



INVASIVE SPECIES



2027
CALENDAR

Minnesota Invasive Species
Advisory Council

Advisory Council

This calendar was produced and distributed by the Minnesota Invasive Species Advisory Council (MISAC).

MISAC is a statewide entity that:

- Promotes communication and cooperation among organizations involved in invasive species issues.
- Coordinates outreach on invasive species.
- Supports statewide and multi-state conferences related to invasive species issues.
- Supports trainings and field visits related to invasive species.
- Recognizes outstanding and noteworthy work related to invasive species and encourages such work through the Carol Mortensen Award.
- Advocates for research and management for the species and pathways deemed greatest risk.

The MISAC website (mninvasives.org) provides additional information about invasive species in Minnesota. This website is a gateway to invasive species information including species profiles, contact information for experts in Minnesota, and links to other related websites.

MISAC Mission Statement

To provide leadership to prevent the introduction and spread of aquatic and terrestrial invasive species and reduce their harmful impacts on Minnesota landscapes, economies, and the people of Minnesota by promoting invasive species awareness, prevention, and management through research, education and regulation in cooperation with local, state, tribal, and federal partners.



Invasive Species Threats

Invasive species are non-native plants, animals and pathogens that cause environmental damage, economic loss, or harm to human health. Invasive species can displace native species, harm habitats, and degrade natural, managed, and agricultural landscapes.

In addition to harming our natural resources, invasive species can pose serious economic threats to major Minnesota industries such as agriculture, tourism, and forestry. Some estimates peg the economic damage of invasive species in the U.S. at more than \$130 billion a year.

Public awareness and action are the keys to preventing the spread of invasive species. Please use the information in this calendar to help inform the public about the problems caused by invasive species and how people can take action to reduce invasive species spread and harm.

There is contact information for two agencies with invasive species responsibilities in Minnesota on the back of this calendar. These agencies, as well as other MISAC members, can provide informational products such as brochures, species identification cards, and videos about invasive species.

The information contained in this document is current as of the date of publication. Because laws can change, it is important to check to see if there have been any changes or updates to applicable laws and regulations.

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888-646-6367 | 651-296-6157 | mndnr.gov

This information can be made available in alternative formats such as large print, braille or audio tape by emailing info.dnr@state.mn.us or by calling 651-259-6157.

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FSC Logo

Report Invasive Species

One of the keys for a rapid response to invasive species is the early identification of new occurrences. Please report occurrences of invasive species in Minnesota to the following:

- Minnesota Department of Agriculture (MDA) Report a Pest at: 888-545-6684 or reportapest@state.mn.us to report invasive plants, insects, or diseases such as Palmer amaranth, Asian longhorn beetle, emerald ash borer, boxwood blight and sudden oak death.
- Minnesota Department of Natural Resources (DNR) Invasive Species Program at: 651-296-6157 or 888-646-6367 or info.dnr@state.mn.us to report invasive aquatic plants or wild animals such as Eurasian watermilfoil, zebra mussels, invasive carp, round goby, jumping worms and mute swans.
- EDDMapS website (EDDMapS.org) or EDDMapS app.
- Or, as specified for individual species in this calendar.

MISAC Members

The Minnesota Invasive Species Advisory Council includes these members: 1854 Treaty Authority, Association of Minnesota Counties, Carlton County Soil & Water Conservation District, Carver County Water Management Organization, Cass County Soil & Water Conservation District, Cook County Soil & Water Conservation District, Fond du Lac Band of Lake Superior Chippewa, Grand Portage Band of Lake Superior Chippewa, Hennepin County Public Works, Lake County Soil & Water Conservation District, Leech Lake Band of Ojibwe, Meeker County AIS, Metropolitan Mosquito Control District, Minneapolis Park and Recreation Board, Minnesota Aquatic Invasive Species Research Center, Minnesota Association of County Agricultural Inspectors, Minnesota Board of Water and

Soil Resources, Minnesota Department of Agriculture, Minnesota Department of Natural Resources, Minnesota Department of Transportation, Minnesota Invasive Terrestrial Plants and Pests Center, Minnesota Nursery and Landscape Association, The Nature Conservancy, Three Rivers Park District, University of Minnesota, University of Minnesota – Extension, University of Minnesota Sea Grant Program, U.S. Customs and Border Protection, U.S. Department of Agriculture – Animal Plant Health Inspection Service – Plant Protection and Quarantine, U.S. Department of Agriculture – National Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Geological Survey, U.S. National Park Service, Wild Rivers Conservancy and Wildlife Forever.



