**Stonecat Noturus flavus**

**Habitat:**

- **Feeding:**
  - consistent low to moderate gradient flowing water
  - rocky riffles of larger streams and smaller rivers
  - not tolerant of silt
  - tolerant of low oxygen and pollution

- **Spawning:**
  - eggs deposited beneath stones
  - shallow rocky areas of streams or lakes
Clinton River Assessment Appendix

**Tadpole madtom** *Noturus gyrinus*

**Habitat:**
- **feeding** - vegetative cover in low-moderate current waters
- muddy substrate with extensive vegetation
- clear waters of streams, rivers, and lakes

- **spawning** - mostly in rivers, sometimes shallows of lakes
- nests in dark cavities (ex: beneath boards, logs, crayfish burrows)
Brindled madtom *Noturus miurus* – special concern

**Habitat:**

- feeding - low gradient streams or pools of higher gradient reaches
  - sand or organic debris substrate - no clayey silts
  - in riffles of sluggish or moderate flow if sand is present

- spawning - silt or mud substrate
  - emergent vegetation
Northern madtom *Noturus stigmosus* – endangered

**Habitat:**
- feeding - deep, wide, swift riffles of streams and rivers
- gravel and boulder substrates
Grass pickerel *Esox americanus vermiculatus*

**Habitat:**
- **feeding** - juveniles: along shore
  - adults: in deeper portions of streams, rivers, lakes, and impoundments
  - clear water, little current, dense vegetation
  - tolerates low oxygen concentrations

- **spawning** - broadcast spawner over submerged vegetation
Northern pike *Esox lucius*

**Habitat:**
- **feeding** - cool to moderately warm streams, rivers, lakes, and impoundments
- **spawning** - vegetation in slow to moderate current
- **spawning** - submerged vegetation with slow current in shallow water
Central mudminnow *Umbra limi*

**Habitat:**

- **feeding**: undisturbed clear, low-gradient streams or rivers and lakes and impoundments
  - organic debris, muck, or peat substrates
  - aquatic vegetation

- **spawning**: floodplain areas, on vegetation
Rainbow smelt *Osmerus mordax*

**Habitat:**
- feeding - young: close inshore lake habitat along sand and gravel beaches
  - cold water
- spawning - clear high-gradient streams or wave swept shoreline
  - riffles with coarse sand or gravel substrate
- winter refuge - midwaters of lakes or inshore coastal waters
Cisco {lake herring} \textit{Coregonus artedi} – threatened

\textbf{Habitat:}

- \textbf{feeding} - deep cool lakes, preferably oligotrophic
- \textbf{spawning} - usually in lakes
  - 3 to 6 feet of water with no vegetation
  - often over gravel or stony substrate
Rainbow trout *Oncorhynchus mykiss*

**Habitat:**
- feeding - cold clear water of rivers and Lake Huron
  - moderate current
- spawning - gravelly riffles above a pool
  - smaller tributaries