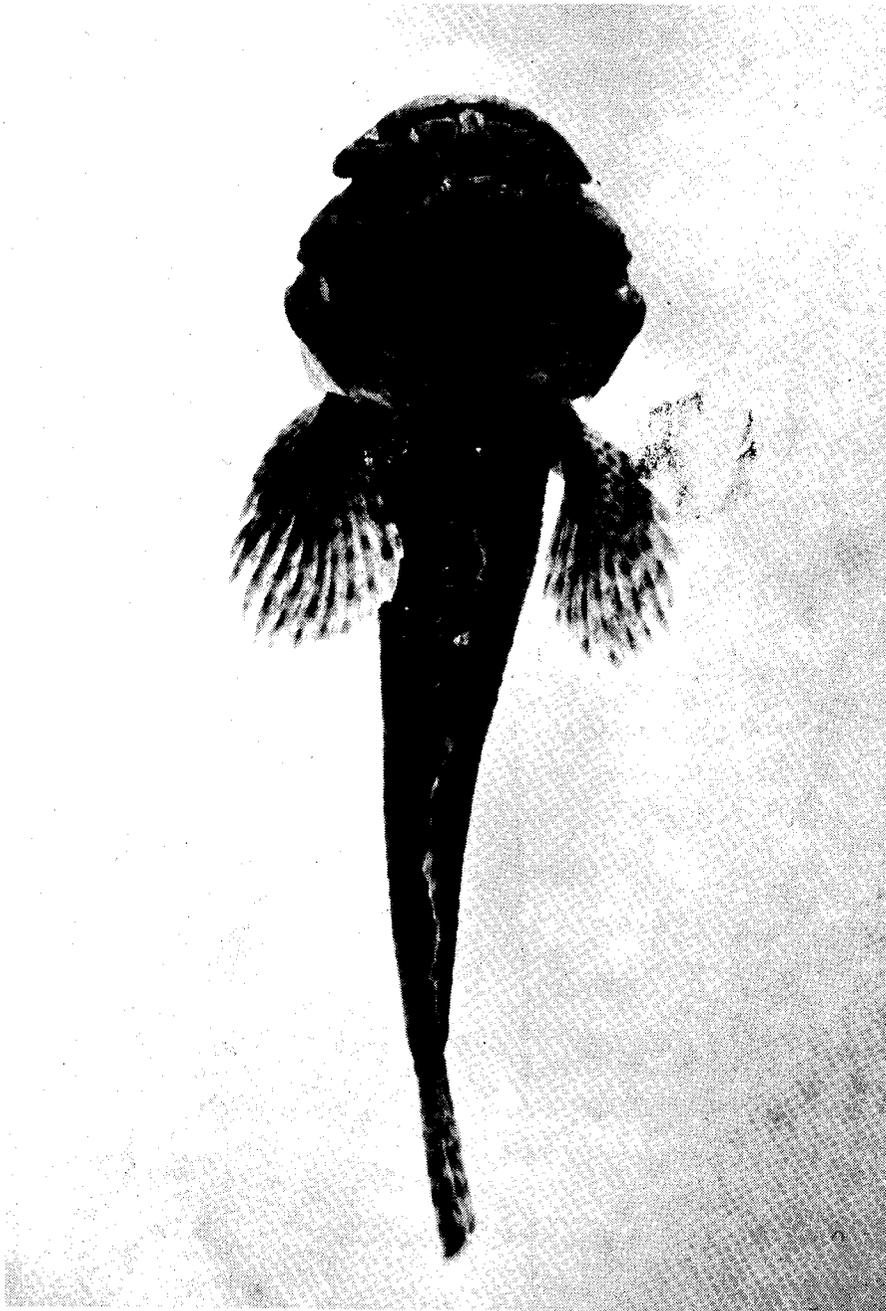


FISHES OF IDAHO

Checklist and Keys



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By
James C. Simpson
1962

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PROVISIONAL CHECK LIST OF FISHES OF IDAHO

PETROMYZONTIDAE - lamprey

Lampetra tridentata (Gairdner). Pacific lamprey. (N)

Snake River system below Shoshone Falls. Common.

ACIPENSERIDAE - sturgeon

Acipenser transmontanus Richardson. White sturgeon. (N)

Snake River below Shoshone Falls; Kootenai River. Common.

SALMONIDAE - trouts, whitefishes and grayling

Coregonus clupeaformis (Mitchill). Lake whitefish. (I)

Pend Oreille Lake. Common.

Oncorhynchus

keta (Walbaum). Chum salmon. (I)

Planted in Bear Lake in 1939, but have probably disappeared.

kisutch (Walbaum). Coho salmon, silver salmon. (N)

Snake River, Lewiston. Rare.

nerka^{1/} (Walbaum). Sockeye salmon, blueback salmon, kokanee. (N)

Originally in Payette Lake and Sawtooth lakes tributary to Salmon River. Kokanee have been planted in a number of lakes outside their native range.

tshawytscha (Walbaum). Chinook salmon, king salmon. (N)

Snake River below Swan Falls; Weiser River; Salmon River and tributaries. Abundant. Clearwater River. Rare.

- (N) Native
- (I) Introduced

^{1/} The lacustrine sockeye stocks are known as kokanee.

