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Stringham, E.

Fish Laws of Mississippi River States,

1917



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DEPARTMENT OF COMMERCE

BUREAU OF FISHERIES

HUGH M. SMITH, Commissioner

FISH LAWS OF MISSISSIPPI RIVER STATES

A DIGEST OF STATUTES RELATING TO THE
PROTECTION OF FISH AND MISCELLANEOUS
AQUATIC ANIMALS OF STATES BORDERING
ON THE MISSISSIPPI RIVER

By EMERSON STRINGHAM

Scientific Assistant, Bureau of Fisheries

APPENDIX IV TO THE REPORT OF THE U. S. COMMISSIONER
OF FISHERIES FOR 1916



Bureau of Fisheries Document No. 840

WASHINGTON
GOVERNMENT PRINTING OFFICE

1917

SH 325

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FISH LAWS OF MISSISSIPPI RIVER STATES: A DIGEST OF STATUTES RELATING TO THE PROTECTION OF FISH AND MISCELLANEOUS AQUATIC ANIMALS OF STATES BORDERING ON THE MISSISSIPPI RIVER.

By EMERSON STRINGHAM, *Scientific Assistant, Bureau of Fisheries.*

INTRODUCTION

This digest of the laws as they existed January 1, 1917, is based upon the statutes or pamphlet copies of the statutes as issued by the commissions or wardens of the several States, as follows:

Arkansas.—Act 124, 1915, and "Game and fish laws of the State of Arkansas" (no date).

Illinois.—Game and fish act of 1915.

Iowa.—Fish and game laws in force July 4, 1915.

Kentucky.—Fish and game laws in force June 14, 1916.

Louisiana.—Conservation laws, compiled 1914-15, and acts of State of Louisiana, 1916.

Minnesota.—Game and fish laws, 1915.

Mississippi.—Code of 1906 and session laws 1908 to 1916, inclusive.

Missouri.—Game law as amended by Forty-eighth General Assembly (1915).

Tennessee.—Game and fish law. (Ch. 152, acts 1915.)

Wisconsin.—Chapter 594, laws 1915.

Section references used hereinafter are for the sections as numbered in the pamphlet copies of the laws. The Louisiana and Kentucky pamphlets include several statutes, each with its own series of numbers for sections; to have indicated the act each time would have made references cumbersome, and it was thought better to avoid this even at the cost of some indefiniteness in references.

Penalties, administration, and procedure, have not been covered; the last includes authority to arrest, seize unlawful implements, etc., rewards for information as to violations, forgery of licenses, provisions for witnesses, limitations of times within which actions may be commenced, sale or destruction of things confiscated, and disposition of fines, fees, etc. Special provisions for counties, and other subdivisions of the States are not always included in the pamphlet copies of game laws, and are generally not digested herein.

The omission of provisions as to administration is not due to a belief that these are of minor importance. Probably they are as well worth attention as the provisions for size limits and so on. In most fields of legislation efficient administration is now recognized to be at least of equal importance with wise substantive provisions. But the question of administration is so different that it seems better not to attempt to combine it with this brief treatment of closed seasons and such matters. The United States Department of Agriculture issues annually a "Directory of Officials and Organizations Concerned with the Protection of Birds and Game." Of the States under consideration, Illinois (sec. 25 of act) and Minnesota (sec. 4761 of act) have statutory provision for a fish culturist and superintendent of fisheries, respectively; the other States do not provide by statute for any officials separately concerned with fish.

It is hoped that this digest will be of service to both commercial and game fishermen, especially those who move from State to State, and possibly that it may be found useful by legislators and those interested in legislation, and in some small measure contribute to greater uniformity of fish protective laws. It has not been possible, within reasonable limits, to give in detail all provisions regulating commercial fishing, but an effort has been made to indicate every such provision not restricted to special waters or subdivisions of the State.

I. NAMES OF FISHES.

As the same species or genus is given different names in different statutes, and even in the same statute, the names by which the fishes will be distinguished herein are listed, together with cross references from other names that are in common use or are found in the statutes. When a genus includes more than one species, all the species are often, perhaps usually, included under one English name, so that such names are commonly generic rather than specific, at least on the Mississippi River. Because of the infinite confusion in the use of these popular names it can not always be determined with certainty to what species or genus a statute refers. Care has been taken to be as accurate as possible under these circumstances.

Barfish. See Bass, striped.

Bass, black. *Micropterus* Lacépède, both species.

Bass, calico. See Crappie.

Bass, gray. See Bass, black.

Bass, Oswego. See Bass, black.

Bass, rock. *Ambloplites rupestris* (Rafinesque), and probably *Chænobryttus gulosus* (Cuvier and Valenciennes).

Bass, silver. See Bass, striped; Crappie.

Bass, strawberry. See Crappie.

Bass, striped. *Roccus chrysops* (Rafinesque) and *Morone interrupta* Gill.

Bass, white. See Bass, striped; Crappie.

Bass, yellow. See Bass, striped; Bass, black.

Billfish. See Gar.

Black-fin. See Cisco.

Bowfin. *Amiatus calva* (Linnæus).

Buffalofish. *Ictiobus* Rafinesque, all species and probably *Carpiodes* Rafinesque, all species.

Bullhead. *Ameiurus* Rafinesque, all species of the region, doubtless excepting *lacustris* (Walbaum).

Burbot. *Lota maculosa* (Le Sueur).

Carp. *Cyprinus carpio*, Linnæus, and probably (but not in Illinois) *Carpiodes* Rafinesque, all species.

Cat, shovel-nose. See Paddlefish.

Cat, spoonbill. See Paddlefish.

Catfish. *Ictalurus* Rafinesque, all species; *Leptops olivaris* (Rafinesque); and probably *Ameiurus lacustris* (Walbaum), and in some cases all species of *Ameiurus*, the bullheads.

Chub. See Minnow. The "chub" of Illinois (Lake Michigan) is herein called cisco.

