

## Be a Responsible Angler

In recent years several fish pathogens (disease-causing microbes) have spread through various regions of the United States and Canada causing fish kills and creating a major concern for both fisheries agencies and anglers. Outbreaks of Viral Hemorrhagic septicemia (VHS), and Infectious Pancreatic Necrosis Virus (IPN) have appeared in neighboring states. In 2006, Largemouth Bass Virus (LMBV) was detected in our own waters, in Lake Hopatcong, and in 2007 was found in Greenwood Lake, Assunpink Lake, Union Lake and Cooper River Park Lake, Farrington Lake and Spruce Run Reservoir in 2007.

Fortunately, these viruses pose no human health risk, but they do pose a significant risk to fishery resources.

### ▶▶ ANGLER ETHICS

1. **Keep Only the Fish Needed**
2. **Do Not Pollute—Properly Dispose of Trash**
3. **Sharpen Angling and Boating Skills**
4. **Observe Angling and Boating Safety Regulations**
5. **Respect Other Anglers' Rights**
6. **Respect Property Owners' Rights**
7. **Pass on Knowledge and Angling Skills**
8. **Support Local Conservation Efforts**
9. **Never Stock Fish or Plants into Public Waters**
10. **Promote the Sport of Angling**

### What Anglers Can Do To Help

Angler and boater cooperation is critical to minimizing the potential for the spread of fish disease and other aquatic invasive species. Follow these guidelines:

- Do not move fish or fish parts from one body of water to another.
- Do not release live bait into any water body.
- Switch to wearing rubber soled boots instead of felt.
- Remove all mud, aquatic plants and animals from all gear, boats, motors and trailers before leaving the body of water where you've been boating or fishing.
- Drain your livewell, bilge and bait tanks before leaving the body of water where you've been boating or fishing.
- Thoroughly clean and dry livewells, boats, trailers and other equipment between fishing trips. A light bleach solution is an excellent disinfectant for cleaning equipment (1 cup bleach for 10 gallons of water). For livewells, use ¼ cup bleach per gallon of water. Make sure the contact time with bleach is at least five minutes. (In a waterbody known to contain VHS, clean and disinfect livewells and bait wells with a 10 percent chlorine/water solution). Rinse well to remove all residual chlorine.
- After cleaning, allow boats, trailers and other equipment to dry fully in the sun for four to six hours.
- Handle fish as gently as possible if they are to be released.
- Refrain from hauling fish for long period in livewells if fish are to be released.
- Stage weigh-in tournaments during cooler weather, so fish caught will be stressed less. Utilize "paper" tournaments during hot weather, with anglers measuring and immediately releasing the fish.

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# New Jersey's **STOCKING PROGRAMS**

## **TROUT STOCKING**

Raised with pride at New Jersey Division of Fish & Wildlife's Pequest State Fish Hatchery

### **SPRING**

- Over 570,000 brook, brown and rainbow trout
- Average size: 10.5 inches and 1/2 pound
- An additional 6,000 breeders 15–21 inches (3–6 pounds)
- Most waterbodies stocked at least three times
- 100 streams and 80 lakes stocked statewide
- All 21 counties stocked
- 180,000 trout released for Opening Day—April 11, 2009
- Stocking continues for seven weeks following Opening Day

### **FALL**

- First two weeks in October
- All large, two year old trout, measuring 14–16 inches
- 20,000 trout stocked
- 30 streams, lakes & ponds
- 1,000 Rainbow trout breeders, averaging 20 inches
- Best chance to catch big trout

### **WINTER**

- All large two year olds, measuring 15–16 inches
- Over 5,000 trout
- 24 lakes and ponds
- Great fishing all winter long!

### **SEA RUN BROWN TROUT**

- Lower Manasquan River
- 15,000 7–8-inch brown trout
- Try this elusive fishery!

