# Kokanee Fact Wheel

**Subject:** Language Arts & Science

**Objective:** Students will be able to read Wildlife Express and outline eight main kokanee facts.

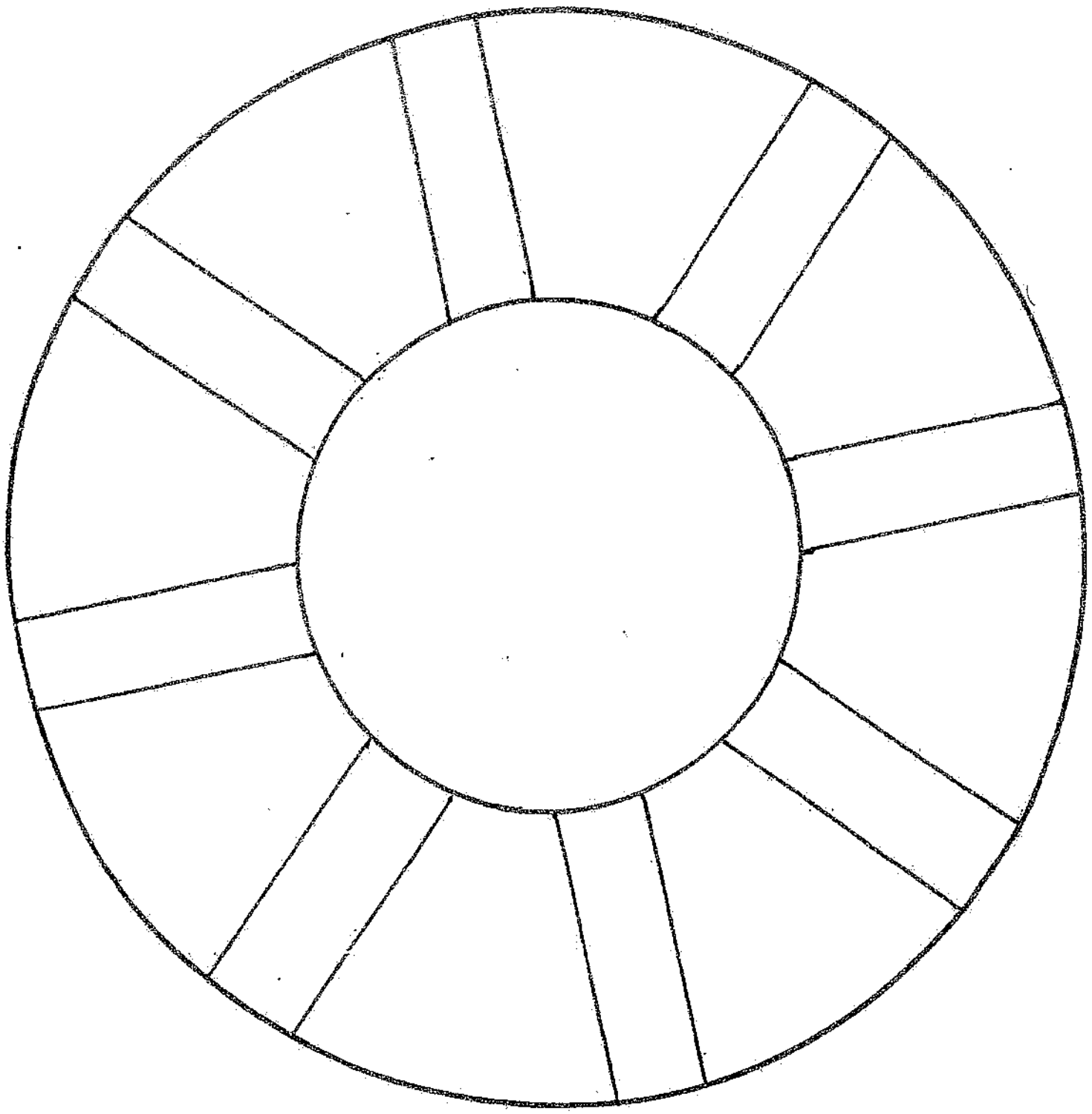
**Materials:**
- □ Research materials/ Wildlife Express
- □ *Wildlife Worksheet* (Kokanee Wheel)
- □ coloring tools (markers, pens, crayons)
- □ construction paper
- □ edged scissors (optional)

**Procedure:**

1. Review the facts about kokanee read in Wildlife Express. Have students make a list of important facts. From the list, they should choose eight they feel are most important.
2. Students may also use books to research other significant facts or ways of life.
3. Hand out Wildlife Worksheet (Kokanee Wheel). Students should write the facts in the "spokes" of the wheel. They should then illustrate and color each fact on the larger sections of the wheel. The center circle of the wheel should contain a catchy kokanee title and the student's name.
4. When wheels are filled in with facts and colored, instruct students to cut out the wheel and mount to a piece of construction paper. To create a border, they should cut the circle out again. If available, use edged scissors to cut the circle around the construction paper, or they could make their own pattern (zigzag etc).

