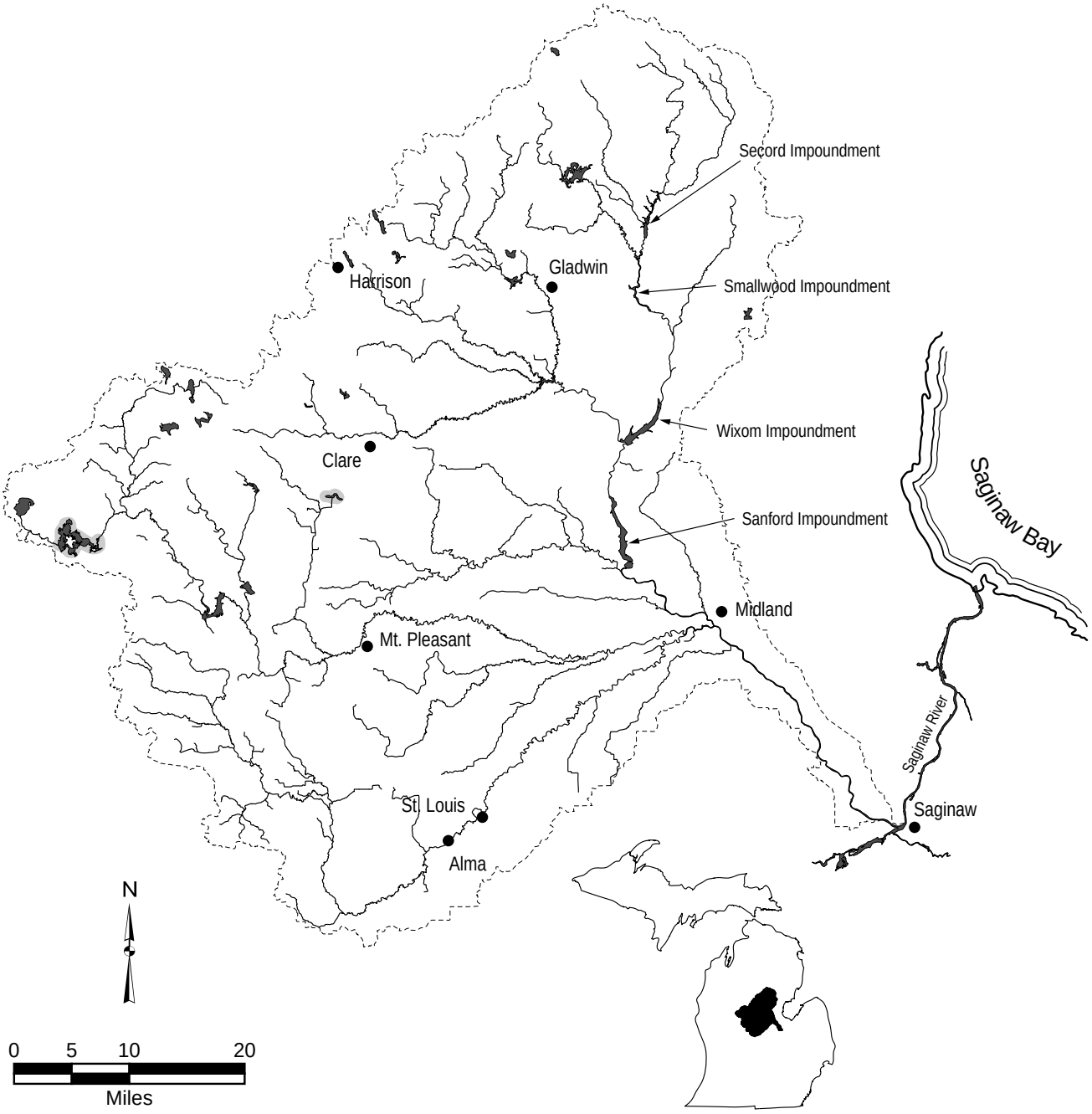
Warmouth *Lepomis gulosus*

Habitat**:**

feeding - clear lakes and impoundments and very low-gradient streams
- abundant aquatic vegetation
- silt-free water
- mucky substrate often covered with organic debris

spawning - nesting sites in loose silt, sand with silt, or rubble over silt near stumps, roots, or vegetation



