Whatcom Boat Inspections

Aquatic Invasive Species
Awareness Course
Part 1

What are aquatic invasive species and why should I care?
Aquatic Invasive Species (AIS) are non-native plants, animals, and pathogens that live primarily in water. They thrive in a new environment, and can cause economic loss, environmental damage and are harmful to human health.

AIS can be transported by a variety of different pathways which include:

- Becoming attached to boat hulls, motors, trailers, and equipment
- Being transported in bilge tanks, live wells, and engine cooling water
- From float planes
- As frozen or live aquatic food & bait
- Being released when aquariums or bait containers are emptied into water bodies
- Becoming attached to fishing or other field gear
- Being transferred by waterfowl and other animals
- And deliberate release by individuals
Lake Whatcom and Lake Samish are both popular recreational sites for boaters visiting from all over the United States and Canada making boating a primary pathway for the introduction and spread of AIS to and from Whatcom County lakes. This is why the current AIS program focuses on these lakes.

AIS introductions can lead to a variety of economic, recreational, and environmental impacts to aquatic ecosystems because they can:

- Attach to and damage boats and recreational equipment
- Clog water intake pipes and impede the flow of water to municipal water supplies, irrigation operations, and power plants
- Create long-term taste and odor issues in drinking water
- Make shoreline areas hazardous and uninviting for recreational users and waterfront property owners
- Damage docks, piers, and other in-water structures
- Compete with native species and spread toxic algal blooms
A prevention program can stop AIS from being introduced.
It can take several years for some AIS to become established and for their impacts to become known. However, once a species becomes established it becomes increasingly difficult and costly to manage it. By having a prevention program and inspecting watercraft before they launch in Whatcom County lakes, we can increase our chances of stopping aquatic invasive species from being introduced in the first place.

Lake Whatcom and Lake Samish are residential lakes located near Bellingham in Whatcom County, Washington. Both lakes are located very close to Interstate-5, the main Interstate Highway on the West Coast, making them very vulnerable to aquatic invasive species that could have hitched a ride on recreational boats travelling along this route. However, aquatic invasive species are a particular threat to Lake Whatcom because it is a major source of drinking water. While inspection efforts are currently focused on these two lakes, the Aquatic Invasive Species Prevention Program aims to protect all Whatcom County waters by educating boaters to take steps to prevent the spread of aquatic invasive species when going from one waterbody to another.
Lake Whatcom

Surface Area: 5000 acres

Fish Species: largemouth bass, smallmouth bass, brown bullhead, longnose sucker, yellow perch, pumpkinseed, Kokanee, cutthroat trout

AIS present:
Asian clams, Eurasian watermilfoil, fragrant waterlily, purple loosestrife, garden loosestrife, curly-leaf pondweed
Lake Whatcom is an open, multiple-use lake that is the drinking water source for over 95,000 residents of Whatcom County and supports a variety of fish and wildlife species, both native and nonnative. The watershed is also home to over 15,000 residents, and is an active recreational site for residents and visitors alike. The introduction of aquatic invasive species into Lake Whatcom could seriously compromise the municipal water supply resulting in millions of dollars in damage and mitigation costs.
Lake Samish

Surface Area: 814 acres

Fish Species: largemouth bass
smallmouth bass
yellow perch
Kokanee salmon
coho salmon
cutthroat coastal resident trout
rainbow trout
steelhead

AIS present: fragrant waterlily
Lake Samish is an open, multiple-use lake that supports a variety of fish and wildlife species, both native and nonnative. In addition to being home to a year-round Kokanee fishery, this lake is a source of drinking water for many lakeside residents, and is also an active recreational site for residents and visitors.
Examples of AIS
This section of the course includes detailed information on several aquatic invasive species that are already present in Whatcom County lakes, some of which are of particular concern. After completing this section, you should have a better understanding of what aquatic invasive species are, how they spread, and how they could potentially impact Whatcom County waters.
Aquatic Plants

- Fragrant Waterlily
- Purple Loosestrife
- Eurasian Watermilfoil
- Garden Loosestrife
- Curly-leaf Pondweed
Invasive aquatic plants of concern in Whatcom County include: Fragrant waterlily, purple loosestrife, Eurasian watermilfoil, garden loosestrife, and curly-leaf pondweed. All of these plants have already become established in Lake Whatcom. Lake Samish, on the other hand, is home to only one aquatic invasive plant: the fragrant waterlily.