# Wildlife Worksheet
# Kokanee Salmon Wheel

- Place the title of your wheel and your name in the center circle.
- Write one of your eight important/interesting Kokanee facts in each of the small sections on the wheel.
- Illustrate each fact in the larger sections. Color!
- Cut out the circle and glue it on a piece of construction paper.
- To create a border, cut the circle out again.



# Fishy Who's Who

## Objectives

Students will: 1) recognize and identify the major species of freshwater or saltwater fish that live in their area; 2) describe various values of fish species in some aquatic communities; and 3) locate places where the fish species occur.

## Method

Students complete an inventory of fish habitats that exist in their area, obtain information about the various fish species that occur in these habitats and locate the fish species on a map.

## Materials

Paper; pencils; large piece of paper for wall map; map of the state; overhead projector; painting or drawing materials for illustrations; colored string or yarn; tape; thumb tacks or pushpins

**Grade Level:** 5-8

**Subject Areas:** Science, Language Arts, Expressive Arts, Social Studies, Environmental Education

**Duration:** three 45-minute sessions

**Group Size:** small groups

**Setting:** indoors

**Conceptual Framework Topic Reference:** WPID

**Key Terms:** biography, habitat, fish

**Appendices:** Local Resources, Agencies and Organizations, Aquarium, Animals in the Classroom

## Background

Fish play a variety of roles in aquatic ecosystems. Some are predators on other aquatic life, while others feed on plant material. Still others scavenge or feed on detritus. Some species deposit eggs in special nests, some have live young. Fish also exhibit a wide range of behaviors and have many different characteristics and adaptations. While some fish species are better known or seen more often, all fish species play important roles in freshwater and saltwater ecosystems.

## Procedure

1. Ask the students what fish species they think inhabit the waters in their community, state or region. What different fish species have they seen, caught, heard of or read about? Make a list of these different kinds of fish and post it in the room.
2. Obtain a large map of the area or region. Make sure the map identifies landforms as well as such major bodies of water as lakes, rivers, large streams, bays and oceans. Identify each major kind of aquatic habitat located on the map as freshwater and/or saltwater. Identify a certain area to be studied more closely by the class. (A simple way of making a large wall map: 1) place a map on an overhead projector, projecting the image onto a wall where a piece of paper is taped to the wall; 2) trace around the part of the map to be studied.)
3. Divide the class into teams. Have each team identify possible sources of information about fish and fish habitats in the community, state or region and develop plans for obtaining the information. State wildlife

agency personnel, water-quality specialists and marine and aquatic biologists may be of assistance. Also contact state and federal agencies to obtain materials. Local wildlife clubs, state wildlife agencies and private groups and organizations often have publications. Other sources might include the school or public library and the Internet. Have each team use its sources and develop "biographies" for as many of the fish that occur in its study area as possible.

NOTE: Each "biography" could include the fish's name (common and scientific), where it lives and what its habits are. It could also include specific information about the kind of habitat (freshwater, estuarine or marine) the fish needs in order to survive. In addition to biological information about the fish and its habitat the "biographies" could include information about ecological, scientific, recreational, economic, political, cultural, aesthetic and intrinsic reasons for which fish are valuable.

4. Ask each team's members to create a set of paintings, sketches or other illustrations of the fish they have written about in their biographies, as well as an illustration of the fish's habitat. These should be drawn large enough to be seen easily in a wall display.
5. Have the teams meet and compare the research information from different sources. In some cases, the information they have found may not agree. If so, the students might try to determine why. Through this process of comparing research notes, the students might be able to improve the accuracy and comprehensiveness of their descriptions of the various fish and habitats.
6. Returning to the large wall map, ask the teams to post the biographies (on cards or other suitable format) and the artwork depictions of the fish and the habitats on the map near the locations where the fish occur. If the fish biographies begin to overlap, post the cards on the outer edges of the map and extend colored string or yarn from the cards and sketches to the areas where the various fish species live. Use tape, thumb tacks or push pins to attach the yarn to the artwork and map.
7. Finally, have the students compare their original list of fish from Step 1 with the current information on the map.