INTERNET SALES PATHWAY

Example species that can be transported through internet sales:

- Jumping worms in orders of composting worms or as soil contaminants.
- Zebra mussels as contaminants on aquarium moss balls.
- Invasive plants that are illegal to sell in Minnesota, such as flowering rush or porcelain berry.
- Invasive plants mislabeled as native species, such as receiving round leaf bittersweet when purchasing American bittersweet.



Minnesota Invasive Terrestrial Plants and Pests Center research project on invasive plants in internet trade. The project was supported by the Minnesota Environment and Natural Resources Trust Fund.

Where to look

Invasive species can be introduced through products you order online. Online sellers can include individuals as well as large retailers. Items can be shipped to Minnesota from other states and countries. Websites may offer living organisms for sale, including plants and animals that are invasive in Minnesota. Invasive organisms also could be unintentionally included in shipments of other items ordered online.

Regulatory classification

It is illegal to possess, transport, release or sell many invasive species in Minnesota. The DNR regulates wild animals and aquatic invasive species and the MDA regulates terrestrial invasive plants and plant pests.

How can people help?

- Don't purchase invasive species. Buy native species whenever possible.
- If you notice invasive plants or animals for sale online, ask the retailer to provide non-invasive alternatives and to advise buyers on the legal status of the species in our state.
- Inspect online purchases for invasive species that may be contaminating your order.
- If you see a noxious weed for sale in Minnesota or have an order contaminated by a plant pest, report it to the MDA at reportapest@state.mn.us
- If you see a prohibited invasive animal or aquatic plant species for sale in Minnesota, report it to the DNR at info.dnr@state.mn.us

Further information

- Internet trade of aquatic invasive species: glc.org/work/gldiatr and dnr.state.mn.us/invasives/trade-pathways.html
- Research on terrestrial invasive plants in e-commerce: mitppc.umn.edu/research/research-projects/spread-invasive-plants-minnesota-through-e-commerce

JANUARY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27	28	29	30	31	1 New Year's Day	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25 Martin Luther King Jr. Day	26	27	28	29	30
31						



MINNESOTA CATTAIL COLLABORATIVE

Researchers sampling fish in an invasive hybrid cattail stand in Big Marine Lake, Washington County, Minnesota.

What's the problem?

There are two cattail species and their hybrid present in Minnesota. Native broadleaf cattail (*Typha latifolia*) and non-native narrow-leaf cattail (*Typha angustifolia*) readily hybridize to produce hybrid cattail (*Typha x glauca*). Hybrid cattail is a fast-growing non-native species that may displace diverse native nearshore plants in lakes, reducing habitat for fishes, birds, amphibians and other species.

What the Collaborative is doing

The Minnesota Cattail Collaborative is a collaboration of Minnesota Sea Grant (MNSG) and the Minnesota Aquatic Invasive Species Research Center (MAISRC) Lab to Lakes program. The project moves invasive cattail management from research to application by engaging participants in testing a small-scale cattail removal protocol. Working with the Minnesota Department of Natural Resources, watershed managers, tribal natural resources staff, lake associations and other communities, the Collaborative is establishing hybrid cattail removal plots at 20-25 Minnesota lakes and supporting participants in collecting data.

Why this matters

Removing invasive cattails in lakes can increase native plant density and diversity, reconnect open-water and near-shore lake zones and improve habitat for fish and wildlife. This project tests whether a research-based approach is effective and practical for managers at diverse lake sites. MNSG and MAISRC will share findings from this project and expand best-practice knowledge among managers and communities statewide.

Further information

- Minnesota Cattail Collaborative: z.umn.edu/mnsg-cattail-collaborative and maisrc.umn.edu/research/MCC
- Invasive cattail-dominated shoreline research: z.umn.edu/mnsg_cattails

FEBRUARY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31 	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Presidents' Day	16	17	18	19	20
21	22	23	24	25	26	27
28	1	2	3 	4	5	6
				Funding for this project was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR) and by Minnesota Sea Grant (MNSG).		



COMMON AND GIANT BUTTERBUR

Petasites hybridus, *Petasites japonicus*

Keys to ID

- Large, heart-shaped or kidney-shaped leaves up to three feet wide with hairs on underside.
- Flowering stalks appear before leaves emerge in the spring.
- Flowers are clusters of small, compound flowers.
- Common butterbur flowers are pink to purplish.
- Giant butterbur flowers are white to yellowish.

