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Inst. for Fish. Res.  
Kenneth E. Christensen  
Gerald P. Cooper

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ALBERT S. HAZZARD, PH.D.  
DIRECTOR

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RETURNS ON SOME RECENT PLANTINGS OF WARM-WATER  
GAME FISH IN MICHIGAN LAKES ✓

By

Kenneth E. Christensen and Gerald P. Cooper

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In 1945, the Fish Division recommended, to the Conservation Commission, the suspension of routine warm-water fish plantings. The reasons were enumerated in the popular article "For Better Fishing" by Westerman and Hazzard.

In 1946, the Conservation Department restricted the stocking of bass, bluegills, walleyes, and other warm-water fish to introductory plantings where a new species was needed or where winterkill, pollution or other catastrophe had wiped out the stock. However, for the walleye, experimental maintenance plantings of fingerlings have been continued on a few lakes where there is little or no natural reproduction by this species.

With the curtailment of stocking thousands of bass, bluegills, walleyes and other species, many persons expressed their belief that fishing in their lakes soon would be ruined, regardless of the evidence which indicated that stocking should be curtailed. Therefore, numerous demonstration plantings of marked fish were carried on to answer the questions from these people.

This report summarizes most of the plantings of warm-water fish which have been made during recent years in Michigan, either as experimental

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maintenance plantings or as demonstration plantings. Also included are three plantings of tagged adult bass transferred to inland lakes from the Great Lakes.

All of the plantings covered in this report were of fish marked either by tagging or by the removal of a fin. Several experimental plants were evaluated by creel census. The demonstration plants were to be checked by voluntary reports from sportsmens' clubs and interested anglers. The adult bass transferred from the Great Lakes were checked by creel census and voluntary reports.

Removal of a fin is widely used to later identify planted fish. Four control groups of fin-clipped fingerling bass were selected from planting stock and were retained in hatchery ponds for a study of fin regeneration (Table 1). A group of smallmouth bass held at Hastings Hatchery for three years were inspected one-half year after clipping. Little regeneration had occurred on the 63 fish carried through one winter. When checked six months later the same 63 fish showed regeneration of the clipped fin to a point where it was difficult to identify the marking (over 90 percent regeneration) on 30 percent of the fish. Three years after marking, the surviving 46 fish had 15 percent near total regeneration. Fourteen smallmouth bass held at Hastings Hatchery for two years after marking had no near-total regeneration. A group of largemouth were examined two, three, and four years after marking and near-total regeneration had occurred on 16, 36, and 59 percent of the fish in the three successive examinations. A group of 21 smallmouth bass which had been held four years at Drayton Plains had 5 near-totally regenerated or 86 percent of the fish. In summary, these fin-clipped controls showed considerable fin regeneration, but it is clearly indicated that over 50 percent of the fin-clipped fish were recognizable as "clipped fish" of hatchery origin, for several years after planting.

The transfer plantings of adult smallmouth bass, from Great Lakes' waters, were carried out in 1939 through 1941 on a group of lakes in the northern part of the Lower Peninsula (Table 2). These fish were caught by commercial fishermen and transferred by hatchery personnel to 7 different lakes. Intensive creel census and voluntary reports from anglers were used as a means of checking returns from these transfers. The most successful transfer was to Round Lake in Emmet County. Fifty smallmouth bass were transferred in 1939, and 19 were recovered by 1941, for a return of 38 percent.

In 1946-1948, experimental plantings of fin-clipped smallmouth bass, to determine the value of maintenance stocking, were made in four lakes, as follows: Birch Lake, Cass County; Fife Lake, Grand Traverse County; Whitmore Lake, Washtenaw County; and Thumb Lake, Charlevoix County. Each lake received twenty to twenty-six thousand fingerlings (Table 3). The average size of these fish ranged from 2.4" to 3.4", with the exception of one plant (in Birch Lake, 1946) of 3,500 fish which averaged 5.6".

Birch Lake is a fair smallmouth bass lake for southern Michigan. Ten-year census records (1941-50) show an estimated harvest of 778 smallmouth bass as compared to 7,044 largemouth bass. The creel census was conducted on this lake from 1941 through 1950 and resumed again in 1953. An estimated 152 smallmouth bass were taken in 1949, 1950 and 1953, following the plantings, and the clerk checked 14 of these fish, but none of these 14 was a marked hatchery fish.