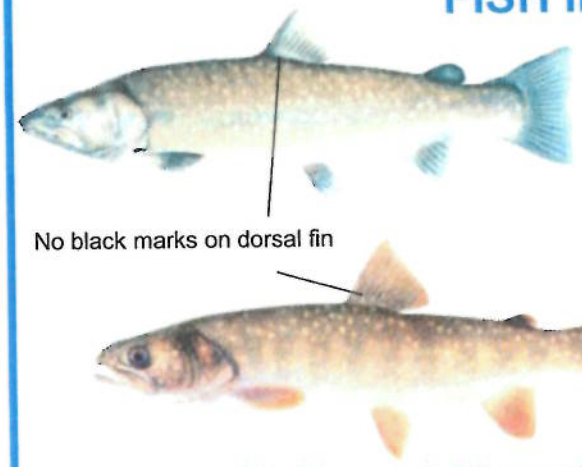
## Extensions

1. Research why some fish species occur widely, in various habitats, while others are more restricted or specialized. What special needs do some fish have or what special abilities do they have?
2. Invite a local fish biologist to come and speak to the class about fish and fish habitat in the state.
3. Locate any local hatcheries, fish research stations or other places doing research with fish and fish habitats. If possible, arrange a tour of one of these facilities for the class or group.
4. Are there any special fish habitat "hot spots" in your state—places where fish are in danger because of human or natural actions? Note these on your wall map as well and describe the nature of the problem.
5. Conduct a "creel survey." This involves conducting interviews of people whom you find fishing—for example, along streams and rivers, in lakes, at the ocean shore, even at urban parks.

## Evaluation

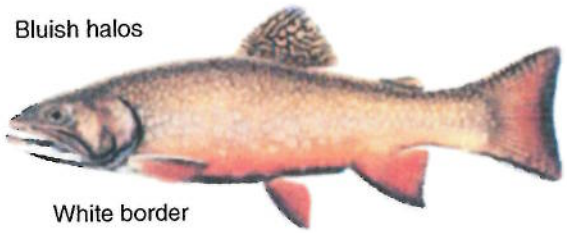
1. Identify five species of fish that live in your state.
2. Describe where in the state each of these fish is most apt to live and in what types of habitat.
3. List and describe a variety of reasons that fish are important.

# FISH IDENTIFICATION



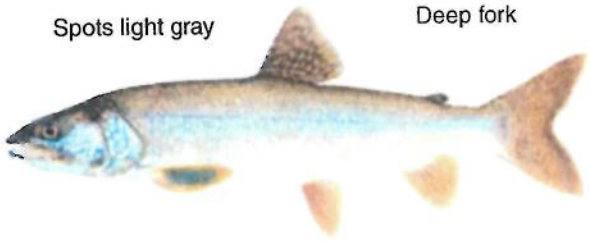

## BULL TROUT No Harvest Allowed

Olive green with brown above and on sides, shading to white on belly. Lacks wormlike markings as in BROOK TROUT. Upper body with yellow spots, sides with red or orange spots. No bluish halos around spots and white borders on fins less distinct than in BROOK TROUT. Tail is slightly forked. NATIVE. See page 73. *Illustration by Joseph Tomelleri.*




## BROOK TROUT

Dark green or blue black on back, to white on belly. Belly and lower fins may turn brilliant red in spawning males. Upper body and dorsal fin with mottled or wormlike markings. Sides with pale spots and reddish spots which may have bluish rings around them. Lower fins, including tail. have distinct white leading edge. Tail square, or only slightly forked. INTRODUCED. *Illustration by Joseph Tomelleri.*




## LAKE TROUT (MACKINAW)

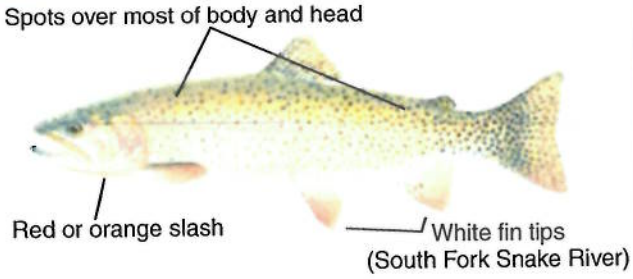
Dark gray or gray green above, belly light gray to white. Irregular shaped light gray spots on back, sides, dorsal fin and tail. Pink or blue spots ABSENT. White borders on fins less distinct than in BROOK TROUT. Tail deeply forked. Inhabits only large, deep lakes. INTRODUCED. *Illustration by Joseph Tomelleri.*