Giant butterbur leaves and flowers

What is it?

Both species are perennial forbs introduced to North America for medicinal and ornamental purposes.

Impacts

- They grow in dense patches and the large leaves shade out native plant species.
- The shading from the large leaves creates bare soil, contributing to soil erosion.

Origin

Common butterbur is native to Europe, Iran and Algeria. Giant butterbur is native to Korea, China and Japan.

Status

Both species have been found along riparian areas in Michigan, Wisconsin and Minnesota.

Where to look

Riverbanks, shorelines, wetland edges, forested floodplains and ditches.

Regulatory classification (agency)

Both species are currently *specialty regulated plants* (MDA) designated as having a three-year nursery production phase-out period. They will become *restricted noxious weeds* beginning January 1, 2029, meaning they will be illegal to import, sell or transport at that time.

Means of spread

- Fragments of tuberous, fleshy roots can spread through water and root and grow new plants.
- Seeds can be wind dispersed.

How can people help?

- Report plants growing in places they have not been planted to **EDDMapS.org** or the MDA at **reportapest@state.mn.us**.
- Refrain from purchasing common or giant butterburs. There are native butterbur species that are alternatives.
- Remove plants that are currently present on your property.

Further information

dnr.state.mn.us/invasives/terrestrialplants/common-butterbur.html

MARCH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

SHORELINE AND FLYFISHING PATHWAY



What's the problem?

Shoreline and fly anglers can spread aquatic invasive species by waders and hip boots, especially in fibers of felt soles and in mud. Some species can survive for days out of water.

Example species

- Didymo (*Didymosphenia geminata*)
- New Zealand mudsnails (*Potamopyrgus antipodarum*)

Impacts

Didymo is an algae that forms thick blooms in streams, rivers and along shorelines. Mats can reduce densities of bottom dwelling organisms, affecting fish diets and reproduction. New Zealand mudsnails can sometimes reach densities of over 500,000 individuals per square meter.

Status

Didymo is present along Lake Superior's North Shore. New Zealand mudsnails are found in Duluth-Superior Harbor.

Regulatory classification (agency)

Didymo is not regulated in Minnesota but is in other states. New Zealand mudsnails are *prohibited invasive species* (DNR).

How can anglers help?

- Clean off aquatic plants and animals from waders, boots and nets.
- Use a brush to scrub off mud and debris from boots.
- Drain all water from bait containers and gear.
- Dispose of unwanted live bait in the trash.
- Use easy to clean equipment such as waders without felt soles.
- If you have fished multiple shoreland areas recently, additional decontamination efforts (such as drying) can reduce your risk for spreading aquatic invasive species.

Further information

- dnr.state.mn.us/invasives/felt.html
- dnr.state.mn.us/invasives/ais/fishing.html

APRIL

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29 	30	31	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30 Arbor Day in Minnesota	1



FORAGING AND INVASIVE SPECIES PREVENTION



Foragers clip the seed heads off of garlic mustard after harvesting it (main). Golden oyster mushrooms are another species that people forage (inset).

Foraging is a great opportunity to pass along best practices for invasive species prevention and good land stewardship.

Know the laws

Garlic mustard, for example, is an edible plant on the Minnesota Noxious Weed list. While harvesting garlic mustard might seem like an act of stewardship, remember that it is illegal to transport propagating parts, including seeds and roots. Always get permission from landowners before foraging.

Clean your gear

To prevent the spread of invasive plant seeds and earthworm egg cases, clean your boots and gear before and after visiting a site.

Stay on the trail

For many, venturing off-trail is part of the appeal, but trampling sensitive vegetation can have unintended impacts such creating open ground for invasive species. It's important to stay on trails, as they're designed for user safety and resource conservation.

Report non-native species

Plants and fungi range from being excellent food sources to being deadly poisonous, making exceptional identification skills critical. Foragers can report non-native plants and fungi in natural areas to **EDDMapS.org**. Golden oyster mushrooms are non-native fungi found in Minnesota and there is interest in better understanding their distribution.

Forage responsibly

Sustainable foraging can be an enjoyable intergenerational pastime, but care, consideration and continuous learning are essential to ensure the love of foraging doesn't negatively impact Minnesota's natural areas.

