

DEPARTMENT OF COMMERCE

BUREAU OF FISHERIES

Economic Circular No. 40 : : : : : : : : : : Issued September 20, 1918

THE CAPTURE AND MARKETING OF CARP.^a

Seasons and Localities of Capture.

The big catch of carp throughout the United States is made during the annual movement which takes place in the time of spring freshets during April, May, and June, when the carp pass from the deeper waters to the shallow waters of the inundated lands, there to deposit and fertilize their eggs on the land vegetation and débris, leaving them for incubation without further attention from the parent fish.

During this time the commercial fisherman reaps his harvest, and the farmer and other small fishermen within range gather the carp from the overflowed fields or as they enter or leave through connecting creeks. The fyke net is used extensively during the migration; it is set in inlets and in the inundated territory as well as in the river course near the banks of the stream, while the trammel net is used for drifting in the rivers and setting in the lowlands. The pound net is used in the large lakes and at selected locations in the bayous and inlet bays along the river, and nearly all manner of trap and net used in fresh-water fishing is successfully operated for carp during this spring "run." The spawning is accompanied by "splashing" of the carp as they swim, side by side, often with their backs out of the water, and it is not uncommon for farmers to spear them with pitchforks in the inundated lowlands of their farms. As soon as the water starts to recede the carp quickly return to the river and disperse, and then the big harvest of carp is over. A similar migration from the deeper waters to the shallow spawning beds takes place in the large lakes, the carp returning to deep water after spawning, during which the lake fishermen harvest the carp with pound nets, fyke nets, and drag seines. As the carp no longer school extensively and from this time on do not lead to an appreciable extent into nets set for their capture, it becomes necessary to seek them in more restricted areas where they can be taken by other gear; there-

^a By H. J. Canfield, superintendent of fish culture, United States Fisheries Biological Station, Fairport, Iowa.

fore the commercial fisherman transfers operations to the lowland sloughs and lakes.

These sloughs and lakes in time of freshets are overflowed, and as the waters recede many carp and other fishes are left in them; during the summer the water becomes lower and lower by evaporation and seepage until, late in the fall, the bodies of water have shrunk in size materially and many of them have completely dried up. These sloughs and lakes, and later the bayous and inlets connected with the rivers, are the fishing grounds of commercial fishermen during the time of low water, and the seine is the most extensively used gear.

In southern waters fishing for carp can be done throughout the entire year; and although limited carp fishing has been done in this section during past years, it is expected that it will be materially increased and quantities of the fish placed upon the market. In coastal waters affected by tides, conditions for winter fishing are very favorable; stop nets and other light gear, including gill and trammel nets, with and without the use of bait, and, in certain restricted districts, pounds and seines, can be used to advantage.

In northern waters the large lakes are cleared of carp in winter by commercial fishermen operating by means of seines hauled under the ice. This method of fishing is also pursued to a very limited extent in deep inlets and bayous of the rivers during the winter, bait being used as a lure. Pound nets are used with some degree of success in the Great Lakes and at selected places in the large rivers, but winter fishing is necessarily limited by weather conditions.

In connection with carp fishing it is found convenient and profitable to fish for other nongame fishes. In some localities the buffalo-fish and catfish are taken with carp gear, as are some other miscellaneous nongame fishes, all these contributing to make the occupation continuous and the yield sufficient to justify the labor and expense.

Regulations governing commercial fishing are ordinarily under State control exclusively, and fishermen should request the desired information on the subject from the proper authorities of the State in which they propose operating. For the duration of the war the Federal Food Administration is exercising partial control over salt-water fishermen, but as yet the control has not been extended to fresh waters.

FISHING GEAR.

The kind of gear used depends chiefly upon the conditions under which fishing is to be done and economy of operation, having reference to original cost of equipment, expense of maintenance, and requirement of labor.

Commercial fishermen usually have their own ideas about gear, but when ordering material the net companies can usually give valuable

transfers operations to the lowland
 time of freshets are overflowed, and as
 and other fishes are left in them; during
 lower and lower by evaporation and
 the bodies of water have shrunk in
 them have completely dried up. These
 the bayous and inlets connected with
 kinds of commercial fishermen during
 seine is the most extensively used gear.
 for carp can be done throughout the
 ited carp fishing has been done in this
 is expected that it will be materially
 the fish placed upon the market. In
 s, conditions for winter fishing are very
 light gear, including gill and trammel
 e of bait, and, in certain restricted dis-
 be used to advantage.
 e lakes are cleared of carp in winter by
 ng by means of seines hauled under the
 s also pursued to a very limited extent
 the rivers during the winter, bait being
 are used with some degree of success
 selected places in the large rivers, but
 imited by weather conditions.
 shing it is found convenient and profit-
 e fishes. In some localities the buffalo-
 th carp gear, as are some other miscel-
 these contributing to make the occupa-
 eld sufficient to justify the labor and
 mmercial fishing are ordinarily under
 id fishermen should request the desired
 from the proper authorities of the State
 ating. For the duration of the war the
 n is exercising partial control over salt-
 t the control has not been extended to

FISHING GEAR.

pends chiefly upon the conditions under
 and economy of operation, having refer-
 pment, expense of maintenance, and re-
 ally have their own ideas about gear, but
 net companies can usually give valuable

information if conditions under which fishing is contemplated are explained and the kinds of fish to be captured are mentioned.