SALMONIDAE

Prosopium

abyssicola (Snyder). Bear Lake whitefish. (N)

Bear Lake. Common.

coulteri (Eigenmann and Eigenmann). Pygmy whitefish. (N)

Pend Oreille Lake; Priest Lake. Abundant.

gemmiferum (Snyder). Bonneville cisco, peaknose. (N)

Bear Lake. Common.

spilonotus (Snyder). Bonneville whitefish. (N)

Bear Lake. Common.

williamsoni (Girard). Mountain whitefish. (N)

Widely distributed. Abundant.

Salmo

aguabonita Jordan. Golden trout. (I)

Several lakes in the Sawtooth Range and in isolated lakes in most of the mountain ranges throughout the State.

clarki Richardson. Cutthroat trout, blackspotted trout, native trout. (N)

Widely distributed. Abundant.

gairdneri Richardson. Rainbow trout, steelhead trout. (N)

Widely distributed. Steelhead are present in the Snake River below Swan Falls; lower Boise River; lower Payette River; Salmon River drainage; Clearwater River drainage. Abundant.

salar Linnaeus. Atlantic salmon, sebago salmon, landlocked salmon. (I)

Included provisionally. Planted in Payette Lake and several lakes in Sawtooth Mountains.

trutta Linnaeus. Brown trout, Loch Leven trout. (I)

Pend Oreille Lake; Clearwater River; South Fork of Snake River; Snake River from American Falls to Weiser; Portneuf River. Rare.

SALMONIDAE

Salvelinus

alpinus (Linnaeus). Arctic char, sunapee trout.

Included provisionally. Reported stocked in several lakes in Sawtooth Mountains.

fontinalis (Mitchill). Brook trout. (I)

Widely distributed. Abundant.

malma (Walbaum). Dolly Varden, bull trout, char. (N)

Snake River drainage below Shoshone Falls; Pend Oreille River drainage; Kootenai River drainage. Common.

namaycush (Walbaum). Lake trout, mackinaw trout. (I)

Bear Lake; Priest Lake. Common. Pend Oreille Lake; Payette Lake. Rare.

Thymallus arcticus (Pallas). Arctic grayling. (I)

North Fork of Payette River; North Fork of Snake River above Ashton. Rare.

OSMERIDAE - smelts

Osmerus mordax (Mitchill). American smelt. (I)

Planted in 13 lakes in Sawtooth Mountains. No evidence of survival. Included provisionally.

CYPRINIDAE - minnows and carps

Acrocheilus alutaceus Agassiz and Pickering. Chiselmouth. (N)

Snake River system below Shoshone Falls. Common.

Carassius auratus (Linnaeus). Goldfish. (I)

Isolated ponds throughout the State. Rare.

Cyprinus carpio Linnaeus. Carp. (I)

Snake River system, widely distributed. Abundant.

CYPRINIDAE

Gila atraria (Girard). Utah chub. (N)

Snake River system upstream from Shoshone Falls; Bear River;
Wood River. Abundant.

Hybopsis plumbea (Agassiz). Lake chub. (N)

Kootenai River system. Common.

Mylocheilus caurinus (Richardson). Peamouth. (N)

Snake River system below Shoshone Falls; Coeur d'Alene River;
Pend Oreille River; Kootenai River. Abundant.

Pimephales promelas Rafinesque. Fathead minnow, blackhead minnow. (I)

Planted in ponds on Perrine Trout Farm, Twin Falls.

Ptychocheilus oregonensis (Richardson). Northern squawfish. (N)

Snake River system below Shoshone Falls; Pend Oreille River
system; Coeur d'Alene River system; Kootenai River system.
Abundant.

Rhinichthys

cataractae (Valenciennes). Longnose dace. (N)

Widely distributed. Common.

falcatus (Eigenmann and Eigenmann). Leopard dace. (N)

Bruneau River. Rare.

osculus (Girard). Speckled dace. (N)

Widely distributed. Common.

Richardsonius balteatus (Richardson). Redside shiner. (N)

Snake River system; Kootenai River. Abundant.

Siphateles bicolor Girard. Tui chub. (I)

Indian Creek, Boise Valley. Common.

CYPRINIDAE

Snyderichthys copei (Jordan and Gilbert). Leatherside chub. (N)

South Fork of Snake River, upper; Bear River, upper. Rare.

Wood River. Common.

Tinca tinca (Linnaeus). Tench. (I)

Pend Oreille River system; Coeur d'Alene River system. Abundant.

CATOSTOMIDAE - suckers

Catostomus

ardens Jordan and Gilbert. Utah sucker. (N)

Snake River above Shoshone Falls; Bear River. Abundant.

catostomus (Forster). Longnose sucker. (N)

Kootenai River. Common. Snake River above Shoshone Falls;
Bear River. Abundant.

columbianus (Eigenmann and Eigenmann). Bridgelip sucker. (N)

Snake River system below Shoshone Falls; Pend Oreille River;
Coeur d'Alene River; Kootenai River. Abundant.

macrocheilus Girard. Largescale sucker. (N)

Snake River system below Shoshone Falls; Pend Oreille River;
Coeur d'Alene River; Kootenai River. Abundant.

Pantosteus platyrhynchus (Cope). Mountain sucker. (N)

Snake River system. Common.