MAY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	26	27  WORK.CLEAN.GO. PlayCleanGo.org	28	29	30	1 Arbor month begins in MN
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31 Memorial Day					



EDDMAPS

Invasive species reporting

What is EDDMapS?

EDDMapS (Early Detection and Distribution Mapping System) is an online mapping system for invasive species.

EDDMapS features include:

- A website and phone applications that are easy ways to report and share invasive species location information. EDDMapS can be used to report all types of invasive species including aquatic and terrestrial plants, animals and diseases. Observations are reviewed and verified by experts before becoming public.
- Maps of invasive species locations. It also has lists and maps of lakes and rivers on Minnesota's infested waters list.
- Ability to sign up to get alerts from EDDMapS when new species are reported in your area.

Why map and share information?

- EDDMapS acts as a "one stop shop" for invasive species location information in the state. Data from many individuals and organizations are shared into one centralized location.
- New reports help activate early detection and response efforts.
- Information helps with management plans and tracking management efforts.
- Distribution information helps better understand cold hardiness of species.
- Data informs policy development.

Tools

- Reports can be made through the EDDMapS website or through an associated app.
- Use the "EDDMapS" app to report species. It also includes species identification information.
- The "EDDMapS Pro" app has additional tools such as offline maps and the ability to record revisits of existing mapped locations.

Further information

EDDMapS.org

JUNE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19 Juneteenth National Independence Day
20	21	22	23	24	25	26
27	28	29	30	1	2 	3



MOUNTAIN PINE BEETLE

Dendroctonus ponderosae

What is it?

Mountain pine beetle is a species of bark beetle.

Impacts

Mountain pine beetle can infest almost all western pine species and has killed millions of acres of pines during outbreaks. In laboratory experiments, mountain pine beetle was found to successfully reproduce in all native Minnesota pine species. Minnesota pines evolved in the absence of mountain pine beetle and thus may be more susceptible to mountain pine beetle-caused mortality.

Origin

Western North America

Status

As of mid-2026, living mountain pine beetles have not been found in Minnesota.

Where to look

Mountain pine beetle feeds, reproduces and develops beneath the bark of pine hosts.

Regulatory classification (agency)

There is an *exterior quarantine* (MDA) for mountain pine beetle which prohibits the movement of any pine wood with bark into the state of Minnesota from states with mountain pine beetle.

Means of spread

Recently infested pines cut for firewood or other products may harbor developing beetles beneath the bark. These products can be transported distances far greater than what the insect could achieve by flying, risking accidental introduction to Minnesota's forests.

How can people help?

- Do not transport uncertified firewood or western pine logs with bark on.
- Source and burn firewood and pine logs locally.
- If you own or manage a pine plantation, consult with a forester about best practices for pest resilience.

Further information

- mda.state.mn.us/plants-insects/mountain-pine-beetle
- dnr.state.mn.us/firewood/index.html

JULY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27 	28	29  www.mda.state.mn.us/reportapest	30	1	2	3
4 Independence Day	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31



RED-EARED SLIDER

Trachemys scripta elegans

Keys to ID

- Unique, broad red or orange (rarely yellow) stripe behind each eye.
- Shell and skin are olive-brown with yellow stripes or spots.
- Younger individuals have dark, eyelike spots on the underside of their shell.

What is it?

Red-eared sliders are medium sized freshwater turtles commonly sold as pets.

Impacts

- Outcompete native turtles for food and habitat.
- Pose a risk of parasite and disease transmission to native species.
- Are a reservoir for *Salmonella* bacteria.

Origin

Their native range covers the southern portion of the Midwest and extends eastward to West Virginia, westward to New Mexico and southward to northeastern Mexico.

Status

Sightings in the wild occur regularly in Minnesota, likely the result of released pets. We do not currently know whether red-eared sliders are reproducing here. Breeding populations in Ontario and Michigan suggest they could reproduce in Minnesota.

Where to look

Prefer quiet waters but are highly adaptable and can tolerate anything from brackish waters to canals and city park ponds.

Regulatory classification (agency)

They are a *regulated invasive species* (DNR). It is legal to possess, sell, buy and transport regulated invasive species, but they may not be released into the environment.

Means of spread

Commonly imported and sold by the pet trade, leading to the potential for illegal release into the wild.

How can people help?