The seine.—The seine is used principally in lakes, sloughs, and bayous, the dimensions depending on the water to be fished. This gear is used extensively for carp on the greatest carp stream in America—the Illinois River—and, to a less extent, on the Mississippi River and other streams and lakes throughout the country. Where conditions favor the operation of the seine there is no other gear so successful in capturing quantities of carp. A locality is desirable for seining when it is a natural feeding or lodging place for fish, being of proper depth, free of snags, fallen timber and débris, with little or no current, and giving a clear shore landing. Where other conditions are favorable, fishermen often clear up “seine hauls” by removing the various obstructions in the water or along shore.

The fyke net or “hoop net”.—This device is perhaps the most generally used, its chief advantages being low first cost and the ease with which the net is handled. It works with marked success for carp only during the spawning migration, as carp will not lead into it to an appreciable extent at other times. The use of the fyke net for carp is general throughout the United States; the nets are generally set independently with flaring “wings” or “leads,” but in certain cases they are rigged in combination with straight netting leads to form a modified pound net. In the North the hoop net is seldom baited, but in the South bait is used extensively.

The pound net.—This gear works well under favorable conditions. The pound net is intended for fishing in large waters and is used in Lake Pepin, Wis. (on the Mississippi River), for winter fishing, and in the Great Lakes, but, owing to the present cost of materials, it is not employed so extensively as formerly. A well-selected location is the most important condition of success with the pound net.

The trammel net.—The trammel net is very efficient when properly operated, and serves well as light gear in dead water where, owing to the presence of obstructions, it is difficult to operate other devices. In selected localities, by drifting (the net drags the bottom, the cork line serving to hold it erect), good catches are often made during the migration of the carp, but the best general use of the net is for setting and driving in lakes and places along the shore where it is difficult to operate other forms of gear.

The gill net.—Gill netting for carp is not generally practiced where other devices can be used to advantage. Unless the net is sufficiently deep to allow the fish to entangle themselves, the size of the mesh regulates, to some extent, the size of the fish captured. In certain restricted districts it works very successfully, the carp becoming entangled in their efforts to escape although not gilling. To

obtain the best results the net should be well concealed and the webbing should be of very fine twine.

The stop net.—Any net, be it fyke, seine, or other, used to “stop off” a creek or inlet, is termed a “stop net” and the device is used extensively in the South where conditions favor the stopping off of creeks and inlets, especially in waters affected by the tides.

The trot line.—The trot line, sometimes called anchor line, jerk line, or throw line, is used extensively, especially during the summer months for the capture in small quantities of carp and other non-game fishes. The main or leader line of this device is made up in various lengths, and is provided with weights to keep it on the bottom, and with floats, when required, to indicate its position. At intervals of from 3 to 5 feet, lines 4 to 6 inches in length and provided with hooks are attached to the leader line. The trot line is anchored from shore to shore, from shore to midstream, or from a selected point in the stream to another point downstream. The trot-line hooks are baited either by removing the line entirely from the water or by “under-running” it; that is, by raising the line to the surface of the water while working from a boat but without removing the line from its anchorage. Dough balls, pork rind, crayfishes, grasshoppers, angleworms, or other available bait may be used on the hooks. Not infrequently fishermen use for still fishing a short throw line fitted with only a few hooks; in this case one end of the line is held in the hand while the line is thrown out into the stream and drawn in at intervals for observation. Set lines are sometimes employed successfully, favored locations being the vicinity of snags and stumps.

The hook and line.—While angling in the ordinary sense will not often be found an effective means of capturing carp for the market, there are conditions under which other forms of capture are impracticable, and correspondents of the Bureau frequently inquire regarding the methods of angling for carp.

The following notes on this method of fishing have been supplied by Dr. W. C. Kendall:

Izaak Walton's advice that, “If you fish for carp, you must put on a very large measure of patience,” still holds good, for it is a very wary fish and, when fishing in clear water, every precaution to avoid casting a shadow or being seen must be observed. It is said to be useless to fish from a boat. Carp bite best in warm or hot weather.