To prevent the spread of aquatic invasive plants, all plants and fragments should be removed and be disposed of on site in a dry-land location away from the water every time you leave a waterbody. Cleaning off any plants from watercraft and gear is important not only to prevent these plants from spreading but also because other organisms can hitchhike on plants. In Washington State, traveling with aquatic plants on your equipment, boat or trailer on any public roadways is a misdemeanor.
Eurasian watermilfoil has been present in Lake Whatcom since the early 1970s and is currently found in scattered patches throughout the lake.

In 2013, Eurasian watermilfoil was discovered in Lake Terrell. It is now present as a dense canopy throughout the lake.
One fingernail-sized piece of Eurasian watermilfoil is all it takes to start a milfoil problem in another lake, but like other submersed aquatic plants, they are unable to spread on land and dry out and decompose quickly. Eurasian watermilfoil has feather-like leaves and can reproduce rapidly, forming dense mats along the surface of the water. This results in reduced light and can have negative impacts on native plant populations and water quality.
Asian clams may be introduced by bait buckets, aquarium dumps, on wet gear, and through boating activities. The larval form of the clams can be transported in lake water on boats and gear and are virtually impossible to see with the naked eye.

Asian clams are brown to golden in color and range in size from ¼ inch up to 1 inch or more. Colonies can reach densities of over 5,000 clams per square yard. Asian clams are most often found on the sediment surface or slightly buried below the sediment.
Asian clams were discovered in both Lake Whatcom and Lake Padden in 2011, but have not been found in any other lakes in Whatcom County to date. These clams have the potential to cause dense algal blooms, and can make recreational areas hazardous and uninviting when their shells accumulate on beaches and in swimming areas.

Our best management option is to prevent the spread of Asian clams to new waterbodies by cleaning, draining, and drying boats (including any gear) and never dumping bait buckets or aquariums into waterbodies.
New Zealand Mudsnaills tolerate a wide range of salinity levels, temperatures and water quality conditions making it incredibly easy for them to adapt to new environments.

These snails are found in Washington State in the Lower Columbia River, Capitol Lake in Olympia, in at least three tributaries of Lake Washington, and in the Chehalis and Snohomish Rivers.

In 2018, New Zealand mudsnails were found in Lake Padden. This is the first time they’ve been seen in Whatcom County.
New Zealand Mudsnails reproduce by cloning, so it only takes one snail to start a new population. That one snail can reproduce exponentially to 12 million in just three seasons.

Because they are so small, they can be transported very easily on boats and equipment such as boots, waders, and tackle. While they are not considered a primary food source, New Zealand mudsnails can also pass through the digestive system of fish and waterfowl unharmed.

To prevent their spread to Whatcom County waters, you should clean and dry everything that comes into contact with water, even the family dog.
Zebra and Quagga Mussels
Among the most damaging aquatic invasive species that could appear in Whatcom County are zebra and quagga mussels. Zebra and quagga mussels have shells that are typically marked by alternating light- and dark-colored stripes and range in color from yellowish to darker brown in color. These very small freshwater mussels have wreaked havoc throughout much of the United States since their detection in the Great Lakes three decades ago.

Zebra and Quagga Mussels first appeared in North America in the mid-1980s when they were brought to the Great Lakes in ballast tanks of large, transoceanic ships. In 2007, quagga mussels were discovered in the western US at Lake Mead, 1,000 miles farther west than any other known quagga mussel infestation at the time. Since then, the mussels have continued their westward spread by hitchhiking on recreational boats. Today, either one or both species are now documented in California, New Mexico, Arizona, Nevada, Colorado, and Utah.
The closest currently known infestation of quagga mussels to Washington is located in Nevada – about 1,000 miles from Whatcom County. While this may seem far away, adult mussels can live out of the water for up to 30 days when the air temperature and humidity are ideal, which is plenty of time for them to make the 16-hour drive to Whatcom County.

