



INVASIVE SPECIES

2018 Calendar

MINNESOTA INVASIVE SPECIES ADVISORY COUNCIL



INVASIVE SPECIES THREATS

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

In addition to harming our natural resources, invasive pests can pose serious economic threats to major Minnesota industries such as agriculture, tourism and forestry. Some estimates peg the economic damage of invasive pests 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 Minnesotans about the invasive species problem and how they can take action in the challenge to reduce invasive species spread and harm.

INFORMATION SOURCES

The Minnesota Invasive Species Advisory Council (MISAC) website 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

www.mninvasives.org

The following websites of MISAC members also have information about invasive species:

Minnesota Department of Agriculture

www.mda.state.mn.us/plants

Minnesota Department of Natural Resources

www.mndnr.gov/invasives

University of Minnesota Sea Grant Program

www.seagrants.umn.edu/ais

U.S. Department of Agriculture—APHIS

www.aphis.usda.gov

U.S. Department of Agriculture—Forest Service

www.fs.fed.us/invasivespecies

U.S. Department of Agriculture—National Invasive Species Information Center

www.invasivespeciesinfo.gov

U.S. Fish and Wildlife Service

www.fws.gov/invasives

Find contact information for four 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.



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 Council includes these members: 1854 Treaty Authority, Leech Lake Band of Ojibwe, Minneapolis Park and Recreation Board, Minnesota Association of County Agricultural Inspectors, Minnesota Board of Water and Soil Resources, Minnesota Crop Improvement Association, Minnesota Department of Agriculture, Minnesota Department of Natural Resources, Minnesota Department of Transportation, Minnesota Forestry Association, Minnesota Nursery and Landscape Association, Minnesota Shade Tree Advisory Committee, National Park Service, St. Croix River Association, Soil and Water Conservation Society-Minnesota Chapter, The Nature Conservancy, Three Rivers Park District, USDA-Animal and Plant Health Inspection Service, USDA-Natural Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Forest Service, University of Minnesota, University of Minnesota Sea Grant Program, and Wildlife Forever.

Cover photos: Japanese barberry by the Minnesota Department of Agriculture, black carp by the Missouri Department of Conservation, water lettuce by Randy Schindle, Minnesota Department of Natural Resources, and red swamp crayfish by Christine Lee, Minnesota AIS Research Center. Photo of beetle by Steven Valley, Oregon Department of Agriculture.

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:

- “Arrest the Pest” at: 888-545-6684. Please call to report suspicious pest species arriving on plants or articles from foreign countries or other states. Get the latest updates on invasive species such as gypsy moth, soybean rust, sudden oak death, Asian longhorned beetle, emerald ash borer, bark beetles, and other destructive insect, plant, and disease pest species at: www.mda.state.mn.us/arrestthepest.
- DNR Invasive Species Program at: 651-259-5100 or 888-646-6367 to report invasive aquatic plants or wild animals such as Eurasian watermilfoil, zebra mussels, invasive carp, round goby, nonnative deer, and mute swans.
- EDDMapS Midwest website or Great Lakes Early Detection Network app at: www.eddmaps.org/midwest.
- Or, as specified for individual species in this calendar.

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500 Lafayette Road
St. Paul, MN 55155-4040
888-646-6367 or 651-296-6157
www.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 651-296-6157.

Printed on recycled paper containing 10 percent post-consumer waste and vegetable-based ink.

Minnesota-made paper.



Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bugwood.org



Nancy Gregory, University of Delaware Cooperative Extension

KEYS TO ID

- Cucurbit downy mildew (CDM) first appears as angular spots, yellow-green to brown in color, on the upper surfaces of leaves.
- Corresponding patches of gray fuzz, or sporulation, form on leaf undersides in wet and humid conditions.
- Once infected, CDM can kill leaves within days, defoliating the plant.

CUCURBIT DOWNY MILDEW

Pseudoperonospora cubensis

JANUARY

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

Species:

Belongs to the Oomycetes, commonly called water molds; distinct from fungi and bacteria.

Origin: Originally described in Cuba in 1968, it now occurs in more than 70 countries.

Impacts: Infects more than 40 members of the cucurbit family (includes cucumber, pumpkin, squash and watermelon) and can result in complete loss of a crop. A resurgence of CDM in the U.S. began in 2004.

Status: CDM occurs occasionally in Minnesota, late in the growing season. Warming winters, increasing greenhouse production of cucurbits, and changes in the pathogen's biology may contribute to its arrival earlier in the season.