ICTALURIDAE - catfishes

Ictalurus

melas (Rafinesque). Black bullhead, horned pout. (I)

Included provisionally.

nebulosus (Le Sueur). Brown bullhead. (I)

Widely distributed.

punctatus (Rafinesque). Channel catfish. (I)

Snake River from Weiser to Lewiston. Abundant.

ICTALURIDAE

Noturus gyrinus (Mitchill). Tadpole madtom. (I)

Lower Boise River; Snake River at Weiser. Common.

Pyiodictis olivaris (Rafinesque). Flathead catfish.

Snake River, Lewiston to Pittsburg Landing. Rare.

GADIDAE - codfishes

Lota lota (Linnaeus). Burbot, ling, lake lawyer. (N)

Kootenai River. Common.

PERCOPSIDAE - trout-perch

Percopsis transmontana (Eigenmann and Eigenmann). Sand roller. (N)

Clearwater River, Lewiston. Common.

CENTRARCHIDAE - sunfishes

Lepomis

cyaneus Rafinesque. Green sunfish. (I)

Mud Lake, Bear Lake County; Stone Reservoir, Franklin County.

Rare.

gibbosus (Linnaeus). Pumpkinseed. (I)

Widely distributed north of the Salmon River. Abundant.

macrochirus Rafinesque. Bluegill. (I)

Widely distributed in southwestern Idaho. Common.

Micropterus

dolomieu Lacépède. Smallmouth bass. (I)

Snake River below Swan Falls; Boise River, lower; Payette River,

lower; Wood River; Clearwater River. Common.

salmoides (Lacépède). Largemouth bass. (I)

Widely distributed. Common.

CENTRARCHIDAE

Pomoxis

annularis Rafinesque. White crappie. (I)

Included provisionally.

nigromaculatus (Le Sueur). Black crappie. (I)

Widely distributed. Common.

PERCIDAE - perches

Perca flavescens (Mitchill). Yellow perch. (I)

Widely distributed. Abundant.

Stizostedion vitreum vitreum (Mitchill). Walleye. (I)

Pend Oreille Lake. Rare.

COTTIDAE - sculpins

Cottus

bairdi Girard. Mottled sculpin. (N)

Snake River system above Shoshone Falls; Bear River. Abundant.

beldingi Eigenmann and Eigenmann. Piute sculpin. (N)

Cub River, Franklin County. Rare.

bendirei (Bean). Malheur sculpin. (N)

Goose Creek, Adams County. Rare.

greenei (Gilbert and Culver). Shoshone sculpin. (N)

Riley Creek near Hagerman. Common.

hubbsi Bailey and Dimick. Columbia sculpin. (N)

Warm Lake Creek, Valley County. Rare.

leiopomus Gilbert and Evermann. Wood River sculpin. (N)

Wood River. Rare.

rhotheus (Smith). Torrent sculpin. (N)

Salmon River drainage north. Common.

KEY TO FAMILIES OF FISHES OF IDAHO

1a.	Mouth a sucking disk, without jaws, but with teeth on disk; nostrils single and median; gill openings seven in number on each side; pelvic fins absent (one species) - - - - -	PETROMYZONTIDAE
1b.	Mouth not a sucking disk, jaws well developed; nostrils paired; pelvic fins present- - - - -	2
2a.	Pelvic fins abdominal- - - - -	3
2b.	Pelvic fins thoracic - - - - -	9
3a.	Back with an adipose fin - - - - -	4
3b.	Back without adipose fin - - - - -	7
4a.	Body scaleless; 8 long barbels on chin and snout; a strong single spine on the dorsal and each pectoral fin-	ICTALURIDAE
4b.	Body scaled; no barbels on the head- - - - -	5
5a.	Pectoral and anal fins with 1 or 2 spines (one species)-	PERCOPSIDAE
5b.	Pectoral and anal fins of soft rays only - - - - -	6
6a.	Axillary process present at base of pelvic fin; vomer with a shaft; pyloric caeca numerous (15 or more)- - -	SALMONIDAE
6b.	No axillary process at base of pelvic fin; vomer without a shaft; pyloric caeca few (5 or none) (one species)	OSMERIDAE
7a.	Body with large bony plates, each with keel or spine; tail heterocercal (one species)- - - - -	ACIPENSERIDAE
7b.	Body without bony plates but fully scaled; tail homocercal - - - - -	8
8a.	Mouth inferior, protractile and suckerlike; lower pharyngeal teeth numerous (9 or more) and in 1 row - - -	CATOSTOMIDAE
8b.	Mouth terminal, occasionally subterminal; pharyngeal teeth few (4 to 5 in main row) in 1 to 3 rows, not comblike - - - - -	CYPRINIDAE
9a.	Body scaleless or scales minute- - - - -	10
9b.	Body scaled, scales well developed and ctenoid- - - - -	11
10a.	Chin with barbel; body "eel-shaped" (one species)- - -	GADIDAE
10b.	Chin without barbel; body tapering sharply from head to caudal fin - - - - -	COTTIDAE