## **WARMWATER STOCKING**

Raised with pride at New Jersey Division of Fish & Wildlife's Hackettstown State Fish Hatchery

### **MUSKELLUNGE—8-12"**

- Carnegie Lake (870)
- Cooper River Park Lake (440)
- D & R Canal—10 mile (300)
- Deal Lake (650)
- Echo Lake Reservoir (837)
- Furnace Lake (328)
- Greenwood Lake (4,050)
- Lake Hopatcong (2,940)
- Lake Shenandoah (350)
- Little Swartswood Lake (569)
- Manasquan Reservoir (2,024)
- Mercer Lake (663)
- Monksville Reservoir (1,120)
- Mountain Lake (535)

### **NORTHERN PIKE—6"**

- Budd Lake (4,250)
- Cranberry Lake (2,250)
- Deal Lake (2,620)
- Farrington Lake (3,070)
- Millstone River (1,720)
- Passaic River (3,590)
- Pompton Lake (2,410)
- Pompton River (3,150)
- Spruce Run Reservoir (8,060)

### **WALLEYE—2-4"**

- Canistear Reservoir (7,375)
- Delaware River (56,595)
- Greenwood Lake (68,900)
- Lake Hopatcong (138,364)
- Monksville Reservoir (45,470)
- Swartswood Lake (10,564)

### **HYBRID STRIPED BASS—4"**

- Lake Hopatcong (29,550)
- Manasquan Reservoir (7,454)
- Spruce Run Reservoir (15,342)

### **SMALLMOUTH BASS—2"**

- Manasquan Reservoir (4,000)
- Lake Audrey (3,000)
- Spruce Run Reservoir (6,740)
- Union Lake (5,000)

### **LAKE TROUT—8.5"**

- Merrill Creek Reservoir (3,400)
- Monksville Reservoir (3,000)

- Plus thousands of channel catfish, black crappie, bluegill sunfish and brown bullheads stocked in over 100 waterbodies located throughout the state!



Tom Bissonette, Sr. Fisheries Worker

# Asian Swamp Eel

Christopher Smith, Principal Fisheries Biologist

Another aquatic invasive species was confirmed in 2008: the Asian swamp eel. The species was confirmed by New Jersey Division of Fish and Wildlife's fisheries biologists and verified by the Academy of Natural Sciences. Fish and Wildlife's Bureau of Freshwater Fisheries is conducting an ongoing evaluation to determine the extent of the Asian swamp eel's distribution and abundance. Fortunately, its presence appears to be limited to one privately-owned location, Silver Lake, a 10-acre waterbody located in Gibbsboro.

Surprisingly, the Asian swamp eel is not a true eel. They are scaleless and have an elongated body with a tapering tail and blunt snout. Their teeth appear like bristles and they have one V-shaped gill located beneath the head. Although generally similar in appearance to an American eel—a true New Jersey native—the swamp eel has no fins. In contrast, American eel have pectoral fins, a long-rayed dorsal fin, anal and caudal fins. (At first glance the American eel also appears scaleless since their scales are imbedded.) Swamp eel also may be mistaken for lamprey, however lamprey do not have jaws and they possess an ovoid mouth. Lamprey, like American eel, also have distinct dorsal and caudal fins; the lamprey has seven gill openings on each side.

Unlike the American eel, the Asian swamp eel life cycle takes place exclusively in freshwater. All young hatch as female. As adults, some females develop into males, however, males can change back to females if female densities are low. Reproduction can occur year round.

These invasive eels are nocturnal and rarely observed by people. Preferred habitat includes shallow wetlands, stagnant waters, marshes, streams, rivers, ditches, canals, lakes, reservoirs and ponds. It was first believed that swamp eels could not tolerate cold temperatures; it is now known they can survive in ice-covered lakes and can tolerate a wide range of oxygen levels. Swamp eels can absorb up to 25 percent of their oxygen from the

air cutaneously (through the skin). They prefer freshwater habitats, but can tolerate brackish and saline conditions.

It is likely the Asian swamp eel was introduced to North America by aquarium release, stocking as a food source or escaping from fish farms during flooding events. The origin of the fish in Silver Lake is unknown.

Asian swamp eels eat a wide range of prey including fish, shrimp, crayfish, frogs, turtle eggs and aquatic invertebrates. Although the ecological impact in North American waters is relatively unknown, some effects are documented in other regions of the world where the eel has become established. There is concern that swamp eel competition with native aquatic species for food may displace the natives, as the swamp eel is known for its voracious appetite.

The presence of the invasive Asian swamp eel serves as a warning that there can be ecological damage inflicted from the careless introduction of a non-native species. A permit from New Jersey Division of Fish and Wildlife is required prior to the release of any species, native or not. The permit serves to prevent introductions such as the Asian swamp eel. 