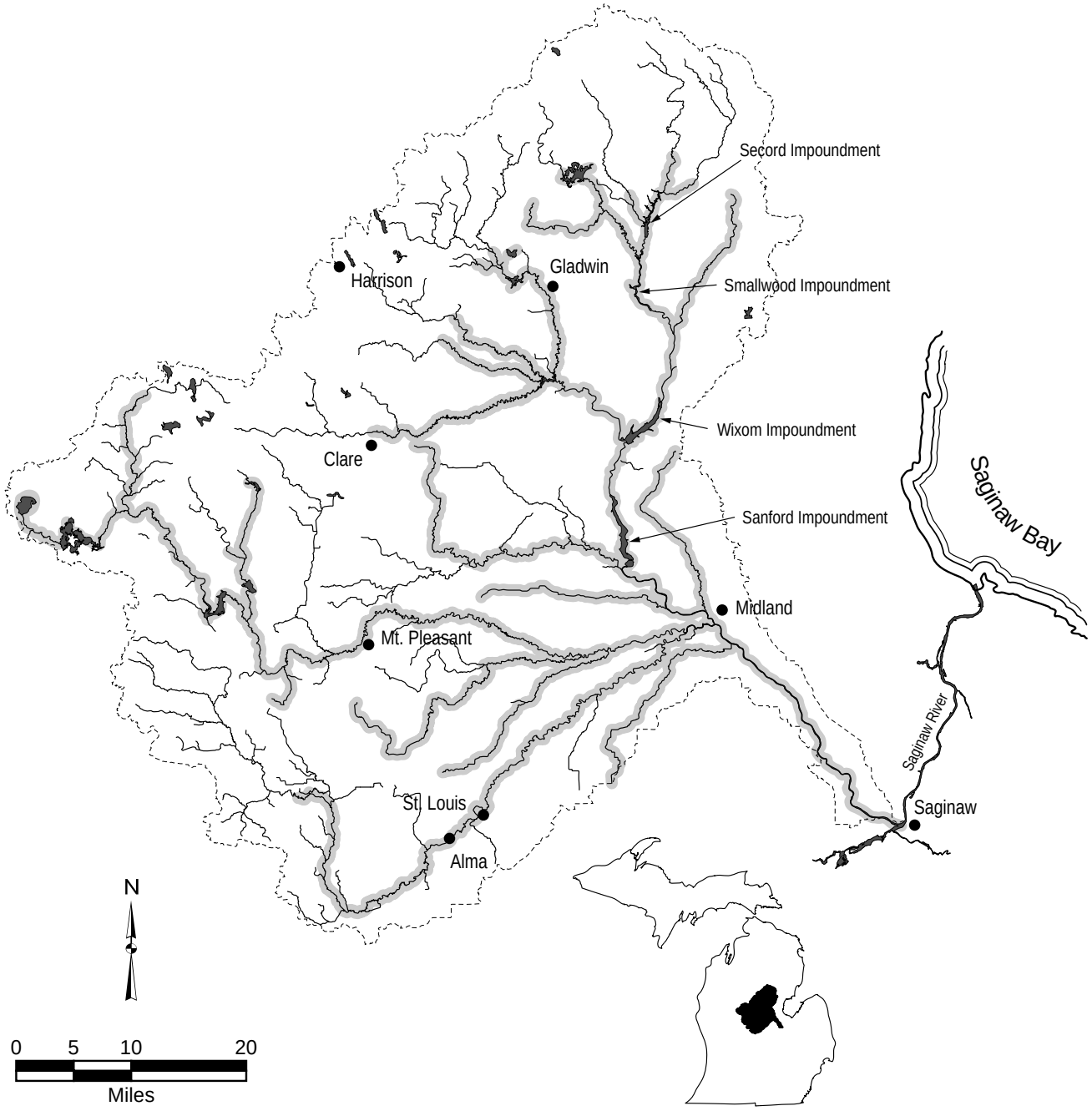
Bluegill *Lepomis macrochirus*

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

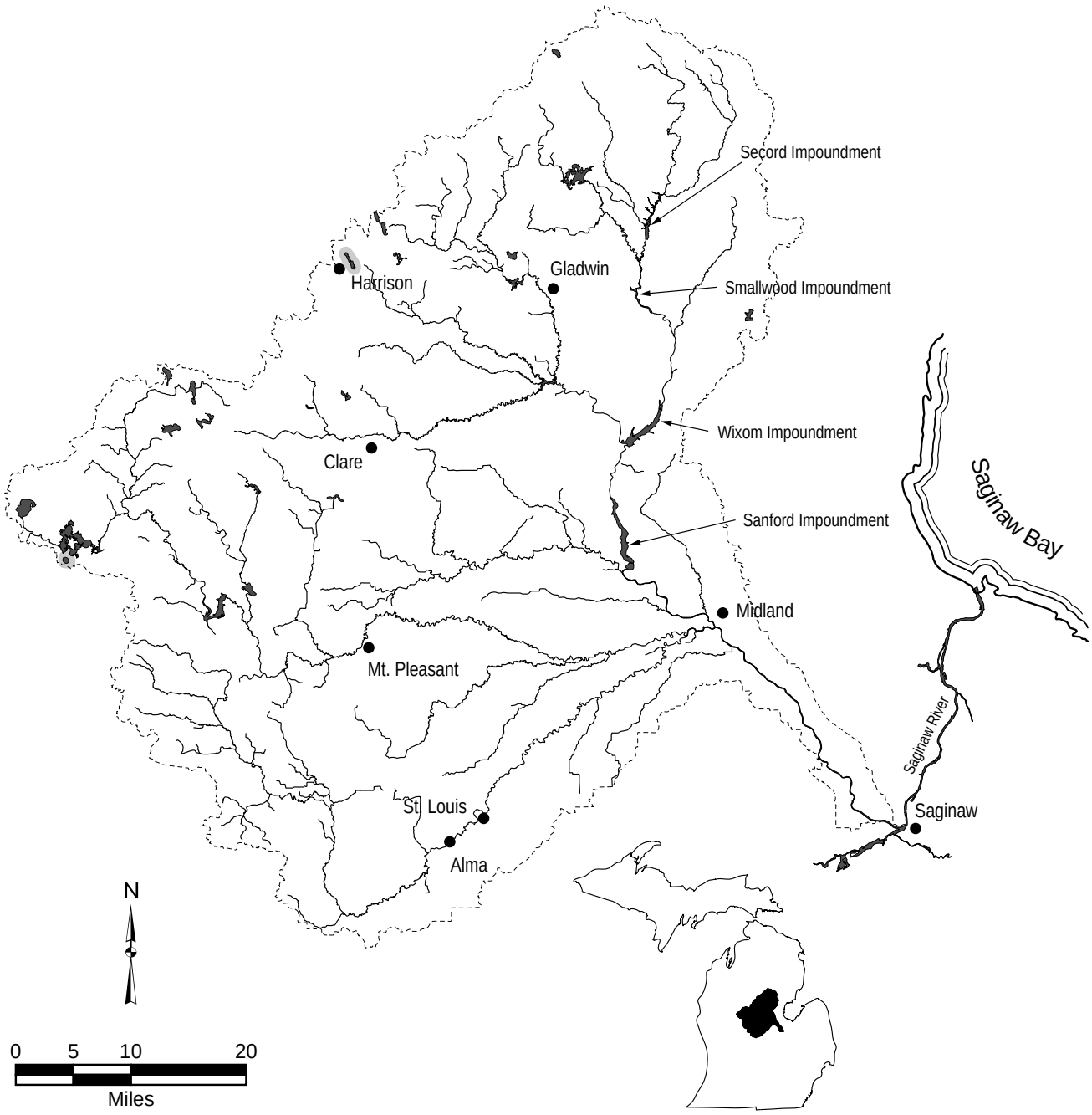


Redear sunfish *Lepomis microlophus*

Habitat**:**

feeding - non-flowing clear waters of streams and lakes
- some aquatic vegetation

spawning - nest in silt or gravel substrate

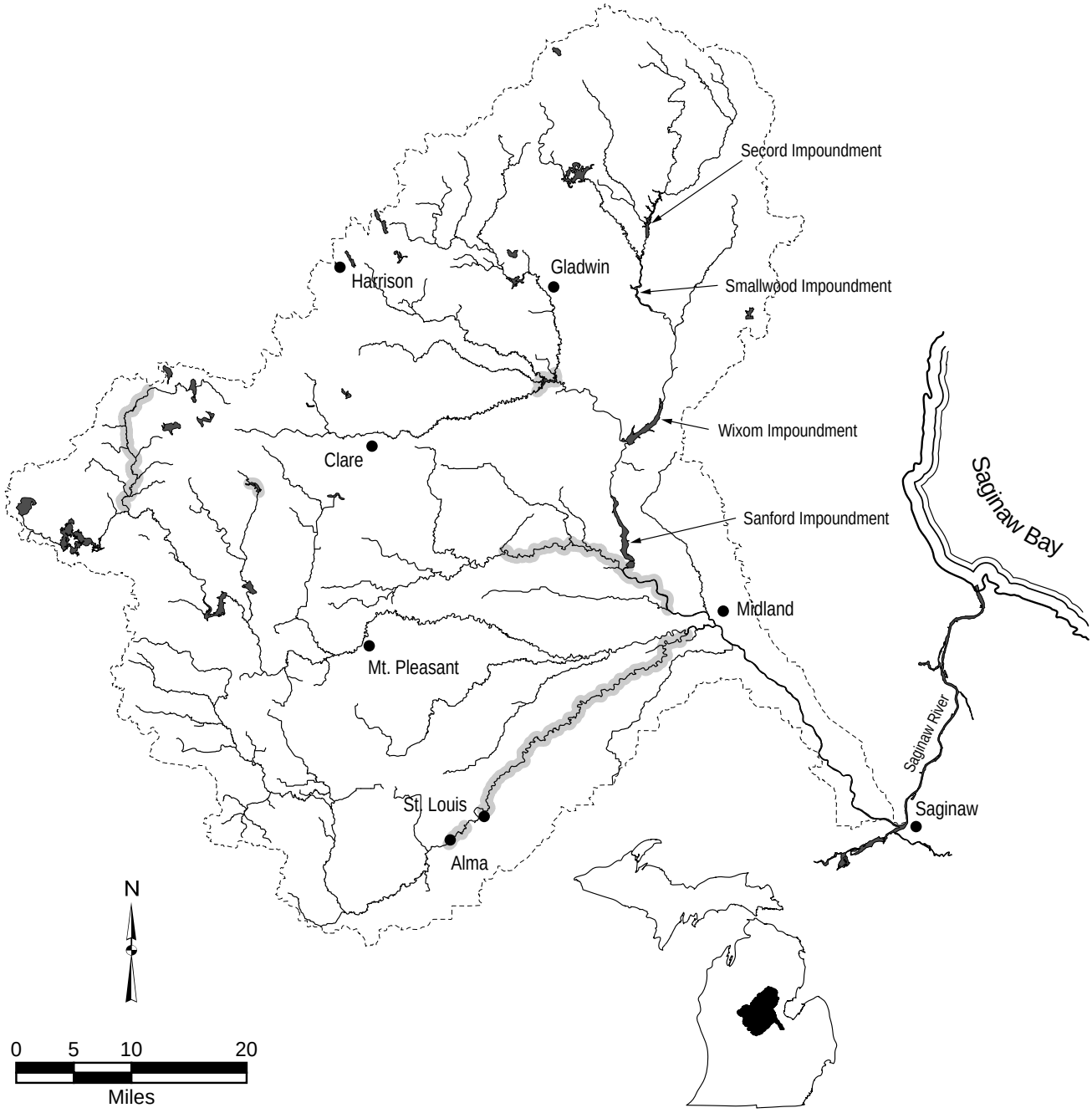


Northern longear sunfish *Lepomis peltastes*

Habitat**:**

feeding - clear moderate-sized shallow streams with moderate vegetation
- rocky substrates
- little to no current