Where to look: Wherever cucurbits are grown—home and community gardens, small farms and greenhouses. While the pathogen can germinate at a wide range of temperatures, outbreaks occur when conditions are wet and warm (59–68°F).

Regulatory classification: Not currently regulated.

Means of spread: CDM overwinters in plants in greenhouses and areas with mild winter temperatures. The disease is spread by spores, moving short distances in splashing water and on tools and hands of workers, and long distances in air currents, moving northward from the southern U.S.

How can people help?

Inform MDA's Arrest the Pest (888-545-6684) if CDM is suspected in cucurbit plants.

Management information: Plant resistant cucurbit varieties, use wide row spacing and drip irrigation, and monitor plants for disease. Fungicides can be effective if applied before the disease becomes severe. A home gardener may want to remove and destroy the plants immediately to prevent CDM spread.





Photo: Dan Larkin, University of Minnesota

EDDMapS MIDWEST

*Early Detection and Distribution
Mapping System (EDDMapS)*

FEBRUARY

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

What is it?

The EDDMapS Midwest website and its associated mobile app, the Great Lakes Early Detection Network app (GLEDN), are easy ways to report and share invasive species information.

What region does it cover?

EDDMapS.org is a national website. EDDMapS Midwest and GLEDN have additional Midwest-specific information.

EDDMapS Midwest and the GLEDN app feature:

- species identification resources
- maps of known locations of invasive species
- ability to report new infestations in the field using your smart phone or tablet, or report on your computer
- ability to attach photos to your report
- reports are verified by experts before they become viewable on the website
- species alerts—sign up to receive alerts of new invasive species reports in your area
- training presentations on the website
- lists and maps of the lakes and rivers on minnesota's infested waters list

Why is mapping helpful?

- managers use the information to plan land management
- allows for early detection and response for key species
- aids in statewide policy development
- provides information on cold hardiness and distribution of species
- increases awareness of species heading our way

How can people help?

Report invasive species using EDDMapS and GLEDN.

Further information: www.eddmaps.org/midwest





Inset photo: Christa Rittberg



Photos: Dave Hansen, University of Minnesota

AIS DETECTORS AND TRACKERS

MARCH

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	 			1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
Daylight Saving Time Begins						St. Patrick's Day
18	19	20	21	22	23	24
		Spring Begins				
25	26	27	28	29	30	31
				Passover Begins		

What are they?

The Aquatic Invasive Species (AIS) Detectors and Trackers programs are citizen science programs developed by the Minnesota Aquatic Invasive Species Research Center (MAISRC) in partnership with University of Minnesota Extension.

AIS Detectors program: Participants learn how to properly identify and report new findings of AIS such as starry stonewort, zebra mussels, round goby and others, through a combination of online and in-person training.

After being trained, AIS Detectors serve a critical role by helping the DNR respond to reports of possible AIS, determining false positives, looking for new infestations, and providing outreach to their communities.

AIS Trackers program: After completing the AIS Trackers training program, participants collect information to help evaluate AIS control efforts including biological and water quality data.

The AIS Trackers database can be used to make recommendations regarding which tools will likely lead to the best management outcomes (effective control of target pest with minimal non-target impacts) given the environmental conditions (water chemistry, target pest, season).

Further information: Visit www.aisdetectors.org and www.aistrackers.org





Kim Lanahan-Lahti, Minnesota Department of Natural Resources



PlayCleanGo



Deborah Rose, Minnesota Department of Natural Resources



Explore Minnesota Tourism



PlayCleanGo



Deborah Rose, Minnesota Department of Natural Resources



PlayCleanGo®

*Stop Invasive Species
in Your Tracks*

APRIL

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

What is it?

PlayCleanGo® is an outreach campaign designed by the Minnesota DNR to disrupt the link between outdoor recreation and the spread of terrestrial invasive species. It is based on using data-driven strategies to change public behaviors for the benefit of all.

How does it work?

The campaign relies on partner organizations to spread the word across their area. Together, we expand our collective reach and connect with audiences across North America. It is free for organizations to sign up as a PlayCleanGo® partner. Partners can download and customize materials.

PlayCleanGo® launched in 2012. As of 2017, the campaign had enrolled more than 400 partner organizations across 36 states and 5 Canadian provinces. In 2014, the North American Invasive Species Management Association adopted PlayCleanGo® as their national campaign and, in 2016, the Canadian Council on Invasive Species followed suit.

