

Classification Key to Certain Fish

Background: A dichotomous key is a tool that allows the user to determine the identity of items in the natural world, such as trees, wildflowers, mammals, reptiles, rocks, and fish. Keys consist of a series of "either or" choices that lead the user to the correct name of a given item. "Dichotomous" means "divided into two parts". Therefore, dichotomous keys always give two choices in each step.

Barbel – a fleshy projection from the lip or head.

Body Dimension Ratio – is a comparison of the length to width (in other words is the fish long and thin or shorter and thick). It's calculated by dividing the length by the width of the fish.

FINS:

Adipose - a small fin on the top mid-line of the body near the tail fin.

Anal - a fin along the lower mid-line of the body near the tail fin.

Caudal - tail fin.

Dorsal - the fin or fins along the top mid-line of the body.

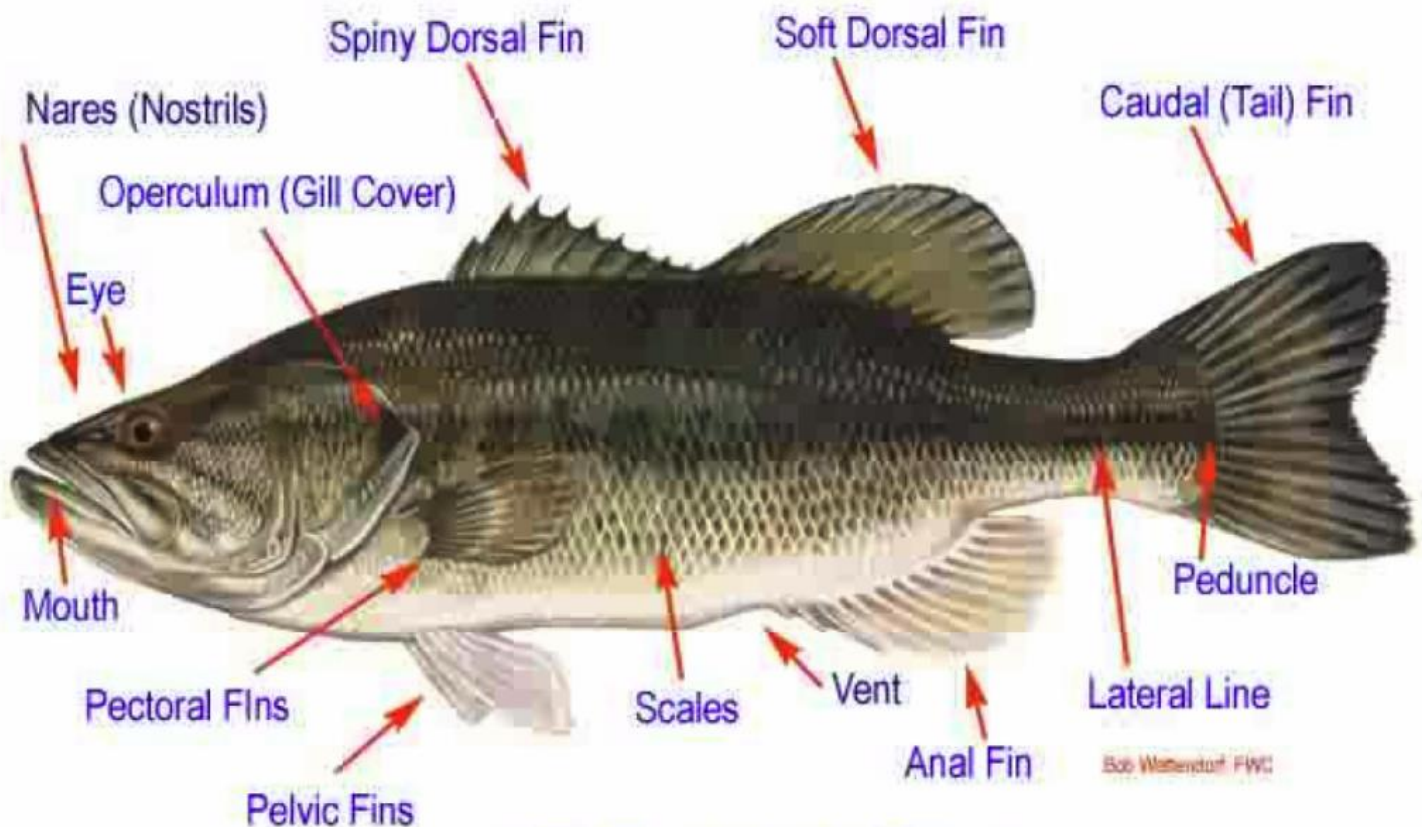
Pectoral - the paired fins nearest the head, corresponding to front legs or arms.

