

I FISH NY Newsletter

July 2010

## Aging Fish with Otoliths

By Ann TeNyenhuis

There are a few ways to age a fish. Scientists can use a fish's scales, opercula (gill cover), or otoliths (ear stones) to determine its age. Scales are probably one of the most popular methods due to the ease of obtaining scales and the relatively straightforward procedure to prepare and read them. The second most popular method, however, is to use otoliths. Otoliths are tiny hard plates made of calcium carbonate found directly behind the brain of a fish. Bony fish have three pairs of otoliths (sagitta, asteriscus, and lapillus) which assist with balance, sound detection, and converting sound waves into an electronic signal. Sagitta, the largest pair of otoliths, are used by scientists for aging. These small translucent plates have rings, called annuli, which tell the age of a fish, much like the rings of a tree. Each annuli represents a year of the fish's life, with translucent rings showing faster growth and opaque rings showing slower growth. Otoliths are removed from a dead fish with an incision through the skull, revealing the brain cavity. The otoliths are normally found floating in a hollow liquid filled cavity behind the brain.

Although extremely accurate, otolith aging requires a substantial investment of time, training, and requires the sacrifice of the fish. Using scales for aging fish is harmless; however, scales do not always provide an accurate age because they can regenerate.

Scientists age fish for a variety of purposes, including growth studies. Growth studies help scientists understand the dynamics of a fish population and how a certain species is responding to environmental stressors (e.g. sportfishing or predators). On Long Island, the NYSDEC Freshwater Fisheries Unit has

been using otolith aging to monitor the health of the walleye populations in Lake Ronkonkoma and Fort Pond. In order to increase the quality of fishing in these water bodies, the DEC began stocking walleye in Lake Ronkonkoma and Fort Pond in 1994 and 1997 respectively. Prior to the walleye stocking, white perch dominated the fish community in both bodies of water. The white perch outcompeted young largemouth bass for zooplankton, their primary food source. Zooplankton feed on algae; therefore when populations of zooplankton are overgrazed by fish, algae blooms can occur. When algae blooms occur, they cover the surface of the water, reducing water clarity and blocking sunlight from reaching bottom plants. Largemouth bass, especially juveniles, depend on rooted aquatic plants for protection from predators. The DEC introduced walleye as an additional top predator to aid in the control of white perch populations. Lake Ronkonkoma receives 10,000 walleye fingerlings per year while Fort Pond receives 4,000 every other year. Every third year, DEC surveys both bodies of water. One of the best ways to assess a walleye population is to use gill nets. Unfortunately, gill nets kill most of the fish that they catch. In order to get full utilization of the fish that are killed, the DEC takes otoliths from the walleye that die in the gill nets. Scales are taken from walleye that can be returned to the water alive. The otoliths from walleye specimens are then sent to Cornell University to be aged. The age of each specimen is compared

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## ASK KATIE

### **Q: Where on Long Island can you catch walleye, and how do you fish for them?**

There are only two locations on Long Island that have walleye: Lake Ronkonkoma (Ronkonkoma) and Fort Pond (Montauk). Both are stocked with fingerlings (juvenile walleye) by the Department of Environmental Conservation Freshwater Fisheries Unit. The walleye season open from the first Saturday in May through March 15. When it comes to walleye fishing, even with the listed dates, there are basically three times of year to fish for the elusive walleye: late spring, summer, and fall.



During the pre-summer months (April-May) walleye are becoming more active, due to the excitement of their spawn. Walleye are beginning to move away from their spawning beds to their “summer location”. Even though the walleye are on the move, this is not their most aggressive time of year. Targeting walleye during the closed season (March 15 until the first Saturday in May) is prohibited. The best method of angling in May, is the use of a bobber and worm. When using this strategy, shallow areas along the shoreline, or rock beds should be targeted. Another way of fishing walleye in the late spring is with the use of crank baits when over structure. Walleye are typically stream spawners and stocked walleye do not spawn in our ponds on Long Island, however they may go through these spawning behaviors.

During the summer months the walleye have moved on from their spawning grounds back out into the deeper waters. At this time the sun tends to be very strong, which can be a disadvantage when it comes to walleye fishing. Walleye have very large sensitive eyes, so when there is a hot day and an overpowering sun, it is probably not the best time to fish for this species. Early mornings and late evenings are the best time to fish for walleye. Weedy areas tend to be hotspots due to the high levels of food and oxygen. The same large sensitive eyes that make fishing for walleye difficult during the day, allows them to see well at night, making it a great time to fish for walleyes. During the darker hours of the night, trolling with shiny crank baits is a great idea. Some anglers like to live line a smaller white perch which are also present in both Lake Ronkonkoma and Fort Pond.