The success of PlayCleanGo® is due to its simple action steps, positive messaging, and flexibility that allows partners to make materials fit their needs.

How can my organization sign-up?

Visit www.PlayCleanGo.org/join.html to sign up and learn more. Retail partners are invited to check out the video at www.playcleango.org/orvideo.html.

How can people help?

- Remove plants, animals and mud from boots, gear, pets and vehicles.
- Clean your gear before entering and leaving a recreation or outdoor work site.
- Stay on designated roads and trails.
- Use Certified or local firewood and hay.
- If you see something, report it.
- Spread the word, not the problem.

Further information: www.playcleango.org



Photos: Monika Chandler, Minnesota Department of Agriculture



KEYS TO ID

- Summer annual; commonly 6–8 feet tall; can reach 10 feet or more.
- Separate male and female plants.
- Leaves are smooth and alternate.
- Leaf stalk is longer than the length of the leaf.
- Seedhead spikes on female Palmer amaranth plants are much taller (up to 3 feet long) and more prickly than similar species.

PALMER AMARANTH

Amaranthus palmeri

MAY

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

Species:

An annual plant in the pigweed family.

Origin: Native to the southwestern United States and northwestern Mexico.

Impacts: Palmer amaranth has developed resistance to multiple classes of herbicides, making it very difficult and expensive to control. It can produce up to a million seeds from one plant. It crowds out crops, causing yield losses up to 91% in corn and 79% in soybeans. It can outcompete native plants in grasslands.

Status: Palmer amaranth was first found in Minnesota in September 2016. It was a contaminant of a seed mix sown at 36 conservation plantings.

Where to look: Conservation lands, crop fields, borders, ditches, and around livestock facilities.

Regulatory classification (agency): Palmer amaranth is a Prohibited Noxious Weed Seed (MDA). This means no Palmer amaranth seed is allowed in any seed for sale in the state. This includes agricultural, vegetable, flower, tree, shrub, native grass and forb seed sold in Minnesota. Palmer amaranth is also a Prohibited Noxious Weed on the Eradicate List (MDA). Land owners are required to eradicate the plant when found, by killing the parts of the plant above and below ground.

Means of spread: Individual female plants can produce up to a million seeds. Contaminated native seed mixes have been a source of spreading Palmer amaranth.

How can people help?

If you suspect Palmer amaranth, contact your local U of M Extension Educator, MDA's Arrest the Pest (888-545-6684) or your Local County Agricultural Inspector.

Further information: Minnesota Seed Law – www.mda.state.mn.us/seed. Noxious weeds – www.mda.state.mn.us/weedcontrol.

WATER GARDEN PATHWAY



WATER LETTUCE



Photo: Randy Schindle, Minnesota Department of Natural Resources



Photo: Allison Gamble, Minnesota Department of Natural Resources



Photo: Allison Gamble, Minnesota Department of Natural Resources

KEYS TO ID

- Java waterdropwort is a relatively difficult plant to identify. There are many look-alikes.
- Stems are cylindrical and upright from a creeping base.
- Serrated leaves are arranged alternately along the stems.
- Small white flowers bloom in late summer.

EXAMPLE: JAVA
WATERDROPWORT
Oenanthe javanica

JUNE

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

Species:

Java waterdropwort is primarily sold as an ornamental plant. In Minnesota, it was found in the wild for the first time in the fall of 2016. Other popular water garden plants such as water hyacinth, parrotfeather, water lettuce, hybrid water lilies, and non-native fishes like goldfish, piranhas, and freshwater pacu have also all been found in state waters, due to accidental or deliberate releases from water gardens.

Origin: Java waterdropwort is native to southeast Asia.

Impacts: In other states, Java waterdropwort has created dense mats of vegetation along river banks. Many popular water garden plants and animals can become problematic if they are released into the wild.

Status: One known location of Java waterdropwort in Minnesota.

Where to look: Wetlands, streams and lakes.

Regulatory classification (agency):

Java waterdropwort is an unlisted nonnative species for Minnesota (DNR). It is legal to buy and plant it in your personal water garden, but it is illegal to introduce it into state waters.

Means of spread: Water garden species are primarily spread through accidental and intentional releases by humans. Seeds or plant fragments can spread plants to new areas.

How can people help?