- Learn identification. Report sightings to [EDDMapS.org](https://eddmapp.org) or the DNR.
- Never release animals into the environment.
- Rehome unwanted pets. Learn more at mndnr.gov/invasives/aquarium-owners.html

Further information

dnr.state.mn.us/invasives/aquaticanimals/red-eared-slider.html

AUGUST

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4



Habitattitude™
PROTECT OUR ENVIRONMENT
DO NOT RELEASE FISH AND AQUATIC PLANTS



www.Habitattitude.net



ARION SLUGS

Arion species

Keys to ID

- Arion slugs are difficult to identify to species and species complexes. Experts often need to use dissections or molecular techniques.
- Report slugs larger than your thumb, as native slugs are smaller.
- Breathing pore located on the front half of the mantle (the raised area directly behind the head).
- Black, dark brown, red or orange in color.

What is it?

Arion slugs (also known as round back slugs) are non-native, slow moving terrestrial mollusks that lack a shell. They can vary in size, but some are very large. This genus of slugs is known for hybridizing, which can make identification difficult.

Impacts

Arion slugs can be destructive pests in home gardens and commercial agriculture. They are also a concern because they can carry animal and human pathogens.

Origin

Most species are native to Europe and the Mediterranean.

Status

Several species of arion slugs have been collected from Minnesota, but it is unknown how well established they are in the state.

Where to look

Most often found in gardens, greenhouses, campgrounds and other disturbed sites. They prefer moist to wet habitats.

Regulatory classification (agency)

Many arion species (such as *Arion ater* and the *Arion* ARVC complex) are quarantine pests (USDA APHIS) but some are not, so proper identification is important. Depending on the species identification, federal and state regulations may be implemented.

Means of spread

Slugs can spread through commodities such as agricultural products, the plant trade, cut flowers and foliage, stone and machinery.

How can people help?

Report large and/or colorful slugs that appear to be out of place. Take a picture and collect a specimen if able. Avoid touching slugs with your bare hands. To report slugs, contact reportapest@state.mn.us or mda.state.mn.us/reportapest.

Further information

idtools.org/mollusk/index.cfm?packageID=1178

SEPTEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30 	31	1	2	3	4
5	6 Labor Day	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2



EASTERN AND WESTERN MOSQUITOFISH

Gambusia holbrooki, *Gambusia affinis*

Keys to ID

- One-half to 2½ inches long.
- Green to brown back, gray sides with blue sheen, and silver belly.
- Translucent fins with one to three rows of black spots on the dorsal (back) and caudal (tail) fins.
- Upturned mouth, flattened head, and large eyes that take up most of their face.

Western mosquitofish

What is it?

Eastern and western mosquitofish are two species of small, live-bearing freshwater fish. The two species can hybridize with each other.

Impacts

Mosquitofish threaten ecosystems by outcompeting native fish for resources. They are adaptable, thrive in harsh habitats and eat large amounts of food.

Origin

Both species are native to the southeastern United States.

Status

Western mosquitofish were stocked in Twin Cities metro area ponds for mosquito control in the late 1950s and early 1960s. Populations are believed to have failed due to winter temperatures. As of mid-2026, there are no known populations of eastern or western mosquitofish in Minnesota.

Where to look

Preferred habitats include slow-moving to stationary shallow water with dense vegetation. They tolerate a variety of environmental conditions.

Regulatory classification (agency)

Both species are *prohibited invasive species* (DNR). It is illegal to possess, import, purchase, transport or introduce either species without a permit.

Means of spread

Mosquitofish were distributed globally for mosquito larva biocontrol beginning in the early 1900s. They may also spread via bait stores and the aquarium trade. A mosquitofish can easily be mistaken for a guppy.

How can people help?

- Learn to identify mosquitofish. Report sightings to **EDDMapS.org** or the DNR.
- Never release animals into the environment.
- Rehome unwanted pets. Learn more at **mndnr.gov/invasives/aquarium-owners.html**

Further information

invasivespeciescentre.ca/invasive-species/meet-the-species/fish-and-invertebrates/mosquitofish/

OCTOBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27  Habitattitude PROTECT OUR ENVIRONMENT DO NOT RELEASE FISH AND AQUATIC PLANTS  www.Habitattitude.net	28	29	30	1	2
3	4	5	6	7	8	9
10	11 Columbus Day/ Indigenous Peoples' Day	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



MYCOHERBICIDE FOR BUCKTHORN

A researcher collects dying buckthorn stems (main). *Chondrostereum purpureum* fruiting on a dead common buckthorn stump that was inoculated with the fungus one year earlier (inset).