11a. Spines in anal fin I or II; spinous and soft dorsal
separate - - - - -

PERCIDAE

11b. Spines in anal fin III to VII; spinous and soft dorsal
united - - - - -

CENTRARCHIDAE

KEY TO GENERA OF SALMONIDAE

- | | |
|---|------------------------------------|
| 1a. Anal fin with 13 to 19 rays, usually 14 to 17;
branchiostegals 13 to 19; gill rakers on first gill
arch 19 to 40- - - - - | <u>Oncorhynchus</u> |
| 1b. Anal fin with 9 to 12 rays; branchiostegals 10 to 12;
gill rakers 20 or less on first gill arch- - - - - | 2 |
| 2a. Dorsal fin as long as the head and with 15 or more
rays (one species) - - - - - | <u>Thymallus</u> |
| 2b. Dorsal fin shorter than the head and with less than
15 rays- - - - - | 3 |
| 3a. Scales more than 100 in lateral line; maxillary
extends behind center of eye - - - - - | 4 |
| 3b. Scales less than 100 in lateral line; maxillary does
not extend behind center of eye- - - - - | <u>Coregonus and
Prosopium</u> |
| 4a. Body spotted with black or with black and scarlet or
with scarlet with bluish ring on light background;
vomer with a plane shaft bearing teeth in
alternating rows or a zigzag row - - - - - | <u>Salmo</u> |
| 4b. Body without black spots, but may have lighter spots
on a dark background; vomer with a troughlike
toothless shaft, teeth confined to head of shaft - - - - | <u>Salvelinus</u> |

KEY TO SPECIES OF COREGONUS AND PROSOPIUM*

- | | | |
|--|---|-------------------------------|
| 1a. A single flap between nostrils - - - - - | 2 | |
| 1b. Two flaps between nostrils - - - - - | 5 | |
| 2a. Scales in lateral line 65 or less- - - - - | | <u>Prosopium coulteri</u> |
| 2b. Scales in lateral line more than 65- - - - - | 3 | |
| 3a. Gill rakers on first arch 19 - - - - - | 4 | |
| 3b. Gill rakers on first arch 20 to 24 - - - - - | | <u>Prosopium williamsoni</u> |
| 4a. Scales in lateral line 68 to 79, usually 69 to 74- - - | | <u>Prosopium abyssicola</u> |
| 4b. Scales in lateral line 75 to 90, usually 80 to 86- - - | | <u>Prosopium spilonotus</u> |
| 5a. Gill rakers on first gill arch 23 to 32- - - - - | | <u>Coregonus clupeaformis</u> |
| 5b. Gill rakers on first gill arch 41 to 44- - - - - | | <u>Prosopium gemmiferum</u> |

* The whitefishes are so variable that it is nearly impossible to construct a satisfactory key for their identification. The characters used in the key have been taken from several publications. Admittedly, the key will be of greatest value when it is used in conjunction with a distributional list of the specimens being studied.

KEY TO SPECIES OF ONCORHYNCHUS

- | | |
|--|--------------------|
| 1a. Gill rakers short, 19 to 28- - - - - | 2 |
| 1b. Gill rakers long, 30 to 50 - - - - - | <u>nerka</u> |
| 2a. Anal rays 13 to 15 - - - - - | 3a |
| 2b. Anal rays 15 to 17 - - - - - | <u>tshawytscha</u> |
| 3a. Pyloric caeca 50 to 80 - - - - - | <u>kisutch</u> |
| 3b. Pyloric caeca 150 to 180 - - - - - | <u>keta</u> |

KEY TO SPECIES OF SALMO

- 1a. Lateral line scales more than 150- - - - - 2
- 1b. Lateral line scales less than 150- - - - - 3
- 2a. A bright red or pink dash on underside of each mandible;
hyoid teeth (small teeth behind those on tip of tongue)
always present; spotting more or less covers entire body clarki
- 2b. No cutthroat marks, or, at most, a small pale yellow
or reddish streak; no hyoid teeth present; spots
usually concentrated posteriorly to dorsal fin; parr
marks usually persist in adult - - - - - aguabonita
- 3a. Sides of body with red spots; black spots larger and
more diffuse; caudal fin without spots, or at most
with a few restricted to dorsal portion- - - - - trutta
- 3b. Sides of body and dorsal, anal and caudal fins
covered with many small, dark or black spots; a broad
pink or red band along the sides - - - - - gairdneri

KEY TO SPECIES OF SALVELINUS

- 1a. Caudal fin rather deeply forked; body spotted and vermiculated with gray; lower fins not edged with white - - - - - namaycush
- 1b. Caudal fin squarish or only slightly forked; red or orange spots on sides; lower fins edged with white - - - - - 2
- 2a. Dorsal rays 9; anal rays usually 8 - - - - - alpinus
- 2b. Dorsal rays 10 or 11; anal rays 9 or 10- - - - - 3
- 3a. Back with wormlike markings on a dark background; dorsal and caudal fins mottled - - - - - fontinalis
- 3b. Back not mottled, but with light spots on dark background; dorsal and caudal fins not mottled - - - - - malma