- Build water gardens away from other waters and areas prone to flooding.
- Inspect and rinse aquatic plant orders to remove seeds, snails and other hitchhikers.
- Do not dispose of plants or animals in or near state waters.
- Report suspected infestations to the DNR or Minnesota Sea Grant.

Further information: www.seagrants.umn.edu/ais/watergardening



Photos: Monika Chandler, Minnesota
Department of Agriculture



KEYS TO ID

- Plants grow 6–12 feet tall and may spread laterally up to 65 feet.
- Shoots are hollow and bamboo-like with alternate leaves.
- Only hybrid or giant knotweed female flowers produce pollen; female Japanese knotweed flowers do not produce pollen.

JAPANESE, GIANT AND BOHEMIAN KNOTWEEDS

Polygonum cuspidatum, *P. sachalinense*
and *Polygonum x bohemicum*

JULY

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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				

Species:

Shrub-like herbaceous perennial plants. Bohemian knotweed is a Japanese and giant knotweed hybrid.

Origin: All three species are from eastern Asia.

Impacts: Knotweeds form tall, dense thickets that shade out other vegetation and degrade habitat. Infestations along waterways can increase erosion. In the United Kingdom, knotweeds have caused property damage by breaking up pavement and growing into buildings, reducing property values. Knotweed infestation cleanup at London's 2012 Olympic site cost £70 million (\$120 million U.S. dollars).

Status: Japanese knotweed was widely planted in the U.S. including Minnesota. It has spread from those plantings. Giant knotweed is found in many states and in St. Louis County in Minnesota. Bohemian knotweed is found in many northern states and in Ramsey and St. Louis counties in Minnesota.

Where to look: Plants are found in sunny areas in a wide range of habitats.

Regulatory classification (agency): Knotweeds are Specially Regulated Plants (MDA) requiring that anyone selling Japanese and/or giant knotweeds in Minnesota must have information directly affixed to the plant or container packaging indicating not to plant this species within 100 feet of a water body or its designated flood plain.

Means of spread: Knotweeds spread aggressively by rhizomes, and fragments as small as a fingernail can start an infestation. Viable seed can be produced if knotweed species cross.

How can people help?

- Report knotweed infestations in EDDMapS.
- Do not plant knotweeds.

Further information: Visit www.mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist.aspx



Photos: Christine Lee, Minnesota AIS Research Center

KEYS TO ID

Red swamp crayfish are dark red with raised red spots on their claws.




RED SWAMP CRAYFISH

Procambarus clarkii

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	



Species: Red swamp crayfish are freshwater crustaceans.

Origin: Red swamp crayfish are native to parts of North America, including the Gulf of Mexico coast and the southern Mississippi River drainage.

Impacts: Red swamp crayfish dig chimney-like burrows near the edge of the water, unlike most of our native crayfish. Red swamp crayfish may disrupt food chains and compete with native species.

Status: The first two red swamp crayfish detected in Minnesota were removed from a Clay County lake in 2016.

Where to look: You might find red swamp crayfish accidentally caught in fishing gear, or in crayfish or minnow traps. You might even find red swamp crayfish crawling over land. If you suspect you have found a red swamp crayfish, keep the animal and report it to the DNR.

Regulatory classification (agency): Red swamp crayfish are classified as a prohibited invasive species (DNR).

Means of spread: Red swamp crayfish likely spread by people illegally dumping live crayfish from aquaria, classrooms, and “crawfish boils.” Red swamp crayfish can also travel overland to new water bodies.

How can people help?

- Never release pets or classroom animals into the wild.
- Remember that it is illegal to purchase, sell or transport red swamp crayfish in Minnesota for any purpose.

Management information: Because red swamp crayfish create burrows, it is nearly impossible to eradicate introduced populations short of excavating or filling in ponds.



BLACK-LEGGED TICKS

Ixodes scapularis

Black-legged ticks were collected and tested for pathogens by the Minnesota Department of Health.



KEYS TO ID

- Fruit on Japanese barberry is bright red and egg-shaped.
- Individual spines are along stems.
- Japanese barberry plants can reach heights of 5 feet or more and form dense stands.

^ **JAPANESE BARBERRY**
Berberis thunbergii

SEPTEMBER

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

Species:

Japanese barberry is a woody shrub that has been found in forested areas. Black-legged ticks (deer ticks) reside in forested areas and can transmit pathogens that cause diseases such as Lyme's disease.

Origin: Japanese barberry is native to Japan. Black-legged ticks are native to North America.