Cisco. *Leucichthys* Dybowski, or *Argyrosomus* Agassiz, all species. See also Tullibee.

Crappie. *Pomoxis* Rafinesque, both species.

Dace. See Minnow.

Dogfish. See Bowfin.

Drum, fresh-water. *Aplodinotus grunniens* Rafinesque.

Eel-pout. See Burbot.

Gar. *Lepisosteus* Lacépède, all species.

Gaspergou. See Drum, fresh-water.

Grayling. *Thymallus* Cuvier, all species.

Grinnel (Grindle). See Bowfin.

Hackleback. See Sturgeon.

Herring, lake. See Cisco.

Lawyer. See Burbot, also Bowfin.

Longjaw. See Cisco.

Minnow. *Cyprinidæ*, except *Cyprinus carpio* Linnæus, the carp.

Muskellunge. *Esox masquinongy* Mitchell.

Paddlefish. *Polyodon spathula* (Walbaum).

Perch, black. See Bass, rock.

Perch, lake. See Perch, yellow.

Perch, pike. *Stizostedion* Rafinesque, both species.

Perch, ring. See Perch, yellow.

Perch, white. See Drum, fresh-water.

Perch, yellow. *Perca flavescens* (Mitchill).

Pickrel. *Esox* Linnæus, all species except *masquinongy*, the muskellunge.

Pike. See Pickerel. The "pike" of Wisconsin and Iowa is herein called pike perch.

Pike, blue. See Perch, pike.

Pike, sand. See Perch, pike.

Pike, wall-eyed. See Perch, pike.

Quillback. *Carpiodes* Rafinesque, all species. See also Carp and Buffalo-fish.

Redhorse. *Moxostoma* Rafinesque, all species, and *Placopharynx duquesnii* (Le Sueur).

Sac-a-lait. See Crappie.

Salmon, jack. See Perch, pike.

Salmon, landlocked. *Salmo sebago* Girard.

Salmon, wall-eye. See Perch, pike.

Salmon, yellow. See Perch, pike.

Sauger. *Stizostedion canadense* (Smith). See Perch, pike.

Shad, gizzard. *Dorosoma cepedianum* (Le Sueur).

Shad, hickory. See Shad, gizzard.

Sheepshead. See Drum, fresh-water.

Spoonbill. See Paddlefish.

Sturgeon. *Acipenseridæ*.

Sucker. *Catostomidæ*, except, usually or always, the genera *Ictiobus*, *Carpiodes*, *Moxostoma*, and *Placopharynx*.

Sunfish. *Lepomis* Rafinesque, all species.

Trelipie. See Tullibee.

Trout. *Salvelinus* (Nilsson) Richardson, all species except *Salvelinus namaycush* (Walbaum), the lake trout, and its subspecies; also *Salmo* (Artedi) Linnæus, all species of the region except *Salmo sebago* Girard, the landlocked salmon. See also Trout, lake.

Trout, brook. *Salvelinus fontinalis* (Mitchill). See Trout.

Trout, brown. See Trout.

Trout, green. See Bass, black.

Trout, lake. *Cristivomer*, or *Salvelinus namaycush* (Walbaum).

Trout, rainbow. See Trout.

Tullibee. *Leucichthys tullibee* (Richardson), and probably other species of the same genus; name used in Minnesota. See also Cisco.

Wall-eye. *Stizostedion vitreum* (Mitchill). See Perch, pike.

Whitefish. *Coregonus clupeaformis* (Mitchill), *C. Albus* Le Sueur, and *C. quadrilateralis* Richardson.

II. TIME, PLACE, AND MANNER OF CAPTURE.

TABLE OF PROVISIONS FOUND IN STATUTES GENERALLY, WITH REFERENCES TO SECTIONS OF PAMPHLET LAWS.

Subject.	Ark.	Ill.	Iowa.	Ky.	La.	Minn.	Miss.	Mo.	Tenn.	Wis.
	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.	Sec.
Fish generally, or certain species, or in certain places, shall not be taken in nets, or shall be taken only with hook and line.....	18	35, 41	2	1, 2	{ 33 40	4808 4838	{ (6548)	{ 6535 6548	45	{ 62.30 62.33 62.40
Minnow seine permitted.....	41	37	2, 4	7	33	-----	-----	6548	{ 45 46	{ 62.33 62.41 (62.28 62.29 62.35 62.36 62.37 62.39 62.43
Close seasons provided as hereinafter noted.....	18	35, 36	{ 2, 9 11 13	-----	37, 60	(a)	-----	{ 6548 6551	17	{ 62.36 62.37 62.39 62.43
Fishing near dam or fishway or both prohibited; hook and line excepted in Iowa, Missouri, Tennessee, and Wisconsin.....	-----	25	2	-----	-----	4864	-----	6549	49	62.29
Use of either poison, drugs, etc., or explosives, prohibited.....	45, 49	40	3	3	57	4865	{ 1173 1329	{ 6537 6538	45	62.32
Fishing on premises of another without consent, prohibited.....	47, 48	40B	-----	1259	26	-----	-----	-----	-----	-----
Authorization to take fish for scientific purposes, or to propagate, or to destroy noxious species.....	-----	38	9	3	19, 47	{ 4758 4771 4846	{ (6524 6568 6570 6571 6572)	-----	-----	{ 62.15 62.50 62.55 62.56 62.57
Provision for private ponds.....	-----	-----	8	1-5, 1252	{ 22, 54, 61	{ 4861 4862 4870	-----	6548	45	{ 62.55 62.58
Areas may be closed to mussel fishing.....	-----	57	-----	-----	-----	(b)	-----	-----	-----	-----

a Ch. 261 of 1915, and sec. 4307, 4808, 4820, 4821, 4829, 4830, and 4874.

b Ch. 276, laws 1915.

PROVISIONS PECULIAR TO THE RESPECTIVE STATES, WITH REFERENCES TO SECTIONS OF PAMPHLET LAWS.