Once fall comes around, the fishing in weed beds where walleye would normally be located may begins to taper. The walleye have found a new location in the lake, typically in deeper water. During this time of year long, thin crank baits are a good lure to use, as are brightly colored jigs. Once the water starts to cool, walleye will not be as aggressive and will not work as hard for a meal. Chances are they will not chase after bait like they would in the summer months. This is what makes the use of a jig so great. When using the jig, you bait can remain relatively motionless, taunting a lazy fish to go after an easy meal.

## FISHING HOTSPOTS

### NYC: Van Cortlandt Park Lake, Bronx, NY

#### Van Cortlandt Lake Crappie Update!

The DEC I FISH NY program fished with several classes of elementary school children at Van Cortlandt Lake this spring and cleaned up on the crappies! Using rods with hooks, bobbers and bait (worms or Power Bait “crappie nibbles”) school children from PS 48 and PS 199 were able to catch their share of black crappies: the first fish ever caught for many of these students. Since both New York State and City regulations are catch-and-release only, all fish were returned to the water. For more information on Van Cortlandt Lake check out: <http://www.dec.ny.gov/outdoor/61807.html>

**Type:** Freshwater lake; 2-13 ft deep

**Where:** Located towards the Southern end of Van Cortlandt Park in the Bronx, the lake is most easily accessed right next to the Van Cortlandt Park Golf Course (105 Van Cortlandt Park South, Bronx, NY, 10463). Take the Van Cortlandt Park South exit off the Major Deegan Expressway; parking is available for a small fee at the golf course. Call 781-430-1890 or visit <http://www.nycgovparks.org/parks/VanCortlandtPark> for more information.

**Public Transportation:** Get to Van Cortlandt Park on either the #1 subway (take it to the last stop, 242nd St.) or take the #4 to the end of the line at Woodlawn station. Bx9, BxM3, Bx16, and Bx34 busses all make stops right by the Park.

**Access:** Access to the lake is free (excluding the parking fee,) and all fishing is from the shoreline. Especially convenient access can be had near the golf course parking lot by the golf cart access road, but please, watch out for golf carts and be respectful to the golfers.

*Boat Launch:* No

*Fishing Pier:* No

*Shoreline:* Shoreline can be reached by wheelchair, but pathways have not been specifically modified for wheelchair access.

#### **Species:**

Largemouth bass

Black crappie

Yellow perch

Brown bullhead

**Specific Rules for Van Cortlandt Park:** Van Cortlandt Park is open to all anglers, although as in all New York City Parks only catch and release fishing with barbless hooks is allowed. For complete angling regulations in NYC Parks visit <http://www.nycgovparks.org/facilities/fishing>. For general freshwater fishing regulations in New York State, please visit <http://www.dec.ny.gov/outdoor/7917.html>.

**Tips:** To catch your share of crappies at Van Cortlandt Lake, try fishing in the vegetation located behind the golf house. A 6' - 7' light to medium action rod, spincasting reel with 6+ lb test monofilament line is recommended for panfish. Use a nightcrawler or a small plastic worm (size 1/32 to 1/8 oz). Black crappie feed in early morning, evening, and late night. Try a variety of colored lures, as crappie are known for being quite picky. On sunny days, use a bright colored lure. When fishing at night, use a black lure or combination of color with black. Crappie love cover, so look for them around rock piles, submerged brush, and fallen trees.



# FISHING HOTSPOTS

## Long Island: Grant Park Pond, Hewlett NY

**Type:** Freshwater Pond

**Area:** 6 acres

**Maximum Depth:** 8 feet

**Getting There:** Grant Park Pond is located in a Nassau County Park on Broadway & Sheridan Avenue, south of Sunrise Highway in Hewlett. Take Sunrise Hwy. to Exit 19S Peninsula Blvd. south about 5 miles through Rockville Center and Lynbrook (approximately 1 mile past Sunrise Highway) to Rockaway Avenue (sign says Grant Park left). Make a left turn onto Rockaway Avenue and follow the road around to the traffic light on Broadway. Go past that light onto Sheridan Avenue. Park entrance will be on the right just past the police station.