Impacts: Japanese barberry infestations form dense stands that replace native forest shrubs. Research in Connecticut has shown that black-legged tick populations increase in areas with Japanese barberry infestations. Dense Japanese barberry infestations create the ideal humid conditions that ticks prefer. Because black-legged ticks are vectors for the pathogens that cause Lyme's disease, increased tick populations could lead to more cases of Lyme's and other tickborne diseases.

Status: Japanese barberry and black-legged ticks are present in Minnesota.

Where to look: Forest understories.

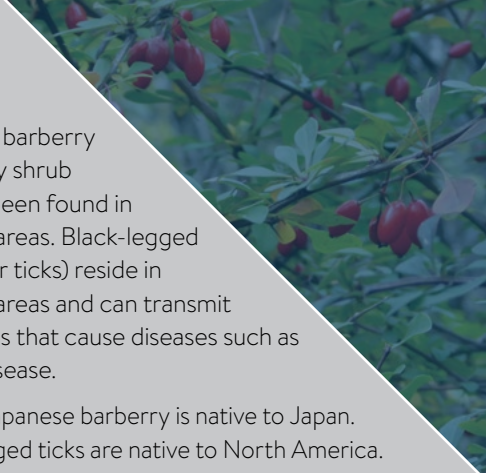
Regulatory classification (agency): Japanese barberry is a Specially Regulated Plant (MDA). As of January 1, 2018, the 25 seediest cultivars of Japanese barberry are prohibited from sale.

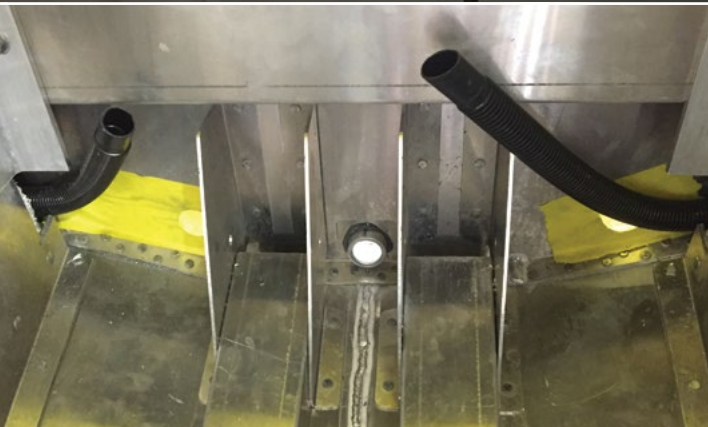
Means of spread: Japanese barberry seed is spread by birds. Plants also spread by low branches that root when they touch soil.

How can people help?

Report Japanese barberry infestations in natural areas to Arrest the Pest www.mda.state.mn.us/arrestthepest.

Management information: Removing naturalized Japanese barberry infestations from the landscape requires persistence. Mechanical removal followed by herbicide application for several years may be the most effective. Visit www.mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist.aspx for more information.





BOAT DESIGN IMPROVEMENTS

Photos: Adam Doll, Minnesota Department of Natural Resources, courtesy of Brunswick Boat Group

OCTOBER

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8 Columbus Day	9	10	11	12	13
14	15	16	17	18	19	20
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Joint Upper Midwest Invasive Species Conference and North American Invasive Species Management Association Annual Conference October 15-18 Rochester, Minnesota</p> </div>						
21	22	23	24	25	26	27
28	29	30	31 Halloween			

What's the problem?

Recreational watercraft can spread invasive species as they move between water bodies. Even after the drain plug is pulled, water may still be trapped in the boat. That water may hold invasive species such as zebra mussel larvae or spiny waterfleas.

Decontaminating all areas of a watercraft with hot water can be a complicated process. Boat designers are looking for ways to simplify this process by factoring decontamination needs into future designs.

What is being done?

In 2015, the Minnesota DNR, U.S. Fish and Wildlife Service and Tonka Bay Marine hosted a national summit for boat design and aquatic invasive species. The American Boat and Yacht Council is drafting an invasive species guidance document for watercraft design and construction. This document will help manufacturers design watercraft that reduce the chances of moving invasive species trapped in water.

How can boat design help?

Water trapped in hoses, pumps, bilge areas, live wells, ballast tanks and engines could harbor invasive species and allow them to be moved from one location to another. Some new designs use self-draining pumps, remodel areas that trap water, or filter water before being pumped into areas like ballast tanks.