## CUTTHROAT TROUT

Red to orange slashes on underside of lower jaw. Body color variable. Back steel gray to olive green. Sides may be yellow brown with red or pink along belly. Spotting more closely grouped toward tail. May spawn in wild with rainbow. NATIVE. *Illustration by Joseph Tomelleri.*

## RAINBOW TROUT

Body color variable. May be silvery in lakes and reservoirs. Back olive to greenish blue, belly white to silvery. Sides may show red or pink streak, white tip on pelvic (belly) and anal fin usually evident. Irregular spots on back, sides, head, dorsal fin and tail. NATIVE. *Illustration by Joseph Tomelleri.*




## HYBRID CUTTHROAT/RAINBOW TROUT

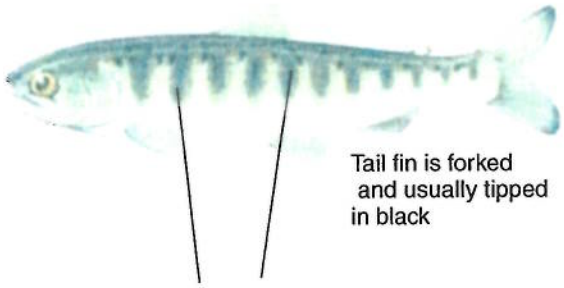
Regulations have been modified to allow harvest of trout hybrids. Anglers should use the following guidelines to differentiate hybrids from cutthroat.

**General:** Cutthroat/rainbow trout hybrids display variable color and markings, representing a range of shared characteristics from rainbow and cutthroat trout. All hybrids show spotting patterns similar to raibow trout with spots more evenly distributed from head to tail and above and below the lateral line.

**All drainages north of, and including the Salmon River:** Westslope cutthroat/rainbow hybrids show a red or orange slash under the jaw that is incomplete and faint in coloration.

**Snake River Drainage:** Yellowstone cutthroat/rainbow trout hybrids in the Snake River drainage are identified by the presence of white fin tips. *Illustration by Joseph Tomelleri.*

## JUVENILE CHINOOK SALMON

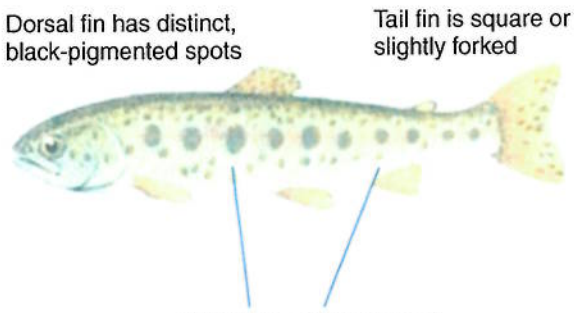



**NO HARVEST ALLOWED IN ANADROMOUS WATERS**

## ADULT CHINOOK SALMON

Adults generally 18-40 inches in length. Irregularly shaped black spots on back, dorsal fin and tail. Teeth well developed. Black mouth and gum line. Adults return to Snake, Salmon and Clearwater rivers to spawn after 1-3 years at sea. Juveniles migrate to ocean after 18 months in streams. NATIVE. See pages 71-72. *Illustration by Joseph Tomelleri.*


## JUVENILE RAINBOW TROUT/STEELHEAD

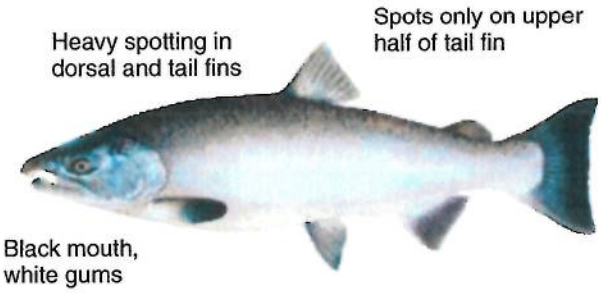



## ADULT STEELHEAD

Adults generally 20-40 inches in length. Irregularly shaped black spots on back, dorsal fin and tail. STEELHEAD are ocean-run rainbow which spawn in Snake, Clearwater and Salmon drainages; juveniles migrate to the ocean, return as adults after 1-2 years. NATIVE. See pages 71-72. *Illustration by Joseph Tomelleri.*