## ▶▶ STOP THE SPREAD OF INVASIVE SPECIES

Invasive fish species such as northern snakeheads, flathead catfish, koi or goldfish must not be stocked or returned to the water! If you catch a northern snakehead or flathead catfish, immediately call Fish and Wildlife at (908) 236-2118.

### Do NOT Release

#### SNAKEHEAD—INVASIVE



Note long anal fin.

#### FLATHEAD CATFISH



Must have all 3 characteristics:

1. Upper white lobe on caudal fin,
2. Protruding lower jaw,
3. Tail NOT deeply forked

### OK to Release

#### BOWFIN—NATIVE



Note short anal fin.

**It is illegal to transport any fish, including game species, from one waterbody to another.**

**It is illegal to stock any fish in New Jersey without a permit!**

#### ZEBRA MUSSELS



Zebra Mussels have already cost millions to boaters, industries, towns and cities in the Great Lakes and along the Mississippi.

#### How to Identify Zebra Mussels

- Zebra mussels look like small clams with a yellowish or brownish “D”-shaped shell, usually with alternating dark and light colored stripes.
- They can be up to two inches long, but most are under an inch. Zebra mussels usually grow in clusters containing numerous individuals and are generally found in shallow, nutrient rich water.
- Zebra mussels are the ONLY freshwater mollusk that can firmly attach itself to solid objects—rocks, dock pilings, boat hulls, water intake pipes, etc.

#### What to Do If You Find a Zebra Mussel

- Note the date and precise location where the mussel or its shell was found.
- Take the mussel (several if possible) with you and store in rubbing alcohol. DO NOT THROW IT BACK IN THE WATER.
- IMMEDIATELY call Dr. Michael Weinstein, New Jersey Sea Grant Headquarters, (732) 872-1300 extension 21

#### Don't Help Them Spread!

- DRAIN all water from bait buckets and live wells
- REMOVE all weeds from boats and trailers
- CHECK boats and motors for zebra mussels
- DRY boats and trailers completely between launches

Courtesy of University of Wisconsin Sea Grant Institute



# BOWFISHING FOR **carp**

## MONSTERS LURKING IN THE NIGHT

By Mark Boriek, Principal Fisheries Biologist

**Bowfishing offers anglers an exciting alternative to traditional forms of angling, and bowfishing for carp is as good as it gets! Few realize the tremendous size of carp lurking in the shallows of a waterbody near you, especially at night.**

These nighttime prowlers easily reach 20-odd pounds, and true trophies weigh in at a phenomenal 50 pounds or more. A modest investment in a bow, reel and some arrows will pay dividends with memories that will last a lifetime.

Two species of carp, common carp and grass carp (or white amur), reside in New Jersey waters, although the presence of either species—both exotic—was neither planned nor assisted. Common carp are an invasive species whose populations can reach problematic proportions. Their introduction is banned by state law. Yet these carp are found throughout New Jersey in every pond, lake and stream or river with slow, shallow water areas.

The grass carp, a prolific Asian vegetarian, was illegally introduced in the late 1970's as a form of aquatic vegetation control. They are currently allowed for this purpose only under special permit conditions, and must be certified triploid (sterile). Grass carp have a reputation as escape artists and can only be stocked in ponds less than ten acres, with no open inlet or outlet structures.

Nonetheless, there have been escapees, with descendents of long-ago illegal stockings growing to impressive sizes. Avid archer Mark Kronyak takes advantage of this. Previously holding the bowfishing state record for grass carp at 59 pounds, 12 ounces. (2006), Kronyak broke that record in 2008 with a 65-pounder, shot at 2:30 in the morning. Both fish were taken from the tidal freshwater Delaware River. Kronyak

**"OK, after you shoot at the fish, how do you retrieve your arrow?"** This is the most frequently asked question about bowfishing. Read these tips to learn how to hang on to your arrow and—more often than not—have a fish on the end of it, too.

—Mark Kronyak,  
Current Bowfishing Record Holder for Carp

also holds the new record for common carp—43 pounds, 14 ounces (2008), also taken from the Delaware River. Few can argue with his success in targeting trophy carp. He offers tips for first time bowfishing anglers, or perhaps those just looking for a few pointers.

### MARK KRONYAK'S BOWFISHING TIPS BOW

Bowfishing is a wet, messy endeavor. Get a cheap, used bow that you won't worry about getting muddy and slimy. Recurve bows are better-suited for bowfishing because the simple design allows for quick shots, but a compound bow will work well, also.