How can people help?

- Clean and drain your watercraft every time you use it.
- Keep the drain plug out during transport.
- Some boat designs may trap water even after pulling all drain plugs. Keep a towel in your boat to help remove water.



Photo of beetle by Steven Valley, Oregon Department of Agriculture
Other photos: Minnesota Department of Agriculture



KEYS TO ID

- There are many related species. Larvae will not be identifiable to species and adult beetles will require an entomologist.
- Adult beetles are brown and about $\frac{1}{2}$ to $\frac{3}{4}$ inch long.
- Indications of insects in furniture include:
 - › holes and tunneling
 - › sawdust or powdery material collecting by the furniture
 - › audible squeaking or scratching noises made by the insects when tunneling within wood



VELVET LONGHORNED BEETLE

Trichoferus campestris

NOVEMBER

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

Species: A wood boring beetle in the family Cerambycidae.

Origin: It is native to Asia and parts of eastern Europe.

Impacts: This insect can infest a range of trees or logs, including both coniferous and deciduous species. It is unclear if healthy trees in Minnesota are at risk from this insect. Larval feeding by the velvet longhorned beetle can stress and damage trees, which can lead to tree death, reduced marketability of wood products and decreased fruit yield.

Status: This insect has been commonly intercepted at U.S. ports of entry and has been detected in Minnesota by USDA trap surveys in 2010 and 2014 through 2016. In 2016, the velvet longhorned beetle was also discovered infesting log furniture imported from China. Utah is the only state where this insect is currently established.

Where to look: In their native range, they prefer declining mulberry and apple trees. However, it appears they can attack additional tree species in the U.S. More research is needed.

Regulatory classification: The velvet longhorn beetle is considered an actionable pest by the USDA. However, there are no quarantines in place against this insect.

Means of spread:

- solid wood packing material and rustic log furniture that has not been properly treated
- cut lumber and, potentially, infested firewood
- moving wood with bark attached increases the risk of spreading this and other forest pests

How can people help?

- Find out where the wood came from before buying log furniture or similar products.
- Report suspect insects to MDA at arrest.the.pest@state.mn.us or 888-545-6684.

Further information: Visit www.mda.state.mn.us/plants/insects/clhbeetle.aspx



Photo: U.S. Fish and Wildlife Service

Photo: Missouri Department of Conservation



KEYS TO ID

- Black carp are elongated, have a pointed head and a small toothless mouth.
- Bodies are brown to black with bluish-gray to white on the belly.
- Fins are darker brownish-black or black with lighter hues at the base.
- Scales have dark edges that give the fish a cross-hatched appearance.

BLACK CARP

Mylopharyngodon piceus

DECEMBER

Photo: U.S. Geological Survey

Species:

Black carp are a freshwater fish species.

Origin: Native populations are found in large rivers and lakes in eastern Asia, from southern Russia to southern China and Vietnam.

Impacts: Young black carp feed primarily on zooplankton and later on insect larvae, competing with native planktivores and young fish. Adult black carp feed primarily on mollusks using their pharyngeal (throat) teeth to crush the shells.

Minnesota is home to 48 species of mussels. Currently, 25 species are listed as endangered, threatened or of special concern. The additional pressure from feeding black carp could be detrimental. Current knowledge of the species suggests that black carp would not be effective in controlling zebra mussel populations.

Status: None found to date in Minnesota. Nearest population is in the Mississippi River in Missouri.

Where to look: The highest risk pathway into Minnesota is black carp swimming north up the Mississippi River. Look near mussel beds.

Regulatory classification (agency): Black carp are a prohibited invasive species (DNR) in Minnesota. They are also listed under the Federal Lacey Act, which prohibits transporting across state lines.

Means of spread: Black carp were used in aquaculture ponds to control snails, which are often vectors of fish diseases. They escaped into the wild during high water events. Current expansion is from existing wild populations.

How can people help? Spread awareness and support efforts to prevent established populations from expanding.

Further information: Visit www.dnr.state.mn.us/invasive-carp/index.html

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2 Hanukkah Begins	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21 Winter Begins	22
23	24 Christmas Eve	25	26	27	28	29
30	31 New Year's Eve	Christmas	Kwanzaa Begins			

JANUARY

FEBRUARY

APRIL

MAY

MARCH

AUGUST

JUNE

JULY

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

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U.S. Fish and Wildlife Service, 612-713-5114

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