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FILLET WEIGHTS AND LOSS IN FILLETING OF YELLOW PIKEPERCH, *Stizostedion v. vitreum* (Mitchill), FROM SAGINAW BAY, NOVEMBER 1942, MAY 1943, AND APRIL 1944

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During past years law enforcement officers of the Michigan Department of Conservation occasionally have had difficulty in the enforcement of minimum size regulations established by law for the taking of yellow pikeperch (walleyed pike, yellow pickerel) for commercial purposes because of the practice of filleting undersized fish of that species in order to avoid detection. Since this practice is apparently growing, a regulation to provide for a minimum size of yellow pikeperch fillets seems necessary. Adoption of a law establishing the minimum legal size of fillets of yellow perch *Perca flavescens* (Mitchill), - Public Act 339, 1939 - has practically eliminated a similar problem which existed when only the minimum legal total length of the fish was specified.

Saginaw Bay was chosen for this investigation since it yields the principal production of yellow pikeperch in Michigan. The main "run" of yellow pikeperch in Saginaw Bay is in the spring but there is another, though relatively light run, in the fall. For the past 11 years the spring run (April, May, June) has produced on the average 85.3 per cent

of the total yearly catch from Saginaw Bay whereas the fall run (September, October, November) yielded an average of only 10.7 per cent of the total. Data were obtained from the fall run in 1942 (November 12-16) and the spring runs of 1943 (May 3-4) and 1944 (April 13).

With the assistance of Conservation Officer A. J. Neering, fish were obtained from the Bay Port Fish Company and the R. L. Gillingham Fishing Company at Bay Port and from the Geo. Loeffler Fish Company at Sebewaing. Messrs. Fred and Floyd Hoerman of Bay Port were engaged to do the filleting during each period of investigation. The cooperation of the several firms and individuals in securing undersized fish and in permitting the use of their facilities for the work is greatly appreciated.

The minimum legal length provided by law for yellow pikeperch taken commercially is 15 1/2 inches in State of Michigan waters of the Great Lakes other than Lake Erie where the minimum legal length is 13 inches. Because of this special provision for Lake Erie any recommendations made in this report necessarily must be applicable only to the Michigan waters of the Great Lakes exclusive of Lake Erie.

To secure a series of weights on either side of the minimum length, fish of 13 to 17 inches total length were used. These fish were measured to the nearest quarter inch and each quarter-inch group was handled separately. The numbers of fish studied in this investigation were 239 in November 1942, 257 in May 1943, and 181 in April 1944. Fewer fish were employed in 1944 than in either of the other two periods because of the absence of fish 15 3/4 to 17 inches long in the commercial catch of yellow pikeperch in Saginaw Bay during April of that year. Another attempt should be made in April 1945 to obtain information on fish at and just above the minimum legal length.

Table 1 gives the average round weight, the average fillet weight, and the percentage loss due to filleting for the fish of each quarter-inch group for each period of the investigation. From these data it is evident that fish taken in November 1942 yielded larger fillets and had a smaller loss due to filleting than did spring-run fish of either 1943 or 1944. The data from the collections of 1942 and 1943 considered alone indicate that a fillet weight of 9.25 ounces would be suitable. However, data from preceding years gathered by the U. S. Fish and Wildlife Service showed that the yellow pikeperch taken during the spring of 1943 were somewhat heavier than were fish of similar lengths taken from Saginaw Bay in the spring of either 1929 or 1930. Furthermore, the fish used in April 1944, although in general a little heavier than those of 1943, suffered a notably higher loss in weight due to filleting than did those of May 1943 and yielded substantially smaller fillets. No fillet weights are available for the fish measured in 1929 and 1930 but where the data are adequate the weights of the fillets from April 1944 were consistently about 0.3 ounce lighter than fillets from fish of similar lengths in each quarter-inch group from May 1943. If this trend held for fish of all lengths a minimum fillet weight of 9.0 ounces would seem reasonable.

A minimum fillet weight of 9.0 ounces would make it possible to obtain legal fillets from a considerable number of fish below 15 1/2 inches in the fall (provided the data for November 1942 are representative of the fall run), but the fall run normally contributes only about 10 per cent of the total annual catch from Saginaw Bay. A detailed examination of the data gathered in the spring of 1943 indicated that, with the 9.0-ounce weight, the number of undersized fish producing legal fillets approximately equalled the number of legal-sized fish yielding undersized fillets. Although the scarcity of fish at and above the legal length

prevented a similar analysis of the 1944 data, the trend indicated by the smaller fish suggests that a 9.0-ounce weight would not have been too low in that year. Accordingly it is recommended that a minimum weight of 9.0 ounces be established for fillets of yellow pikeperch. However, since the data for April 1944 are not adequate, a revision of the 9.0-ounce weight might be desirable in the future as further information is secured.