spawning - nests in gravel, sand, or hard rock substrate



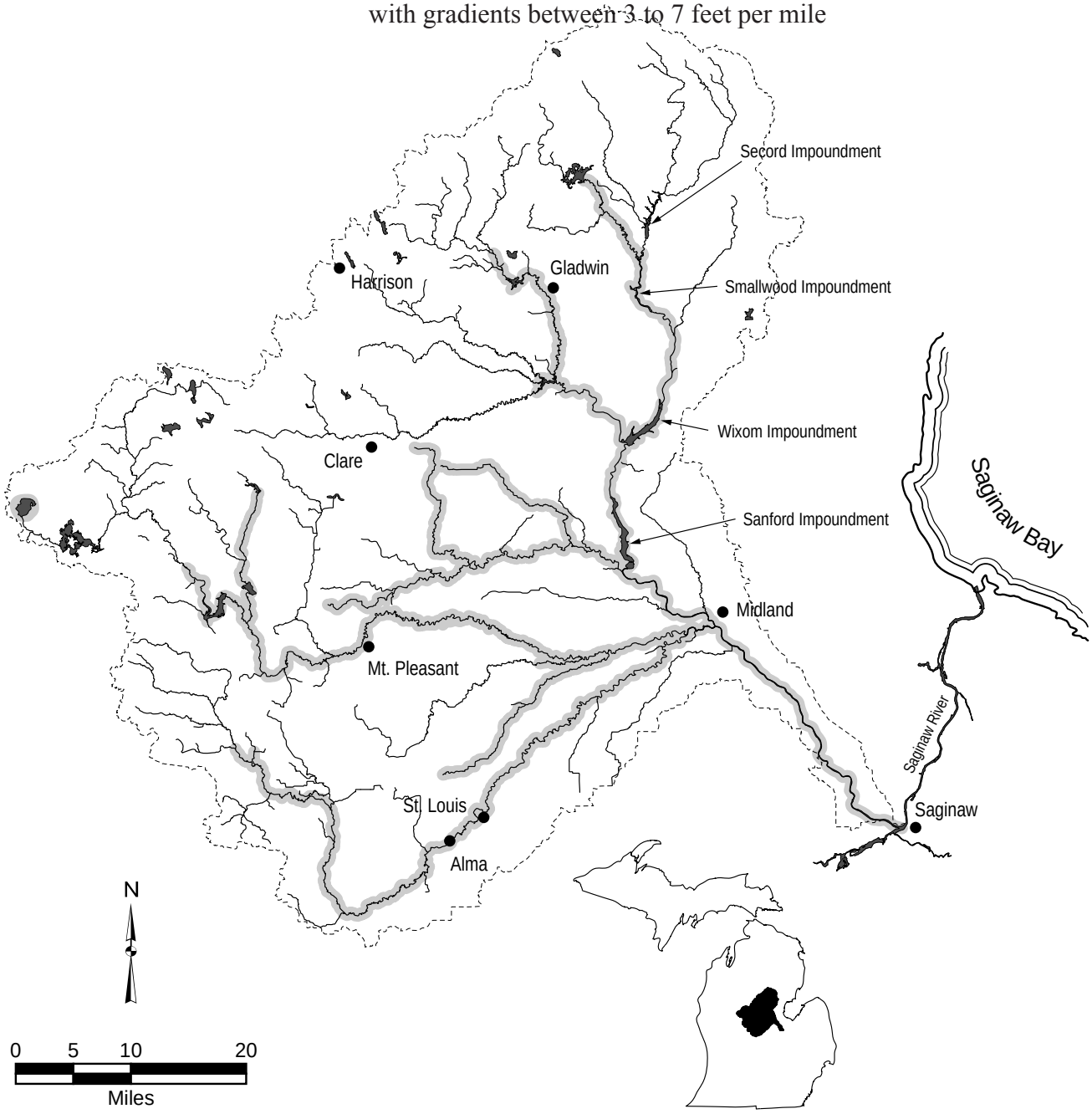
Smallmouth bass *Micropterus dolomieu*

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

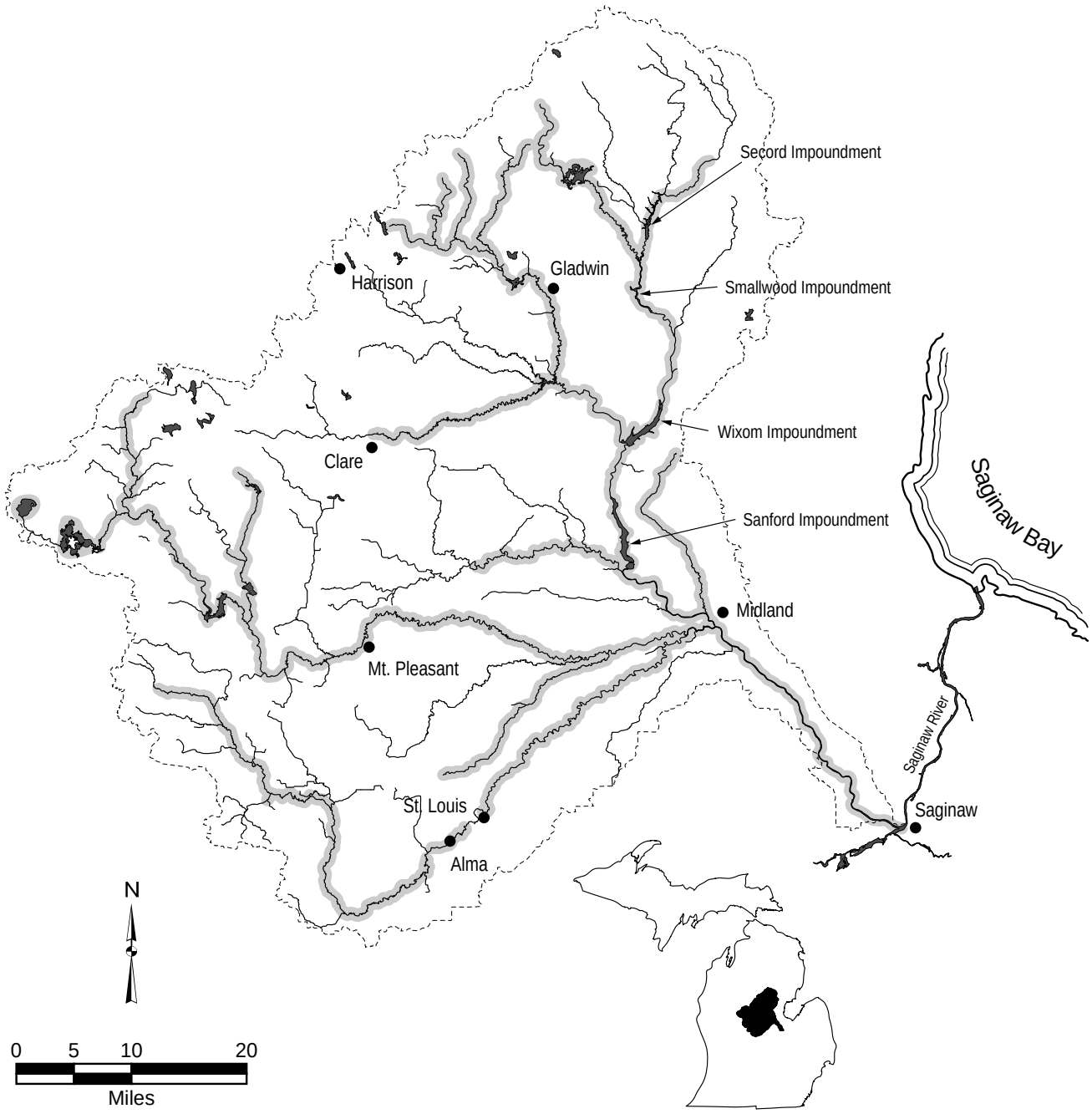


Largemouth bass *Micropterus salmoides*

Habitat**:**

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

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

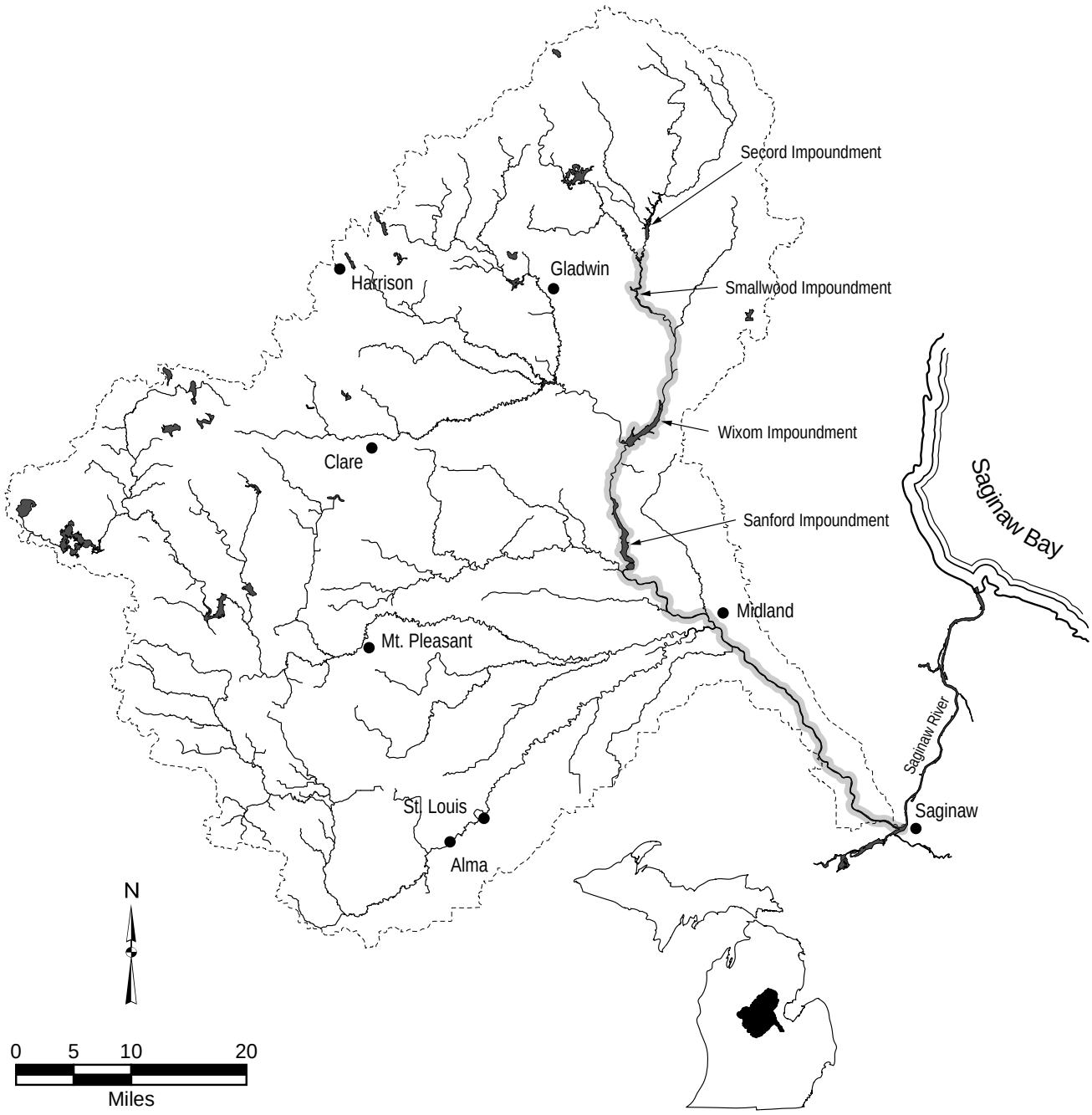


White crappie *Pomoxis annularis*

Habitat**:**

feeding - lakes and impoundments >5 acres
- sluggish pools of moderate to large low-gradient rivers
- no substrate preference
- can tolerate severe turbidity and rapid siltation

spawning - various substrates usually beside rooted aquatic vegetation
- sometimes under banks

