

Appendix 3

Known past and present fish distributions in the Cheboygan River system. Distribution of fishes were compiled from Bailey et al. (2004) and from records located at the Michigan Department of Natural Resources Gaylord Operations Service Center, the Michigan Department of Natural Resources, Hunt Creek Fisheries Research Station, and from the Michigan Department of Natural Resources Fish Collection System. For species that are listed under Michigan's Endangered Species Act (Part 365, Endangered Species Protection, of the Natural Resource and Environmental Protection Act, Act 451 of the Public Acts of 1994), their status follows their scientific name. Categories are decline, rare, special concern, threatened, extinct, and locally extinct.

Habitat descriptions were compiled from the Fishes of Ohio (Trautman 1981), Freshwater Fishes of Canada (Scott and Crossman 1973), Fishes of Wisconsin (Becker 1983), Fishes of Missouri (Pflieger 1975), and Fishes of the Great Lakes Region (Hubbs and Lagler 1947). (These species distribution maps are under construction.)

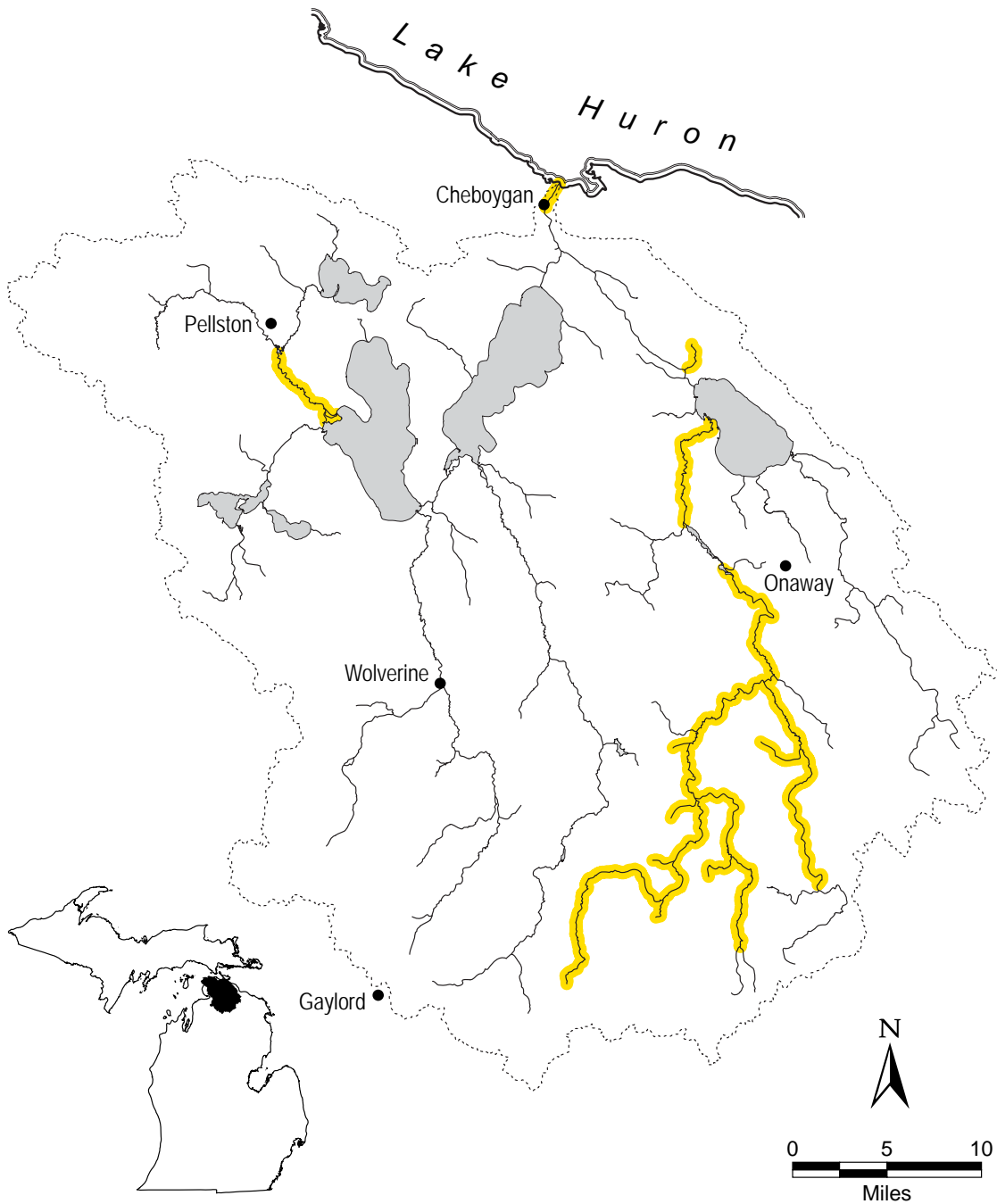
APPENDIX # INDEX

Alewife.....	502	Largemouth bass	558
American brook lamprey	497	Least darter.....	562
Atlantic salmon	540	Longnose dace	519
Black bullhead	526	Longnose gar.....	500
Blackchin shiner.....	511	Mimic shiner	514
Black crappie	559	Mottled sculpin	550
Blackside darter	566	Muskellunge.....	531
Bluegill.....	555	Ninespine stickleback	549
Bluntnose minnow	517	Northern brook lamprey.....	495
Bowfin.....	501	Northern logperch	565
Brassy minnow.....	505	Northern longear sunfish.....	556
Brook stickleback.....	548	Northern pearl dace.....	507
Brook trout	542	Northern pike	530
Brown bullhead.....	528	Northern redbelly dace.....	515
Brown trout	541	Pink salmon.....	536
Burbot	546	Pumpkinseed	554
Central mudminnow.....	532	Rainbow darter.....	560
Chinook salmon	539	Rainbow smelt	533
Cisco {Lake herring}	534	Rainbow trout.....	538
Coho salmon	537	Rock bass	552
Common carp.....	504	Round goby	569
Common shiner.....	506	Sand shiner.....	513
Creek chub	521	Sea lamprey.....	498
Emerald shiner	510	Silver lamprey	496
Fathead minnow.....	518	Silver redhorse	523
Finescale dace	516	Slimy sculpin	551
Freshwater drum	568	Smallmouth bass	557
Golden redhorse	524	Splake.....	543
Golden shiner	509	Spotfin shiner	503
Grass pickerel.....	529	Spottail shiner	512
Greater redhorse.....	525	Trout-perch	545
Green sunfish	553	Walleye	567
Hornyhead chub.....	508	Western banded killifish	547
Iowa darter	561	Western blacknose dace.....	520
Johnny darter.....	563	White sucker	522
Lake sturgeon.....	499	Yellow bullhead.....	527
Lake trout.....	544	Yellow perch.....	564
Lake whitefish.....	535		