KEY TO GENERA OF CYPRINIDAE

1a.	A spine, usually serrated, in front of dorsal and anal fin- - - - -	2
1b.	Dorsal and anal fins not preceded by a spine - - - - -	3
2a.	Barbels present, 2 pairs on upper jaw (one species)- - -	<u>Cyprinus</u>
2b.	Barbels absent (one species) - - - - -	<u>Carassius</u>
3a.	Scales more than 100 along the lateral line (one species)	<u>Tinca</u>
3b.	Scales fewer than 100 along lateral line - - - - -	4
4a.	Lower jaw with a broad, straight-edged, conspicuous, horny plate (one species)- - - - -	<u>Acrocheilus</u>
4b.	Lower jaw without straight-edged horny plate - - - - -	5
5a.	Anal fin with 10 to 22 rays; depth 3-1/4 to 4-1/4 in standard length (one species)- - - - -	<u>Richardsonius</u>
5b.	Anal fin with fewer than 10 rays - - - - -	6
6a.	Barbels present- - - - -	7
6b.	Barbels absent - - - - -	9
7a.	Mouth terminal or oblique, but never subterminal; barbel anterior to angle of jaw- - - - -	8
7b.	Mouth subterminal, almost suckerlike; barbel at angle of jaw, sometimes inconspicuous- - - - -	<u>Rhinichthys</u>
8a.	Scales 12 to 13, 73 to 79, 7 to 9; pharyngeal teeth 1, 5-5, 1 (one species)- - - - -	<u>Mylocheilus</u>
8b.	Scales 10 to 11, 55 to 58, 6 to 8; pharyngeal teeth 2, 4-4, 2 (one species)- - - - -	<u>Hybopsis</u>
9a.	First ray of dorsal fin heavy and blunt; scales large, usually 45 to 50 along lateral line (one species)- - -	<u>Pimephales</u>
9b.	First ray of dorsal fin not heavy and blunt; scales usually more than 50 - - - - -	10
10a.	Scales more than 65 along lateral line - - - - -	11
10b.	Scales fewer than 65 along lateral line- - - - -	12
11a.	Body long and slender, pikelike, head slender with snout long and pointed; mouth very large; scales in lateral line 67 to 75 (one species)- - - - -	<u>Ptychocheilus</u>

- 11b. Body not long and slender, not pikelike; head not slender, more than half as deep as long; mouth moderate to small; scales along lateral line about 80 (one species) - - - - - Snyderichthys
- 12a. Scales in lateral line 55 to 63 (one species)- - - - - Gila
- 12b. Scales in lateral line 41 to 53 (one species)- - - - - Siphateles

KEY TO SPECIES OF RHINICHTHYS

- 1a. Premaxillaries protractile, separated from snout by
a complete groove- - - - - 2
- 1b. Premaxillaries not protractile, but connected by
bridge of skin or frenum to tip of snout - - - - - cataractae
- 2a. Scale radii present on all fields; caudal peduncle
deep, its least depth contained 2.35 to 2.5 in head- - - osculus
- 2b. Scale radii absent on basal field; caudal peduncle
slender, its least depth contained 2.6 to 2.68 in
head - - - - - falcatus

KEY TO GENERA OF CATOSTOMIDAE

1a. A distinct notch at the corners of the mouth between upper and lower lips; lower jaw with well-defined, square-cut, hard cartilaginous sheath (one species) - - -

Pantosteus

1b. No distinct notch at corners of the mouth between upper and lower lips; lower jaw without a well-defined hard cartilaginous sheath - - - - -

Catostomus

KEY TO SPECIES OF CATOSTOMUS

- 1a. Lower lip not deeply incised, at least 2 rows of papillae crossing the midline; peritoneum jet black - - - columbianus
- 1b. Lower lip deeply incised, at most 1 row of papillae crossing the midline; peritoneum dusky - - - - - 2
- 2a. Scales 95 or more in lateral line- - - - - catostomus
- 2b. Scales fewer than 80 in lateral line - - - - - 3
- 3a. Scales 11 to 16 (usually 12 or 13), 65 to 79 (usually 72 to 75), 7 to 10; dorsal rays 12 to 15, rarely 12- - - macrocheilus
- 3b. Scales 10 to 12 (usually 11), 61 to 73 (usually 66 to 68), 7 to 9; dorsal rays 11 to 13, rarely 13 - - - - - ardens

KEY TO GENERA OF ICTALURIDAE

- | | |
|---|-------------------|
| 1a. Adipose fin adnate to back (one species) - - - - - | <u>Noturus</u> |
| 1b. Adipose fin not adnate to back - - - - - | 2 |
| 2a. Anal rays 12 to 15; head flattened dorso-ventrally;
band of teeth in upper jaw with backward lateral
extensions (one species) - - - - - | <u>Pylodictis</u> |
| 2b. Anal rays more than 15; band of teeth in upper jaw
without backward lateral extensions- - - - - | <u>Ictalurus</u> |

KEY TO SPECIES OF ICTALURUS

- | | |
|---|------------------|
| 1a. Caudal fin deeply forked - - - - - | <u>punctatus</u> |
| 1b. Caudal fin not deeply forked, but rounded or square- - - | 2 |
| 2a. Pectoral spine strongly barbed on posterior edge, offers resistance when grasped by thumb and forefinger- - - - - | <u>nebulosus</u> |
| 2b. Pectoral spine smooth or weakly barbed on posterior edge - - - - - | <u>melas</u> |

KEY TO GENERA OF CENTRARCHIDAE

- | | |
|---|--------------------|
| 1a. Anal spines 5 or more- - - - - | <u>Pomoxis</u> |
| 1b. Anal spines 3- - - - - | 2 |
| 2a. Scales 58 or more in lateral line; body elongate (bass-shaped)- - - - - | <u>Micropterus</u> |
| 2b. Scales 53 or less in lateral line; body deep (sunfish-shaped)- - - - - | <u>Lepomis</u> |