Arkansas.—Mesh of nets shall be at least 3 inches square; no seine, net, trap, or other device shall be used March 1 to June 15 (sec. 18). In some counties nets and similar devices are prohibited (sec. 41, 44).

Illinois.—Hoop, fyke, dip nets, or baskets with mesh not less than $1\frac{1}{2}$ inches square, may be used July 1 to April 15 and seine with same mesh September 1 to April 15, except for black bass, pickerel, pike perch, whitefish, trout, cisco, and yellow perch (sec. 35). Gill and pound nets with mesh not less than $2\frac{1}{2}$ inches square may be used for whitefish and lake trout December 1 to November 1 (sec. 36). Gill, dip, and pound nets with mesh not less than $1\frac{1}{4}$ inches square may be used for cisco, or with mesh not less than $1\frac{1}{16}$ inches square for yellow perch, provided not over 10 per cent of catch at any lift consists of lake trout of a less weight than $1\frac{1}{4}$ pounds dressed each, and such lake trout may be sold only locally and not shipped (sec. 36). Rough fish may be taken from fish preserves by net under special permit (sec. 25). Maximum lengths for nets are: Hoop, fyke, or pound 200 yards and seine 1,000 yards; they shall not obstruct more than half the width of a water course (sec. 39).

Firearms, artificial lights, snare spears, gig graines, and trammel nets shall not be used to catch fish (sec. 40B).

Mussel fishing may be practiced commercially with one boat only or an additional boat for towing, and with only two crowfoot bars not over 16 feet long each, and only one dredge not over 3 feet long; such fishing is permitted only April 15 to November 30 (sec. 55).

Frogs over quarter pound shall not be taken May or June (sec. 34).

Iowa.—Closed seasons are as follows: "Salmon" and trout, October 1 to April 15; "bass," pike perch, crappie, pickerel, catfish, and "other game fish," December 1 to May 15 (sec. 2); in interstate waters pike perch, bass, and crappie, March 31 to June 1 (sec. 13). The statute does not define "game" fish, but Mr. E. C. Hinshaw, the State game warden, writes under date of December 14, 1915, that the Department of Fish and Game construes it to include any food fish that takes a live bait. Bag limit is 40 of said species, and not over 20 of them shall be bass, pike perch, or pickerel (sec. 2). Fishing is prohibited in streams stocked with breeding trout over two years old within one year from date of stocking, if notice be posted (sec. 2). In ice fishing no structure for protection against the weather or means for creating artificial heat may be used (sec. 2). Only two lines with one hook each, or three united hooks in trolling may be used (sec. 5).

One set line may be used, May 15 to December 1, in streams, in Big Sioux River and boundary portion of Des Moines River, but shall not extend more than halfway across (sec. 2 and 11). Spears may be used to take carp, sucker, redhorse, and buffalofish in slues, etc., of Mississippi River (sec. 2).

From certain lakes, buffalofish, carp, quillback, redhorse, suckers, and gar may be taken in nets under special permit and supervision of warden, but no seine shall be used December 1 to June 15 (sec. 9). Nets may be used in Mississippi and Missouri Rivers, but shall have mesh not less than $2\frac{1}{2}$ inches stretch measure (sec. 11). It is unlawful to net food fishes and not use them (sec. 14).

Kentucky.—Except in private ponds, it is forbidden to use wing net, set net, seine, trap, trammel net, dip net, or other contrivance (sec. 2), or to shoot fish (sec. 4), or to use gig or spear, or to fish by groping, grabbing, tickling or in other manner with the hands, except hook and line, trot line, hand line, or set line (sec. 5), or to kill or stun fish by striking upon the rocks or ice (sec. 6).

Louisiana.—Bag limit is 25 black bass, striped bass, or crappie, and 100 "perch" and sunfish (resolution of Conservation Commission adopted September 10, 1912). Specified game fish shall be caught with rod, hook and line only, having not more than five sets of hooks, or with a trolling line and artificial bait (sec. 40).

Hoop nets are prohibited in bayous, lagoons, and streams less than 40 yards wide and seining in fresh water is prohibited, except in certain waters for common species, such as buffalofish and catfish under permit by Commission (sec. 33); letter of the president of the Conservation Commission to Dr. H. M. Smith, United States Commissioner of Fisheries, dated October 25, 1915, includes paddlefish and "gaspergou" (fresh-water drum) as such common species. Seines shall not be used within 100 feet of the shore and shall not exceed 900 feet in length; splashing of water or pounding of boat to drive fish into seine is not permitted; vegetation hauled out with seine must be returned to the water; gars taken in seine must be killed. (Rules on permits issued by Conservation Commission.) Permits may be revoked if shown to be detrimental to game fish resources (sec. 33). Hoop nets must be made of twine and be at least 3-inch mesh on bar between knot and knot (sec. 64). Seine, hoop net, or set line shall not be used for buffalofish February 15 to April 15, or for paddlefish January 1 to July 15, or for catfish May 15 to July 15; no paddlefish shall be had in possession which does not contain roe suitable to be made into caviar (sec. 37). Puddling water to catch fish, and using lights, fyke, gill, or trammel nets, or other permanent set means are prohibited (sec. 44, 45, 55), hoop nets are probably not intended to be included in this prohibition for they are regulated as hereinbefore noted.

The Conservation Commission may prohibit the taking of any kind of fresh-water fish in any part of the State for not over three years (sec. 24, 52).

Diamond-back terrapin shall not be taken or sold April 15 to June 15; if artificially propagated they may be taken or sold during that period, but not for food (sec. 60, 61). Nest or eggs of terrapin must not be molested (act 50 of 1910).

Salt-water operations for fish, shrimp, and oysters are regulated by several acts.

