

Tracking Fins: Ethograms and Aquatic Behavior Studies

Cyprinidae – Minnows

- Minnow Features:
 - Single dorsal fin
 - Abdominal pelvic fins
 - Lateral line (rarely absent)
 - Cycloid scales (round or oval)
 - No true spines in the fins
 - Varied ecologically and morphologically
 - Mouth at end of snout
 - Small body lacking spots
 - Schooling: always in schools, mixed species
 - Feeding: stonerollers and riffle minnows eat algae scraped or sucked off rocks and insects; shiners and chub eat insects and detritus floating in the water
- 1. Upper Tennessee (Stream) Exhibit:
 - **Tennessee Dace** *Chrosomus tennesseensis* – Black stripe along side, broken under dorsal fin. Small black spots and thin black stripe along side (above larger broken stripe). Habitat: gravel- sand- and silt-bottomed pools
 - **Warpaint Shiner** *Coccotis coccogenis* – Black band on dorsal and caudal fins. Red bar on opercle. Breeding male has pink or red side, red snout, and red on dorsal fin.
 - **River Chub** *Nocomis micropogon*. Long snout, small eye high on head, Large mouth. Breeding male has hump on head, pink-blue head, body and fins.
- 2. Conasauga (Rain/Thunderstorm) Exhibit:
 - **Rainbow Shiner** *Notropis chrosomus* - Iridescent blue and Pink head and body (large individual) Clear to red-purple stripe above silver black stripe along side. Faint to bright red-orange fins. Breeding male has bright purple head, back and fins. Breeding male will have light blue below the silver strip along side. Compressed body, round snout, terminal mouth. Lateral line complete
- 3. Pop-up Exhibit:
 - **Creek Chub** *Semotilus atromaculatus* – Large minnow, barely to moderately compressed body, broad head. Small flaplike barbels above corner of mouth (most easily seen when mouth is held open). Complete lateral line. Large black spot on

dorsal fin origin. Breeding male has pink body, orange fins. Large terminal mouth reaching past front of eye. Pointed snout.

Percidae – Perches & Darters

- Features:
 - Most are small, less than 4 inches (10 cm) long
 - “Dart” along the bottom of streams
 - 2 dorsal fins, first with spines, second with rays
 - Thoracic pelvic fins
 - Lateral line is straight and complete (unless stated otherwise)
 - Small, torpedo shaped body
 - Schooling: solitary or in pairs
 - Habitat: bottom dweller; pools, glides and riffles
 - Feeding: aquatic insects; logperch may flip rocks in search for insects
- 1. Upper Tennessee (Stream) Exhibit:
 - **Redline Darter** *Etheostoma rufilineatum* – Black dashes on cheek and opercle. Teardrop broken into two black spots. Cream colored caudal fin base. Pointed snout. Dark blotches on side (can look like a checkerboard pattern). Black edge on 2nd dorsal, caudal, and anal fins. Male has red spots on side, orange belly, blue breast, red-orange band on fins. Female has brown spots on side, white to dusky blue breast, black spots on fins.
 - **Tangerine Darter** *Percina aurantiaca* - One of the largest darter species at 7.25 in (18 cm) long! Colorful! Small dark brown spots on upper side. Thin black stripe along back breaks into small spots at rear. Broad black stripe of 8-12 fused blotches along side. Underside of young white, large female yellow, and large male orange. Breeding male bright red-orange belly, blue breast, orange edge of first dorsal.
 - **Logperch** *Percina caprodes* – Also large at 7.25 in (18 cm) long! Many altering long and short bars along side extend over back and join on other side. Dusky teardrop.
- 2. Conasauga
 - **Greenbreast darter** *Etheostoma jordani* – has 8-11 small black blotches along side just below lateral line; less obvious blotches along upper side. Brown above, 8-9 black saddles, white to blue below; dusky yellow fins; dusky teardrop. Dusky to black edge of 2nd dorsal, caudal, and anal fins. Breeding male is bright blue below, has small red spots on side, red edge on 1st dorsal fin, blue edge and red band in 2nd dorsal and caudal fins; blue anal and pelvic fins