Probably no better bait for carp than those prescribed by the “Complete Angler,” or some modifications of them, can be employed. “Advance baiting” is also advocated by old anglers. This consists of placing in the water, some 6 or 8 feet from the shore, pieces of boiled potatoes, or other cooked vegetable matter, such as kitchen waste, for several successive days before fishing. Then, if possible,

l be well concealed and the
 seine, or other, used to "stop
 net" and the device is used
 ons favor the stopping off of
 affected by the tides.
 imes called anchor line, jerk
 especially during the summer
 tities of carp and other non-
 of this device is made up in
 weights to keep it on the bot-
 to indicate its position. At
 6 inches in length and pro-
 leader line. The trot line is
 ore to midstream, or from a
 point downstream. The trot-
 ng the line entirely from the
 is, by raising the line to the
 m a boat but without remov-
 h balls, pork rind, crayfishes,
 ailable bait may be used on
 use for still fishing a short
 s; in this case one end of the
 is thrown out into the stream
 vation. Set lines are some-
 locations being the vicinity
 in the ordinary sense will not
 capturing carp for the market,
 forms of capture are imprac-
 au frequently inquire regard-
 of fishing have been supplied
 i fish for carp, you must put
 ill holds good, for it is a very
 ter, every precaution to avoid
 be observed. It is said to be
 best in warm or hot weather.
 han those prescribed by the
 ons of them, can be employed.
 y old anglers. This consists
 eet from the shore, pieces of
 able matter, such as kitchen
 re fishing. Then, if possible,

a day or two before fishing deposit a small quantity of the same ma-
 terial that is to be used for bait.

Various baits have been recommended. Worms, grubs, grasshop-
 pers, and pieces of fresh meat have been successfully used, but the
 most highly recommended baits are composite pastes. A tough paste
 may be made of moistened bean, wheat, or other flour, thoroughly
 mixed with a little sugar, or preferably honey. To give the paste a
 greater tenacity, cotton batting or wool should be stirred in. Ground
 or mashed white meat, such as veal or pork, or any bleached meat
 may be added, but this bait must be fresh and kept untainted.
 Pellets of partly boiled potatoes are said to be good bait, as well as
 dough balls or corn kernels wrapped in mosquito bar.

THE USE OF BAIT IN NET FISHING FOR CARP.

During winter the northern fishermen often bait deep inlets or
 bayous in the rivers by dumping in a bushel or two of corn or oats
 or both, and several days later make a seine haul over the baited
 grounds to capture the carp which congregate to feed there. In
 summer months when the water is low, fyke nets are baited with
 "dough balls" which are made by boiling rye flour to a consistency
 of paste, then sprinkling with corn flour and rolling into a "ball,"
 and, on the Cumberland River, cottonseed cake is used for baiting.
 The first method yields substantial results, but is done only occa-
 sionally in selected places, while the baiting of fyke nets is of little
 importance commercially.

In the South corn and oats are used very successfully in baiting
 inlets and bayous, especially in waters affected by the tides, where a
 stop net can be used. The corn or oats is thrown onto the grounds
 during low water (the oats having been soaked or mixed with sand
 so they will remain on the bottom) and the stop net, which is usually
 a fyke, is placed in readiness. On high tide the net is set to catch the
 carp on the following low tide, at which time the net is visited and
 the fish collected. This manner of baiting can be done successfully
 along the shores also, and a trammel net or seine used to capture the
 carp. It is sometimes advisable to bait for a few days previous to
 fishing, and the greatest amount of food is placed close in, with scat-
 tering food leading from the river to the main baiting point, which is
 usually selected not far from the river. As the carp take vegetable
 food readily, almost any grain or vegetables cut up so as to be taken
 easily will suffice as bait, and any amount from a few handfuls to
 half a peck or more should be used, according to conditions. The
 carp usually consume the bait during one tide. Along the Great
 Lakes, canals or ditches are dug from the Lakes inland and baited
 with corn, oats, etc., the carp being removed from these ditches by
 nets or other means.

MARKETING THE CARP.

As might be expected, the markets are supplied with quantities of carp, particularly during the spring, and it is in the early part of the season that the higher prices prevail. Later in the summer the carp bring fair prices, while during the winter months they command their highest prices. The principal markets are in the big cities, and the carp are consumed there chiefly by the Jewish people, who are especially particular about the freshness of the fish they eat. The carp stands transportation well and, when properly packed, arrives at the markets in the best of condition. In warm weather the carp should be thoroughly chilled ("precooled") before shipment and well packed with ice.

In some localities carp are captured and held for market until winter in order to obtain the best prices; the retention of the live carp entails extra expense and some risk, but for a long time it has been extensively practiced in some parts of the country, especially near the south shore of Lake Erie. Where carp can be fished economically in winter a decided advantage exists.