Fife Lake has a large population of smallmouth bass, estimated at 7,300 legal in 1950, as compared to an estimated 1,800 legal largemouth bass. During the 1950 population study, 198 legal smallmouth bass were taken in trap nets; five of these fish were marked. One marked smallmouth was from the 1946 planting and four were from the 1948 planting. The creel census clerk checked 110 smallmouth bass out of an estimated harvest of 2,954 from 1948 through 1953, but recorded no instance of a marked hatchery fish.

Table 1.--Degree of regeneration of clipped fins on smallmouth and largemouth bass held in hatchery ponds

All fish marked as fingerlings

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Hatchery	Fin clip	Years held	Number of fish	Lengths of fish (inches)	Percentage showing 90%-100% regeneration
Wolf Lake (smallmouth)	L. Pel.	1/2	63	3-1/2	0
	L. Pel.	1	63	8-10	30
	L. Pel.	3	46	13-16	15
Hastings (smallmouth)	L. Pect.	2	14	9-10	0
Hastings (largemouth)	L. Pect.	2	73	8-10	16
	L. Pect.	3	39	10-13	36
	L. Pect.	4	27	10-15	59
Drayton (smallmouth)	L. Pel.	4	21	5-9	86

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Table 2.--Returns on adult smallmouth bass transferred from Great Lakes to several inland lakes, 1939-1941

Lake	Planting year	Number planted	Number recovered by anglers, '39-'41	Percent recovered <sup>1/</sup>
East Twin				
Montmorency Co.	'39, '40	514	96	18.7
Big Bear				
Otsego Co.	'41	374	78	20.9
Long				
Alpena Co.	'40	200	45	22.5
Douglas				
Cheboygan Co.	'39, '40, '41	1,044	92	8.8
Round				
Emmet Co.	'39	50	19	38.0
Nettie				
Presque Isle Co.	'39	93	25	26.0
Crooked				
Emmet Co.	'40	144	6	4.2

<sup>1/</sup>Includes only those reported, thus minimum figures.

Table 3.--Fall plantings of fin-clipped smallmouth bass in four lakes,  
1946-1948. (Average lengths of fish given in parentheses)

Lake	Year			Total
	1946	1947	1948	
Birch	3,500	6,000	10,000	20,500
Cass Co.	(5.6")	(2.4")	(3.4")	
Fife	9,850	5,860	10,000	25,710
Grand Traverse Co.	(3.4")	(2.8")	(3.4")	
Whitmore	9,900	5,860	10,000	25,760
Washtenaw Co.	(3.7")	(2.8")	(3.7")	
Thumb	8,000	5,860	10,000	23,860
Charlevoix Co.	(3.3")	(2.8")	(2.7")	

Whitmore Lake has a small population of smallmouth bass and is more typically a largemouth bass lake. During the population study in 1953, trap nets took only 2 smallmouth bass as compared to 1,204 largemouth bass. In the creel census conducted from 1948 to 1954, the clerk checked 31 smallmouth, with no recoveries of hatchery fish.

There was no creel census conducted on Thumb Lake, but test netting for smallmouth bass was carried out in 1950. In 42 trap-net sets, 9 gill net sets, and 1 seine haul, 50 smallmouth bass over 6 inches were taken. Two of these were identified as coming from the 1946 planting and two were identified as possibly originating from the 1948 planting.

Demonstration plantings were made from 1947 through 1950 in Gun Lake, Barry County, of 6,990 smallmouth bass, 13,680 largemouth bass, and 37,800 bluegills, all fingerlings from the Gun Lake rearing ponds. Test netting was carried out in 1950 with trap nets, gill nets and bag seine. The nets took 31 smallmouth bass, 68 largemouth bass, and 242 bluegills, all over 6" long. None of these fish was identified as a planted fish.

Another series of demonstration type plantings were made on the Menominee River in Menominee County in 1947 through 1949. A total of 3,800 smallmouth bass fingerlings from the Ingalls Bass Pond were planted, and the success of plantings was to be checked by voluntary creel census records. No creel census records were turned in. The plantings were discontinued after 1949.

Two additional demonstration plantings, on which no field check has been made, have been: 500 largemouth bass (average size 2.5") in West Fish Lake, Montmorency County in 1949, and 440 largemouth bass (average size 3") in Big Wolf Lake, Montmorency County in 1948. Subsequent reports indicate that the bass put in West Fish Lake may have been lost to winterkill.

Some experimental plantings of bluegills have been made to demonstrate the lack of need for plantings of this species. The Gun Lake plantings, mentioned previously, were an example of this type of plant. Also, 4,000 bluegill fingerlings were planted in Bright and Glory lakes during 1951.

