Western banded killfish *Fundulus diaphanus menona*

**Habitat:**

- feeding: quiet backwaters at the mouths of streams and lakes
- substrate of sand, gravel, and a few boulders
- also found over detritus substrate where patches of submerged aquatic vegetation are present
- spawning: quiet areas of weedy pools
**Brook stickleback* *Culaea inconstans**

**Habitat:**

- feeding - clear, cold, densely vegetated streams, and swampy margins of lakes
- low gradient
- muck, peat, or marl substrate
- not tolerant of turbidity

- spawning - shallow cool (<66°F) water
- aquatic reeds or grasses necessary
**Mottled sculpin Cottus bairdii**

**Habitat:**

- feeding - cool to cold streams
- riffle and rock substrates preferred
- clear to slightly turbid shallow water

- spawning - nests under logs or rock
Rock bass *Ambloplites rupestris*

Habitat:

- **feeding** - clear, cool streams, rivers, and lakes
  - rocky to sand substrate
  - woody or vegetative cover
- **spawning** - sand or gravel nests
  - shallow water
- **winter refuge** - deep water
Pumpkinseed *Lepomis gibbosus*

**Habitat:**

- feeding - non-flowing clear water in streams and rivers; also lakes and impoundments
  - muck or sand partly covered with organic debris substrate
  - dense beds of submerged aquatic vegetation
- spawning - nest in sand, gravel, or rock substrate
  - in shallow water near submerged vegetation
Bluegill *Lepomis macrochirus*

**Habitat:**

- **feeding** - non-flowing clear streams and rivers; also lakes and impoundments
  - sand, gravel, or muck containing organic debris substrate
  - scattered beds of aquatic vegetation
  - cannot tolerate low oxygen or continuous high turbidity and siltation
- **spawning** - nests in firm substrate of gravel, sand, or mud
- **winter refuge** - deep water
Smallmouth bass *Micropterus dolomieu*

Habitat:

- feeding - clear, cool, deep lakes and rivers
  - streams where 40% consists of riffles over clean gravel, boulder, or bedrock substrate
  - in pools with a current and >4 feet of depth
  - gradients between 4 and 25 feet per mile
- spawning - nest in sandy, gravel, or rocky substrate
  - gradients 7 to 25 feet per mile
  - streams 20 to 100 feet wide
- winter refuge - larger deeper waters
  - with gradients between 3 to 7 feet per mile
**Largemouth bass** *Micropterus salmoides*

**Habitat:**

- **feeding**
  - non-flowing clear waters - lakes, impoundments, and pools of streams
  - abundant aquatic vegetation
  - soft muck, organic debris, gravel, sand, and hard non-floculent clay substrates

- **spawning**
  - nest in gravelly sand to marl and soft mud substrates
  - emergent vegetation
  - quiet shallow bays; no current
Black crappie *Pomoxis nigromaculatus*

Habitat:

- **feeding** - larger clear non-silty low-gradient rivers; also in lakes and impoundments
  - clean hard sand or muck substrate
  - associated with submerged aquatic vegetation
  - does not tolerate silt or turbidity well
- **spawning** - nests in gravel, sand, or mud substrate
  - some vegetation must be present
  - sometimes nests under banks
**Iowa darter** *Etheostoma exile*

**Habitat:**
- **feeding**
  - clear, slow moving streams and lakes
  - sandy to muddy substrates
  - intolerant of turbid water
  - lives in rooted aquatic vegetation

- **spawning**
  - in pond-like extensions of streams on organic matter or roots
  - in shallows