Since their initial introduction, the primary pathway for spreading zebra and quagga mussels to uninfested waterbodies has been by trailered watercraft. Unlike native North American mussels, these mussels are capable of attaching themselves to a large variety of substrates using byssal threads. This adaptation allows zebra and quagga mussels to spread easily to uninfested waterbodies by hitching a ride on boat hulls, motors, and recreational equipment.
Potential Damage

Billions of dollars in damages

> $1 Billion in control costs
Mussel densities of well over 100,000 per square yard have been observed in several waterbodies, resulting in billions of dollars in damage and estimated annual control costs of at least $1 billion nationwide.

If these mussels were to become established in Lake Whatcom, they could:

- Clog water intake pipes resulting in reduced flows to municipal water supplies
- Increase water treatment costs
- Damage dams, piers, docks and pilings
- Create long-term taste and odor issues in drinking water supplies
- Cover beaches and swimming areas with sharp shells
- Damage boats and equipment, and
- Decrease property values
Difficult to Detect

D. bugensis umbonal veliger

108.89 μm
126.14 μm

The immature form of the mussel, or veliger, is virtually invisible and can easily be transported in lake water left on your boat.
While adult mussels are fairly visible and easier to spot, it is the immature form – veligers or larvae - which are virtually invisible in the water that pose the bigger detection problem. This is why it is very important to clean, drain, and dry everything that has been in contact with the water to prevent the spread of these organisms.

You can view a map of the current distribution of quagga and zebra mussels here: http://nas.er.usgs.gov/taxgroup/mollusks/zebramussel/maps/current_zm_quag_map.jpg
Part 2

What strategy are local jurisdictions using to prevent the spread of AIS?
The goal of the Aquatic Invasive Species (AIS) Program is to protect Whatcom County's natural resources, infrastructure, recreation, wildlife, and economy from the impacts of aquatic invasive species by...

1. Preventing the introduction of zebra and quagga mussels, and other aquatic invasive species, into Whatcom County waters, and
2. Stopping the spread of established aquatic invasive species into new waters.

Local jurisdictions are carrying out the AIS program by inspecting and decontaminating watercraft and recreational equipment, educating the public on the importance of keeping invasive species from entering water bodies and on ways to prevent their spread, monitoring lakes for the presence of new aquatic invasive species and to determine program effectiveness, and modifying the AIS program as necessary to protect Whatcom County’s lakes.
Required AIS Inspection

Required Inspection: Motorized Boats  
Jet skis  
Sailboats  
Kayaks  
Canoes  
Rowboats

Exempt: Paddle boards  
Kite boards  
Small inflatables < 10 ft
One of our best prevention strategies is the use of education and outreach via websites, radio, television, newspapers, brochures, mailings, community meetings, and one-on-one discussions with boaters and the public. All of our education and outreach efforts are designed to help the public to understand the threat that invasive species pose to Whatcom County waters and steps they can take to help prevent their spread.

The Aquatic Invasive Species Programs requires that all watercraft be inspected and permitted prior to launching and while operating on Lake Whatcom or Lake Samish. This includes motorized boats, including jet skis, and non-motorized watercraft such as sailboats, kayaks, canoes, and rowboats. The only exceptions are paddle boards, kite boards, and small inflatables that are less than 10 feet in length. Since the presence of a permit is the only way to tell whether a boat has been inspected or not, you still need to have your watercraft inspected and permitted at least once each season even if your boat never leaves the lake.
CLEAN • DRAIN • DRY

1. CLEAN
2. DRAIN
3. DRY
Inspectors remind boaters to follow these three simple steps to prevent the spread of aquatic invasive species:

• **CLEAN** - Remove all aquatic plants, animals, and mud then, thoroughly wash everything, especially in crevices and hidden areas.

• **DRAIN** - Drain water from your boat, trailer, tackle and gear, including wells, bilge, and engine cooling water before leaving the area.