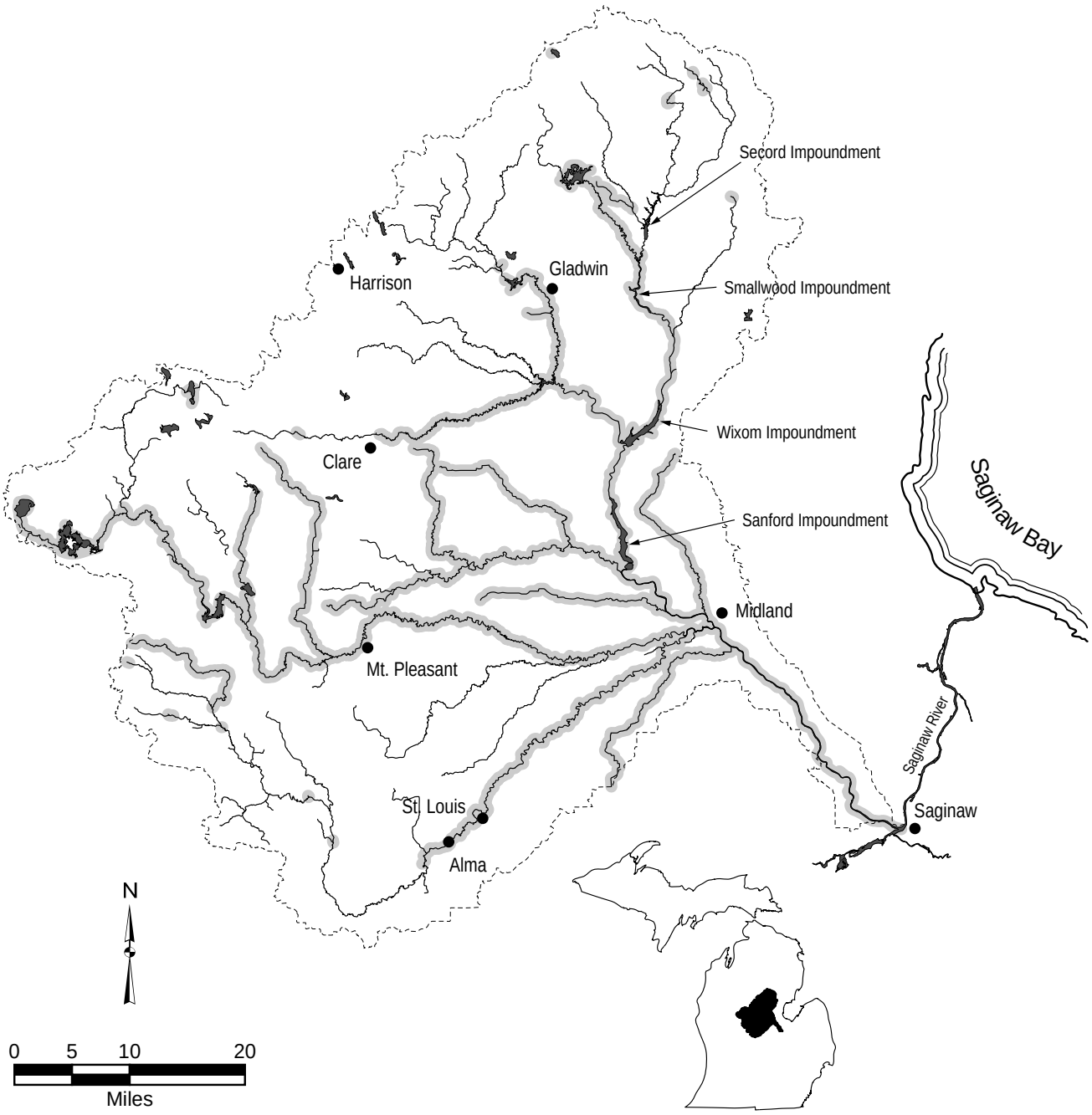


Black crappie *Pomoxis nigromaculatus*

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

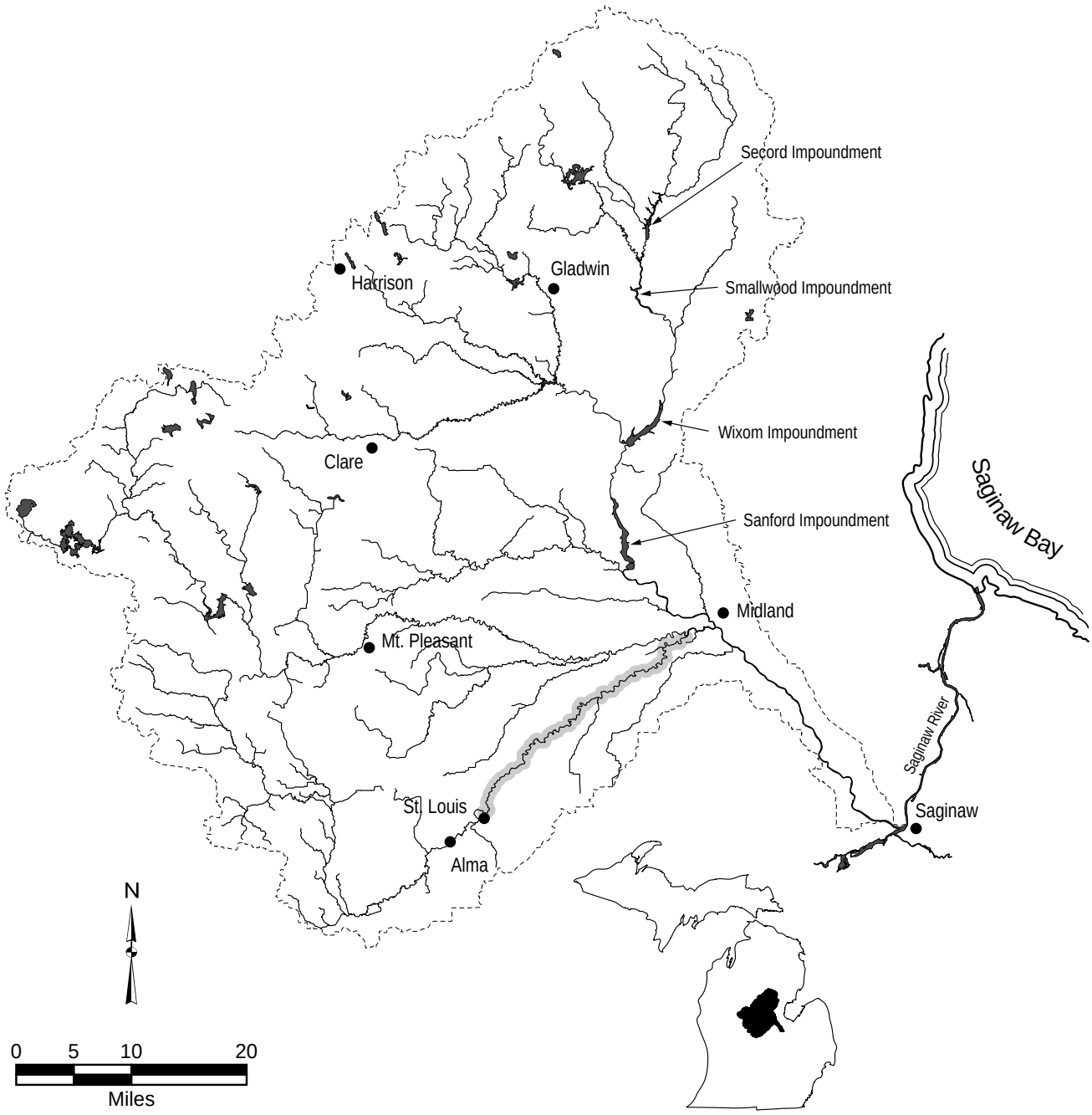


Greenside darter *Etheostoma blennioides*

Habitat:

feeding - young: in quiet water
- swift gravelly riffles or pools with current of streams and rivers

spawning - filamentous algae necessary for egg deposition

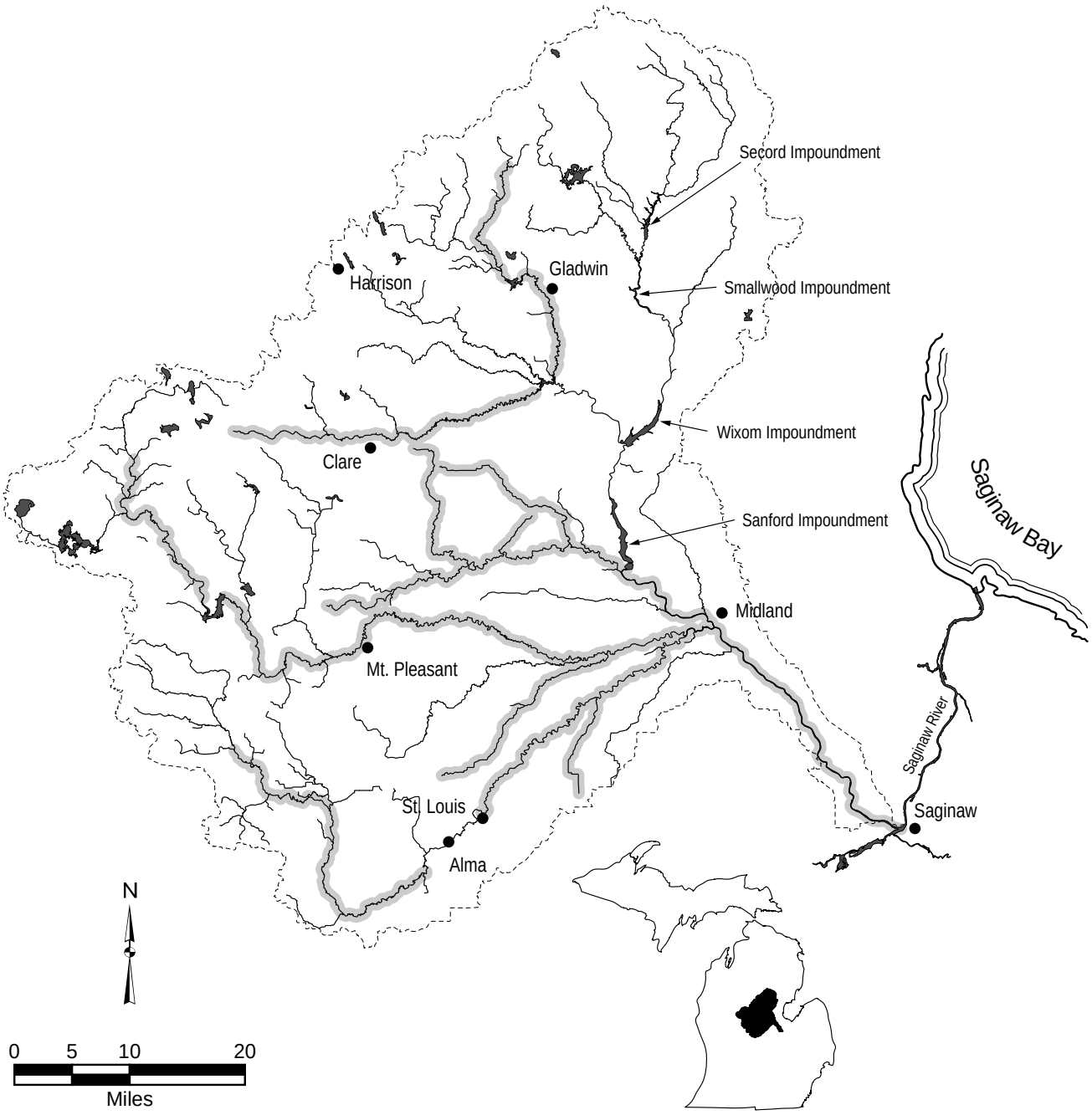


Rainbow darter *Etheostoma caeruleum*

Habitat**:**

feeding - gravelly high gradient riffles
- clear, moderate to large streams
- in shallows (average 1 foot)