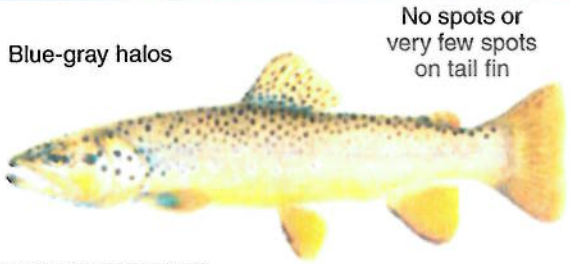
## KOKANEE (Blueback)

Back greenish blue with faint speckling and few if any spots. Sides and belly silvery. No distinct spotting in dorsal fin or tails as in RAINBOW. During spawning (September-December in both streams and shoreline gravels), bodies become 'leathery' and turn dark red to bright scarlet and heads dusky green. Spots are visible on the back half of the fish when in spawning coloration. Kokanee are native to the Payette lakes and the Stanley Basin lakes and have been established in other large lakes and reservoirs throughout the state. NATIVE. *Illustration by Joseph Tomelleri.*




## COHO SALMON

Appearance similar to kokanee with spotting on back, dorsal and upper lobe of tail fin. Sharp teeth on tongue and roof of mouth. 14-16 rays in anal fin. Can be confused with rainbow trout in reservoirs. Landlocked Chinook salmon can be distinguished from coho by black inside of mouth and gums, while coho have white or gray gums. INTRODUCED. *Illustration by Joseph Tomelleri.*




## BROWN TROUT

Back brown or olive with large black spots. Sides light brown to yellowish with numerous brown, black and red spots surrounded by halos of blue gray. Adipose fin usually with orange border. Few, if any, spots on tail. Tail slightly forked. INTRODUCED. *Illustration by Joseph Tomelleri.*

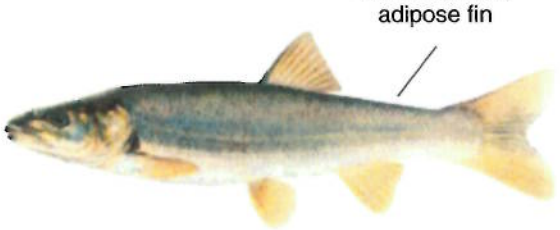
## MOUNTAIN WHITEFISH

Color light grayish blue on back; silvery on sides; and dull whitish on belly. Small mouth without teeth. Five other secies of whitefish are found in Idaho. NATIVE. *Illustration by Joseph Tomelleri.*

NO HARVEST ALLOWED

## WHITE STURGEON

Five rows of bony plates or scutes; mouth directed downward; four barbels in front of mouth; size up to 10 feet in Snake, Salmon and Kootenai rivers. NATIVE. See page 73 for more information. *Illustration by Joseph Tomelleri.*




## NORTHERN PIKEMINNOW (formerly the northern squawfish)

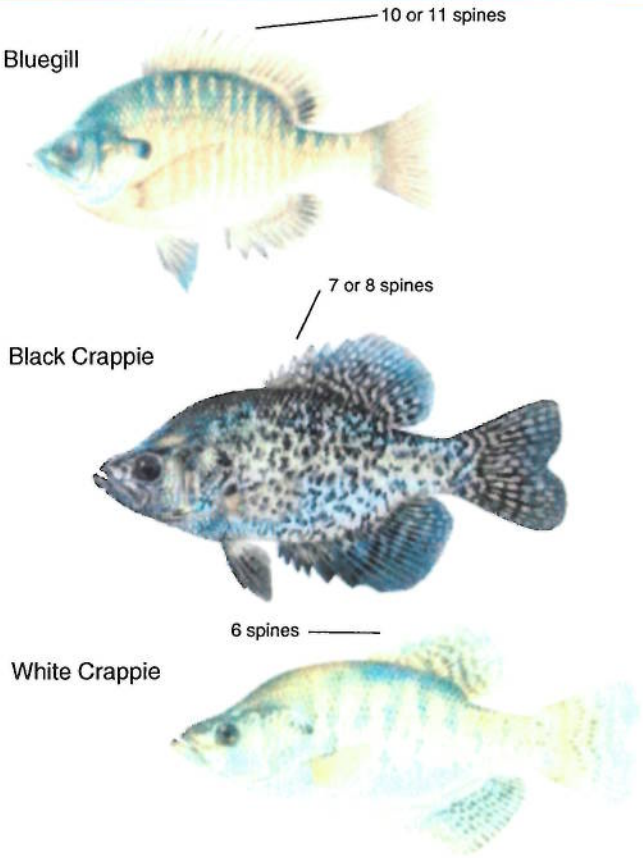
Body color has a general yellowish tone, back is dark olive green, sides are grayish-silver, belly is yellowish-white. Tail fin is distinctly forked, the mouth is large. Fins without spots. NATIVE. *Illustration by Joseph Tomelleri.*

