

Flathead Catfish

TRICENARIANS



OF THE THREE RIVERS

by **Bob Ventorini**

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Fisheries Management biologists age fish all the time. When we collect gamefish, we remove a few of their scales before releasing them unharmed. These scales are taken back to our labs and flattened over clear, acetate slides to make impressions using a heavy, steel roller press. The slides are viewed with a microprojector, and we count each annulus, or year mark, to make an age determination. In fisheries, annulus is the Latin word for “little ring” (the plural is annuli). Just like counting yearly growth rings to age trees, each concentric annulus of a fish scale represents one year. We have aged Walleyes up to 18 years old by reading their scales.

What about catfish that do not possess scales? Fortunately, like all bony fish, catfish possess small, calcified structures called otoliths that we can use to age them. Also known as “earstones,” three pairs of otoliths are located directly behind a fish’s brain. Otoliths are involved in the detection of sound, gravity and converting sound waves into electrical signals. Although a catfish must be sacrificed to obtain its otoliths, the growth history and longevity information they reveal is essential for completing our management objectives. Compared to otoliths of other bony fish, catfish otoliths are very small. After we surgically extract them, the otoliths are prepared back at our labs, where each one is carefully glued to a glass microscope slide, wet-sanded numerous times and viewed with a stereomicroscope. Using a thin, fiber-optic light, concentric annuli of the

otolith become visible across the polished cross-section. For the age determination, the number of annuli counted represents the age of the catfish in years.

Recently, Pennsylvania Fish & Boat Commission’s Fisheries Management Division Area 8 biologists in Somerset have made some amazing discoveries while reading otoliths removed from catfish collected from the Three Rivers. In 2011, as part of our Strategic Plan for Management of Channel Catfish Fisheries in Pennsylvania, Area 8 biologists started deploying baited tandem hoop net arrays in the Allegheny, Ohio, and Monongahela

rivers every September to target Channel Catfish. These devices consist of three hoop nets connected in series and baited with cheese logs. This net and bait configuration is commonly used by commercial fishermen on the Mississippi River and fisheries biologists in the Midwest. We were not surprised to find that baited hoop nets were very effective for capturing Channel Catfish.

We were surprised at some of the ages of the Channel Catfish we collected. At the tailwaters of Lock and Dam 2 on the Allegheny River, we collected one catfish that was 22 years old. At Maxwell Lock and Dam on the Monongahela River, we captured a 23-year-old catfish and a 24-year-old catfish. These two catfish were

Three Rivers Biologist Bob Ventorini hoisting his first tricenarian, a 34-pound Flathead Catfish collected from the Monongahela River that was found to be 32 years old.

photo-Matt Kinsey





photo-Bob Ventorini

Area 8 Fisheries Biologist Aide Matt Kinsey (left), Area 8 Fisheries Manager Rick Lorson (center) and summer intern Steve Roberts (right) retrieving a tandem hoop net array from the Allegheny River.

only 18 and 16 inches long respectively. In fact, our 24-year-old is the oldest Channel Catfish ever reported in the United States.

What was most surprising to us, however, were the six “tricenarians,” or fish between the ages of 30 and 39, which we found in our hoop nets. These tricenarians were Flathead Catfish collected from the Three Rivers at Allegheny Lock and Dam 2, Monongahela Maxwell Lock and Dam and Ohio Dashiels Lock and Dam, and their ages were found to be 30, 31, 32 and 33. These Flathead Catfish were older than our summer intern and fisheries biologist aide who heaved heavy hoop nets filled with fish over the gunwale of our survey boat. The 33-year-old is the same age as our Area 8 Fisheries Biologist Mike Depew. Since 2008, biologists with the West Virginia Division of Natural Resources have targeted Flathead Catfish on the Ohio River using low-frequency boat electrofishing as a survey technique. Of all the Flathead Catfish they have aged, a total of 255, they only found one tricenarian—a 33-year-old collected from the tailwaters of Belleville Lock and Dam. Our six tricenarians were found among only 61 Flathead Catfish aged. Of these catfish, 18 were between the ages of 20 and 29. The oldest reported Flathead Catfish in the United States is a 34-year-old collected from Lake Wilson, an impoundment of the Tennessee River in Alabama.

Our mounting evidence is revealing that the Flathead Catfish populations of the Three Rivers are characterized as having a large proportion of old, slow-growing individuals that maintain high rates of survival and longevity and low rates of mortality. This facet of the fishery is interesting, because not that long ago, Flathead Catfish could not be found in many reaches of the Three Rivers. Throughout the Industrial Revolution, when the Three Rivers served as a sink for decades of pollution, many fish species were exterminated. Beginning in 1957, lockchamber surveys conducted on the Three Rivers by the Ohio River Valley Water Sanitation Commission did not turn up a single Flathead Catfish until 1980 at Dashiels Lock and Dam on the Ohio River. Over the years and through the intervening recovery stages, catfish assemblages of the Three Rivers changed from predominantly pollution-tolerant Brown



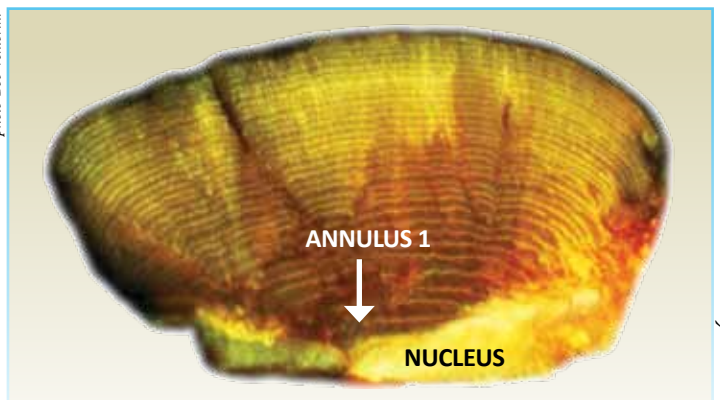
photo-Joe Gordon

Adam Beley of first place winning Team Creek Chub and his 37-pounder, the largest Flathead Catfish caught during the 2013 Steel City Catfish Classic.

Bullheads in the late 1950s through early 1970s to more sensitive Channel Catfish and Flathead Catfish in the 1980s and beyond. The tricenarians we recently collected may actually be members of the very first cohort bred from successful natural reproduction in the recovering Three Rivers.

Observations made by seasoned Flathead Catfish anglers such as Ed Kickler from Verona are comparable to the lockchamber findings. A lifelong angler of the Allegheny River, Ed recalls not catching any Flathead Catfish until the 1980s. His largest is a 35-pounder, and he hopes to someday bring the state record (48 pounds, 6 ounces) back to its native range. Rich Whiteside of Franklin Park has found it takes a lot of time, effort, specialized gear and the right kind of live bait to consistently catch 20-pound-plus Flathead Catfish. His largest is a 37-pounder from the Ohio River. Rich competed in the first annual Steel City Catfish Classic held August 2013 on the Ohio River in Monaca. Organized by 3 Rivers Catfish Club founder Joe Gordon of Kennedy Township, the 2014 Classic is slated to be held at the North Shore in Pittsburgh. Like Flathead Catfish anglers across the country, Joe has noticed that his club membership is growing and hopes that this year's Classic is bigger, better and brimming with tricenarians. ☐

photo-Bob Ventorini



Answer: 32-year-old

The cross section of a Flathead Catfish otolith. Starting with annulus 1, what age do you think this fish is by counting the concentric annuli? Hint: This fish was collected in 2011, and annulus 1 was formed when the Pittsburgh Steelers beat the Los Angeles Rams in Super Bowl XIV.