### **Access:**

*Boat Launch:* No

*People with Disabilities Access:* Yes

*Fishing Pier:* No

*Shoreline:* Yes

### **Species:**

Largemouth Bass

Bluegill

Carp

American Eel

**Specific Rules for Grant Park Pond:** Park is open from 8am-dusk. Grant Park is a Nassau County Park, non-residents may be charged a parking fee. Boats are prohibited. Shoreline access is available, but part of the shoreline is restricted, so please respect the posted signs. For more information call, 516-571-7821.

**Health Advisories:** Carp. Eat no more than one meal per month.

### **Other:**

Nassau County Freshwater Fishing Regulations

<http://www.dec.ny.gov/outdoor/31466.html>.

Nassau County Parks Grant Park

<http://www.nassaucountyny.gov/agencies/Parks/wheretogo/active/grant.html>.

**Bass Fishing Tips and Techniques:** Grant Pond is a great spot for bass fishing. Pick up a dozen nightcrawlers, grab your spinning rod (equipped with 8-14lb test line), and head down to the water in the early morning or evening. Largemouth bass are often found in slow moving water with dense vegetation. Fallen logs, overhanging brush, and dock pilings are also prime spots. Keep in mind when fishing for largemouth bass you will usually be fishing through weeds. If the body of water is filled with dense vegetation, a medium-heavy action rod is best to help pull the bass out of the weeds. If fishing in a less weedy lake a light to medium action rod is sufficient. The greater bend in the rod helps prevent the line from breaking and intensifies the fight of the fish. There are a few rigs that can be used when fishing for black bass. An example is the Texas Rig with a live or plastic worm. The advantage of the Texas Rig: it's weedless (see Figure 1). You can fish for bass on Long Island from the first Saturday in June until April 30th (always check the current freshwater fishing regulations). Peak bass fishing seasons are in June, and September to late October.



# FISHING HOTSPOTS

Long Island: Grant Park Pond, Hewlett NY

Figure 1: Texas Rig



To set up the Texas rig, place a 1/8 to 1 ounce bullet sinker on your line. Then tie on a round bend or weedless hook size 1/0 to 5/0 onto your line. Using a soft plastic worm, place the hook into the top of the worm. Thread the worm onto the hook all the way down to the knot. Push the worm over the knot and pick up over the hook. Then gently push the hook back into the worm as illustrated above.

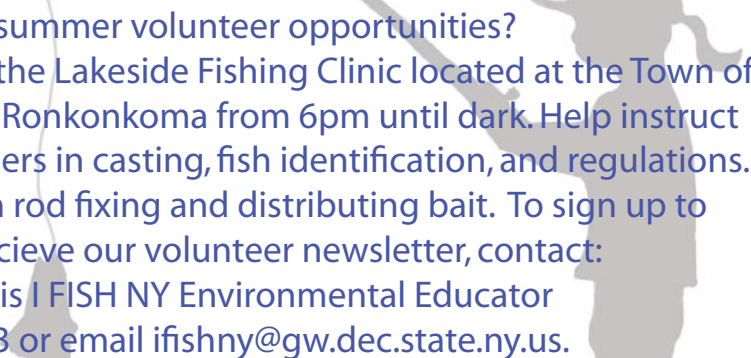
Illustration by Ann TeNyenhuis

## Aging Fish with Otoliths continued...

with its length and weight in order to determine the health and growth rate of the walleye specimen. If the specimen is too small for its age, this could mean that there is too much competition for the food resources of the lake, and stocking rates should be reduced.

Take a look at the picture below which shows an otolith taken from a large striped bass!



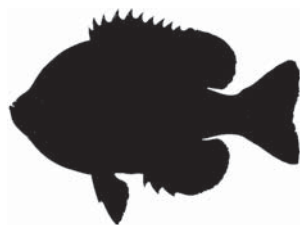


Looking for summer volunteer opportunities?  
Join I FISH NY July 14th, for the Lakeside Fishing Clinic located at the Town of Brookhaven Beach at Lake Ronkonkoma from 6pm until dark. Help instruct the next generation of anglers in casting, fish identification, and regulations. Assist I FISH NY staff with rod fixing and distributing bait. To sign up to volunteer or to receive our volunteer newsletter, contact:  
Ann TeNyenhuis I FISH NY Environmental Educator  
at 631-444-0283 or email [ifishny@gw.dec.state.ny.us](mailto:ifishny@gw.dec.state.ny.us).

