

## AQUATIC INVASIVE SPECIES

Aquatic invasive species are an increasing threat to aquatic ecosystems across the country. Introductions of invasive zebra mussels, snakeheads, and Asian Carp have had impacts on and are threatening sport fishing in the Great Lakes and Mississippi and Ohio rivers. Recreational impacts and economic costs associated with invasive species can be substantial if invasive species do become a problem. Informing anglers of these threats is important because they are our best and first line of defense to guard against invasive species. We are concerned that invasive aquatic species could become established in West Virginia and cause significant harm to our aquatic environments, particularly sport fish populations.

### Asian Carp

Some species of Asian Carp (bighead and silver) pose a particularly serious threat to WV waters. Native to Asia, they were introduced into the United States for use as various biological control agents in the aquaculture industry and have since escaped. Due to their large size, voracious appetites, and reproductive capabilities, they are regarded as highly invasive species and have been moving up the Mississippi and Ohio River basins at an alarming rate. Their diet consists of plankton, aquatic vegetation, aquatic insects and native fish larvae, which puts them in direct competition with native mussels other filter feeders such as the paddlefish and bigmouth buffalo and other forage fishes like the gizzard shad, threadfin shad and emerald shiner. Nearly all fish feed on zooplankton at some point in their life cycle, thus there is potential for an adverse effect on all fishes in the Mississippi and Ohio River basins. In states where they have become established, Asian carp make up as much as 90 percent of the biomass of the entire fish community.

Silver carp are also known to leap high out of the water when disturbed by vibrations like those commonly caused by recreational watercraft, posing an additional threat to boaters.

The West Virginia section of the Ohio River is close to the leading edge of invasion of the bighead and silver carps, and it is important that we work toward slowing their advance into West Virginia waters.

#### What you can do:

- NEVER move fish from one body of water to another
- Drain live wells thoroughly before leaving an access area
- Dispose of ALL unwanted bait in the trash
- Do not release live aquarium fish into West Virginia's waters
- Take a picture, note the location, and report new sightings to **877-STOP-ANS** or **www.wvdnr.gov**
- Learn to identify bighead and silver carp. Visit **wvdnr.gov/Fishing/Asian\_Carp.shtm** for detailed descriptions.

Silver and Bighead carp:

- » Are silver in color with small scales
- » Have a large upturned mouth that lack barbels
- » Have low set eyes, below midline of body
- » Have a keel (ridge) along the abdomen

By following these simple steps, anglers can help ensure West Virginia's good fishing for future generations.

For more information please visit:

**www.wvdnr.gov/Fishing/AquaticInvasiveSpecies**

### How to Properly Disinfect Recreational Equipment

#### Disinfection Procedures

Disinfect boats and personal watercraft prior to moving to another waterbody, watershed, or upstream site.

There are a number of disinfection techniques that will kill most aquatic invasive species and fish and wildlife pathogens, including whirling disease and Didymo. Solutions of bleach or dishwashing detergent product are suggested as they provide the best combination of availability, cost and effectiveness against these species. It is recommended that all disinfected equipment be rinsed on dry land, away from state waters. It is preferable to drain used solutions into treated wastewater (e.g. sinks, tubs, etc.)

#### Suggested Techniques

##### Non-absorbent items (boats, canoes, rubber waders, etc.)

- **Dishwashing Detergent:** soak and scrub for at least one minute with a 5% solution.
- **Bleach:** soak or spray all surfaces for a least one minute in a 2% solution of household bleach.
- **Hot Water:** soak for at least one minute in very hot water (above 140°F - hotter than most tap water) or for 20 minutes in water kept at 120°F (hot tap water, uncomfortable to touch).
- **Drying:** Drying will kill most aquatic pathogens, but slightly moist environments will support some organisms for months. This approach should only be used for gear than can be left in the sun for extended periods of time.
- **Freeze:** Place item in freezer until solid.

##### Absorbent items (felt-soled waders, clothing, wetsuits, sandals, etc.)

- These items require longer soaking times to allow thorough penetration into the materials. The thicker and denser the material, the longer it will require for adequate disinfection.
- Bleach solutions are not recommended for absorbent materials.
- **Hot Water:** Soak items for at least 40 minutes in very hot water kept above 140°F (hotter than most tap water)
- **Dishwashing Detergent and Hot Water:** soak for 30 minutes in a hot 5% detergent/water solution kept above 120°F



**STOP AQUATIC HITCHHIKERS!**

Prevent the transport of nuisance species.  
Clean all recreational equipment.  
[www.ProtectYourWaters.net](http://www.ProtectYourWaters.net)