## TIGER MUSKIE

A sterile hybrid cross of a northern pike and a muskellunge. Olive green to dark gray color with VERTICAL MARKINGS on sides. INTRODUCED. *Illustration by Joseph Tomelleri.*

## NORTHERN PIKE

Bluish-green to gray on back and sides with irregular rows of light-colored HORIZONTAL SPOTS on sides. INTRODUCED. *Illustration by Joseph Tomelleri.*




## BLUEGILL and CRAPPIE

Have spines in the dorsal fin. Bluegill have a blue spot on the gill cover, the back is olive to dark green with a bluish luster, sides are bluish, belly is yellowish. Crappie are grayish to silvery green on the head, with lighter sides and a silvery-white belly. Heavy black spotting or splotches on body and fins. INTRODUCED. *Illustrations by Joseph Tomelleri.*


## LARGEMOUTH BASS

Dark green on back and sides, belly white. Dark, irregular HORIZONTAL band along sides. Upper jaw, when closed, extends behind the eye. INTRODUCED. *Illustration by Joseph Tomelleri.*


## SMALLMOUTH BASS

Dark olive to brown on back, sides bronze, belly white. Dark VERTICAL bands on sides. Eyes reddish. Upper jaw, when closed, does NOT EXTEND behind eye. INTRODUCED. *Illustration by Joseph Tomelleri.*

## YELLOW PERCH

Dark green back and yellow sides with 6 to 8 dark vertical bars. Front fin has sharp spines and cheek has serrated edges. INTRODUCED. *Illustration by Joseph Tomelleri.*

## WALLEYE

Closely related to the yellow perch, but lacks vertical bars and has prominent "canine" teeth. Lower lobe of tail fin is white tipped. INTRODUCED. *Illustration by Joseph Tomelleri.*



## CHANNEL CATFISH and BULLHEAD

MEMBERS of the catfish family have 4 pairs of barbels (whiskers), spines on their dorsal and pectoral fins, and no scales. Bullheads in Idaho are normally a more solid brown. INTRODUCED. *Illustration by Joseph Tomelleri.*

## CHISELMOUTH

Body color is dark grayish brown on back with lighter sides and a grayish white belly. Head is blunt, snout rounded, lower lip is curved with a hard cartilage that has a straight cutting edge (like a chisel). Average length 8-10 inches. Typically found in Snake River and impoundments from Boise to Lewiston. NATIVE. *Illustration by Joseph Tomelleri.*

## UTAH CHUB

Body color is black to olive brown on back with yellowish sides and a silvery to white belly. Typically has a plump body and a small mouth. Average length 8-12 inches. Found in the Bear River and Upper Snake River drainage. NATIVE. *Illustration by Joseph Tomelleri.*

# Idaho Rivers

**Subject:** Social Studies

**Objectives:** Students will label the major rivers and towns of Idaho on a map.

**Materials:**
□ *Wildlife Worksheet* (Idaho)
□ colored pencils
□ map of Idaho

**Procedure:**
1. Ask students to brainstorm names of rivers in Idaho. They should come up with a pretty extensive list. If you have an overhead projector, draw an outline map of Idaho and ask the students to come up and draw in the location of some of the rivers. You might have a few students who can easily do this. It is my guess, though, that a lot of students will know the names of the rivers, but could not tell you where the rivers are on a map.
2. Tell the students they will be learning where major rivers of Idaho are by looking at a map and labeling them on an outline map.*
3. Handout the Wildlife Worksheet (Idaho Map). Use text books and maps from the library to help students locate and label the following (Add some of your own too!):

**Rivers, Lakes and Reservoirs:**

| | | |
|---|---|---|
| Henrys Fork | Coeur D'Alene Lake | American Falls Reservoir |
| Bear River | Lake Pend Oreille | Blackfoot River |
| Snake River | Lochsa River | Palisades Reservoir |
| Salmon River | Coeur D'Alene River | Bear Lake |
| Clearwater River | Kootenai River | Boise River |
| Priest River | Selway River | Cascade Reservoir |
| Bruneau River | Pend Oreille River | Owyhee River |
| Payette River | St. Joe's River | |