### REEL

There are three types of bowfishing reels:

The hand-wind type is like a small tire rim. It attaches to the bow at the stabilizer mount or can screw to the bow where a sight would be mounted. It is the most time consuming to reel in, but also the least expensive.

The second type is a closed-face, push-button reel like what many used as a child, only larger to accommodate heavier braided line. Use caution when operating a closed-face reel. If you forget to push the button, you may either break the line and lose an arrow, or worse, have the arrow snap back at your face.

The last and most popular reels is the retriever reel. This reel looks like a plastic bottle

mounted where a sight is normally situated. When you shoot, the line exits the bottle drag-free. To reel in the line, pull the trigger while turning the handle and the line slips back into the bottle ready for the next shot.

### LINE

A 200-pound-test braided nylon line is used to secure the arrow to the reel. To attach the line to the arrow, be sure to use a safety slide. Safety slides come with selected arrow sets, or they may be purchased separately.

**WARNING:** Do NOT attach the line directly to the back of the arrow. If the line gets caught after release this can cause the arrow to come right back at you.

### ARROWS

Bowfishing arrows are usually solid fiberglass or carbon rods with a nock (a plastic end affixed to the back of an arrow so it can snap onto the bowstring) and a barbed point attached to the leading end. The arrows can weigh as much as 1,500 grams. Heavy indeed, but the weight is necessary to carry the bow's energy through the water. Big fish are notorious for pulling free from your arrow; therefore, stronger, larger barbs are preferred.

### GLASSES

Polarized sunglasses are a must for daytime fishing. Glare on the water makes spotting fish difficult. Polarized glasses reduce glare and improve your view into the water.

### WHEN AND WHERE

Common carp are such prolific fish that they are readily available a short drive from just about everyone's home. June is the best time to go because carp are late spring spawners and are found in shallow waters at that time. While common carp are the number one target for bowfishing, there's a good selection of other species to target

# This was the year of the carp. Homer Tye caught the hook and line state record grass carp (54 lbs., 7 oz.) from Curlis Lake, Pennington.

such as catfish, suckers, bowfin, quillback carpsuckers, grass carp and pan fish.

Although bowfishing is possible from shoreline or wading into a river or lake, going by boat is the most productive method. A simple set up can be a 10-foot jon boat with a piece of ½-inch plywood lying across the front creating a platform. For night-time bowfishing, use a one million candle-power spotlight powered by a deep-cycle battery.

## AIM AND RELEASE

Adjusting for light refraction is required when taking aim at fish under water. This refraction makes fish appear closer to the surface than they are, so aim lower when shooting. Create a practice target by filling a gallon milk jug with spray foam. Use rope to attach weight so the jug floats a few feet below the surface. Practice shooting at this target and you will quickly learn to account for light refraction when aiming. Be sure to follow through with your shot; keep your bow aimed precisely at the target until after the arrow reaches its destination. Remember, when you draw your bow, the safety slide and line stay in front of the bow and arrow rest.



**Mark Kronyak hefts his record common carp, which weighed 43 pounds 14 ounces.**

## THE RULES

- A fishing license is required.
- The established size, season and creel limit regulations apply for specific species and waterbodies.
- A longbow, recurve bow or compound bow may be used, provided it is hand held and hand drawn and line is attached.
- Waterbodies such as the Delaware River and Greenwood Lake have shorelines in more than one state. Be sure to double check the rules of the state where you fish as they may differ between states.
- It is legal to take any species of fish with a bow EXCEPT brook trout, lake trout, brown trout, rainbow trout, largemouth bass, smallmouth bass, striped bass, chain pickerel, northern pike, walleye, muskellunge or any hybrid thereof.

## TARGETING TROPHIES

After dark is your best chance to find a trophy, but it is true that the two state record carp mentioned above were both shot during the day. As a general rule though, the bigger fish come out in the dark. The larger the waterbody, the greater the chance it may hold very large fish.

Deep pools in lakes and rivers where fish hold up in the winter are important habitat factors to consider when seeking trophy fish. Many of the state's reservoirs (Spruce Run is a good one), as well as lakes—such as Greenwood and Hopatcong—plus rivers like the Delaware, Raritan and Passaic, all have excellent habitat with fish of gigantic proportions.

Areas such as the mouth of feeder streams, lily pad beds or deep channels bordering shallow flats will attract and hold lots of fish. 




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