Northern brook lamprey *Ichthyomyzon fossor*

Habitat:

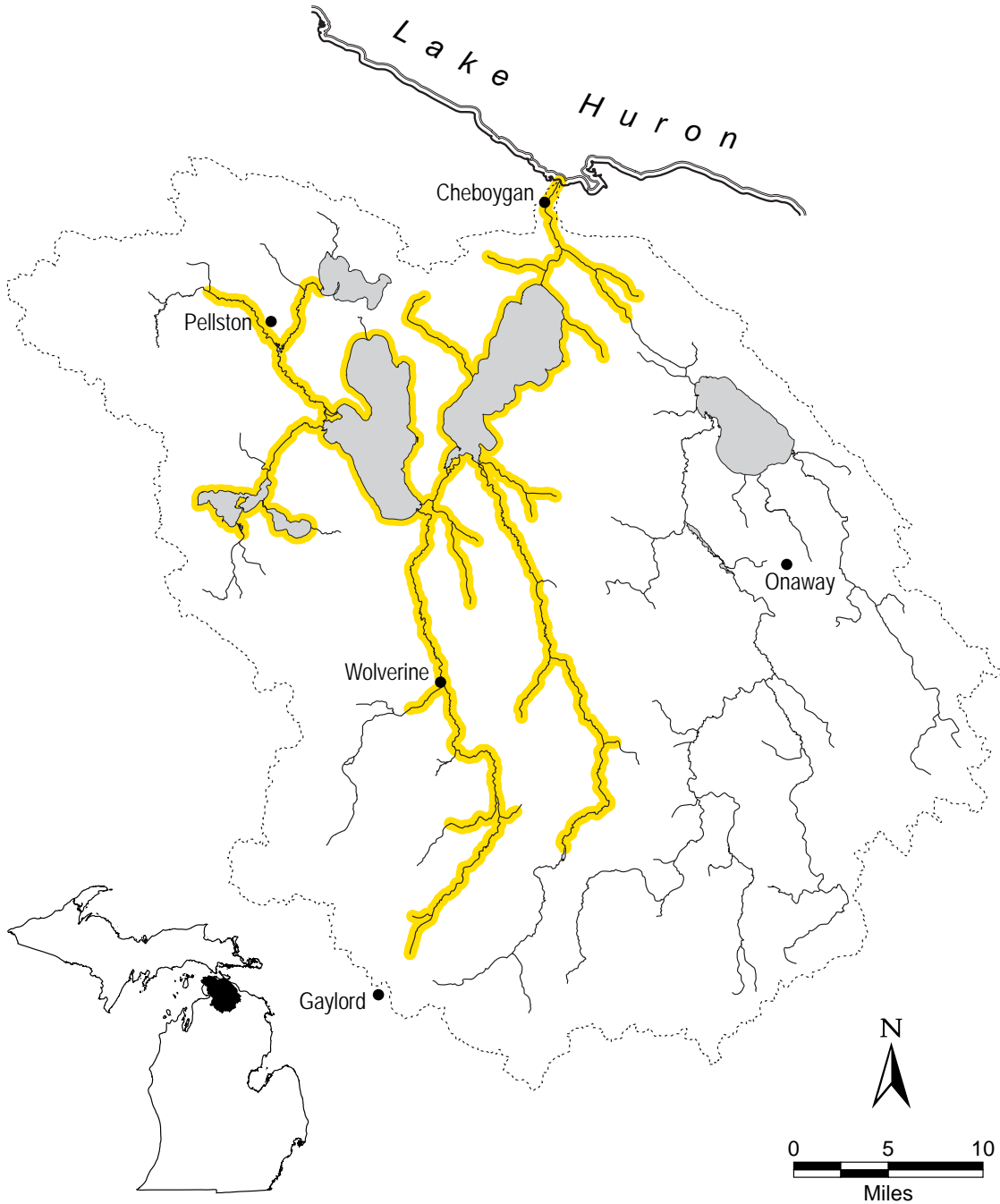
- feeding - young: low gradient, substrate with bars and beds of mixed sand and organic debris
- moderately warm water
- spawning - clear, high gradient streams (<15 feet wide)
- riffles with sand or gravel substrate



Silver lamprey *Ichthyomyzon unicuspis*

Habitat:

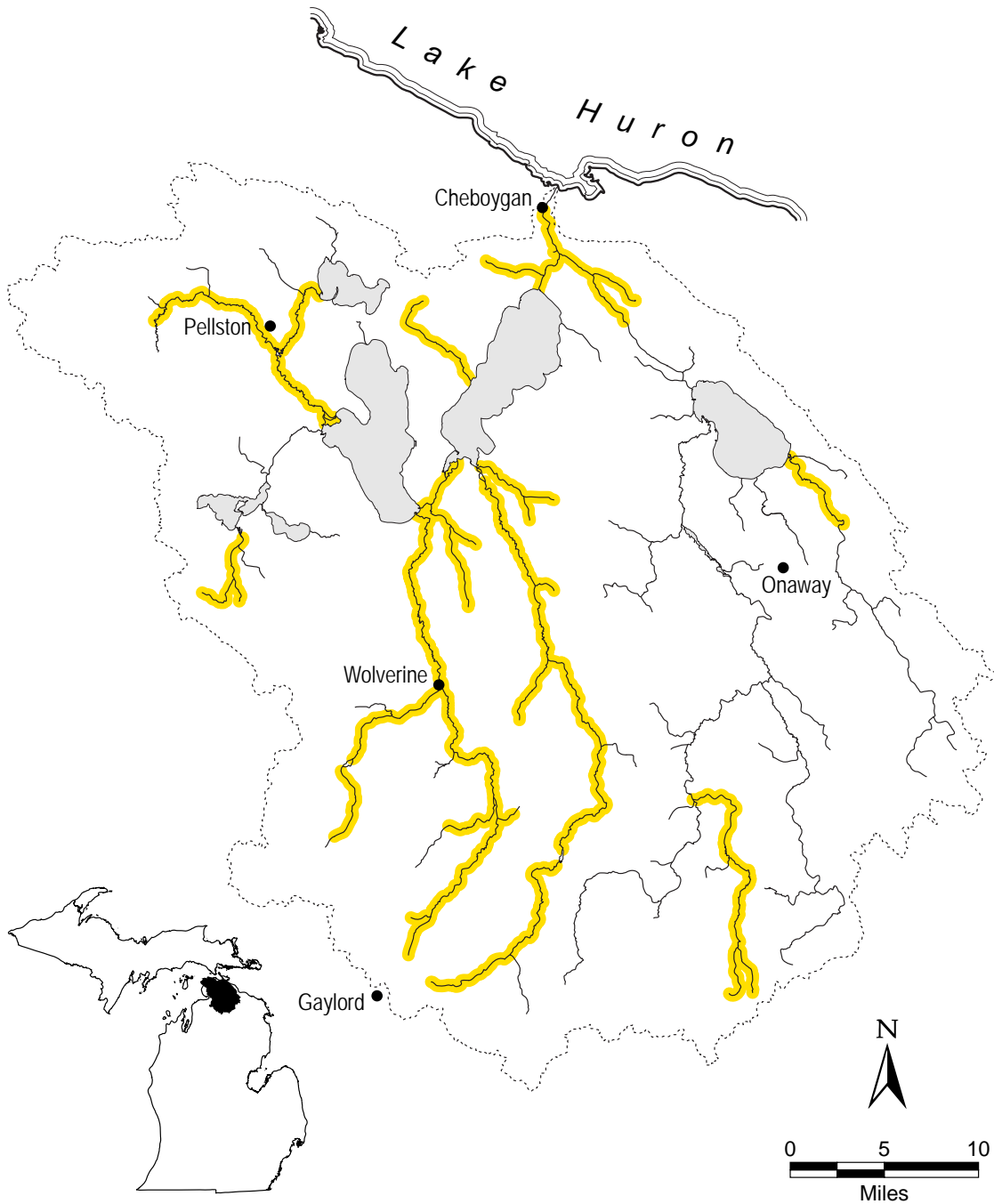
- feeding - young: sand, muck, or organic debris substrate
- adults: clear river water with prey species
- spawning - gravel and sand substrate
- moderate gradient
- moderate size stream
- cannot tolerate silt
- no dams
- winter refuge - annocetes burrow for 4 to 7 years
 in mud and silt at river margins