The usual method of shipping carp is to pack them in boxes and barrels with ice, in the rough or dressed, according to the demand of the market to which they are destined, and from certain places and when quantities warrant, they are handled alive in cars especially fitted for their transportation. Large numbers are thus taken from the storage ponds or live boxes of the fisherman in Ohio direct to the dealer in New York or elsewhere and delivered to the consumer while still alive. More detailed information about the shipping of live carp can be furnished on application to the Bureau of Fisheries, Washington, D. C. The Bureau will also furnish on application its circular No. 31, entitled "The Carp, a Valuable Food Resource," with 22 recipes.

ECONOMIC CIRCULARS OF THE BUREAU OF FISHERIES AVAILABLE FOR DISTRIBUTION.

5. Artificial propagation of diamond-back terrapin. Revised Mar. 17, 1917. 22 p. 5 text fig.
6. Mussel fisheries of Caddo Lake and Cypress and Sulphur Rivers of Texas and Louisiana. Dec. 10, 1913. 10 p.
7. Opportunity for new sea-scallop fishery off middle Atlantic coast. Jan. 28, 1914. 5 p. 1 text fig.
9. Mussel streams of eastern Oklahoma. Feb. 17, 1914. 4 p.
12. Sea mussels: What they are and how to cook them; with 18 recipes. Mar. 24, 1914. 5 p. 1 text fig.
14. Mussel resources of Tensas River of Louisiana. Apr. 9, 1915. 7 p.
15. Common and scientific names of fresh-water mussels. Apr. 8, 1915. 4 p.
16. Concerning mortality of soft clams at Essex, Mass. Apr. 8, 1915. 4 p. 1 text fig.
17. Fishes destructive to eggs and larvæ of mosquitoes; by Lewis Radcliffe. July 1, 1915. 19 p. 28 text fig.

CARP.

re supplied with quantities of and it is in the early part of ail. Later in the summer the winter months they command markets are in the big cities, and y the Jewish people, who are ess of the fish they eat. The when properly packed, arrives 1. In warm weather the carp cooled") before shipment and

ed and held for market until ices; the retention of the live isk, but for a long time it has irts of the country, especially Where carp can be fished eco-age exists.

to pack them in boxes and bar- according to the demand of the and from certain places and undled alive in cars especially numbers are thus taken from fisherman in Ohio direct to the nd delivered to the consumer mation about the shipping of ion to the Bureau of Fisheries, also furnish on application its , a Valuable Food Resource,"

**BUREAU OF FISHERIES AVAIL-
DISTRIBUTION.**

terrapin. Revised Mar. 17, 1917.
press and Culphur Rivers of Texas
off middle Atlantic coast. Jan. 28,
Feb. 17, 1914. 4 p.
cook them; with 18 recipes. Mar.
uisiana. Apr. 9, 1915. 7 p.
water mussels. Apr. 8, 1915. 4 p.
Essex, Mass. Apr. 8, 1915. 4 p.
of mosquitoes; by Lewis Radcliffe.

18. Oysters: A little of their history and how to cook them; by H. F. Moore. [Revised edition.] Mar. 14, 1918. 16 p.
20. Caviar: What it is and how to prepare it; by Lewis Radcliffe. Apr. 19, 1916. 8 p. 3 text fig.
21. Information concerning parasitic worms in fish. Oct. 14, 1916. 4 p.
22. Grayfish. Try it. It knocks H out of H. C. of L. Nov. 29, 1916. 8 p. 1 text fig.
23. Sablefish, alias black cod. Mar. 8, 1917. 6 p. 1 text fig.
24. Question of fishways. May 8, 1917. 6 p.
25. Burbot: Fresh-water cousin of cod. May 9, 1917. 4 p. 1 text fig.
26. Bowfin: Old-fashioned fish with new-found use. [Revised edition.] Jan. 28, 1918. 4 p. 1 text fig.
27. Practical small smokehouse for fish: How to construct and operate it. [Second revision.] 12 p. 11 text fig.
28. Preserving fish for domestic use. May 26, 1917. 2 p.
29. Why and how to use salt and smoked fish: Sixty-one ways of cooking them; by H. F. Moore. Aug. 8, 1917. 8 p.
30. Possibilities of food from fish; by H. F. Taylor. Aug. 28, 1917. 4 p.
31. The carp: Valuable food resource, with 23 recipes; by H. F. Taylor. Sept. 26, 1917. 7 p. 1 text fig.
32. The whiting: Good fish not adequately utilized; by H. F. Moore. Oct. 10, 1917. 4 p. 1 text fig.
33. The eulachon: A rich and delicious little fish; by H. F. Moore. Dec. 5, 1917. 4 p. 1 text fig.
34. Skates and rays: Interesting fishes of great food value, with 29 recipes for cooking them; by H. F. Moore. Mar. 20, 1918. 7 p. 1 text fig.
35. Sharks as food: with 30 recipes. 8 p.
36. Fish roe and buckroe, with 85 recipes. 11 p.
37. How the angler may preserve his catch; by W. C. Kendall. June 6, 1918. 7 p.