spawning - gravel or rubble riffles

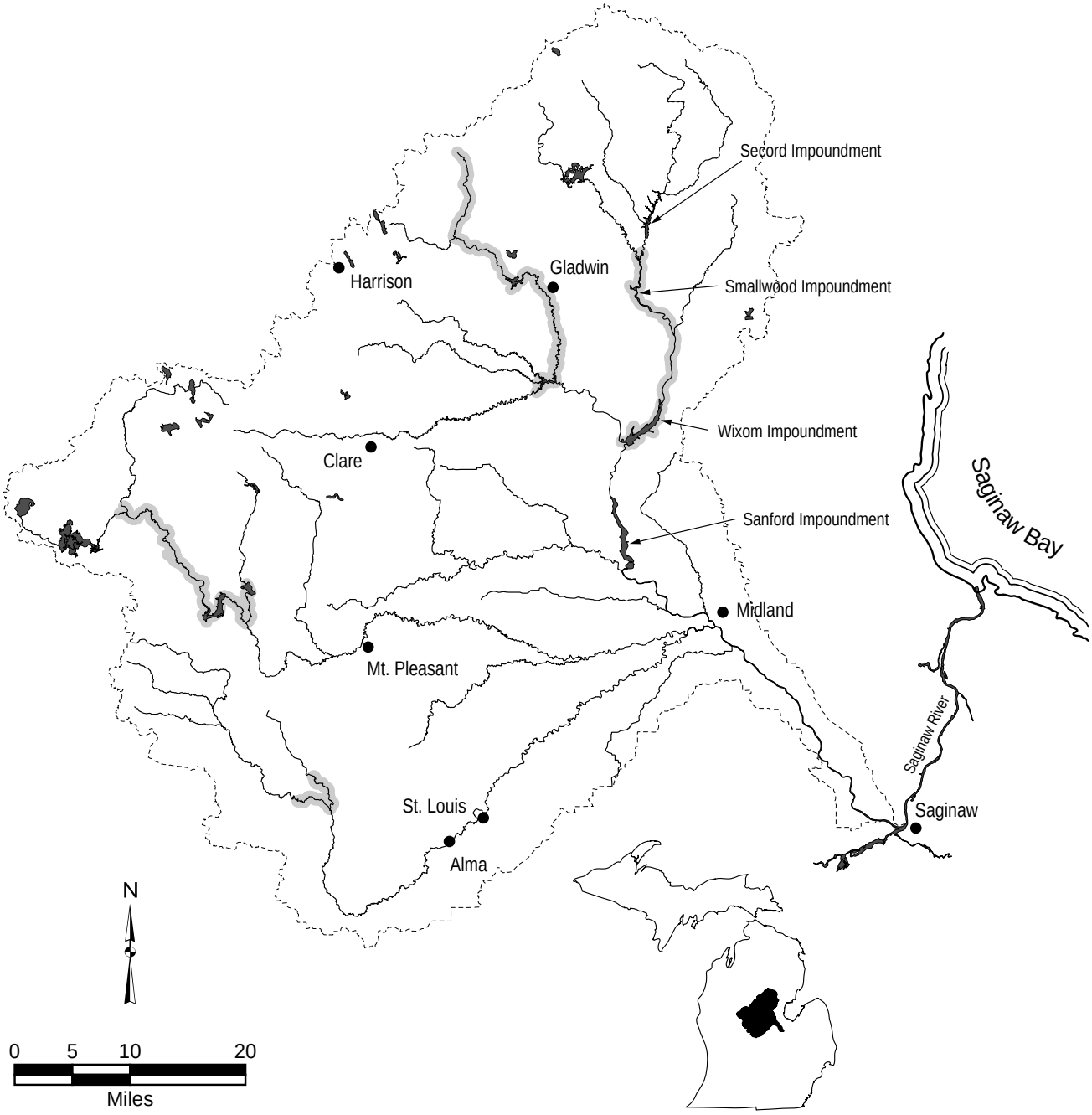


Iowa darter *Etheostoma exile*

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



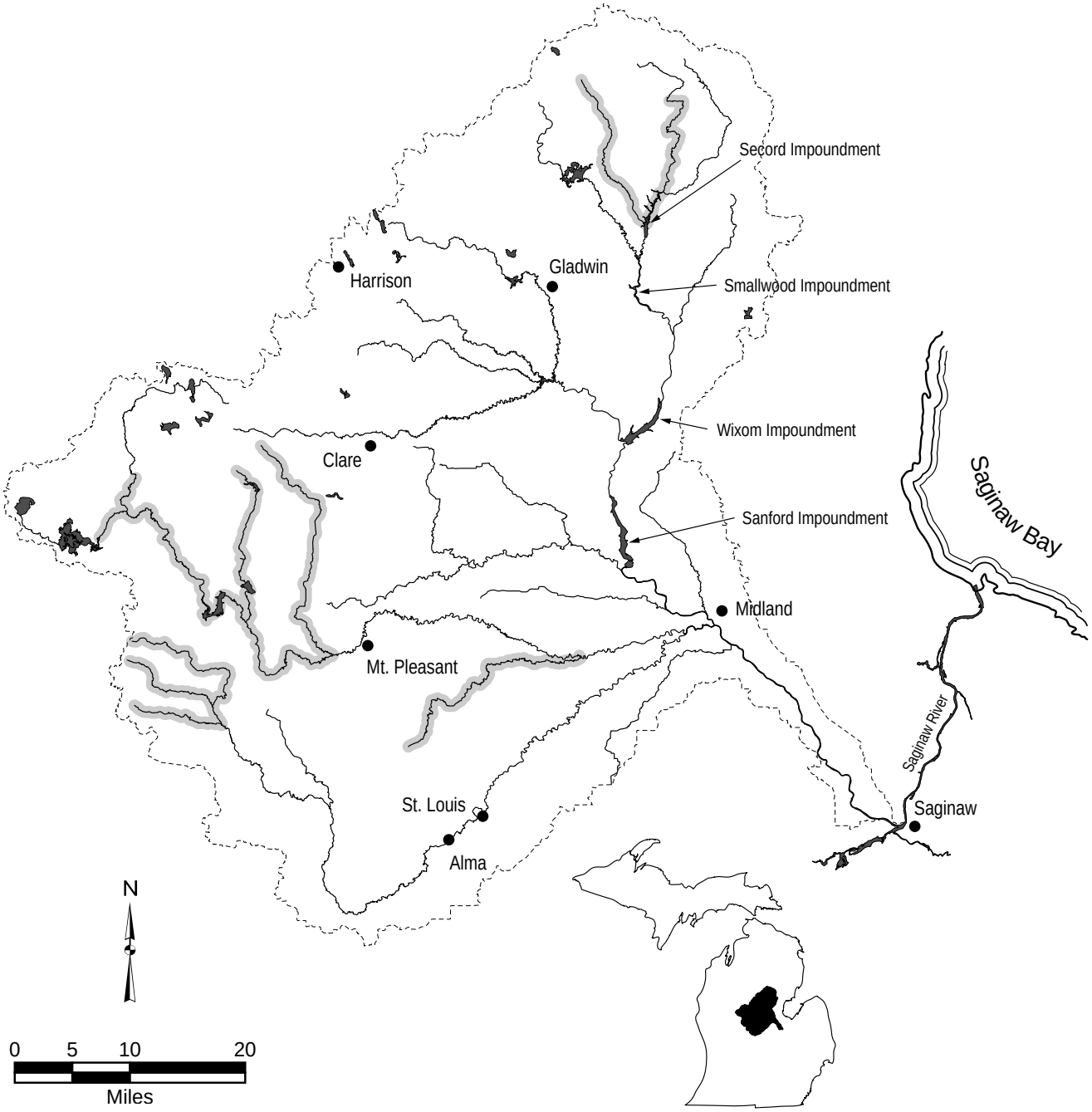
Fantail darter *Etheostoma flabellare*

Habitat:

feeding - small, shallow (<18 inches) streams
- some tolerance of turbidity and siltation
- clear warm waters
- slow to moderate current
- gravel and boulder substrate

spawning - gravel in slower water
- lays eggs on underside of rocks, male guards and fans them