Forty-thousand bluegill fingerlings were planted in Marble Lake, Branch County, from 1948 through 1951. A survey, conducted prior to the first planting in 1948, showed the bluegill to be the dominant species in the lake. A check on survival of these plantings was made by Institute personnel in 1949 and 1950 using trap nets, gill nets and seines. Seining in 1949 took 980 bluegills, 1" through 6" long, of which only one was marked. The 1950 netting produced 88 bluegills, 2.7" through 8.8", and again only one was a marked fish. A local sportsmens' club at the lake kept some creel census records on bluegill fishing. No marked bluegills were reported.

Experimental plantings of bluegills were made in Wolf Lake, Lake County, where seine checks had shown little or no success in natural reproduction. One of these plantings was of 2,900 marked fish (size range, 1-1/2" to 5-1/2") transferred from Big Star Lake, Lake County, to Wolf Lake in October, 1953. During the 1954 fishing season, voluntary creel census records reported 73 bluegills checked, of which 15 were identified as transferred fish. A second planting in Wolf Lake was 4,000 six-inch fish made in September, 1954, from the Hastings Hatchery. A closed season on bluegills in this lake was established from February 15 to June 17, 1955, to protect the bluegills through the 1955 spawning season.

Prior to 1946, millions of walleye fry were planted in lakes throughout the state. These plantings were responsible for some walleye fishing on a few of the lakes. Attempts have been made in recent years to raise fingerling walleyes for maintenance plantings. At the present time, a maintenance



program is being carried out on approximately 20 lakes. As a part of the 1951 maintenance program, Duck Lake, Calhoun County, received 825 walleyes (average size 4.5"); and Fine Lake, Barry County, received 5,000 walleyes (average size 2.5"), all fin clipped. A creel census on these two lakes has been conducted since 1946. No recoveries of these fingerling walleyes have been reported to date. Duck Lake and Fine Lake both received fry plantings of walleyes in the 1930's and a few unmarked walleyes are reported each year in the creel census, presumably survivors from these fry plantings. It is believed that little or no natural reproduction occurs in these lakes.

As part of the Muskegon River walleye "transfer," adult walleyes have been planted in two groups of lakes in the vicinity of Newaygo. Two-hundred walleyes were tagged and planted in the North Newaygo lakes (Kimball, Pickerel, Emerald and Sylvan) in 1947. Fifty-five (27.5 percent) of these walleyes were taken by anglers in five years. One-hundred and seventy-five walleyes were planted in the South Newaygo lakes (Brook and Hess); and 16 (9.1 percent) of these were recaptured by anglers in seven years. Most of the recoveries came the first year after planting.

As part of a study on types of tags to use on adult northern pike, two plantings were made at Sugarloaf Lake, Washtenaw County, in 1950 and 1952, from the Drayton Plains Hatchery. Fifty-four northern pike were planted in 1950 (average size 7.4"). These fish were tagged with an opercle tag. No recoveries were recorded. Seventy-two northern pike, with streamer tags, were planted in 1952 (average size 10.9"). No recoveries were recorded from this plant. The lack of recoveries from these two plantings is possible due to loss of tags.

Otsego Lake, Otsego County, received a planting of 520 adult northern pike (average length, 19") in an attempt to determine whether the northern pike population could be increased thereby. These fish were transferred to

Otsego Lake from the Seney Refuge in April and May of 1954. During the following summer and fall (of 1954), while a creel census was conducted on this lake, 16 northern pike were checked by the census clerk and 4 of these 16 fish were from the Seney transfer. An estimated total of 1,136 northern pike were taken from the lake, which would indicate a harvest of 284 (55 percent) of the transferred fish. The returns reported by the creel census clerk are supported by a report from a resort operator who recorded 7 marked pike out of 27 that came into his landing during the summer.

Certain experimental and demonstration plantings of marked warm-water fish are being continued where good census records will be obtained on returns. A program of planting fingerling largemouth bass and bluegills in lakes on the Rifle River Area was started in the fall of 1954. Maintenance plantings of fingerling walleyes are to continue on Fine and Duck lakes, and maintenance plantings of northern pike and possibly muskies are planned for a few lakes in the near future.

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INSTITUTE FOR FISHERIES RESEARCH

Kenneth E. Christensen and Gerald P. Cooper

Approved by: A. S. Hazzard

Typed by: P. R. Darling