

# Fish Classification Lab

## Planning A

**Problem:** You and a several friends are going fishing. The lake has many different kinds of fish. However brook trout, pickerels, and wall-eyed pike are protected and there is a \$500 fine for keeping these fish. Instead of memorizing the names of all the fish, it is easier to use a taxonomic key.

**Background: Describe the value of classification.**

**Hypothesis: None**

## Planning B

**Materials:** Taxonomic key, pictures of fish paper and pencil.

## Procedures:

1. Use rulers to make a table like the one illustrated below in the data section of your lab write up:

Fish #	Key Numbers Used	Fish Name
1	1a->2b->etc	Albacore tuna

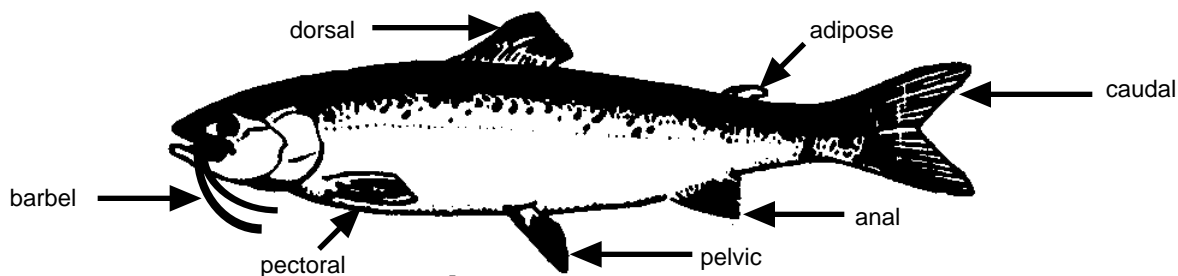
2. Use the dichotomous key on page 2 to determine which numbers to put in the middle section of your table and in turn help you determine the name of the fish.
3. With all fish begin by reading choices 1a and 1b. Determine which one may be more applicable for the pictured fish (remember not all the characteristics listed are clearly visible, but if one doesn't apply then it must be the other choice.) Follow the dotted line to the right side and it will tell you the next key step to proceed to or it will name the fish.
4. Record all the key numbers used to determine fish's identity in the middle section of your data table, and the fish's name in the end column of your data table.
5. It is important that you know how to use a dichotomous key for your next test because there will be a few questions on your next test involving the use of such a key.

## Conclusion:

1. What are some limitations when using a dichotomous key?
2. Error analysis and suggestions

## Anatomical Terms for Fish

- **barbel** - a fleshy projection from the lips or head, "whiskers".
- **adipose fin** - a small fin on the top midline of the body near the tail fin.
- **anal fin** - a fin along the lower mid-line of the body near the tail fin.
- **caudal fin** - tail fin
- **dorsal fin**- the fin or fins along the top midline of the body, "think shark".
- **pectoral fins** - a pair of fins nearest the head along the side or lower side of the body, these fins would correspond to your arms.
- **pelvic fins** - a pair of fins nearest the tail along the lower side of the body, these fins would correspond to your legs.



## Classification Key to Certain Fish

**\*\* All measurements do not include fins.**

- 1a. Body noticeably covered with scales .....2
- 1b. Scales not present or too small to be seen.....12
- 2a. Dorsal fin single .....3
- 2b. Dorsal fins two or more, joined or separated .....6
- 3a. Body more than five times as long as broad; front edge of dorsal fin far back on body; mouth large, hinge of mouth is behind eye.....4
- 3b. Body less than five times as long as broad; front edge of dorsal fin about midway between head and tail; mouth not large, hinge of mouth is in front of eye .....5
- 4a. Dark lines forming netted design on body, fins not spotted..... *Pickereel*
- 4b. Body covered with yellow spots; fins spotted ..... *Northern pike*
- 5a. Mouth turned downward; barbels absent; dorsal fin not elongated..... *White sucker*
- 5b. Mouth not turned downward; barbels present; dorsal fin elongated ..... *Carp*
- 6a. Two dorsal fins separated, the anterior spiny and the posterior soft .....7
- 6b. Two dorsal fins united, forming an anterior spiny portion and a posterior soft portion .....8
- 7a. Top of head concave, forming a hump in front of dorsal fin; dark vertical bars on body ..... *Yellow perch*
- 7b. Top of head not concave, body sloping to dorsal fin and not forming a hump; dark blotches on body..... *Wall-eyed pike*
- 8a. Body more than three times as long as broad .....9
- 8b. Body less than three times as long as broad .....10
- 9a. Hinge of jaws behind the eye; notch between spiny and soft dorsal fin deep nearly separating into two fins..... *Large mouth black bass*
- 9b. Hinge of jaws in front of or below the eye; notch between spiny and soft dorsal fin not nearly separating into two fins..... *Small mouth black bass*
- 10a. Mouth large, hinge below or behind eye.....11
- 10b. Mouth small, hinge in front of eye..... *Bluegill*
- 11a. Five to seven spines in dorsal fin; dark spots forming broad vertical bars on sides..... *White crappie*
- 11b. Ten or more spines in dorsal fin; sides flecked with dark spots..... *Rock bass (Redeye)*
- 12a. Body much elongated and snake-like; dorsal, caudal and anal fins continuous..... *Eel*
- 12b. Body not elongated and snake-like; dorsal, caudal and anal fins separate; adipose fin present .....13
- 13a. Barbel growing from lips and top of head; head large and broad .....14
- 13b. Barbels lacking; head not large and broad .....16
- 14a. Caudal fin deeply forked; head tapering.....15
- 14b. Caudal fin rounded or slightly indented but not forked; head blunt..... *Bullhead catfish*
- 15a. Dorsal fin rounded at top; body silvery, speckled with black markings..... *Channel catfish*
- 15b. Dorsal fin long and pointed at the top; body bluish-gray without speckles ..... *Blue catfish*
- 16a. Caudal fin deeply forked; back not mottled and with few spots..... *Atlantic salmon*
- 16b. Caudal fin square or slightly indented; back mottled or spotted.....17
- 17a. Back and caudal fin spotted; broad horizontal band along sides..... *Rainbow trout*
- 17b. Back mottled with dark lines; caudal fin not spotted ..... *Brook trout*