Minnesota.—Close season for trout, except lake trout, is September 1 to April 15; for black bass, March 1 to May 29; other varieties of fish, March 1 to May 1 (sec. 4807). Bag limit is 25 crappie or trout, 15 pike perch, 15 bass, except rock bass, and no person shall have in possession more than 25 bass (sec. 4808), and the taking of over 25 fish in one day is prohibited, with exceptions (sec. 4896). Crappie, trout, pike perch, and bass (except rock bass) shall be taken only with hook and line and not more than one line shall be used with not more than one bait, except that 3 artificial flies may be used in trout fishing (sec. 4808). Fishing for game fish in interstate waters is prohibited March 1 to May 29 (sec. 4830). Provision is made for closing trout streams to all fishing except during season for trout (sec. 4857–4859). And there are provisions for special localities (sec. 4885–4895).

Fishing by means of set lines (sec. 4835), fishhouse (sec. 4866), and tip-ups (sec. 4867, 4868) is regulated; see also provisions as to license fees for pole and line fishing by nonresidents, and set line fishing. Spears may be used for pickerel, suckers, redhorse, carp, and bullhead, subject to numerous restrictions (sec. 4808).

Netting in inland lakes for whitefish and tullibee is permitted with numerous restrictions (sec. 4808). In the Mississippi River within the State (from Falls of St. Anthony to 1,000 feet above the mouth of the St. Croix River) pound net, seine, or dip nets may be used to take sturgeon, redhorse, bowfin, buffalofish, catfish, pickerel, carp, and suckers, as follows: Not within 1,000 feet of mouth of a stream; pound net not over 75 feet long; seine not over 150 feet long; mesh in all cases not less than 2½ inches on bar (sec. 4819). Netting in certain waters is allowed for specified rough fish, under supervision of warden and subject to exceptions and to provisions as to mesh, bond, and reports, except, for most waters, April 1 to October 1 (ch. 261, laws 1915). In international waters pound and gill nets may be used by United States citizens, resident in Minnesota, under restrictions as to size, mesh, number of nets, leads, position, and season (sec. 4820, 4821). Netting in Lake Superior (except for cisco) is prohibited November 1 to December 1; also prohibited within half mile of shore (sec. 4874). In interstate waters fish, except catfish under 15 inches rough, 12 inches dressed, "pike" (pike perch?), pickerel, bass, sunfish, yellow perch, and crappie, may be taken by residents with nets, set lines, and spears, except April 15 to June 15 (sec. 4826, 4827, 4829, 4833, 4834, 4835); no license is required for spearing (sec. 4833); the mesh is limited for each kind of net and for different parts of the same kind (sec. 4834); set lines may have not more than 25 hooks, shall not be baited with live bait, and no person may have more than one (sec. 4835); nets must bear license number above water, and seines shall not be longer than 4,000 feet and shall not be raised at night (sec. 4840); fyke nets must be raised at least weekly (sec. 4841).

Mussel fishing may be practiced commercially with one boat only, or an additional boat for towing, and with only two crowfoot bars not over 16 feet long each and only one dredge not over 3 feet long with prongs or forks not more than 4 inches long (ch. 276, sec. 3, laws 1915).

Commission may prescribe a closed season for frogs in certain districts (ch. 288, laws 1915).

Mississippi.—Boards of supervisors have authority to regulate the times and the places in which and the circumstances under which fish may be taken (sec. 2306); they may entirely prohibit the catching of fish for one or more years or seasons when they believe that the supply of fish is about to be exhausted (sec. 2309); they may prohibit the use of seines, barrel nets, gill nets, and other like contrivances, or any of them, or may restrict the use of the same to places which annually go dry, and may prohibit or regulate the use of the same in particular waters, and may prescribe what kinds of seines or nets may be used and when and where (sec. 2312). Fish traps may be prohibited or regulated by boards, but shall not wholly obstruct the passage of fish (sec. 2313).

Missouri.—Fishing through ice is prohibited (sec. 6549).

Not more than 50 pounds of fish, in addition to one individual fish, shall be giggered or speared in one day, and that for domestic use only. Giggering and spearing are prohibited December to April; all fishing, except hook and line and giggering, are prohibited April and May; it is unlawful to seine, net, or trap within 100 yards of the mouth of any stream or slue emptying into the Mississippi or Missouri Rivers; these prohibitions do not apply to private ponds or to fish taken by residents for domestic use from temporary overflows; the owner of the land, or other person by his permission, may use a 2-inch mesh seine to take fish from unnavigable streams for consumption but not for sale during July, August, and September; bowfin, paddlefish, and gars may be taken at any time or in any manner, except by explosives; seines, trammel and hoop nets with mesh at least 2-inch are permitted in the Mississippi and Missouri Rivers June to March, but not within 300 yards of the mouth of any stream or slue (sec. 6548).

Pearl fishing is prohibited March to June (sec. 6551).

Tennessee.—Closed season on trout, black bass, landlocked salmon, crappie, and rock bass is May 1 to June 15 (sec. 47).

Seines are prohibited, but trammel nets, baskets, dip nets, and set nets with mesh at least 2-inch may be used in designated rivers, but not within 200 feet of any inlet (sec. 49).

Wisconsin.—Close seasons (omitting most provisions for special counties, or bodies of water) are as follows, all dates being inclusive: Black bass, March 2 to May 28. Crappie, rock bass, pike, perch, and pickerel in counties bordering on the Mississippi River and on various inland waters, March 2 to May 28. Pike perch and pickerel on outlying waters except Mississippi River, March 11 to April 30. Catfish on Mississippi River and Lakes Pepin and St. Croix and inland waters, March 2 to May 28. Muskellunge on inland waters, March 2 to May 28. Trout on inland waters, except some counties, September 1 to April 14. Yellow perch in counties bordering on Mississippi River and on certain inland waters, March 2 to May 28. Sunfish in counties bordering on Mississippi River, March 2 to May 28. Lake trout on Lake Superior, September 16 to October 14 (sec. 62.28).

Bag limit for trout is 45 a day and for black bass and yellow bass 15 a day (sec. 62.28).

All fishing is prohibited: (1) In unnavigable waters containing trout, during the close season for trout; (2) or at any time in any spring hole or artificial well connected with any of the waters of the State; (3) or by means of shutting or drawing off water for that purpose (sec. 62.29).