KEY TO SPECIES OF LEPOMIS

- 1a. Mouth rather large, upper jaw reaching nearly to the middle of eye; pectoral fins short and rounded - - - - - cyanelus
- 1b. Mouth small, upper jaw not reaching to middle of eye; pectoral fins long and pointed - - - - - 2
- 2a. Gill rakers long and slender; opercular bone on rear margin of gill cover flexible- - - - - macrochirus
- 2b. Gill rakers short and knoblike; opercular lobe stiff and with a definite scarlet spot - - - - - gibbosus

KEY TO SPECIES OF POMOXIS

- 1a. Dorsal spines 7 or 8, rarely 6 or 9; distance from eye to front of dorsal fin base about equal to the base of the dorsal fin; body speckled- - - - - nigromaculatus

- 1b. Dorsal spines 6, rarely 7; distance from eye to front of dorsal fin base greater than base of dorsal fin; black spots on sides forming definite bars- - - - - annularis

KEY TO SPECIES OF MICROPTERUS

- 1a. Dorsal fin almost completely divided; upper jaw extends
past the posterior margin of eye - - - - - salmoides
- 1b. Dorsal fin not deeply notched; upper jaw does not
extend to posterior margin of eye- - - - - dolomieui

KEY TO GENERA OF PERCIDAE

- 1a. Canine teeth absent; sides golden yellow; body with six or more broad crossbars; pelvic fins close together (one species) - - - - - Perca

- 1b. Canine teeth present and elongate; body without crossbars; pelvic fins far apart (one species) - - - - - Stizostedion

KEY TO SPECIES OF COTTUS

1a.	Preopercular spines absent, or at most poorly developed- - - - -	<u>leiopomus</u>
1b.	Preopercular spines present- - - - -	2
2a.	Preopercular spine 1 - - - - -	3
2b.	Preopercular spines 2 to 4, usually 3- - - - -	4
3a.	Pelvic fin rays I, 4; dorsal fin rays VII - VIII, 17 to 19; lateral line complete or nearly complete - - -	<u>beldingi</u>
3b.	Pelvic fin rays I, 3; dorsal fin rays VI, 18 to 19; lateral line very incomplete - - - - -	<u>greenei</u>
4a.	Body without prickles- - - - -	<u>bendirei</u>
4b.	Body with prickles - - - - -	5
5a.	Lateral line complete- - - - -	6
5b.	Lateral line incomplete- - - - -	<u>bairdi</u>
6a.	Least depth of caudal peduncle 3.7 to 4.6 in head length; prickles restricted to small area mesial to pectoral fin - - - - -	<u>hubbsi</u>
6b.	Least depth of caudal peduncle 4.8 to 6.4 in head length; prickles on body well developed and covering upper sides far back on body - - - - -	<u>rhotheus</u>