winter refuge - moves downstream to larger and deeper waters

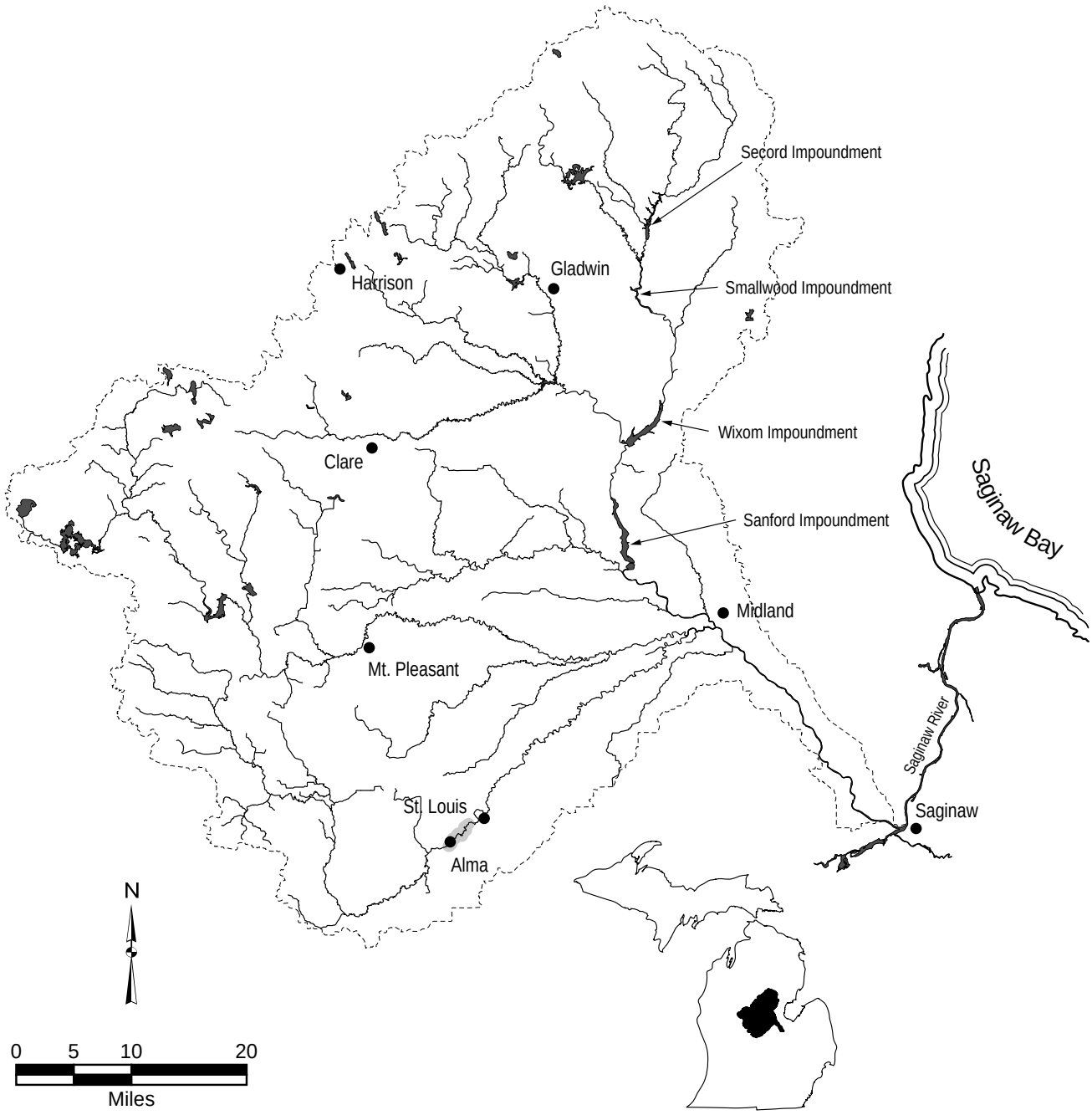


Least darter *Etheostoma microperca*

Habitat**:**

feeding
- moderate to warm temperature
- clear quiet low-gradient vegetated streams (wetlands, floodplains)
- soft substrate

spawning
- spawning occurs on stems of plants
- male guards a territory in a vegetated area

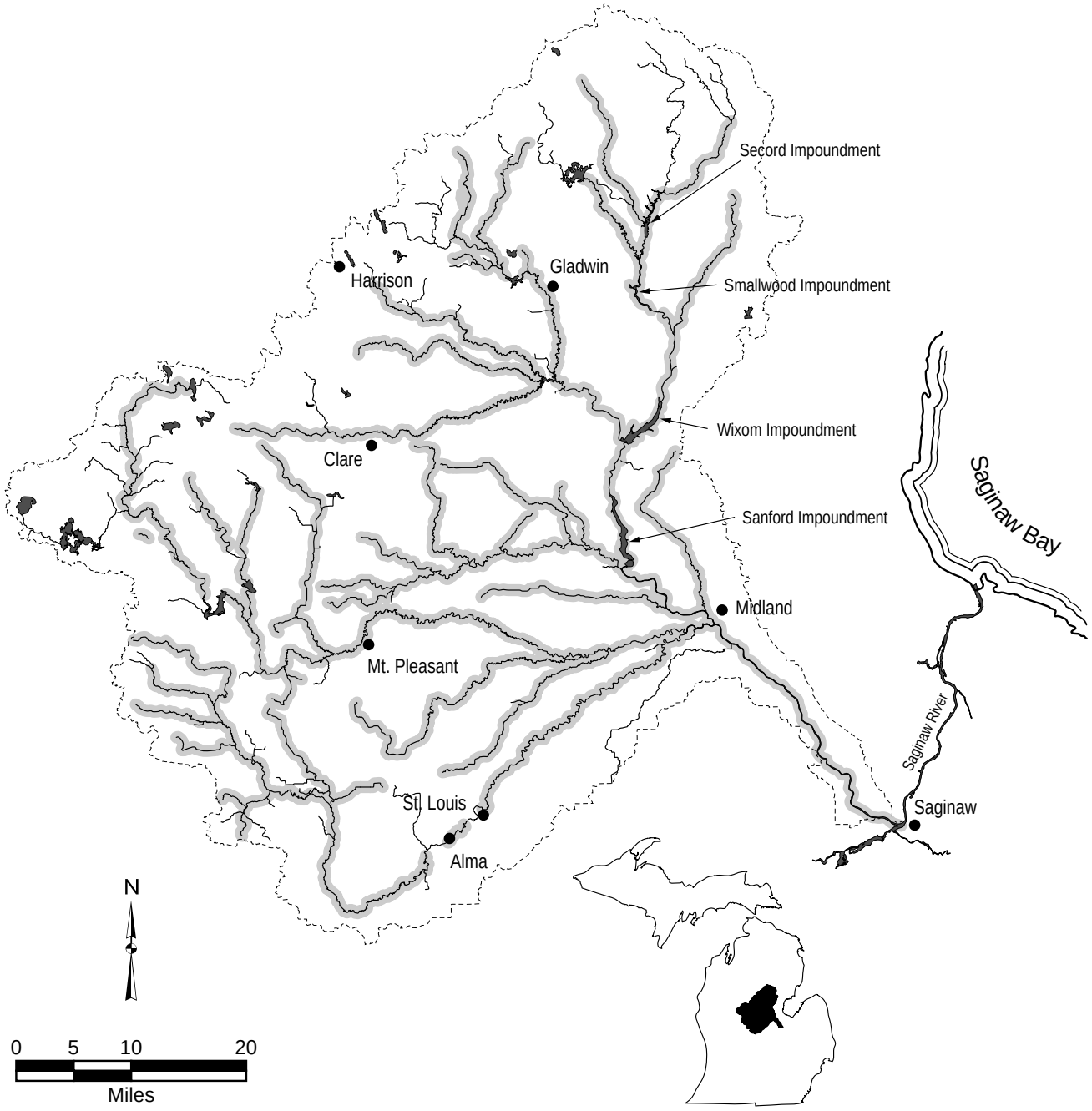


Johnny darter *Etheostoma nigrum*

Habitat**:**

feeding - sand and silt substrate
- little to moderate current
- shallow areas of streams, rivers, lakes, and impoundments
- tolerant of many organic and inorganic pollutants and turbidity

