

Key to Fishes in Ichthyology Lab*

- 1a Mouth without jaws2
- 1b Mouth with upper and lower jaws6

- 2a Mouth a funnel-like depression lined with horny teeth Lamprey family, Petromyzontidae3
- 2b Mouth surrounded by tentaclesHagfish family, Myxiniidaehagfish

- 3a Dorsal fin separated into 2 parts4
- 3b Dorsal fin continuous5

- 4a Total length >30 cmsea lamprey
- 4b Total length <30 cmAmerican brook lamprey

- 5a Teeth on each side of oral opening in buccal funnel mostly unicuspid silver lamprey
- 5b Teeth on each side of oral opening in buccal funnel mostly bicuspidchestnut lamprey

- 6a Caudal fin is typical or modified heterocercal type7
- 6b Caudal fin is homocercal type12

- 7a Mouth is under and behind tip of projecting snout8
- 7b Mouth is located at tip of snout10

- 8a Snout long and paddle-like, no scales or bony plates on bodyPaddlefish family, Polyodontidaepaddlefish
- 8b Snout shovel-like, scales or bony plates on bodySturgeon family, Acipenseridae9

- 9a Caudal peduncle thick, lower lip with 2 lobeslake sturgeon
- 9b Caudal peduncle very thin, lower lip with 4 lobesshovelnose sturgeon

- 10a Jaws elongate, body covered with diamond-shaped ganoid scalesGar family, Lepisosteidae11
- 10b Jaws not elongate, body covered with cycloid scalesBowfin family, Amiidaebowfin

- 11a Snout long and slender, >2X length of head.....longnose gar
- 11b Snout short, broad, with rounded point <2X length of head.....shortnose gar
- 11c Snout broad and blunt, upper jaw with 2 rows of large teethalligator gar

- 12a Body elongate or eel-like.....Freshwater eel family, AnguillidaeAmerican eel
- 12b Body not elongate or eel-like13

- 13a Pelvic fins near anus, abdominal in position.....14
- 13b Pelvic fins near pectoral fins, thoracic or jugular in position43

- 14a Head without scales15
- 14b Head more or less covered with scales29

- 15a Fins without spines (except introduced carps)16
- 15b Fins with both spines and soft rays37

- 16a Four or more branchiostegal rays present on each side17
- 16b Fewer than four branchiostegal rays present on each side22

17a	No adipose fin present	18
17b	Adipose fin present	19
18a	Lateral line absentHerring family, Clupeidae	<u>gizzard shad</u>
18b	Lateral line presentMooneye family, Hiodontidae	<u>mooneye</u>
19a	No axillary process present at base of pelvic fin	Smelt family, Osmeridae..... <u>rainbow smelt</u>
19b	Axillary process present at base of pelvic fin... ..	Salmon family, Salmonidae20
20a	Fewer than 100 scales in lateral line, maxillary does not extend behind center of eye.....	<u>cisco</u>
20b	More than 100 scales in lateral line, maxillary extends behind center of eye	21
21a	Anal fin rays 15-17	<u>chinook salmon</u>
21b	Anal fin rays 12 or less, body with dark spots on light background.....	<u>brown trout</u>
21c	Anal fin rays 12 or less, body and most fins with dark speckles	<u>rainbow trout</u>
21d	Anal fin rays 12 or less, body with light spots on dark background.....	<u>brook trout</u>
22a	More than 10 dorsal rays	Sucker family, Catostomidae23
22b	Usually 10 or fewer dorsal rays (except introduced carps) ...3 minnow families, Cyprinidae, Xenocyprinidae, Leuciscidae	28
23a	Dorsal fin long (25-40 rays)	24
23b	Dorsal fin short (11-18 rays)	26
24a	Anterior dorsal rays as long as base of fin.....	<u>quillback</u>
24b	Anterior dorsal rays much shorter than base of fin	25
25a	Mouth large, upper lip almost level with lower edge of eye	<u>bigmouth buffalo</u>
25b	Mouth small, upper lip far below lower edge of eye	<u>smallmouth buffalo</u>
26a	Lateral line incomplete, each scale with a distinct spot	<u>spotted sucker</u>
26b	Lateral line complete	27
27a	Lower lip with lines or folds, halves meet in almost straight line.....	<u>shorthead redhorse</u>
27b	Lower lip with lines or folds, halves meet in slight V-shape	<u>golden redhorse</u>
27c	Lower lip with bumps	<u>white sucker</u>
28a	Pectoral fins with spines, large fish	29
28b	Pectoral fins without spines, small fish.....	30
29a	Barbels on each side of upper jaw.....	<u>common carp</u>
29b	Without barbels on upper jaw	<u>grass carp</u>
30a	Lower lip with hard cartilaginous front edge	<u>central stoneroller</u>
30b	Lower lip without hard cartilaginous front edge	31
31a	Small barbel at or near end of maxillary	32
31b	No barbel present, sides with 2 horizontal stripes	<u>southern redbelly dace</u>
31c	No barbel present, sides with only single horizontal stripe	33
32a	Snout greatly elongated, overhanging lower jaw	<u>longnose dace</u>
32b	Snout slightly overhanging lower jaw	<u>blacknose dace</u>