Not more than five lines may be used with not more than one hook each, and they shall not be left unattended; spearing for rough fish is prohibited: (1) In unnavigable waters containing trout, (2) in navigable waters containing trout during the close season for trout, (3) in certain specified waters, and (4) at night time in inland waters; the use of snag line or snag pole is prohibited (sec. 62.30).

Fishing through ice is prohibited: (1) On certain waters, and (2) under protection of any shelter except on certain waters (sec. 62.31).

Net and set line fishing is regulated as follows: No seine shall be drawn over spawning beds of game fish during their spawning season; no apron or other device to catch small fish shall be used in pound net; no net shall shut off more than two-thirds of any channel or passage-way of a stream; nets and set lines must have flags bearing license number; licensees must permit State officials to accompany them and the officials may at any time raise set lines; lifting nets at night in Great Lakes waters is forbidden; buffalofish, carp, burbot, gar, redhorse, suckers, bowfin, and fresh-water drum shall not be returned to waters (sec. 62.33). Set lines of specified lengths are authorized in the Mississippi River and other specified waters, subject to various regulations (sec. 62.39).

Elaborate and complicated regulations are provided for net and set line fishing in Great Lakes waters (sec. 62.34). Net fishing is prohibited in the Mississippi River and Lakes Pepin and St. Croix: (1) April 16 to June 14, inclusive, (2) at all times in specified waters, and (3) for pike perch, bass of any variety, crappie, sunfish, pickerel, and yellow perch; in said waters seines shall not exceed 4,000 feet, and mesh shall be not less than 5-inch on the wings, or 4-inch in the center of the pot, the pot not exceeding 150 feet, and gill nets shall have mesh not less than 7-inch, and pound nets not less than 6-inch in the leaders, 5-inch in the hearts, or 3-inch in the hoops, and bait nets shall be used without leads, have mesh not less than 3-inch and front hoop not over 4 feet (sec. 62.35).

Gill netting in certain inland lakes for whitefish and cisco is authorized for a short season (sec. 62.36). Netting in inland waters, with specified exceptions, for specified rough fish, is authorized, subject to various restrictions (sec. 62.37, 62.38). Dip nets of specified sizes may be used without license to capture various rough fishes in specified waters (sec. 62.40).

Gill nets may be used to take lake trout and whitefish during specified dates and for the purpose of propagating these species, under special permit by the commission (sec. 62.57).

Minnow seines shall not be used in some waters (sec. 62.41).

Crawfish and crabs shall not be taken March 1 to June 10, or frogs during March and April, except that frogs may be had in possession by a person in the business of propagating them for scientific purposes (sec. 62.43). Frogs shall not be taken from lands owned by another without his consent (sec. 4565dm).

Nonresident mussel fishermen may use one boat only. Mussels shall not be taken with a dredge (sec. 62.44).

III. SIZE LIMITS FOR AQUATIC ANIMALS.

TABLE OF LIMITS WITH REFERENCES TO SECTION OR SECTIONS OF PAMPHLET LAWS OF EACH STATE.

Names.	Ill., sec. 41, 42, 42A, 56.	Iowa.		La., sec. 37, 40, 60.	Minn. ^a	Mo., sec. 6550.	Tenn., sec. 50.	Wis., sec. 62.28, 62.33, 62.34, 62.35.
		Inter- state waters, sec. 13.	State gener- ally, sec. 2.					
	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>	<i>In.</i>
Fish, except rock bass, sunfish, and bullheads					6			
Rough fish in outlying waters, except bait								7
Bass, black	10	11	10	8	9	11	7	10
Bass, rock	6						6	
Bass, striped	8	8	10	8		8		
Buffalofish	18	15		12				
Bullhead	7							
Carp	15	15						
Catfish	13	13	10	12	(b)	13		(b)
Crappie	8	8	8			8	6	7
Drum, fresh-water	10					10		
Muskellunge					30			(b)
Perch, pike	13	15	12		(b)	11		13
Perch, yellow	7							
Pickerel	18	18	12			11		16
Salmon, landlocked							7	
Sturgeon		(b)			(b)			
Sunfish	4					6		
Trout			10			8	7	7
Trout, lake	(b)				(b)			(b)
Whitefish	(b)				(b)			(b)
Mussels	2				1½			
Turtle or terrapin, or both	7			b 5½				

^a Minnesota: Sec. 4827, 4873, and ch. 276, laws 1915.

^b See text following.

PROVISIONS PECULIAR TO THE RESPECTIVE STATES.

Arkansas.—No limits.

Illinois.—Restrictions do not apply to pole and line fishing. The limit on lake trout and whitefish is $1\frac{1}{4}$ pounds. The catfish restriction states "blue and channel catfish."

Fish measurements are taken for "the length of the entire fish from the extreme tip of the snout to the extreme end of the tail fin," and turtle or terrapin for the extreme ends of the shell.

Iowa.—A different limit is set for the species of sturgeon, being 1 pound for the sand sturgeon, or shovel-nose sturgeon, or hackleback, *Scaphirhynchus platorhynchus* (Rafinesque), and 3 pounds for the rock sturgeon or lake sturgeon, *Acipenser rubicundus* Le Sueur; the former would perhaps include the white sturgeon, *Parascaphirhynchus albus* Forbes and Richardson. The limit on lake trout and whitefish is $1\frac{1}{4}$ pounds.

Kentucky.—No limits.

Louisiana.—The terrapin restriction is only on the diamond-back. Size limits for salt-water species are fixed by acts 53 and 54 of 1914.

Minnesota.—Measurements are taken from tip of snout to fork of tail. A different size limit is set for the two species of pike perch, being 14 inches or 1 pound dressed for the wall-eye, and 10 inches for the sauger. Catfish under 15 inches tip to tip rough, or 12 inches dressed shall not be taken in nets in interstate waters. The limit on sturgeon is 15 pounds dressed weight; on lake trout 2 pounds round, or undressed weight, and $1\frac{1}{2}$ pounds dressed weight; and on whitefish $2\frac{1}{2}$ pounds undressed weight, or 2 pounds dressed weight.