Centrarchidae – Sunfishes (Bream) & Basses

- Bass Features:
 - “Bass” is a common name and the features of these fish vary depending on the species
 - All have 2 dorsal fins
 - Schooling: solitary (“except for accepted exceptions”)
 - Habitat: Deep pool, near cover
 - Feeding: insects, crayfish, fish

- 1. Upper Tennessee (Stream) Exhibit
 - Genera *Ambloplites* features – Red eye, white edge on ear flap, dusky to black teardrop. Compressed as young, thicker bodies as adults. Large mouth, short rounded pectoral fin, complete lateral line
 - **Rock Bass** *Ambloplites rupestris* – Adults have a row of black-brown spots along side, largest and darkest below lateral line. Light green above, brassy yellow flecks on side, about 5 wide dark saddles over back and down midside. White to bronze breast and belly. Black edges on dorsal, caudal, and anal fins.
 - Genera *Micropterus* features – Large (at least 14in). Fiesty, amongst the most popular spot fishes in the world. Moderately compressed, elongate body. Large mouth extends under or past eye. Shallowly forked caudal fin. Black spot at rear gill cover (no long flap). Clear to yellow-olive fins.
 - **Smallmouth Bass** *Micropterus dolomieu* – has 8-16 brown bars, bronze specks, on yellow-brown to olive green side. Red eye. Large male has green-brown to bronze with black mottling on back, bars on side. Large mouth, upper jaw extends under eye.

- Sunfish Features:
 - 2 dorsal fins – 1st spiny, 2nd soft, do not appear separated
 - Shallowly forked caudal fin
 - Large, flat, deep body. Strongly compressed “pan fish”
 - Adult males are among some of the most colorful fishes in North America
 - “Ear flap” – fleshy extension at rear of gill cover
 - Schooling: solitary
 - Habitat: shoreline near deep pool
 - Feeding: insects

- 1. Upper Tennessee (Stream) Exhibit
 - **Redear Sunfish** *Ambloplites rupestris* – Bright red or orange spot and white edge on black ear flap. Long pointed pectoral fin usually extends far past eye when bent forward. Fairly pointed snout, small mouth

2. Pop-Up

- **Longear Sunfish** *Lepomis megalotis*
 - Longear and Dollar sunfish can be hard to distinguish from one another. Long ear flap; horizontal to slanted downward on adult, slanted upward on young. Wavy blue lines on cheek and opercle. Adult is dark red above, bright orange below, marbled and spotted with blue.
- **Dollar Sunfish** *Lepomis marginatus*
 - Dollar sunfish look very similar to longear – distinguishing features: shorter, upwardly slanted ear flap, red streak along lateral line

Fundulidae – Topminnows

- As the name suggests, many swim at or near the surface of the water
- Several species have bright gold or silver marks on the top of their head and body
- Small, often brightly colored
- Flattened head and back
- Uprturned mouth
- Large eyes
- Spineless fins
- 1 dorsal fin located far back on the body
- No lateral line
- Abdominal pelvic fins

1. Upper Tennessee

- **Northern Studfish** *Fundulus catenatus* – Light yellow-brown above, short gold stripe in front of the dorsal fin, rows of small brown (female and young) or red-brown (male) spots on side. Adult has rows of small brown spots on caudal and dorsal fins. Breeding male has bright blue side, red spots on head and fins, usually yellow paired fins, orange edge on caudal fin. Dorsal fin over or slightly in front of anal fin origin

2. Conasauga

- **Southern Studfish** *Fundulus stellifer* – Similar to northern studfish but has few to many brown or red spots scattered over side. Black edge on dorsal and caudal fins on some large males

Tennessee Dace



Warpaint Shiner



River Chub



Rainbow Shiner



Creek Chub



Redline Darter



Tangerine Darter



Logperch



Greenbreast Darter



Rock Bass



Smallmouth Bass



Redear Sunfish



Longear Sunfish



Dollar Sunfish



Northern Studfish



Southern Studfish