32c	Snout not overhanging lower jaw	<u>creek chub</u>
33a	First dorsal fin ray half-sized, but distinct from larger rays	34
33b	Half-sized first dorsal ray fused to adjacent larger ray	35
34a	Lateral line incomplete, mouth terminal and oblique	<u>fathead minnow</u>
34b	Lateral line complete, mouth subterminal and horizontal	<u>bluntnose minnow</u>
35a	Body depth ≥ 5 times in standard length	<u>emerald shiner</u>
35b	Body depth < 5 times in standard length	36
36a	Mouth subterminal and large	<u>bigmouth shiner</u>
36b	Mouth terminal, dark spot on long dorsal fin.....	<u>spotfin shiner</u>
36c	Mouth terminal, no dark spot on short dorsal fin	<u>common shiner</u>
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38a	Caudal fin deeply forked	<u>channel catfish</u>
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39a	Adipose fin present	Troutperch family, Percopsidae
39b	Adipose fin absent	<u>trout-perch</u>
40a	Small spiny dorsal fin in front of soft dorsal fin ...Silverside family, Atherinopsidae ...	<u>brook silverside</u>
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41b	Jaws not shaped like a duckbill.....	Mudminnow family, Umbridae
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42a	Dark bars or spots on light background, 6 or more pores on each side of ventral surface of lower jaw	<u>Alaska blackfish</u>
42b	Light spots on dark background, 5 or fewer pores on each side of ventral surface of lower jaw	<u>muskellunge</u>
43a	Fins without spines or hard rays	Cod family, Gadidae.....
43b	Fins with spines or hard rays	<u>burbot</u>
44a	Body without scales	44
44b	Body with scales	45
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45b	Dorsal spines united to each other by fin membrane	<u>brook stickleback</u>
46a	Anal spines 3 or more	Sculpin family, Cottidae.....
46b	Anal spines less than 3	<u>slimy sculpin</u>
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47b	Opercles without well-developed spine.....	48
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47b	Opercles without well-developed spine.....	Sunfish family, Centrarchidae

48a	Body elongated	49
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50a	Base of dorsal fin only slightly longer than anal fin	51
50b	Base of dorsal fin much longer than base of anal fin.....	52
51a	Sides mottled with irregular dark spots	<u>black crappie</u>
51b	Dark spots on sides arranged as vertical bars	<u>white crappie</u>
52a	Mouth large, maxillary extending behind middle of eye	<u>rock bass</u>
52b	Mouth small, maxillary not extending behind middle of eye	53
53a	Pectoral fin short and rounded	<u>green sunfish</u>
53b	Pectoral fin long and pointed	<u>bluegill</u>
54a	Second anal spine broad and long, lateral line extends onto caudal fin	Drum family, Sciaenidae
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57b	Lower lobe of caudal fin not whitish, spiny dorsal fin spotted with no dark spot at posterior base	<u>sauger</u>
58a	Length ≥ 7 X greater than body height, anal fin with only single spine	<u>crystal darter</u>
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60b	Mouth terminal, 9-10 dark blotches along lateral line	<u>slenderhead darter</u>
60c	Mouth terminal, 5-6 black blotches along lateral line	<u>blackside darter</u>
61a	Sides with row of W-shaped blotches	<u>johnny darter</u>
61b	Sides with dark spots on scales, forming longitudinal lines	<u>fantail darter</u>
62a	Pelvic soft fin rays usually 3.....	<u>slimy sculpin</u>
62b	Pelvic soft fin rays usually 4.....	<u>mottled sculpin</u>

*spiny dogfish, skate, spotted ratfish, West African lungfish, and bichir are not included in this key