• **DRY** - Allow sufficient time for your boat and equipment to completely dry before entering other waters.
Aquatic invasive species check stations allow for one-on-one contact with boaters to determine where and when their boats were last used, particularly in the last 30 days. Inspectors use this information to make an initial risk determination and then conduct a physical watercraft inspection of the outside of the boat, as well as any internal compartments and equipment on board. Inspectors both look and feel for any evidence of aquatic invasive species or standing water using flashlights, mirrors, and magnifying glasses.
Hi! I’ll be inspecting your boat for AIS today.

Registration number?

Length? Type?

How many compartments?

Last used?
Inspectors begin the inspection by introducing themselves and by giving you a brief overview of the AIS Program and the purpose of the inspection. They will then ask you questions about your boat, such as registration number, length, type, how many compartments, and where and when it was last used. They will also ask you about any other waterbodies where you have taken your boat in the past. All of this information will help the inspector to make an initial risk determination.

Inspectors don't just rely on your answers to their questions when making a risk determination; they also rely on visual and physical evidence. Inspectors will start the inspection process at one end of the watercraft. They will then work their way around the boat looking and feeling for any sign of mud, vegetation, mussels, snails, or other species that may be attached to the hull. They'll also look at any equipment on board and, in the case of trailered vessels, they will check the trailer rollers and bunks for any sign of attached plants.
Inspectors pay special attention to more complex boats with intakes, upper and lower motor areas, trim tabs, and propellers as there are lots of hard-to-see places where aquatic invasive species can hide. The inspectors will also ask you to open up any internal compartments on board so they can check to see if the boat has been completely drained or if there is standing water present. Standing water is of particular concern as some aquatic invasive species have life stages that are microscopic - like invasive mussel larvae or veligers - and are undetectable, but can be easily transported in standing water from a previous use.
Be Ready for Inspection

- Dock Lines
- Storage Compartments
- Anchor
- Live Wells
- Bilge
- Through-Hull Fittings
- Hull
- Trailer
- Axle
- Rollers/Bunks
- Gimble Area
- Motor Intakes
- Prop
Planning ahead can help you get through the boat inspection process in minimal time. The inspection process itself can take as little as 5 minutes. Factors that extend inspection time include, how well you cleaned, drained, and dried your boat after its last excursion; how blocked inspection areas are with packed gear; the day and time, the size and complexity of your boat, and whether your boat has an intact wire tether attached from your last visit.

Remember: inspections include looking into compartments only accessible by boarding your boat. Boat inspectors are looking for wet and dirty areas that could be harboring invasive species. The inspection process will take longer if there is a lot of gear blocking access to compartments that have to be checked. Equipment and areas on your boat, such as lines, anchors, live wells, bilges, ballasts, and engines, that are found wet, damp, or dirty may require decontamination.
Wire Seals
Boats launching at a location with an Aquatic Invasive Species Check Station are required to be inspected every time they launch unless they have been tethered using an AIS Program wire seal. If you plan on returning to the same location on your next visit, you can ask an inspector to tether your boat to your trailer to speed up your next launch.

Please Note: Wire seals are not available for hand-carried, non-motorized watercraft. These watercraft will need to be inspected every time; however, inspections should not take longer than 5 minutes depending on the size of the craft.
Non-motorized Watercraft

1. CLEAN
2. DRAIN
3. DRY
Aquatic invasive species can collect in any water left in cockpits and hatches, cling to outer hulls, rudders and paddles, and even hide out in your gear. Paddlers need to follow these three very simple steps every time they haul out of a waterway to prevent the spread of aquatic invasive species:

CLEAN - Start at the stern and look for any plant fragments or mud. If you have a hose available, spray down the boat and flush it out. If you don't have access to high-pressure water, you can give the boat a rinse using your bailer bag and then take a quick-dry towel to wipe it off.

DRAIN - Immediately after exiting a body of water it's important to clean your boat and also to drain out any water. It's helpful to have two people to drain a canoe or kayak but you can also do it on your own. Tip your boat from bow to stern and from side to side to get any water out of the decking, cockpit and any hatches.
DRY - The best thing you can do to dry your canoe or kayak is to use a synthetic, quick-dry towel. You'll want to use it to dry out the inside and outside of your watercraft. Then, lay your gear out and inspect and dry it off as best as you can with the towel.