American brook lamprey *Lampetra appendix*

Habitat:

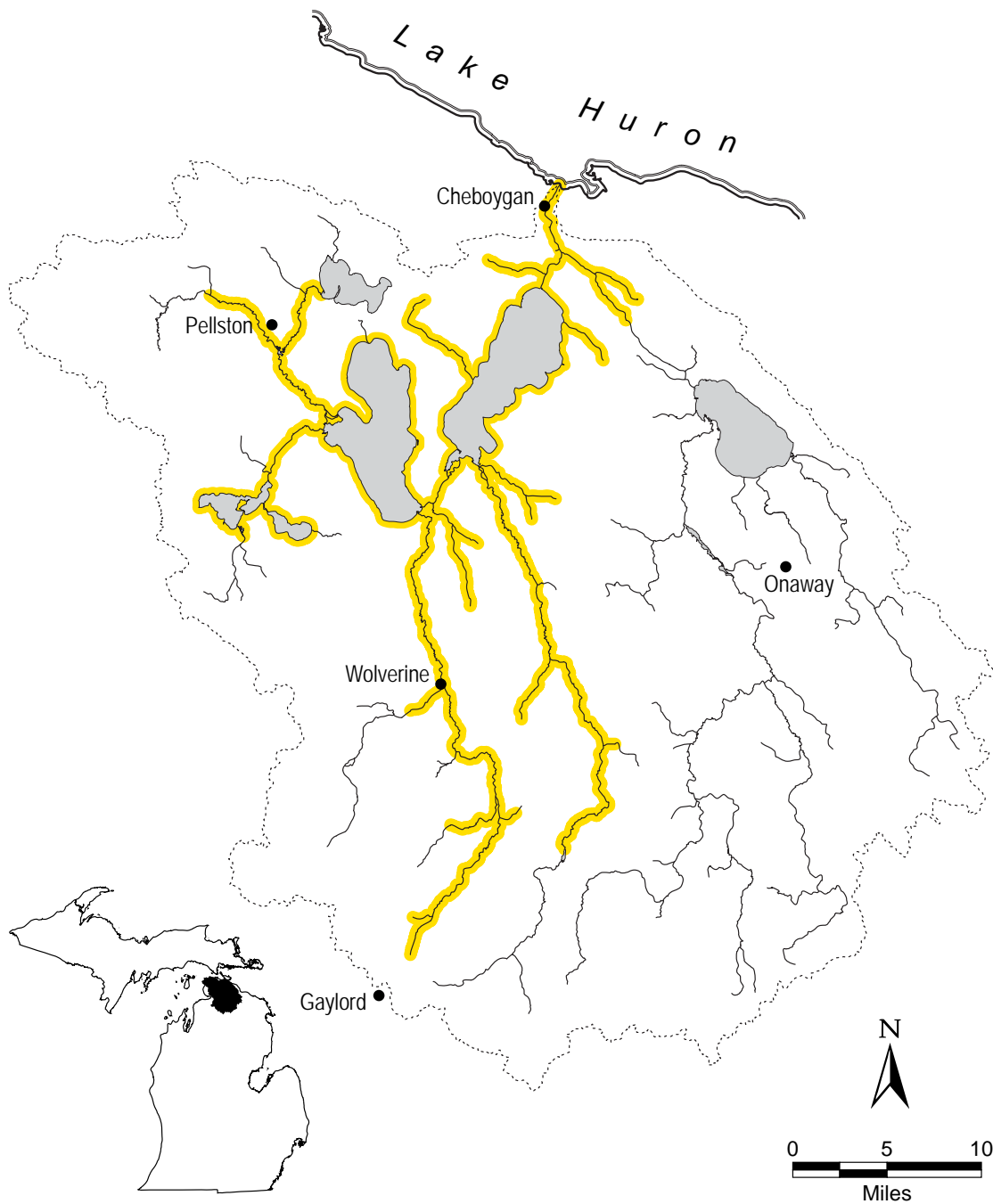
- feeding - young: low gradient, substrate with bars and beds of mixed sand and organic debris
- clear cool stream water, sensitive to turbidity
- spawning - clear, high gradient streams (>15 feet wide)
- cold water
- gravel substrate
- winter refuge - sand or silt substrate for ammocetes



Sea lamprey *Petromyzon marinus*

Habitat:

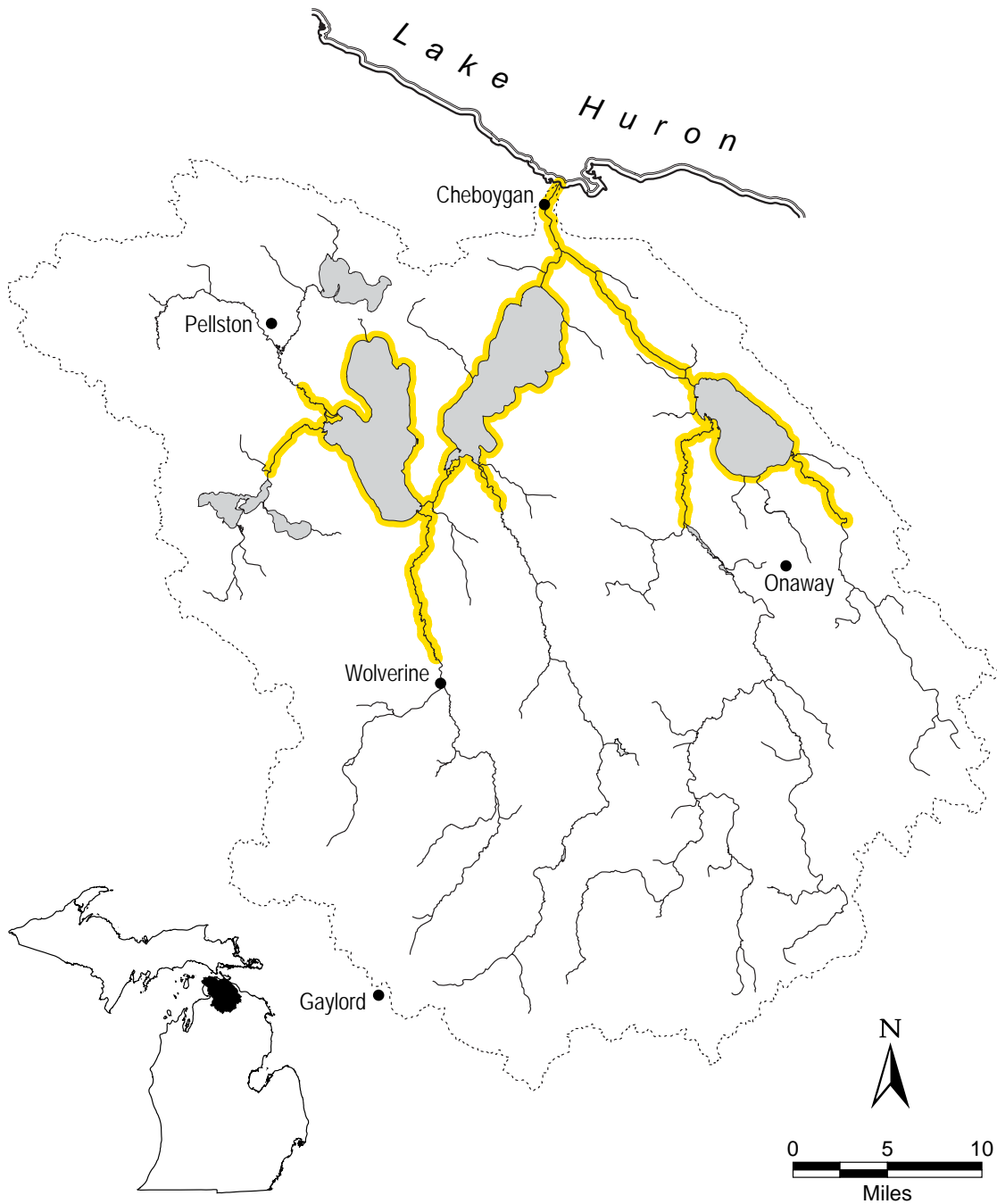
- feeding - young: substrate with beds of sand mixed with organic debris
- cannot tolerate silt
- adults: clear cool water of Lake Huron
- spawning - no dams
- riffles with sand and gravel substrates



Lake sturgeon *Acipenser fulvescens* - threatened

Habitat:

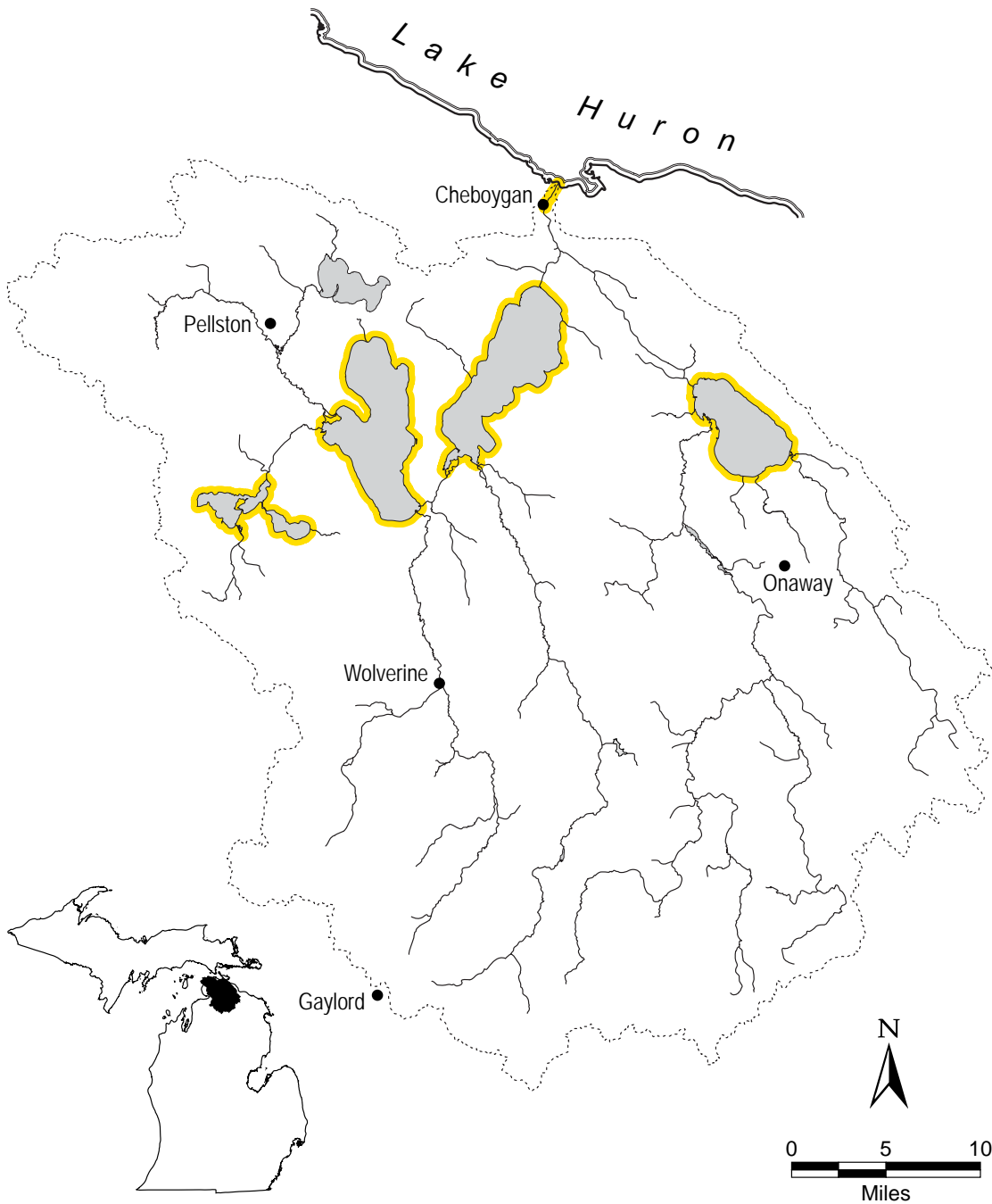
- feeding - shoal areas of large rivers, lakes, and impoundments
- gravel, sand, rock substrates
- spawning - in or before rapids, at the base of dams in rivers
- in 2-15 feet of water
- swift current
- rocky ledges or around rocky islands in Great Lakes