Mississippi.—No statutory limits. County boards have general authority to protect fish (sec. 2305-2315).

Missouri.—Measurements are taken from nose to fork of tail. The restrictions are applicable only to fish sold. The catfish restriction states "blue or channel catfish."

Wisconsin.—Measurements are taken from tip of snout to tip of tail. The limit for catfish in the Mississippi River and Lakes Pepin and St. Croix is 15 inches round and 12 inches with head off; in all other waters $1\frac{1}{2}$ pounds round and 1 pound dressed. The limit on muskellunge is 5 pounds round and 4 pounds dressed. Lake trout less than 14 inches long shall not be taken with pound net in specified Great Lakes waters. The limit on whitefish is 2 pounds round and $1\frac{1}{2}$ pounds dressed.

IV. LICENSES REQUIRED AND FEES THEREFOR.

Arkansas.—The fee for devices other than hook and line for the purpose of catching fish for market is \$25 (sec. 16); and for using artificial bait \$1 (sec. 17).

Illinois.—Fees for net fishing are as follows, the amounts in parentheses being for nonresidents: Each 100 yards of seine \$5 (\$10); dip or fyke nets, \$1 (\$2); hoop net, 50 cents (\$2); basket or trap net, 50 cents (?); in operation of gill or pound nets, steam tug, \$25 (\$200), gasoline launch, \$15 (\$50), sail or row boat, \$10 (\$30) (sec. 22). Clerk's fee is 25 cents extra (sec. 23).

Owners of property, their children and tenants may do net fishing, without license, from waters wholly within their property and not connected with any open stream (sec. 22). Gill and pound nets shall be operated only from a boat as listed hereinbefore (sec. 39). The fee for conducting a wholesale fish business is \$10.50 (sec. 24). The commercial mussel fishing fee is \$1.25 for residents and \$25.50 for nonresidents; plus in either case \$25 if a dredge is used (sec. 55).

Iowa.—Fees for nets in the Mississippi and Missouri Rivers are as follows: Each 500 feet of seine, \$10; pound net having more than 100 feet of lead on each side, \$4;

pound net with less lead, \$1; each bait, dip, hoop, and fyke net, 50 cents; each 300 feet of trammel net used for floating fishing, \$5. Metal tags are required and non-residents must give bond (sec. 11).

Louisiana.—Fees for seines are as follows: Less than 300 feet, \$25; 300 to 600 feet, \$50; 600 to 900 feet, \$100 (sec. 33). Fees for wholesale dealing in fresh-water fish are \$5 to \$150, depending on the amount of business and whether the dealer is a resident or nonresident (sec. 34, 35). Fees for vessels purchasing fresh-water fish to make a cargo are \$5 to \$40, depending on tonnage of boat (sec. 36). The fee for buying and selling diamond-back terrapin is \$25, and for buying, selling and shipping \$100 for a resident and \$200 for a nonresident or unnaturalized foreign-born resident (sec. 63).

The fees for salt-water operations are fixed by several acts.

Minnesota.—Licenses of Wisconsin are accepted if it reciprocates (sec. 4845 and ch. 276 of laws 1915).

The fee for seine, pound, or dip nets in the Mississippi River within the State is \$5 for each net (sec. 4819). In international waters the fees are \$25 for pound net and \$10 for gill net (sec. 4820, 4821). In interstate waters the fees are: For seine \$1 a hundred feet up to 500 feet, then \$2 a hundred to 1,000 feet, then \$3 a hundred to 1,500 feet, then \$4 a hundred to 2,000 feet, then \$5 a hundred to 2,500 feet, then \$6 a hundred to 4,000 feet; for gill nets \$5 for 2,000 feet and \$5 for each additional thousand; for pound net, with leader not exceeding 700 feet, \$5, and for each pound net in excess of one used with one leader, \$5; fyke or hoop net, \$5; bait or turtle nets, \$1; metal tags are 25 cents each (sec. 4836). Fee for inland commercial fishing is 20 per cent of gross receipts plus expenses and compensation of warden (ch. 261 of laws 1915).

Fees for set line (sec. 4836), fishhouse (sec. 4866), tip-up license (sec. 4868), and non-resident pole and line license if fisherman over 21 years old (sec. 4879) are \$1 each.

The commercial mussel fishing fee is \$1 for residents and \$25 for nonresidents, plus in either case \$25, if a dredge is used (ch. 276 of laws 1915).

Tennessee.—The fee is \$2 for each net or basket (sec. 49).

Wisconsin.—Fishing licenses of Minnesota and Iowa are accepted if those States reciprocate (sec. 62.07).

Licenses are issued only to natural persons (not to corporations) (sec. 62.11).

Fees for nonresidents are as follows: Mussel fishing, \$50 (sec. 62.44); fishing in inland waters if fisherman over 16 years old, \$1 (sec. 62.25); operating gill net in Great Lakes waters with steam vessel having steam lifter, \$200, or without steam lifter, \$100, or with any other vessel not propelled by oars, paddle, or pole, \$50 (sec. 62.34).

Fees for residents or nonresidents in Great Lakes waters are as follows: Pound or gill nets (except as heretofore noted), \$2; fyke, drop, or trap nets, trammel net, seine, or set lines, \$1 (sec. 62.34).

Fees for fishing in the Mississippi River and Lakes Pepin and St. Croix are as follows: Seines for first 500 feet \$1 a hundred, second 500 feet \$2 a hundred, third at \$3, fourth at \$4, fifth at \$5, and 2,500 to 4,000 feet at \$6 a hundred; gill nets for first 2,000 feet \$5 and for each additional thousand feet \$5; pound or hoop nets with 700-foot leader and one pound \$5 and for each additional pound \$5; bait nets, \$1 each. For these waters fishermen must give bonds (sec. 62.35).