Pelvic - the paired fins nearest the tail, corresponding to hind legs.

Scales - overlapping outgrowths of the skin.

Anterior – towards the front or head of fish.

Posterior – towards the back or tail of fish.



EXTERNAL ANATOMY

Classification Key to Certain Fish

1. a. Body noticeably covered with scales.....Go to 2
b. Scales **not** covering body or too small to be seen.....Go to 12
2. a. Dorsal fins two or more, joined or separated.....Go to 6
b. Dorsal fin single.....Go to 3
3. a. Body more than 5.5 times as long as broad (top to bottom): front edge of dorsal fin far back on body; mouth large.....Go to 4
b. Body less than 5.5 times as long as broad: front edge of dorsal fin about midway between head and tail; mouth not large, hinge in front of eyeGo to 5
4. a. Dark lines forming netted design on body: caudal fin light at tip.....**Esox niger**
b. Body covered with light blotches; caudal fin not light at tip.....**Esox lucius**
5. a. Mouth turned downward: barbels absent; dorsal fin not elongated.....**Catostomus commersonii**
b. Mouth not turned downward: barbels present; dorsal fin elongated.....**Cypinus carpio**
6. a. Two dorsal fins clearly separated, the anterior spiny and the posterior soft.....Go to 7
b. Two dorsal fins united or nearly touching, forming an anterior spiny portion and a posterior soft portion.....Go to 8
7. a. Golden color with dark vertical bars on body; lower portion of mouth protrudes further forward than upper.....**Perca flavescens**
b. Black patch on posterior end of spiny dorsal fin; upper and lower portion of mouth protrude the same distance forward.....**Sander vitreus**
8. a. Body dimension ratio of 3.5 or greater.....Go to 9
b. Body dimension ratio of 3.4 or less.....Go to 10
9. a. White tipped anal fin; body lighter and slightly golden with dark stripe running horizontally along midline of body.....**Micropterus salmoides**
b. Anal fin not white tipped; body darker.....**Micropterus dolomieu**
10. a. Has 7 or less spines on the anterior portion of dorsal fin.....**Pomoxis annularis**
b. Has 8 or more spines on the anterior portion of dorsal finGo to 11
11. a. Operculum has crescent shaped black tip on posterior end.....**Lepomis macrochirus**
b. Operculum has round black marking on posterior end**Ambloplites rupestris**
12. a. Body much elongated and snakelike: dorsal, caudal, and anal fins continuous.....**Anguilla rostrata**
b. Body not elongated and snakelike: dorsal, caudal, anal fins separate; adipose fin present....Go to 13
13. a. Barbels growing from lips and top of head; head large and broad.....Go to 14
b. Barbels lacking; head not large and broad.....Go to 16
14. a. Caudal fin deeply forked; head tapering.....Go to 15
b. Caudal fin rounded or slightly indented but not forked: head blunt.....**Ameiurus melas**
15. a. Two fins on ventral side: body greenish, speckled with black markings**Ictalurus punctatus**
b. Three fins on ventral side: body purple-gray without speckles.....**Ictalurus furcatus**
16. a. Caudal fin slightly u-shaped; white belly.....Go to 17
b. Caudal fin square with a few black dots on anal fin.....**Oncorhynchus mykiss**
17. a. Distinct black spots on dorsal side.....**Salmo salar**
b. Red and gold spots along body.....**Salvelinus fontinalis**



1.

Body dimension ratio equals 5.2. Scales are inconspicuous or lacking

2.



Body dimension ratio equal 5.0. Scales lacking.



3.

Body dimension ratio equals 2.7. Scales are large and conspicuous.

4.



Body dimension ratio equals 3.7. Scales are large and conspicuous.

5.



Body dimension ratio equals 3.9. Scales are present.

6.



Body dimension ratio equals 19.7. Scales are lacking.



7.

Body dimension ratio equals 2.3. Scales are large and conspicuous.

8.



Body dimension ratio equals 4.9. Scales are inconspicuous or lacking.

9.



Body dimension ratio equals 3.4. Scales are present.

10.



Body dimension ratio equals 3.3. Scales are present.

11.



Body dimension ratio equals 6.0. Scales lacking.

12.



Body dimension ratio equals 5.8. Scales present.

14.



Body dimension ratio equals 4.6. Scales are inconspicuous or lacking.

13.



Body dimension ratio equals 4.0. Scales are large and conspicuous.

16.



Body dimension ratio equals 5.6. Scales are present.

15.



Body dimension ratio equals 5.4. Scales are present.

18.



Body dimension ratio equals 6.4. Scales are present.

17.



Body dimension ratio equals 5.3. Scales are lacking.