENVIRONMENTAL PROTECTION; **ASIAN CARP:** AUBURN U.; **EURASIAN WATERMILFOIL:** ALISON FOX/U. OF FLORIDA/BUGWOOD.ORG; **NEW ZEALAND MUDSNAIL:** PAUL CHIN/SAN FRANCISCO CHRONICLE; **HYDRILLA:** LESLIE MEHRHOFF/U. OF CONNECTICUT/BUGWOOD.ORG.

Web Resources

GENERAL INFORMATION

Center for Invasive Species Management
www.weedcenter.org

Center for Invasive Species and Ecosystem Health
www.invasive.org

US Fish & Wildlife Service Invasive Species Program
www.fws.gov/invasives

US Forest Service Invasive Species Program
www.fs.fed.us/invasivespecies

AQUATIC INVASIVE SPECIES

100th Meridian Initative
www.100thmeridian.org

Aquatic Nuisance Species Task Force
www.anstaskforce.gov

Stop Aquatic Hitchhikers
www.protectyourwaters.net

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