Metal tags are required for nets and set lines at 25 cents each (sec. 62.34, 62.35, 62.39).

Fees are from \$5 to \$50 for net fishing in specified inland waters (sec. 62.37, 62.38).

Fee for set lines in specified waters is \$1 (sec. 62.39).

V. SHIPPING AND SELLING FISHERIES PRODUCTS.

Arkansas.—Shipping of game fish beyond State line is prohibited (sec. 19).

Illinois.—Black bass shall not be sold nor, if taken within the State, pickerel or pike perch (sec. 41). Said fish shall not be shipped, except not over 25 fish, in one lot as baggage (sec. 43, 44). No frogs over a quarter of a pound, or fish shall be shipped April 20 to July 1, inclusive, except whitefish, lake trout, cisco, and yellow perch (sec. 44). Shipments of fish must be marked to show contents and other facts (sec. 43, 45).

Iowa.—Game fish shall not be shipped from inland waters for the purpose of sale, and any person shipping game fish must deliver to the carrier a sworn statement (sec. 2). As noted on page 9 hereof, "game" fish is construed to include any food fish that takes a live bait.

Louisiana.—Black bass, striped bass, crappie, "white perch" (crappie?), "any species of perch," and sunfish shall not be sold (sec. 38). All shipments of fish and shipments without the State of diamond-back terrapin must be marked to show contents and other facts (sec. 41, 62).

Minnesota.—The sale or shipping of pike perch from stocked waters, or of brook trout or black bass, is prohibited (sec. 4870, 4871; see also sec. 4876 as to certain counties). Fish shall not be shipped beyond the State except specified rough fish and except not over 50 pounds taken by a nonresident for personal use; packages shall be marked to show contents and other facts (sec. 4875). The commission may prohibit the sale of crappie, yellow perch, or sunfish caught in stocked lakes (sec. 4877).

Mississippi.—Boards of supervisors have authority to regulate by whom and in what quantities and to what extent fish may be marketed (sec. 2306).

Wisconsin.—Shipments of fish must be marked to show the contents and other facts, and the consignor must be the owner and must deliver to the carrier a statement that he is. (Sec. 62.10, 62.35, 62.37, 62.38.)

Subject only to the preceding, minnows, suckers, carp, redborse, fresh-water drum, burbot, bowfin, gar, buffalofish, and lizards may be shipped. Other varieties of fish taken in inland waters may be shipped only as follows: One shipment of lake trout containing not more than 20 pounds may be transported by any person in each period of 7 days when accompanied by the consignor; other varieties of trout may be transported when accompanied by the consignor; of the remaining varieties of fish, one package containing not more than 20 pounds or in lieu thereof not more than 2 fish of any weight may be made in each 7 days; or (without 7-day limit) up to 50 pounds may be transported to a point within the State when accompanied by the consignor (sec. 62.42).

Other restrictions regulate shipments from Green Bay and Fox River; pike perch and pickerel taken from outlying waters; imported pike perch and pickerel in their natural frozen state; and provide that any shipment originating at any other than ports on outlying waters shall be subject to provisions hereinbefore noted as to fish taken in inland waters; and prohibit the transportation of living young of carp or bowfin (sec. 62.42). Transportation of wild animals (includes fish) into this State is forbidden, if shipped from another State in violation of its laws relating to transportation (sec. 62.07).

Trout other than lake trout shall not be served at eating places (sec. 62.10).

VI. MISCELLANEOUS PROVISIONS.

TABLE OF PROVISIONS FOUND IN STATUTES GENERALLY, WITH REFERENCES TO SECTIONS OF PAMPHLET LAWS.

Subject.	Ark.	Ill.	Iowa.	Ky.	La.	Minn.	Miss.	Mo.	Tenn.	Wis.
Ownership of fish, etc., declared in State.	Sec. (a)	Sec. 32	Sec. 59, 60	Sec.	Sec. 1	Sec. 4778	Sec.	Sec. 6508	Sec. 1	Sec. 62.08
Obstructing the passage of fish forbidden.					53		2313	6535	48	62.09
Fishways required over dams.	50	49	16	1392A		4772		6552		
Contamination of waters prohibited.					57	4773	3286	6536	51	62.32
Having fish in possession smaller than the legal limit, or during close season, or in excess of bag limit, is declared unlawful or presumed to be unlawful.		42A	6, 26		18, 39	4785, 4786 4808, 4839 4870, 4871 4873				62.07 62.10
Commission or warden to propagate and rescue fish and assist in stocking waters.	6	25, 46	1, 12	3, 9	1, 19, 21 22, 23 49, 51	4758				62.55
Commission may establish fish preserves.		25		8	22, 30					
Reports by licensees required on fish caught or handled.					35, 36	(b)				62.34 62.35
Reports required on catch of mussels.		58				(c)				

a Sec. 15 of act of 1903.

b Sec. 4820 and ch. 261, laws of 1915.

c Ch. 276, laws of 1915.

PROVISIONS PECULIAR TO THE RESPECTIVE STATES, WITH REFERENCES TO SECTIONS OF PAMPHLET LAWS.

Arkansas.—Nonresidents are forbidden to fish, except in one locality with hook and line (sec. 16 of act of 1903).

Illinois.—"Objectionable" fish is defined to mean gar and gizzard shad (sec. 51).

Iowa.—Cities and towns may prevent the escape of fish from boundary lakes (sec. 17).

Louisiana.—Intake pipes for irrigation must be screened to prevent entrance of fish, except on the Mississippi River (sec. 56).

Fish may be had in possession five days after end of open season (sec. 39).

Police juries of each county are authorized to make regulations for the protection of alligators (act 37 of 1908).

The commission may adopt rules and regulations for the comprehensive control of fish (sec. 2, 24, 52); shall assist in protecting private ponds (sec. 2); may prescribe regulations for stocked streams (sec. 23, 51); and may regulate seines, hoop nets and set lines (sec. 42). No spawn or fish from without the State shall be liberated without permission from the commission (sec. 22, 50).