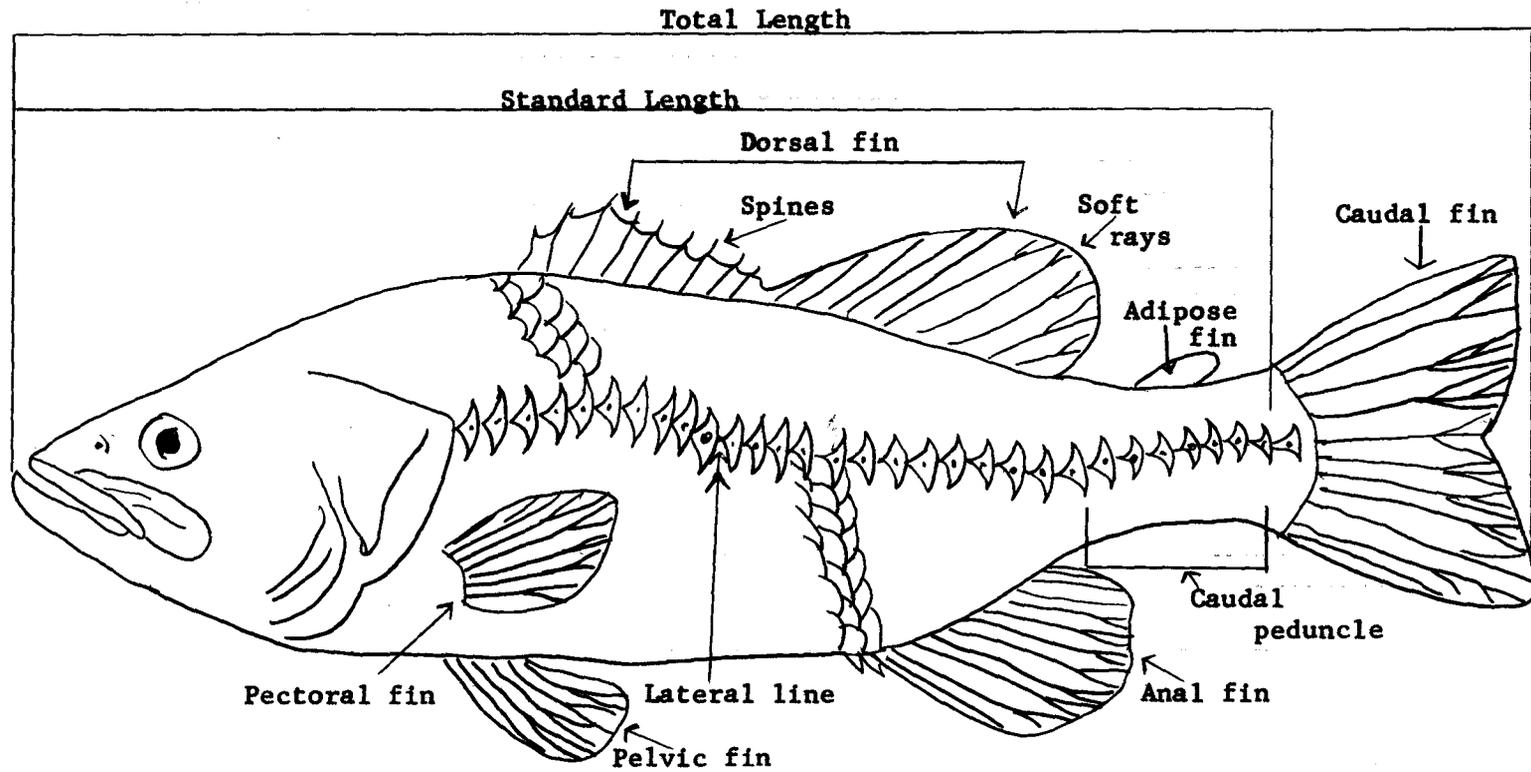


Figure 1. Topography of a fish showing location of structures, methods of measurement and regions used in identification.

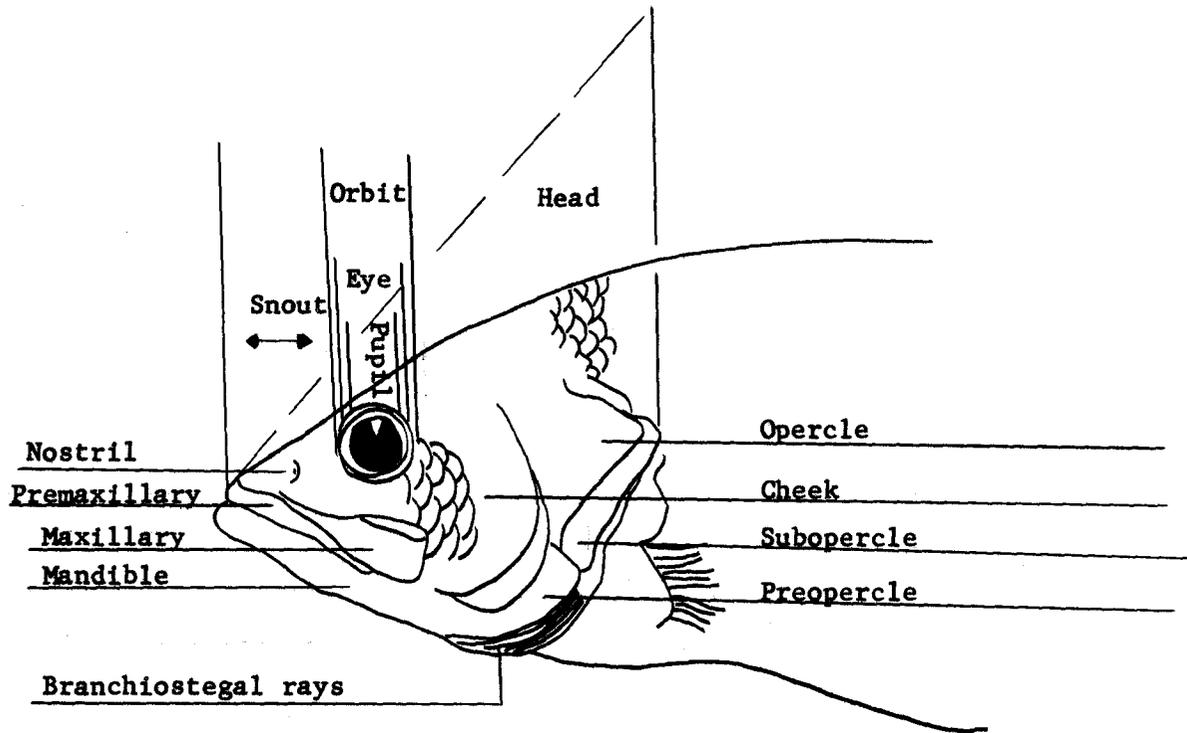
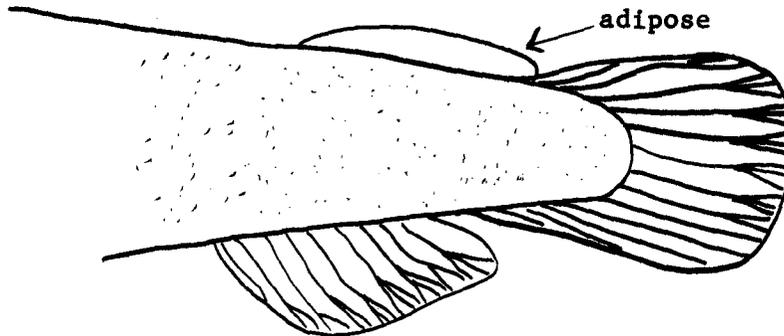


Figure 2. Head of a fish showing structures and regions used in identification.