## FISH 411: Sunfish Family

It's Always Sunny in the Sunfish Family

Did you know? The tiny bluegill you see at the local pond and the tackle-busting largemouth bass are both members of the sunfish family. In late spring, you can see members of the sunfish family guarding their saucer-shaped nests, along the shoreline of ponds, lakes and streams. This characteristic helped give this group of fish the family name, sunfish, aka centrarchidae. In the sunfish family, it is usually the male that guards the nest. Sometimes referred to as panfish, sunfish are generally deep-bodied and compressed laterally, giving them the appearance of a pancake. However, not all sunfish have this deep-body shape. The largemouth and smallmouth bass species differ greatly in body shape from a bluegill or pumpkinseed sunfish, but still have external similarities. The dorsal fin of sunfish has both soft and spiny rays and their caudal fin (tail fin) is forked or has a slight notch. Look at the images below to compare the external anatomy of a bluegill sunfish (left) and a largemouth bass (right). Common sunfish found in NY include: bluegill sunfish, pumpkinseed sunfish, largemouth bass, smallmouth bass, and black crappie. See the chart on the following page for more information on these common species.










# FISH 411: Sunfish Family

## fish identification and information

For more information on the sunfish of NY, check out <http://www.dec.ny.gov/animals/7266.html>

Fish Species	Characteristics	Location/ Time of Year	Fun Facts	Fish Picture
Bluegill sunfish <i>Lepomis macrochirus</i>	<ul style="list-style-type: none"> <li>• Black flap on rear edge of gill cover</li> <li>• Black blotch at rear of dorsal fin</li> <li>• Dark bars</li> <li>• Deep and compressed body</li> <li>• Two blue streaks from chin to edge of gill cover</li> </ul>	<ul style="list-style-type: none"> <li>• Canada to deep south</li> <li>• Vegetated lakes, ponds, swamps, and pools of creeks, and small to large rivers</li> <li>• Spawning occurs from May to June and sometimes July at our latitude</li> </ul>	Bluegills have been known to live up to 11 years. They reach maturity between age 1 & 2.	
Pumpkinseed sunfish <i>Lepomis gibbosus</i>	<ul style="list-style-type: none"> <li>• Back flap on the rear edge of the gill cover has a red spot</li> <li>• Deep and compressed body</li> <li>• No black blotch at rear of dorsal fin</li> </ul>	<ul style="list-style-type: none"> <li>• New Brunswick to Northeastern Georgia</li> <li>• Males begin nesting when water temperature reaches about 60°F</li> </ul>	Females can lay anywhere between 600 to 5,000 eggs depending on their size and other factors.	
Largemouth bass <i>Micropterus salmoides</i>	<ul style="list-style-type: none"> <li>• Elongated body, with jaw extending past the eye</li> <li>• Greenish in color</li> <li>• Usually has a pronounced stripe running along mid-side of body</li> </ul>	<ul style="list-style-type: none"> <li>• Found in most U.S. states.</li> <li>• In NY, originally native only to the Great Lakes and Mississippi drainage area</li> <li>• Warm, weedy parts of lakes, ponds, and streams</li> </ul>	Largemouths reach maturity at 5 years old and can live up to 15 years.	
Smallmouth bass <i>Micropterus dolomieu</i>	<ul style="list-style-type: none"> <li>• Similar in shape to the largemouth bass</li> <li>• Jaw does not extend past midpoint of eye</li> <li>• Brown or greenish bronze in color with two rows of vertical lines</li> </ul>	<ul style="list-style-type: none"> <li>• North-Central part of the US to Northern Alabama</li> <li>• Live in streams, with slow to moderate currents and standing waters where they tend to select rocky habitats</li> </ul>	The diameter of their nests is usually twice the length of the fish.	
Black crappie <i>Pomoxis nigromaculatus</i>	<ul style="list-style-type: none"> <li>• Highly compressed, diamond-shaped bodies</li> <li>• More than three anal spines and short dorsal fins with only six to eight spines</li> </ul>	<ul style="list-style-type: none"> <li>• St. Lawrence Valley of Southern Quebec to East Texas</li> <li>• Spawn from May to July with water temperature above 68°F</li> </ul>	Young crappies feed on plankton and mature crappie feed on insects and fish.	

Images by Duane Raver