Game and fish preserves are established. (Acts 172 of 1912 and 273 of 1910.)

Minnesota.—It is unlawful to have fish in possession if unlawfully taken without the State (sec. 4785). Provision is made for the removal of carp (ch. 348, laws 1915). Counties may screen navigable lakes that have been stocked (sec. 753).

Wisconsin.—Waters of State are divided into "outlying" and "inland" and each defined (sec. 62.26). Game fish are declared to be trout, grayling, lake trout, whitefish, crappie, black bass, striped bass, rock bass, pike perch, catfish, muskellunge, sturgeon, and pickerel, in all waters, and yellow perch in certain waters; rough fish are all others (sec. 62.27). Fishermen must permit State officials to remove eggs and milt from fish captured (sec. 62.56).

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grade flour or middlings, and a little ground meat. For the first week or ten days he fed five times a day; after that, three times.

In an experiment conducted at the Purdue (Indiana) Station chickens fed milk and grain made an average weekly gain of 4.46 ounces, while those receiving no milk gained but 2.62 ounces per week. The growth of the milk-fed chickens was more uniform as well as more rapid. The general result seemed to show the beneficial effect in every way of the skim-milk.

It is not possible for all to give their chicks unlimited range, says Ohio Poultry Journal, and in such cases the feeder will have to make up the deficiency by feeding bone-forming elements. The best of these is green cut bone.

William C. King, Hopkinton, Mass., says he feeds no meat food to baby chicks until they are four weeks old. After that about ten per cent of the mash food is composed of meat in some form as long as he keeps the bird. He has found that an over-supply of meat fed to stock in confinement is apt to cause a watery discharge from the bowels, but birds on free range can stand nearly any amount.

Geo. Hall, East Islip, N. Y., says in feeding green cut bone, about a half ounce can be allowed for half-grown chicks, but little ones should not have over an eighth of an ounce each.

When the chicks have good appetites, but weak legs, the chicks moving about on their knees, it denotes too rapid growth. A teaspoonful of citrate of iron and ammonia (a solid) in each quart of drinking water, is recommended.

Dr. G. M. Twitchell, before the Massachusetts State Board of Agriculture, said:

"In no place is skimmed milk more valuable than in growing chicks. In my own experience I found the best ration for market poultry to be thirty per cent of oats and wheat, twenty of corn and ten of linseed all ground together and ten of meat scraps added. This mixed into a dough with skimmed-milk I would bake until thoroughly cooked, set away for a day or more and then pound fine and feed. In this combination I consider linseed one of the most valuable parts, it is rich albuminous food and hence valuable in forcing growth. If these chicks were intended to furnish future layers I would change the ration to meet the changed condition. No matter how choice the stock, how careful the breeding, how well balanced the ration, unless regularity be observed in feeding it is utterly useless to expect to succeed. Hunger must be appeased at once, or the system draws upon its own stores for nourishment. If regular hours are observed nature adapts the animal to the condition. Green food must be supplied liberally, and for want of this many broods are lost. A good plan is to sow oats or rape-seed in boxes, and cut when two or three inches high, chopping fine and feeding freely."

Frank Y. Hopping, tells in the Germantown Telegraph, how he feeds chicks to get big broilers for the early market. He says: "I have found the following method of feeding chicks for broilers the

best: The first week I give cracked wheat, then after that I give a mixture of ground oats and corn, equal parts, about a fourth part of middlings, and a handful of ground meat. The whole mixture is scalded several hours before feeding, and then fed only moist. Also chopped up cabbage, boiled or raw potatoes and other vegetables, feeding either separate or in with the mash. Whole wheat or cracked corn is also fed between meals. The mash is fed morning noon and night, and the same continued until ready for market, the supply of meat, however, being gradually increased the older they become. Coal ashes, charcoal and ground oyster shells are constantly within reach."

M. Sumner Perkins, in *Farm Journal*, says:

"For twenty-four hours the chick needs no food whatever, and is better off without it. For the first two or three weeks, a mixture of hard boiled eggs and bread crumbs, moistened in sweet milk is as good as anything. Eggs are first-class food, if not fed too plentifully, in which case they are very liable to produce diarrhoea. Oatmeal is another very nutritious food, and it may be either boiled to the consistency of a stiff pudding, or it may be mixed with other grain and baked into a cake. Waste bread from hotels can be purchased cheaply. This contains beside common wheat bread, a species of corn cake that forms splendid chicken food. Corn cake can easily be made by anyone by mixing a little shorts with corn meal, preparing and baking the same as in the case of ordinary family bread. Milk in all its forms, is much relished by all classes of poultry. Chickens when allowed plenty of the same, can well-nigh be seen to grow. The bones and frame-work under such a diet develop rapidly and perfectly. As the chicken grows older, cracked corn, oats, wheat, barley and buckwheat, can all be used with profit. The greater the variety in the food and manner of feeding, the better it is.

"Animal food must always be supplied, a little at first, the quantity to increase with age of the chicks. Beef trimmings, livers, hearts, etc., of sheep and cattle, when boiled and finely chopped will fill the bill. If the prepared beef scrap of commerce be relied upon, care should be exercised to buy one the best grade. A greasy, mouldy article is in no wise suitable for chickens, and disease will surely follow the use of such. The tender heart of a cabbage, clover cured when in full bloom, steamed and finely chopped, potatoes and other roots, will supply acceptable vegetable food.

"Coarse sand, bits of charcoal, cracked oyster shells and broken bones, should always be in reach as each of these substances has its own use.

"To sum this whole matter of winter chicken-raising up in a nut-shell, select vigorous, breeding stock, incubate only large perfect eggs from the same, place the chicks soon after hatched in a good brooder, comfortably warmed, feed well upon a variety of nourishing and natural food, keep all appurtenances scrupulously clean, and the chickens will take care of themselves. It must be borne in mind that the chick in winter is wholly dependent upon the