GLOSSARY

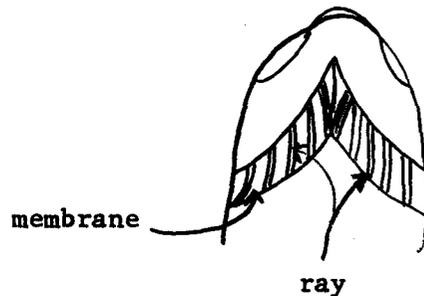
ADNATE: In catfish, applied to adipose fin that is joined in its full length to the back.



BARBEL: A threadlike structure on the head, usually near the mouth (catfish, ling); may be a short, minute protuberance at end of the maxillary (some minnows).

BRANCHIOSTEGAL MEMBRANE: Membrane connecting gill cover with throat.

BRANCHIOSTEGAL RAYS: Slender, often flattened, bones which support the branchiostegal membrane.



CAECA: Slender fingerlike structures arising from the junction between the stomach and intestine.

CANINE: Pointed tooth.

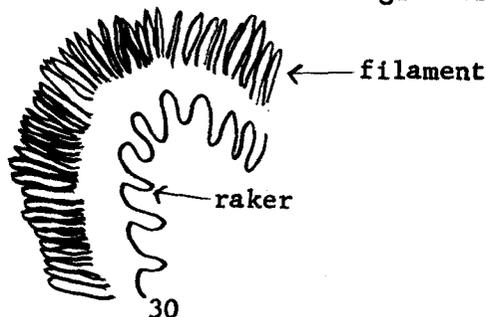
CTENOID: See SCALE.

CYCLOID: See SCALE.

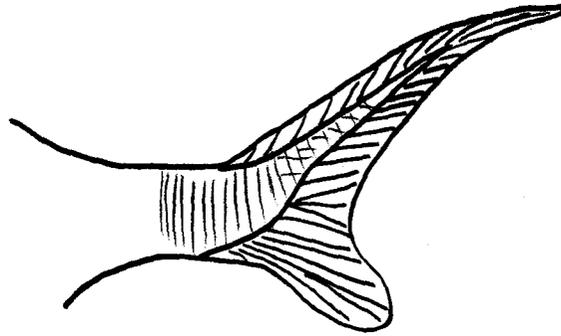
FRENUM: Fleishy bridge of tissue that connects the upper lip and snout.

GILL FILAMENT: Slender red structures for absorption of oxygen on arch of gill.

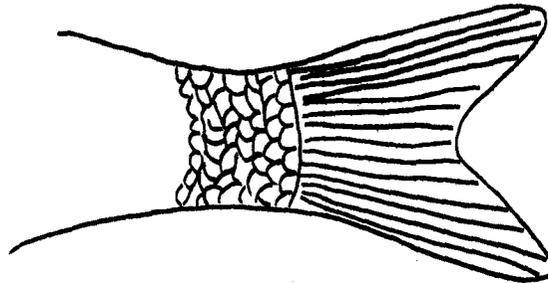
GILL RAKER: A rodlike projection on inner face of gill arch.



HETEROCERCAL FIN: The vertebral column extending into the upper lobe of the caudal fin.



HOMOCERCAL FIN: Vertebral column ending at the base of caudal fin.



HYOID TOOTH: One of a number of teeth on the tongue of fishes.

HYOID: A series of bones anterior to the gill arches and extending forward in floor of mouth.

PARR MARK: One of a number of vertical dark bars on the sides of some young fishes.

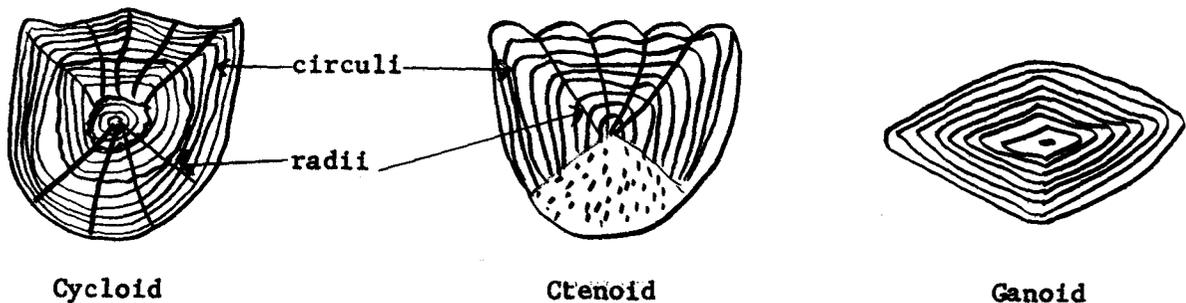
PERITONEUM: The lining of the body cavity.

PHARYNGEAL: A toothed bone of the throat region of fishes.

PROTRACTILE: Capable of extending forward, indicated by groove completely separating premaxillary from snout.

RADII: See SCALE.

SCALE: Small bony plates in skin of fish overlapping each other except in case of ganoid scale.



VOMER: An unpaired bone lying near the front of the roof of the mouth.