spawning - underneath rocks
- in stream pools or protected shallows of lakes

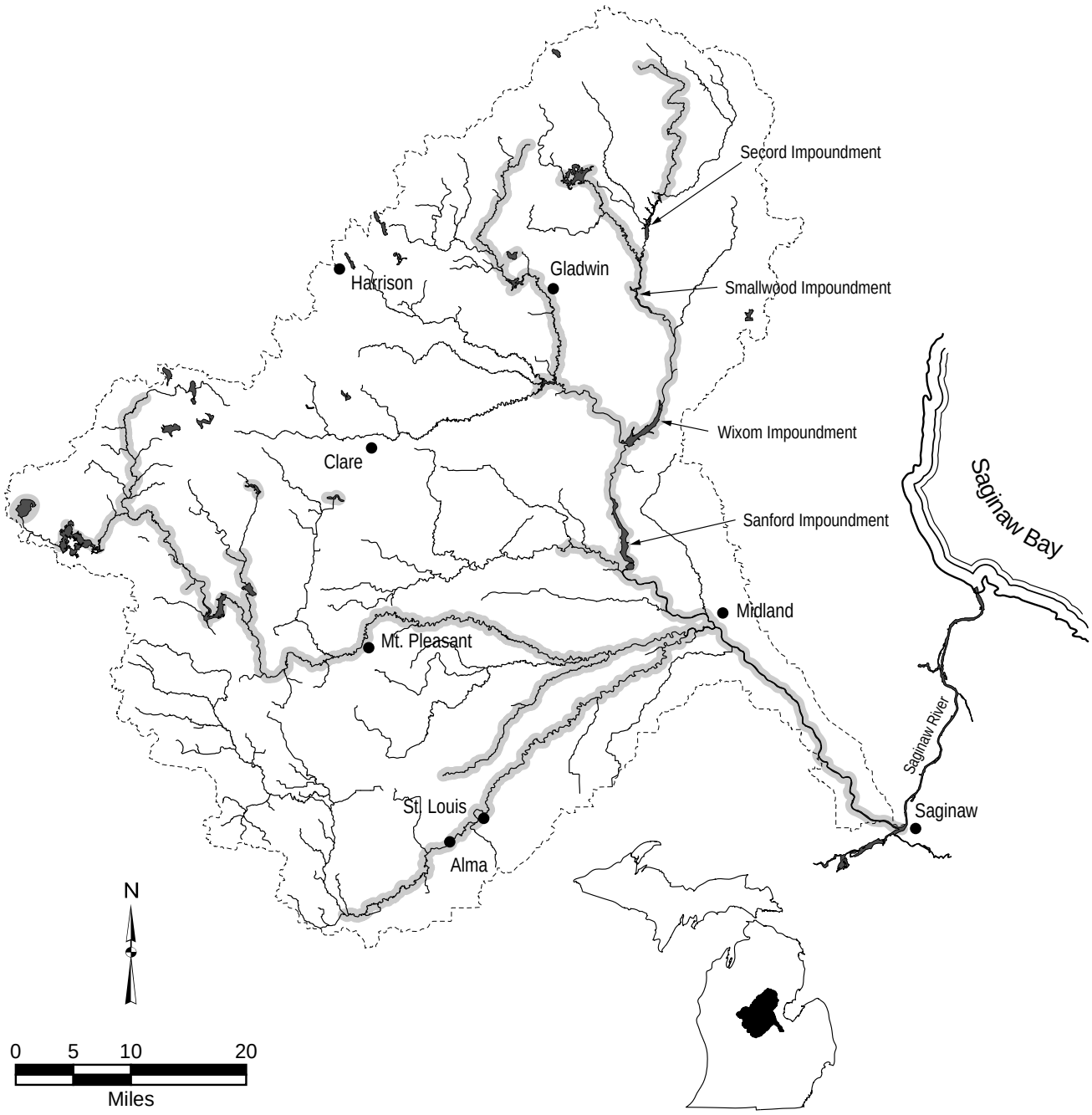


Yellow perch *Perca flavescens*

Habitat**:**

feeding
- clear lakes and impoundments; also Lake Huron
- low gradient rivers
- abundance of rooted aquatics
- muck, organic debris, sand, or gravel substrate
- does not tolerate turbidity and siltation

spawning
- shallows of lakes, tributaries of streams
- occurs over rooted vegetation, submerged brush, fallen trees
- may occur over sand or gravel

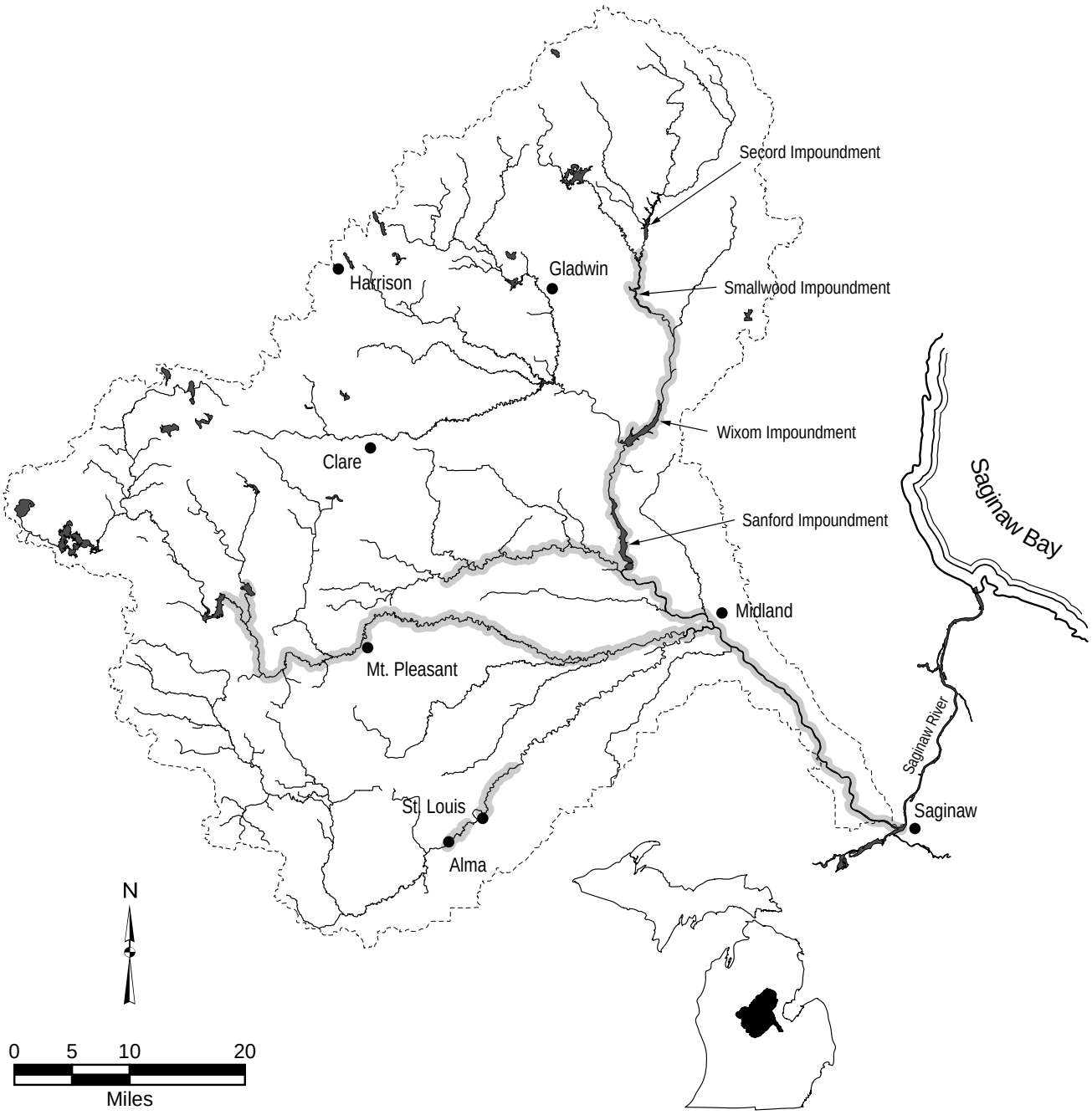


Northern logperch *Percina caprodes semifasciata*

Habitat**:**

feeding - gravel riffles, deeper slower sections of rivers
- medium size streams; also lakes, impoundments, and Lake Huron
- sand, gravel, or rock substrate
- avoids turbidity and silt

spawning - riffles or sandy in-shore shallows

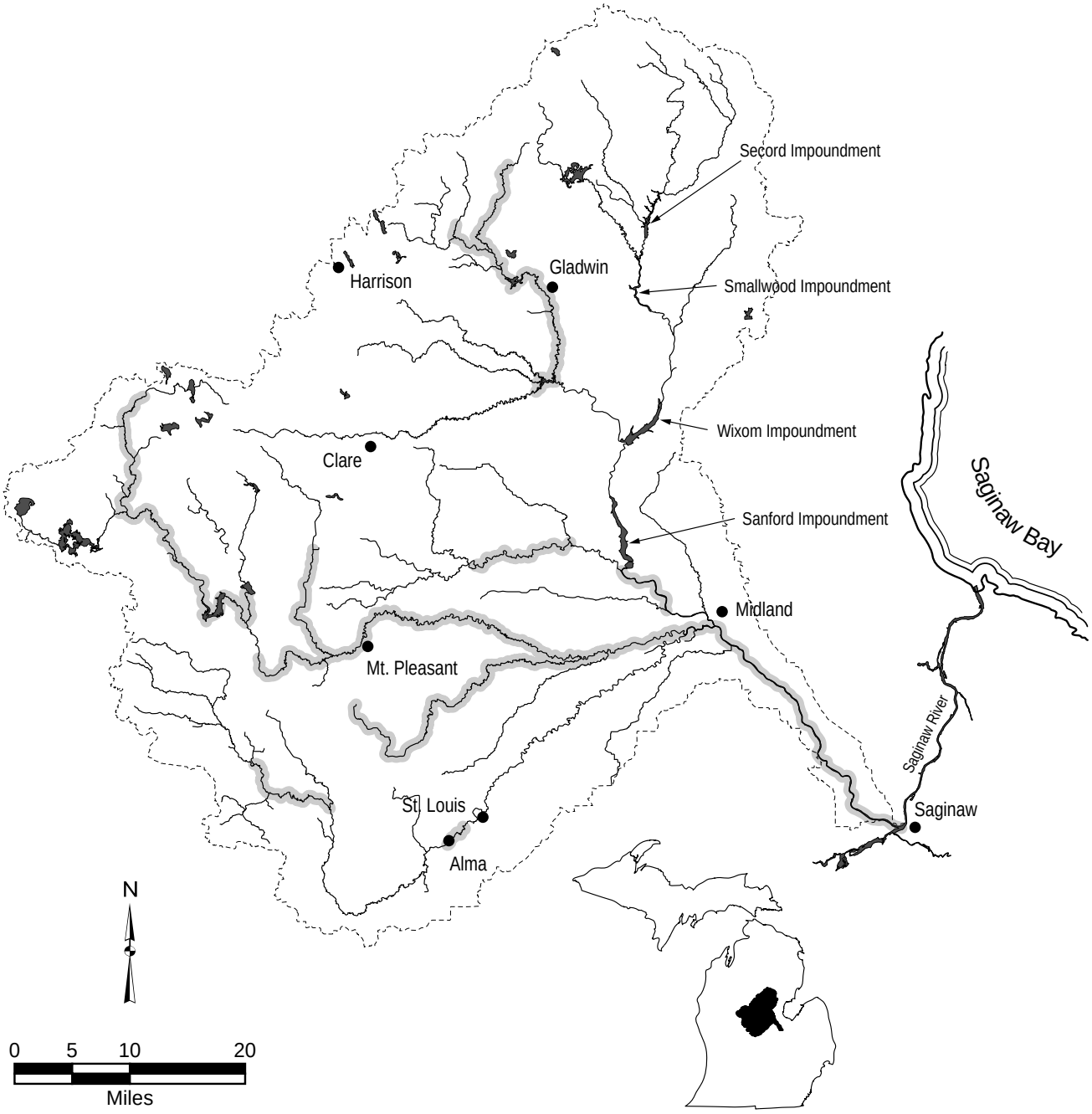


Blackside darter *Percina maculata*

Habitat**:**

feeding - small to medium streams
- low to medium gradient
- gravel and sand substrate
- tolerate some turbidity

