

Determining the Age of Fish

By D.L. Garling And Keith Ashley

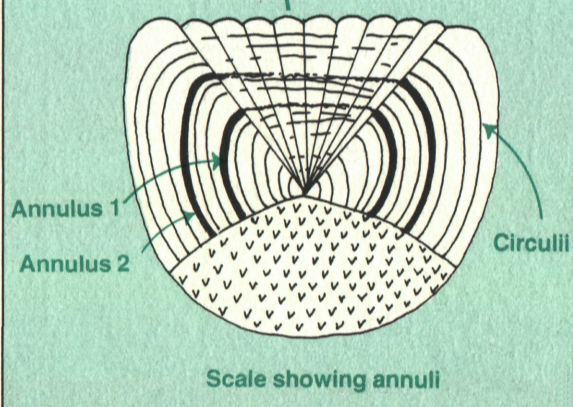
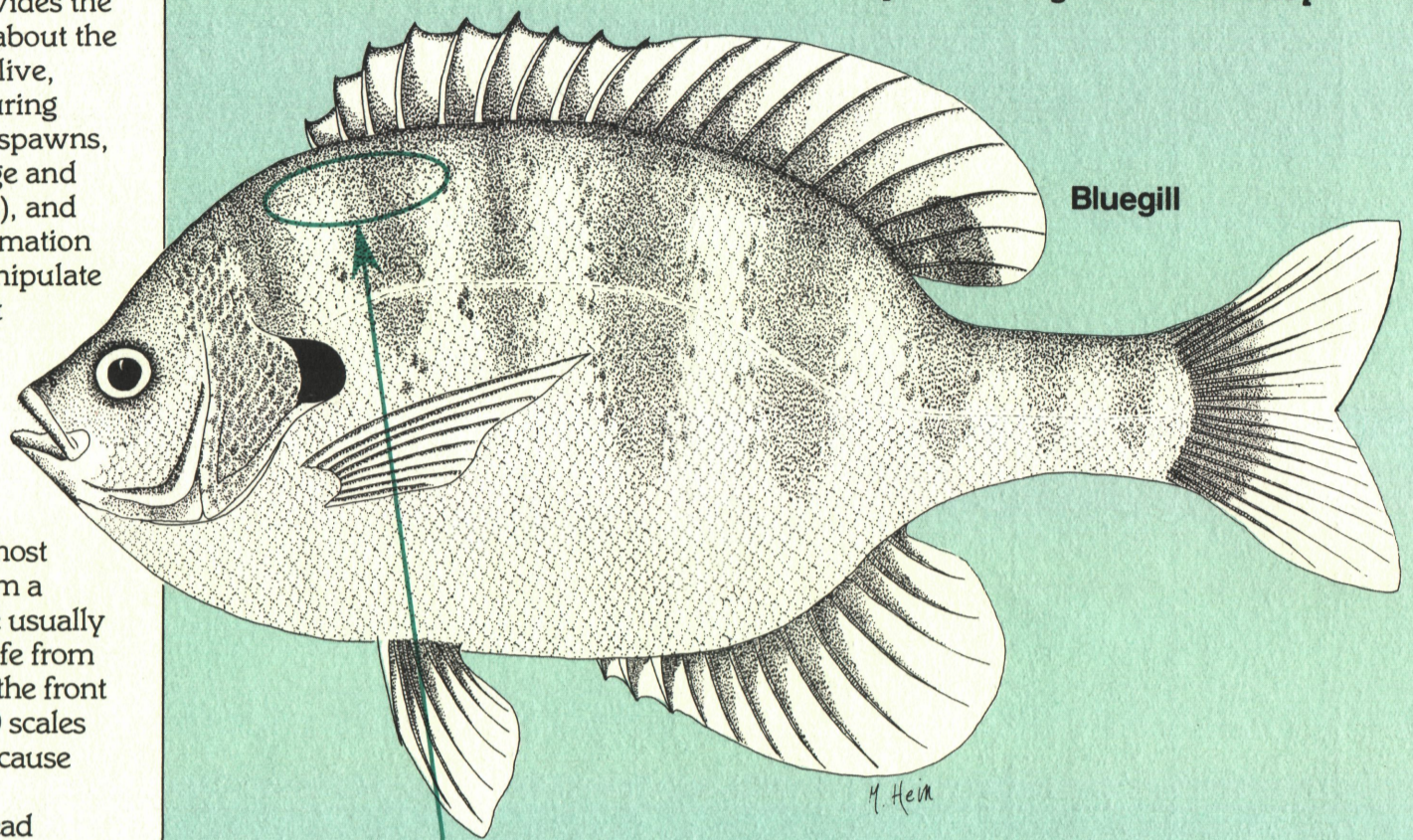
Knowledge about the age composition of fish populations is essential for effective management. It provides the fisheries manager with information about the condition of the fish, how long they live, their age at certain critical periods during their lives (how old a fish is when it spawns, when its habitat requirements change and when it begins important migrations), and their rate of growth. Use of this information enables the fisheries manager to manipulate the resource for maximum benefit at minimum cost.