**Other ideas:**

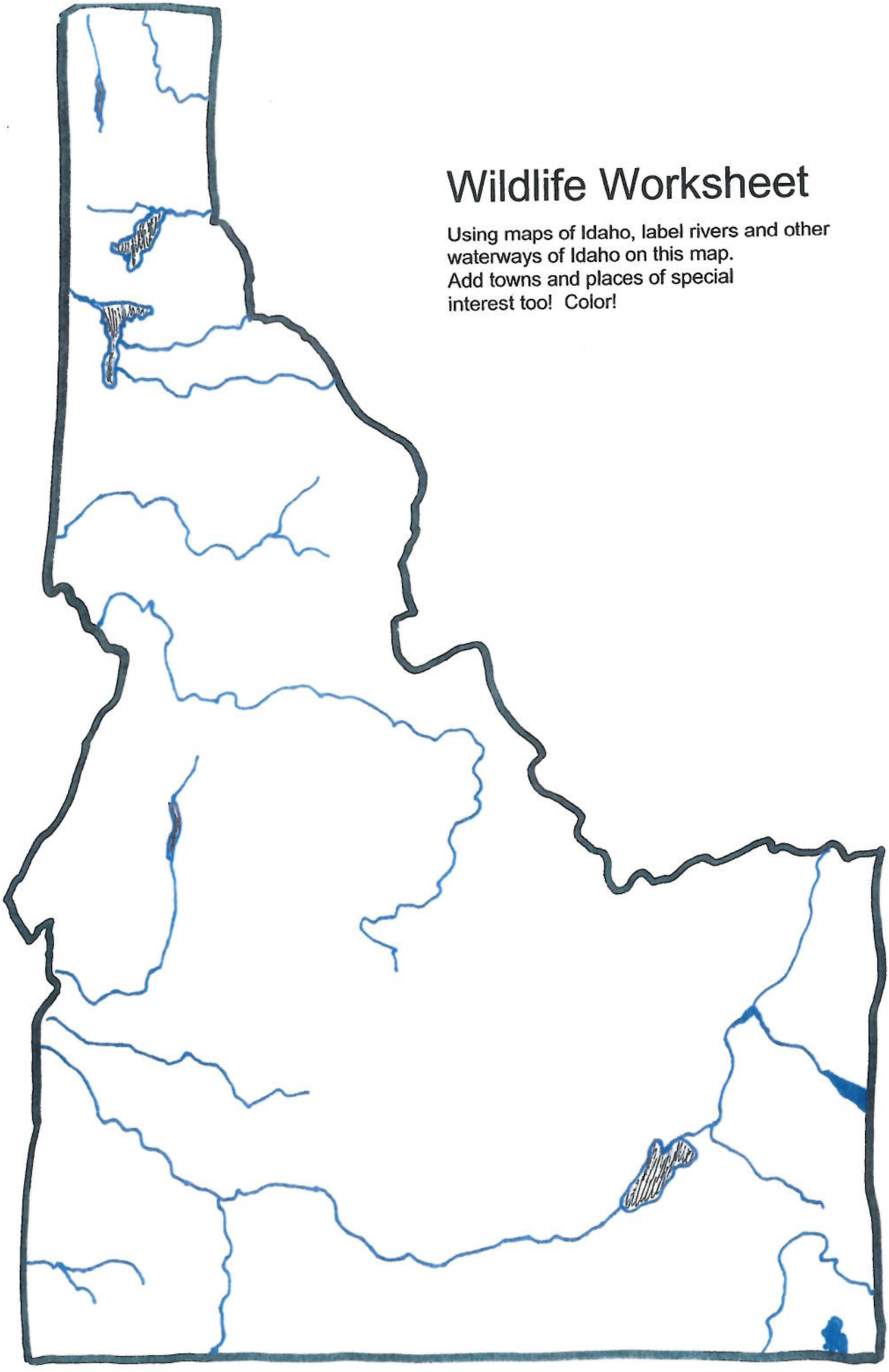
| | | |
|---|---|---|
| 45th Parallel | Cities and towns | Compass Rose |
| Surrounding states | Mountain Ranges | Favorite Places (Outside places!) |