Longnose gar *Lepisosteus osseus*

Habitat:

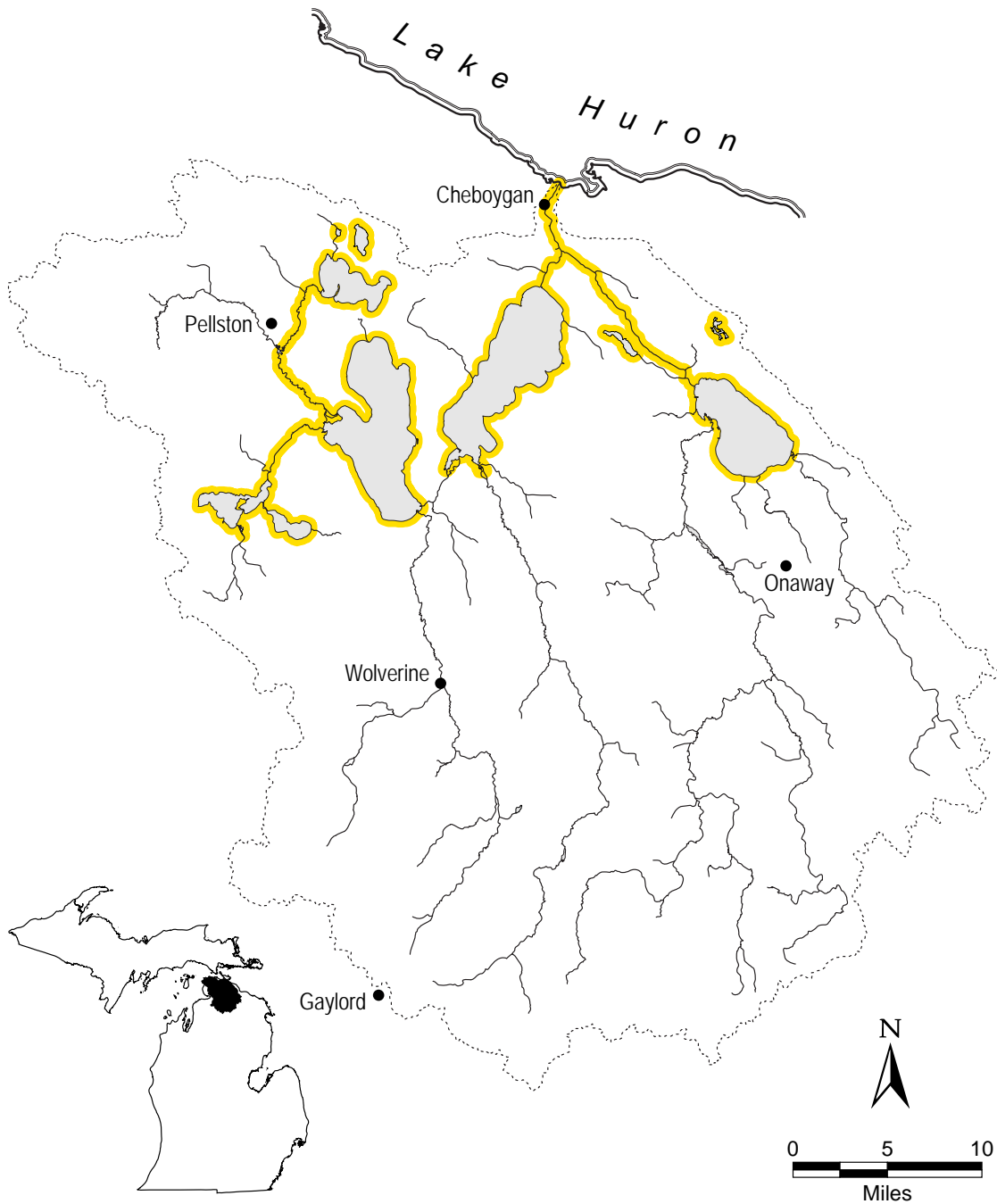
- feeding - adults: in deeper water
- young: in shallows
- clear water, low-gradient streams, lakes, and impoundments
- will feed in moderate current
- aquatic vegetation preferred, but not necessary
- open water fish
- spawning - warm shallow water of lakes or streams over vegetation



Bowfin *Amia calva*

Habitat:

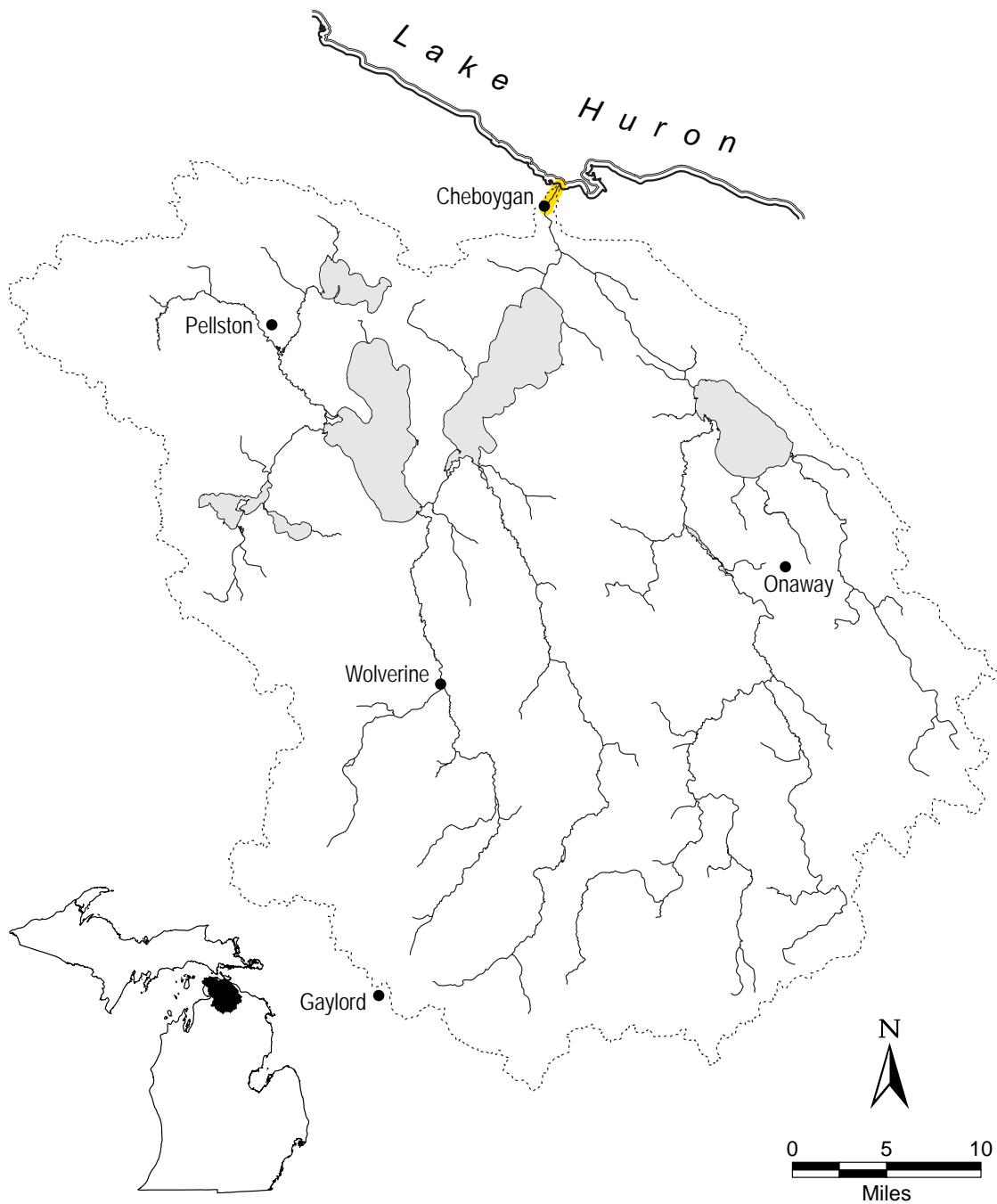
- feeding - clear water
- abundant rooted aquatic vegetation
- low gradient streams, lakes, and impoundments
- tolerate only small amount of silt
- spawning - need vegetated water, 1 to 2 feet deep
- can spawn under logs, stumps, or bushes
- winter refuge - gravelly pockets among aquatic vegetation



Alewife *Alosa pseudoharengus*

Habitat:

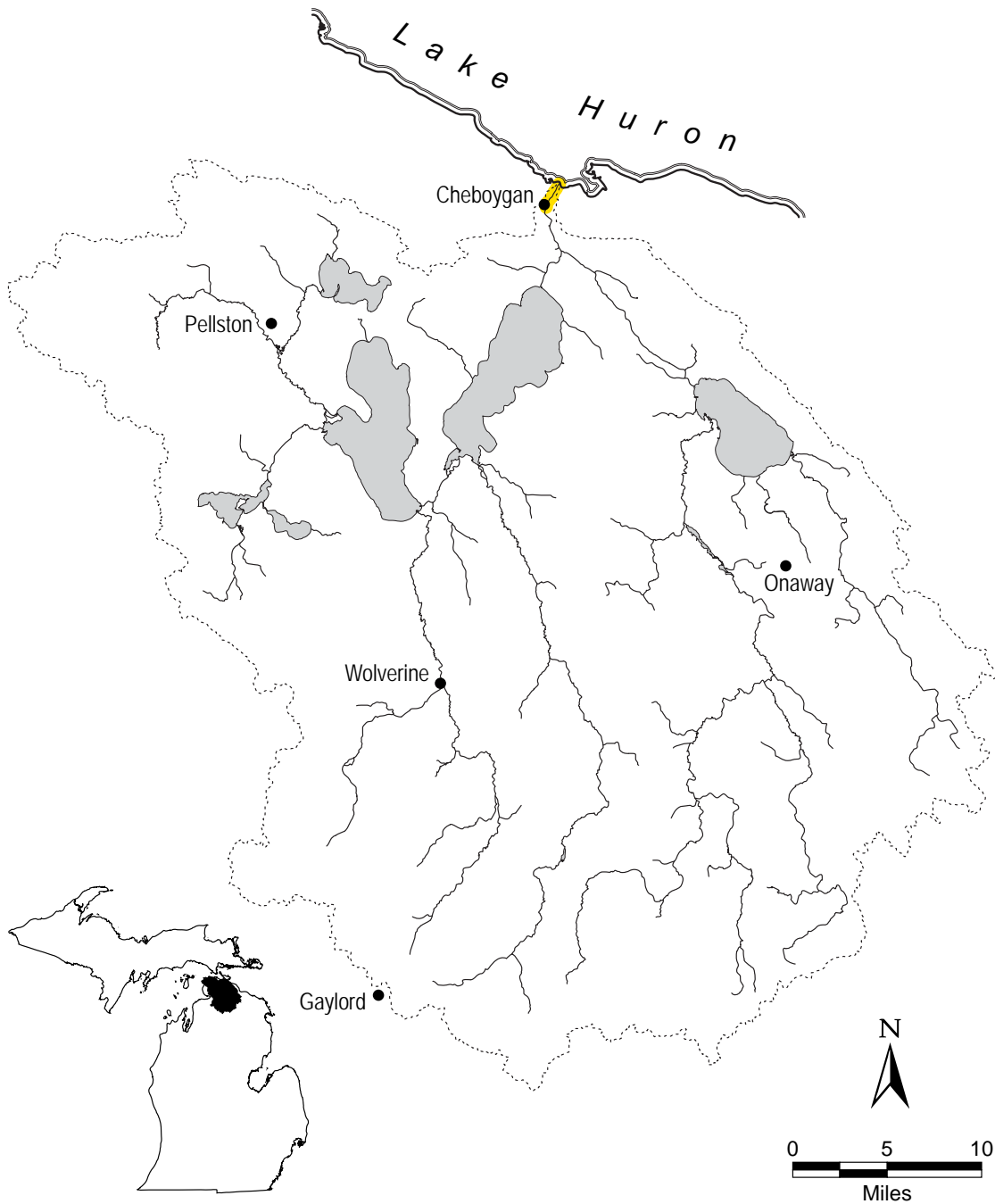
- feeding - adults: deep water of Lake Huron
- young: shallow water of Lake Huron
- prefers warmer waters
- spawning - streams or shallow beaches of lake
- sand or gravelly substrate
- winter refuge - deep water