How old is my fish?

Scales are commonly used to age most species of fish. A typical scale from a bluegill is shown here. The scales are usually removed with the blunt edge of a knife from the upper side of the fish, just under the front edge of the dorsal fin. About 10 to 20 scales are taken from each fish sampled, because some of the scales collected may be replacement scales, which can't be read accurately.

Scales from individual fish are placed in an envelope like those used by coin collectors. Important information is recorded on the outside of the envelope, including the collector's name, the type of fish, the locality and method of capture, date and time of capture, and the total length and weight of the fish.

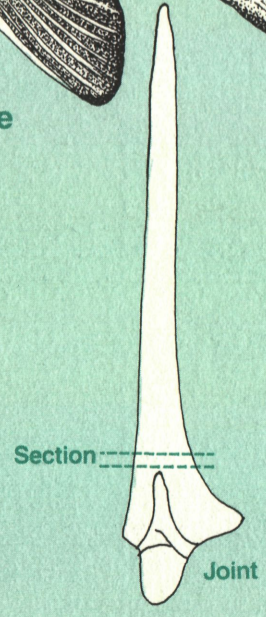
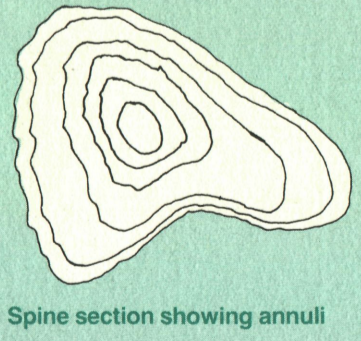
The scales are aged later in a variety of ways. One of the most popular methods uses a microfiche reader. The scales are slightly moistened and placed on the microfiche reader and can be read directly off the screen. **The age of the fish is determined by counting the number of thick growth rings called annuli.** In our example, the bluegill is two years old. Aging fish is similar to aging a tree by counting the number of growth rings.



Aging of scaleless fish, like a catfish, or fish with very small scales, such as trout, presents a different problem. Bony structures such as spines, vertebrae or otoliths (ear bones) must be used. These are cut into thin

cases, the bones are softened with chemicals to make them easier to slice. For example, catfish spines are treated to remove the hard, bony calcium and make the spines soft enough to cut with a razor blade. They are cut just behind the joint to obtain the section needed for aging. Once the sections have been obtained, they can either be soaked in rubbing alcohol or chemically stained so the annuli are easier to see.

Channel Catfish



For more information on fisheries management you can contact the Fisheries and Wildlife Extension, 9 Natural Resources Building, MSU, East Lansing, MI 48824-1222. Phone number: (517) 355-7493.

Summer length ranges at various ages for fishes in Michigan ponds. These are rough statewide values. Growth may be somewhat greater where fish are uncrowded and temperature and food supply are ideal. Growth can be much slower, especially where ponds are overpopulated.

Kind of fish	Length in Inches						Life Expectancy
	First summer (Age 0)*	Second summer (Yearling)	Third summer (2-yr-old)	Fourth summer (3-yr-old)	Fifth summer (4-yr-old)	Sixth summer (5-yr-old)	
Rainbow trout**	4-6	9-14	14-17	15-19	***	***	5-7
Brook trout	2-4	6-8	8-12	9-14	11-16	***	5-7
Largemouth bass	1-4	6-8	8-10	10-12	12-14	13-17	14-15
Smallmouth bass	1-4	4-7	7-10	10-12	12-14	13-17	12-14
Channel catfish	1-4	5-7	8-10	11-13	13-15	15-17	10-14
Bluegill	1/2-2	3-4	4-5	5-6	6-7	6 1/2-7 1/2	10-11

*Fingerling.
 **From fall-spawning stock in hatcheries.
 ***Very few survive to this age, and growth at this age is extremely variable.



MSU is an Affirmative Action/Equal Opportunity Institution. Cooperative Extension Service programs are open to all without regard to race, color, national origin, sex, or handicap. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, E. Lansing, MI 48824. This information is for education purposes only. Reference to commercial products or trade names does not imply endorsement by the Cooperative Extension Service or bias against those not mentioned. This bulletin becomes public property upon publication and may be reprinted verbatim as a separate or within another publication with credit to MSU. Reprinting cannot be used to endorse or advertise a commercial product or company.