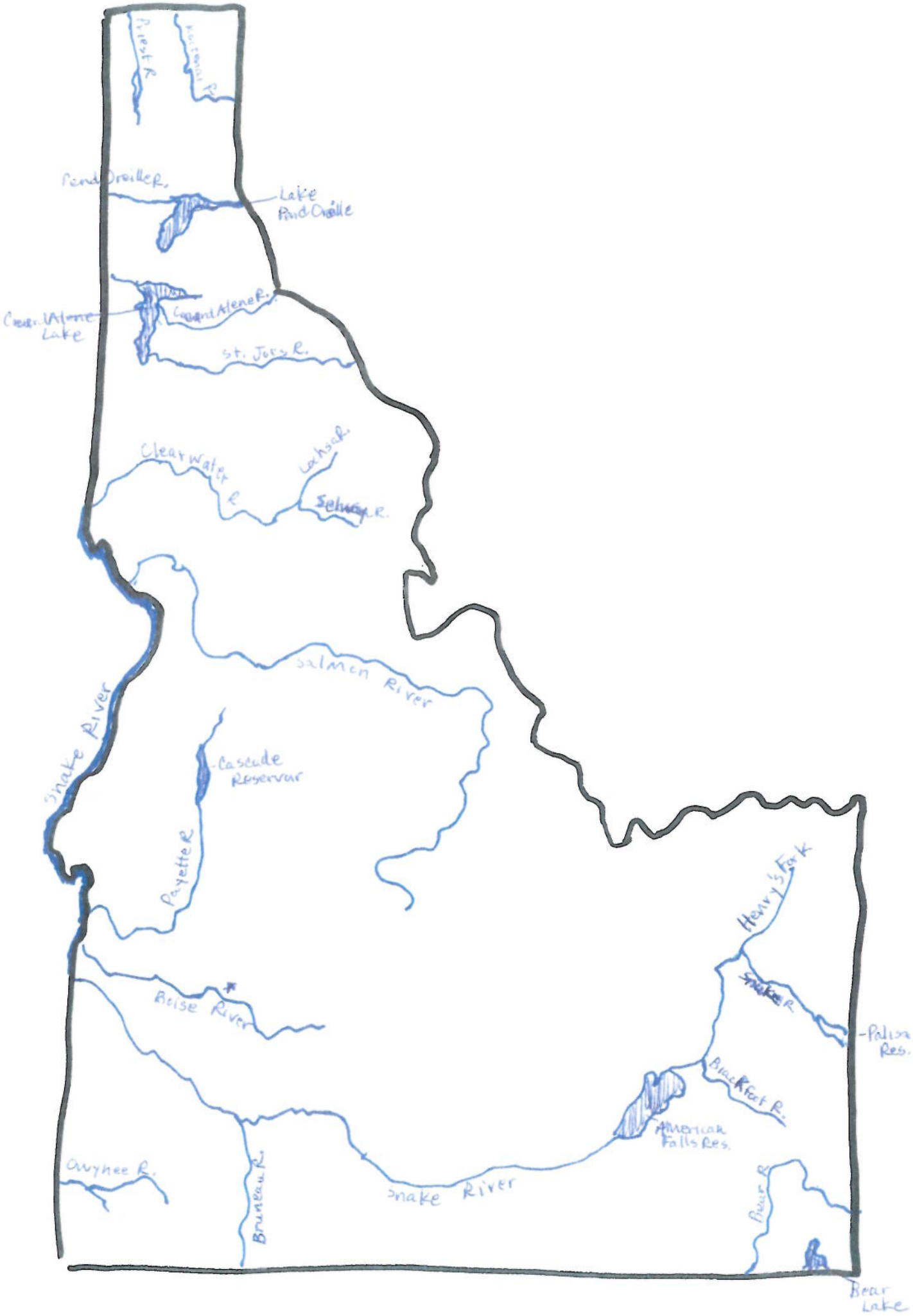
4. Have the students keep the maps in their binders for reference!

*Many of the rivers have forks. Depending on level of students, you might want to have them draw them in and label them.

# Wildlife Worksheet

Using maps of Idaho, label rivers and other waterways of Idaho on this map.
Add towns and places of special interest too! Color!




Priest R.
Priest R.
Pend Oreille R.
Lake Pend Oreille
Coeur d'Alene Lake
Coeur d'Alene R.
St. Joe R.
Clearwater R.
Lochsa R.
Selway R.
Salmon River
Snake River
Cascade Reservoir
Payette R.
Boise River
Henry's Fork
Snake R.
Palisa Res.
Black Foot R.
American Falls Res.
Owyhee R.
Bruneau R.
Snake River
Bear R.
Bear Lake