Approved by A. S. Hazzard 11/29/44

NOTE: The recommendations in this report were discussed with Dr. John Van Oosten and received his approval.

Table 1

Round weights (pounds and ounces) and fillet weights (ounces) of yellow pikeperch according to length, and the percentage loss in weight in filleting, Saginaw Bay, November 1942, May 1943, and April 1944. The horizontal ruling in the body of the table separates legal- and illegal-sized fish. The figures in parentheses indicate the number of fish in each quarter-inch length group

Total length (inches)	Average weight of fish in round			Average weight of fillets			Percentage loss in filleting		
	1942	1943	1944	1942	1943	1944	1942	1943	1944
13	0-12.0 (2)	0-12.0 (2)	0-11.0 (1)	5.7 (2)	5.7 (2)	4.5 (1)	52.5 (2)	52.5 (2)	59.1 (1)
13 1/4	0-11.8 (5)	0-12.0 (4)	0-12.2 (3)	6.2 (5)	5.8 (4)	5.3 (3)	47.5 (5)	51.7 (4)	56.6 (3)
13 1/2	0-13.9 (6)	0-12.7 (8)	0-13.7 (19)	6.8 (6)	6.4 (8)	6.0 (19)	51.1 (6)	49.6 (8)	56.2 (19)
13 3/4	0-13.7 (7)	0-13.8 (12)	0-14.3 (21)	7.1 (7)	6.7 (12)	6.4 (21)	48.2 (7)	51.4 (12)	55.2 (21)
14	0-13.4 (11)	0-13.9 (16)	0-15.0 (36)	7.0 (11)	6.9 (16)	6.7 (36)	47.8 (11)	50.4 (16)	55.3 (36)
14 1/4	0-15.0 (17)	0-14.7 (18)	0-15.4 (32)	7.4 (17)	7.3 (18)	6.9 (32)	50.7 (17)	50.3 (18)	55.2 (32)
14 1/2	0-15.5 (22)	0-15.9 (26)	1- 0.3 (38)	7.8 (22)	7.6 (26)	7.3 (38)	49.7 (22)	52.2 (26)	55.2 (38)
14 3/4	1- 0.9 (21)	1- 0.3 (24)	1- 1.1 (14)	8.6 (21)	8.0 (24)	7.6 (14)	49.1 (21)	50.9 (24)	55.6 (14)
15	1- 1.6 (19)	1- 1.3 (27)	1- 1.9 (13)	8.6 (19)	8.2 (27)	7.9 (13)	51.1 (19)	52.6 (27)	55.9 (13)
15 1/4	1- 2.8 (19)	1- 1.7 (19)	1- 2.8 (3)	9.3 (19)	8.6 (19)	8.4 (3)	50.5 (19)	51.4 (19)	55.3 (3)
15 1/2	1- 4.3 (16)	1- 3.3 (18)	1- 3.0 (1)	10.3 (16)	9.3 (18)	8.4 (1)	49.3 (16)	51.8 (18)	55.8 (1)
15 3/4	1- 5.7 (20)	1- 3.8 (10)	...	10.8 (20)	9.7 (10)	...	50.2 (20)	51.0 (10)	...
16	1- 6.5 (17)	1- 5.2 (13)	...	11.5 (17)	10.6 (13)	...	48.9 (17)	50.0 (13)	...
16 1/4	1- 7.0 (17)	1- 5.8 (15)	...	11.4 (17)	10.9 (15)	...	50.4 (17)	50.0 (15)	...
16 1/2	1- 8.8 (18)	1- 7.1 (15)	...	12.7 (18)	11.5 (15)	...	48.8 (18)	50.2 (15)	...
16 3/4	1- 9.9 (11)	1- 8.5 (15)	...	13.1 (11)	11.9 (15)	...	49.4 (11)	51.4 (15)	...
17	1-10.5 (11)	1- 8.8 (15)	...	13.2 (11)	12.5 (15)	...	50.2 (11)	49.6 (15)	...
Average percentage loss							49.7 49.7	50.9 51.6	55.9 55.5