Inspectors will be checking both the inside and outside of your paddle-craft for any evidence of aquatic invasive species or standing water so as long as you clean, drain, and dry your watercraft beforehand, you should be through the inspection line in no time!
Decontamination

Clean

Drain

Dry
If any evidence of aquatic invasive species or standing water is found, the boat will not be allowed to launch and may need to be decontaminated. As long as you clean, drain, and allow sufficient time for your boat and equipment to completely dry before showing up at an Aquatic Invasive Species Check Station, it is very unlikely that your boat will require a professional decontamination.

Please Note: For boats planning on launching at Lake Samish, it is extremely important that they have been completely drained - even if they were last used in Lake Whatcom - to prevent the spread of Asian clams, which are present in Lake Whatcom and other lakes, but are not in Lake Samish.

If deemed necessary, you may be required to have your boat decontaminated using high-pressure, hot water. The goal of decontamination is to kill and remove all visible mussels or suspected aquatic invasive species. The AIS Program is offering several different decontamination options for boaters depending on the level of decontamination required.
Decontamination Levels

From local waterbodies: **No charge to clean off plant fragments**

From AIS waterbodies: **$25 for 30-minute hot high-pressure wash**
(or evidence of AIS)

Complex boats w/ AIS: **Fee for full decontamination at a marina**
For boats that are coming from local waterbodies and are found to be carrying plant fragments, inspectors will remove the fragments and clean the area in question on site for no charge.

Boats that have indications of other invasive species or that were last used in an area known to have invasive species may require decontamination using high-pressure, hot-water. For most recreational boats, the decontamination will be conducted by our staff for a fee of $25. The decontamination will involve the boat and its systems being flushed using 140 degree water to destroy any possible remaining invasive species that might pose a risk to Whatcom County waters. Decontaminations using the AIS Program's high-pressure, hot-water mobile unit will take about 30 minutes.

Owners of more complex boats with internal ballast tanks or bladders (such as wakeboard boats) with signs of invasive species will be encouraged to take their vessels to a marina for a more thorough decontamination at the owner's expense.
Once the watercraft has been decontaminated, an inspector will re-inspect the watercraft to determine if all aquatic invasive species have been removed. If the watercraft passes re-inspection, it will be allowed to launch.

Because of the potential serious impacts from the introduction of aquatic invasive species into Whatcom County waterbodies, failure to comply with these requirements can result in penalties of up to $1,000.
Know before you go...

Know what steps to take to prevent the transport of AIS
When going out for a day of fishing or boating, it’s important that you know ahead of time whether you will be at risk for transporting aquatic invasive species. Whenever possible, avoid taking your watercraft to waterbodies infested with aquatic invasive species or consider renting a watercraft when you get there. The best way to avoid spreading aquatic invasive species is to only use one lake. If you have to take your watercraft to a waterbody that is infested with aquatic invasive species, make sure you know what steps to take to prevent the transport of those species to uninfested waters.

Before launching and before leaving, inspect everything – Do your own inspection by checking the exterior and interior of your watercraft for any aquatic hitchhikers! Remember to look and feel for AIS as they can be hard to see. If you find something, remove it and dispose of it in the trash or in an area away from the water. If you find standing water, drain it as best you can and then use a towel or fan to dry out the area.
Clean, Drain, and Dry EVERYTIME!

1. CLEAN
2. DRAIN
3. DRY
Remember: Clean, Drain, and Dry – To avoid spreading aquatic invasive species, you should always follow these three steps before launching in a new waterbody:

• CLEAN – Remove all aquatic plants, animals, and mud then thoroughly wash everything, especially in crevices and hidden areas.

• DRAIN – Drain water from your boat, trailer, tackle and gear, including wells, bilge, and engine cooling water before leaving the area.

• DRY – Allow sufficient time for your boat and equipment to completely dry before entering other waters.
It's now time to take the final exam. Once you have answered all of the questions correctly, you will be asked to enter some information on the screen (Name, Email, Address). You will then be able to download a copy of your Certificate of Completion to your computer. A copy of your Certificate will also be emailed to you for future use. You will need to print out your Certificate and bring it with you to your inspection to receive your discount(s).

GO TO EXAM:
http://whatcomboatinspections.com/certification/exam/