spawning - gravel and sand substrate



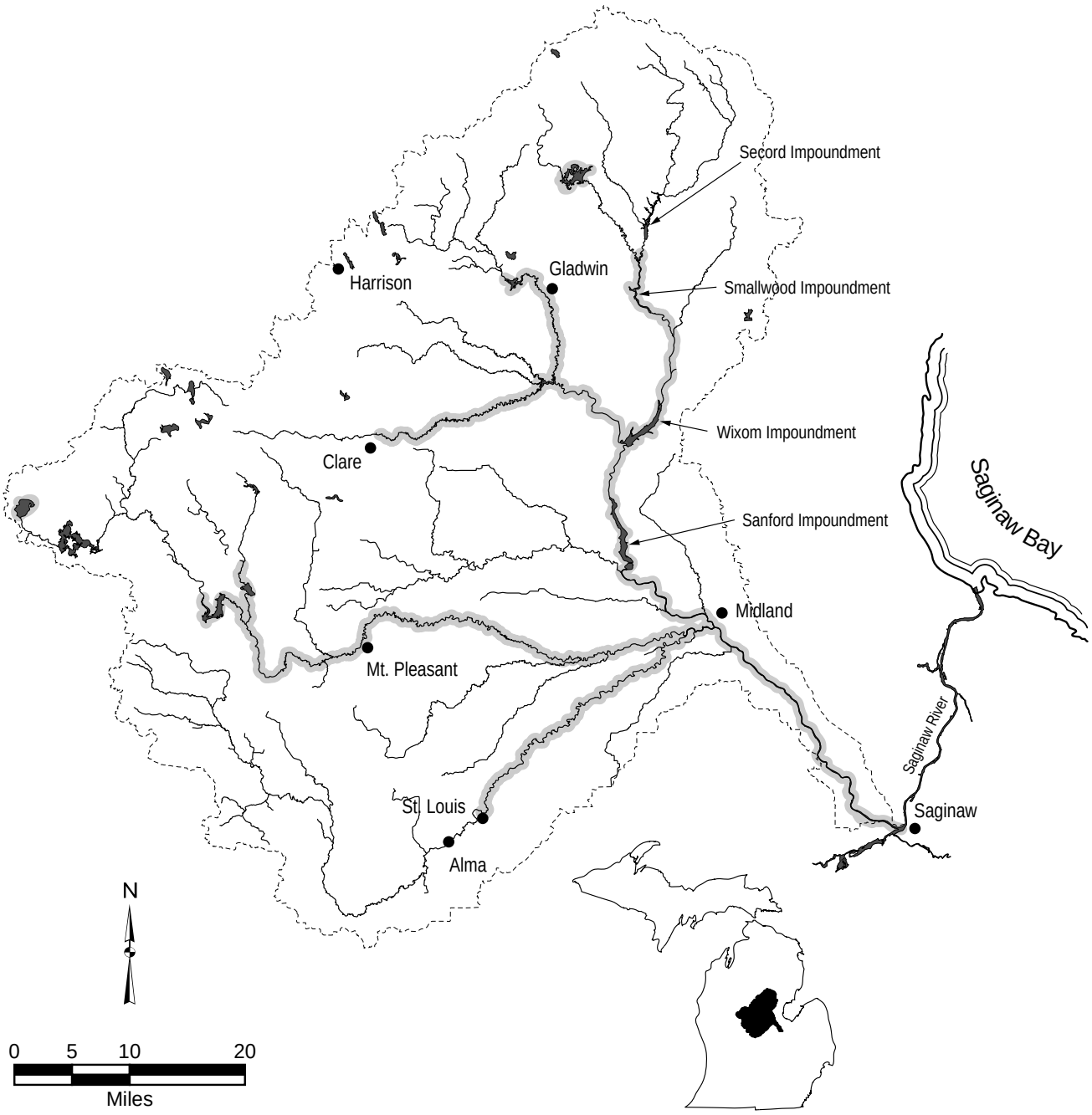
Walleye *Sander vitreus*

Habitat**:**

feeding - larger, deeper streams and in large, shallow, turbid lakes and impoundments; also Lake Huron
- gravel, bedrock, and firm substrates preferred
- does not tolerate a lot of turbidity or low oxygen

spawning - rocky substrates in high gradient water in rivers
- boulder to coarse gravel shoals in lakes

winter refuge - avoids strong currents

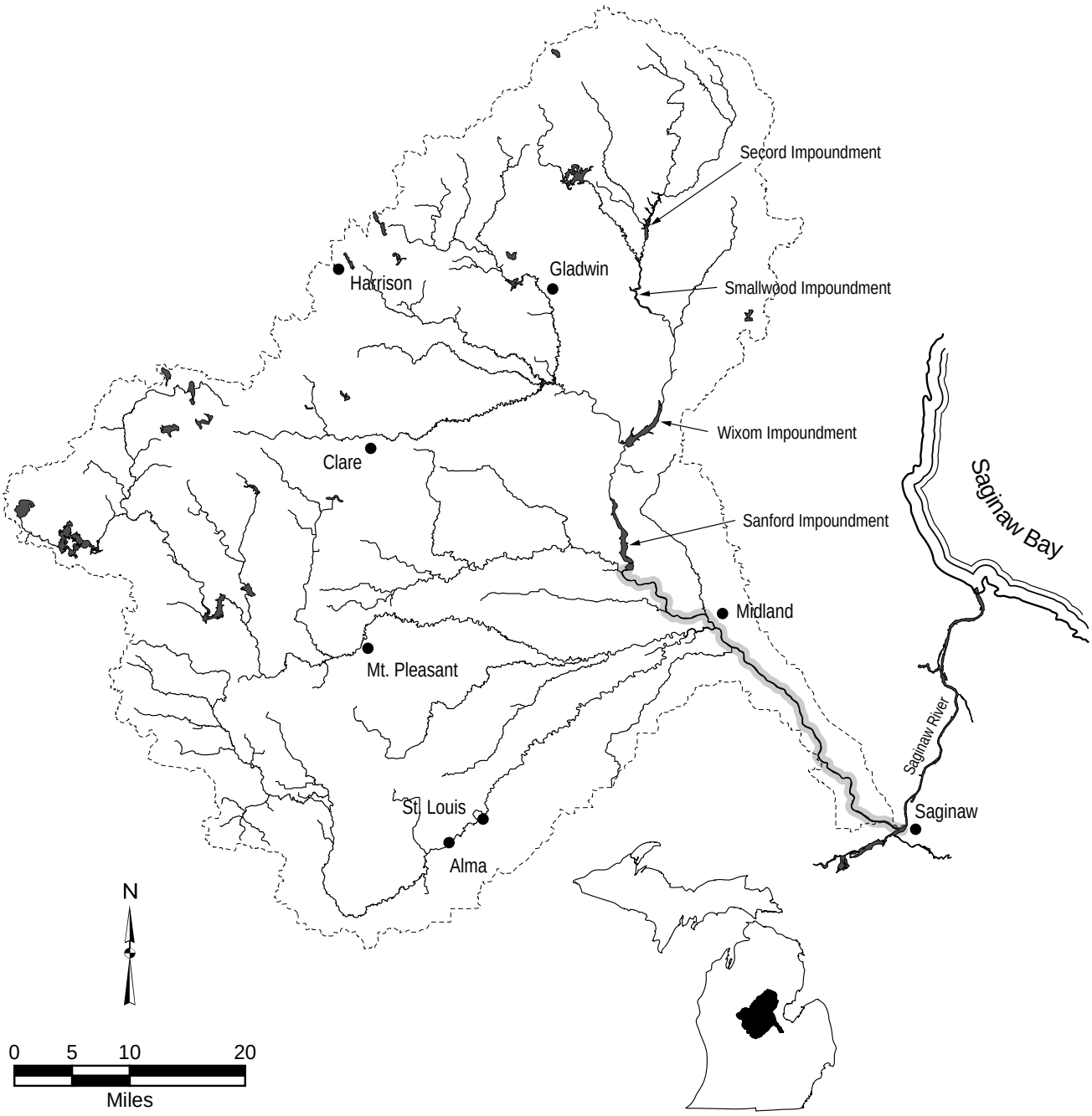


Freshwater drum *Aplodinotus grunniens*

Habitat**:**

feeding - deeper pools of rivers and Lake Huron
- in shallows
- prefers clear waters and clean substrates
- can adapt to high turbidity levels

spawning - pelagically, in open water, over sand or mud substrate
- occurs in bays or lower portions of marshes



Round goby *Neogobius melanostomus* - **non-native species**

Habitat**:**

feeding	-	rock, cobble, riprap, and vegetate areas of rivers and lakes
	-	young found over sand substrate
spawning	-	rocky substrate with large interstitial spaces
winter refuge	-	rocky substrate with large interstitial spaces
	-	deep water