A buckthorn problem

Common buckthorn (*Rhamnus cathartica*) is a widespread non-native tree in Minnesota that displaces native plants, facilitates invasion of non-native earthworms and alters ecosystem functioning.

Numerous methods to control common buckthorn have been developed, yet each has its limitations. Treatment with chemical herbicide is the most broadly applied method. However, chemical herbicides are expensive, can impact the environment and sometimes require multiple applications.

At the University of Minnesota forest pathology lab in the Department of Plant Pathology, researchers are studying fungi to develop a fungal-based herbicide (mycoherbicide) to kill buckthorn.

A fungal fix?

From 2023-2024, sites with dying buckthorn across Minnesota and Wisconsin were sampled and fungi were isolated from diseased plant tissue. Fungi retrieved during sampling were screened for pathogenicity (damage to trees) on buckthorn saplings in greenhouse trials. Eleven of these fungi killed large portions of cambium (outer stem) tissue around the sites where the fungi were applied to the plant.

In a subsequent field trial, buckthorn trees were cut and the stumps were inoculated with fungi. Several fungi species were found to kill stumps and prevent resprouting. Various formulations and application techniques are now being developed and tested for applying these buckthorn-killing fungi.

Further information

mitppc.umn.edu/research/research-projects/biological-control-buckthorn-using-fungi

NOVEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31	1	2	3	4	5	6
7	8	9	10	11 Veterans Day	12	13
14	15	16	17	18	19	20
21	22	23	24	25 Thanksgiving	26	27
28	29	30	1	2 	3	4
					Funding for this project is provided by the Minnesota Invasive Terrestrial Plants and Pests Center through the Environment and Natural Resources Trust Fund.	



ELECTRIC DETERRENTS FOR INVASIVE CARP

Lake Elysian electric deterrent under construction (main) and operating (inset).

What's the problem?

Bighead, silver, grass and black carp, collectively known as invasive carp, pose a threat to Minnesota's waterways. They can have a variety of impacts on native ecosystems, and silver carp can pose a threat to recreationists by jumping 10 feet out of the water. Prevention is the best method to reduce the risk from invasive carp. Black carp have not yet been observed in Minnesota.

Current research efforts

For 15 years, the Minnesota DNR has been installing and maintaining electric deterrents and physical barriers to prevent invasive carp from moving into new watersheds. Four electric deterrents for invasive carp are operating in southern Minnesota on Okabena Creek and near Lakes Madison, Illinois and Elysian. Minnesota also helped fund a deterrent at the Iowa Great Lakes to prevent invasive carp from moving into the state from the Missouri River basin.

Depending on the site, the deterrent is either built into a culvert under the roadway or is in an open ditch configuration. Fish are either deterred by the irritating electric field or are stunned and swept downstream if they attempt to cross.

The DNR is carrying out an updated watershed breach study to identify other potential routes for carp movement where deterrents or barriers should be considered.

Goal

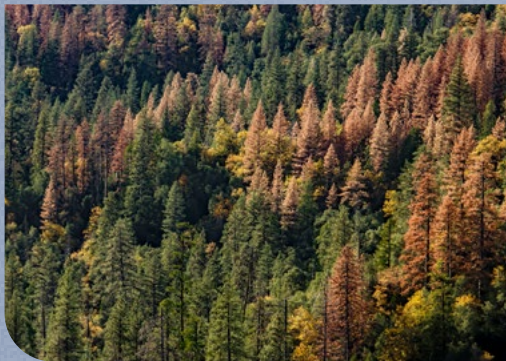
Prevent invasive carp from accessing new watersheds.

Further information

- [Isohc.mn.gov/FY2013/accomp_plan/5h.pdf](http://isohc.mn.gov/FY2013/accomp_plan/5h.pdf)
- files.dnr.state.mn.us/natural_resources/invasives/aquaticanimals/timeline/2011-2016-sw-minnesota-watershed-breaches-and-invasive-carp-barriers-report.pdf

DECEMBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28  	29 Funding for the initial deterrent installations was provided by the Outdoor Heritage Fund, and funding for the current watershed breach study was provided by the Minnesota Environment and Natural Resources Trust Fund as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR).	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1 Christmas Day



For more information about invasive species in Minnesota

Aquatic Plants and Animals
Minnesota Department
of Natural Resources
Invasive Species Program
651-296-6157

Terrestrial Plants and Insects
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