Spotfin shiner *Cyprinella spiloptera*

Habitat:

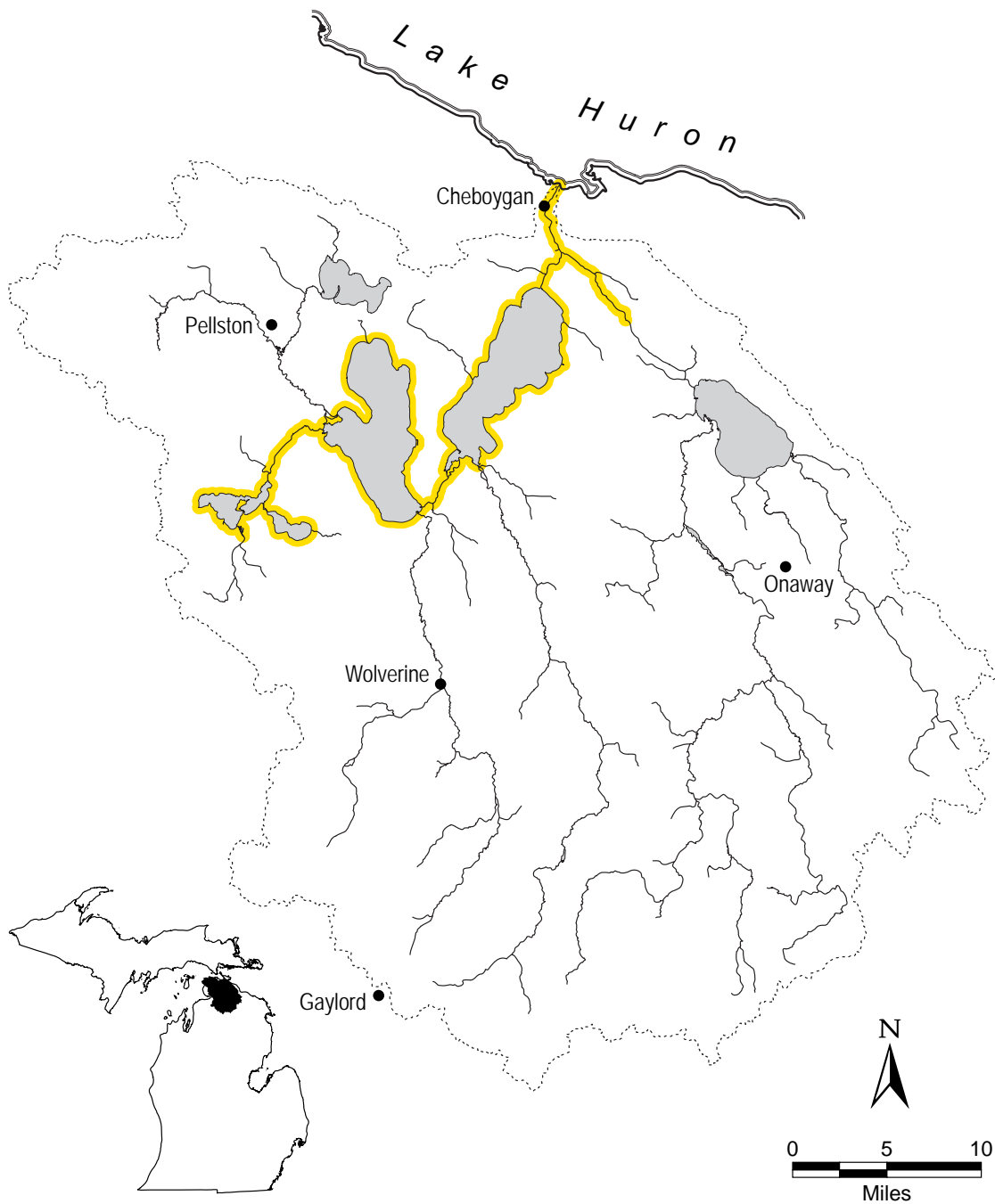
- feeding - clear water tolerant of turbidity and siltation
- some current
- shallow depths
- medium sized streams, lakes, and impoundments
- clear sand or gravel substrate
- spawning - swift current
- crevice spawner or on underside of submerged logs and roots



Common carp *Cyprinus carpio*

Habitat:

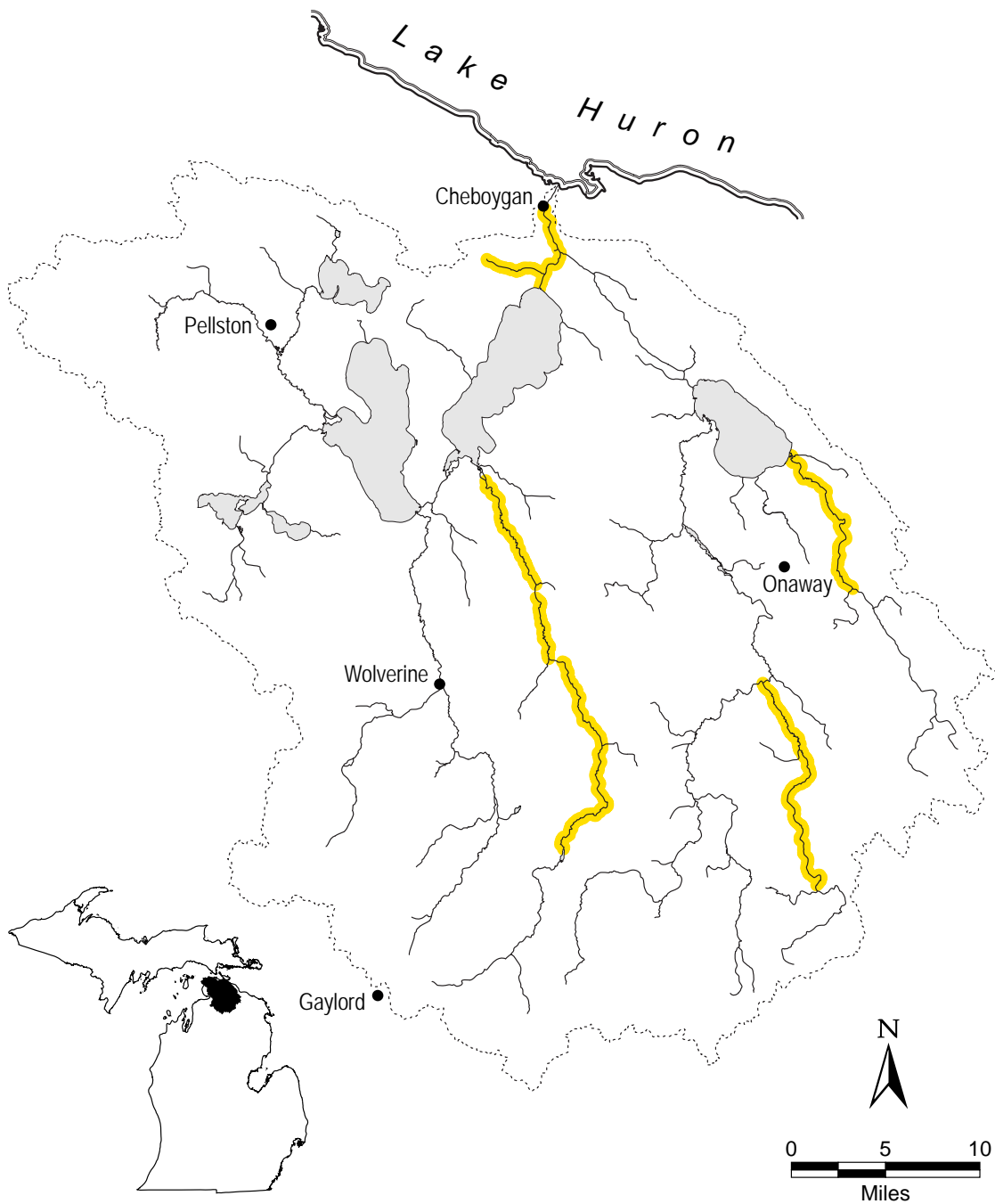
- feeding - low gradient fertile streams, rivers, lakes, and impoundments
- abundance of aquatic vegetation or organic matter
- tolerant of all substrates and clear to turbid water
- spawning - weedy or grassy shallows



Brassy minnow *Hybognathus hankinsoni*

Habitat:

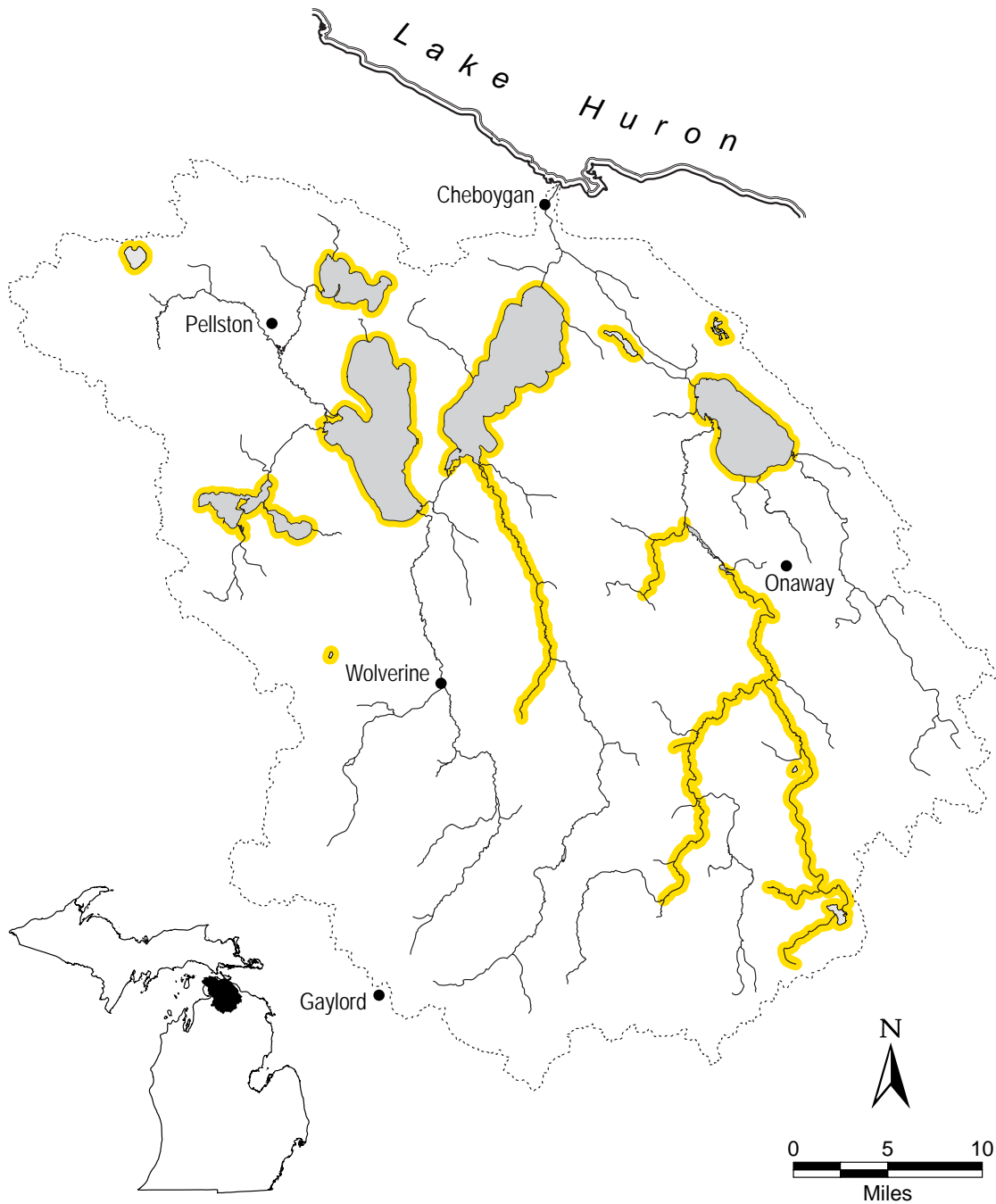
- cool acidic streams
- slow to moderate current
- sand or gravel substrate



Common shiner *Luxilus cornutus*

Habitat:

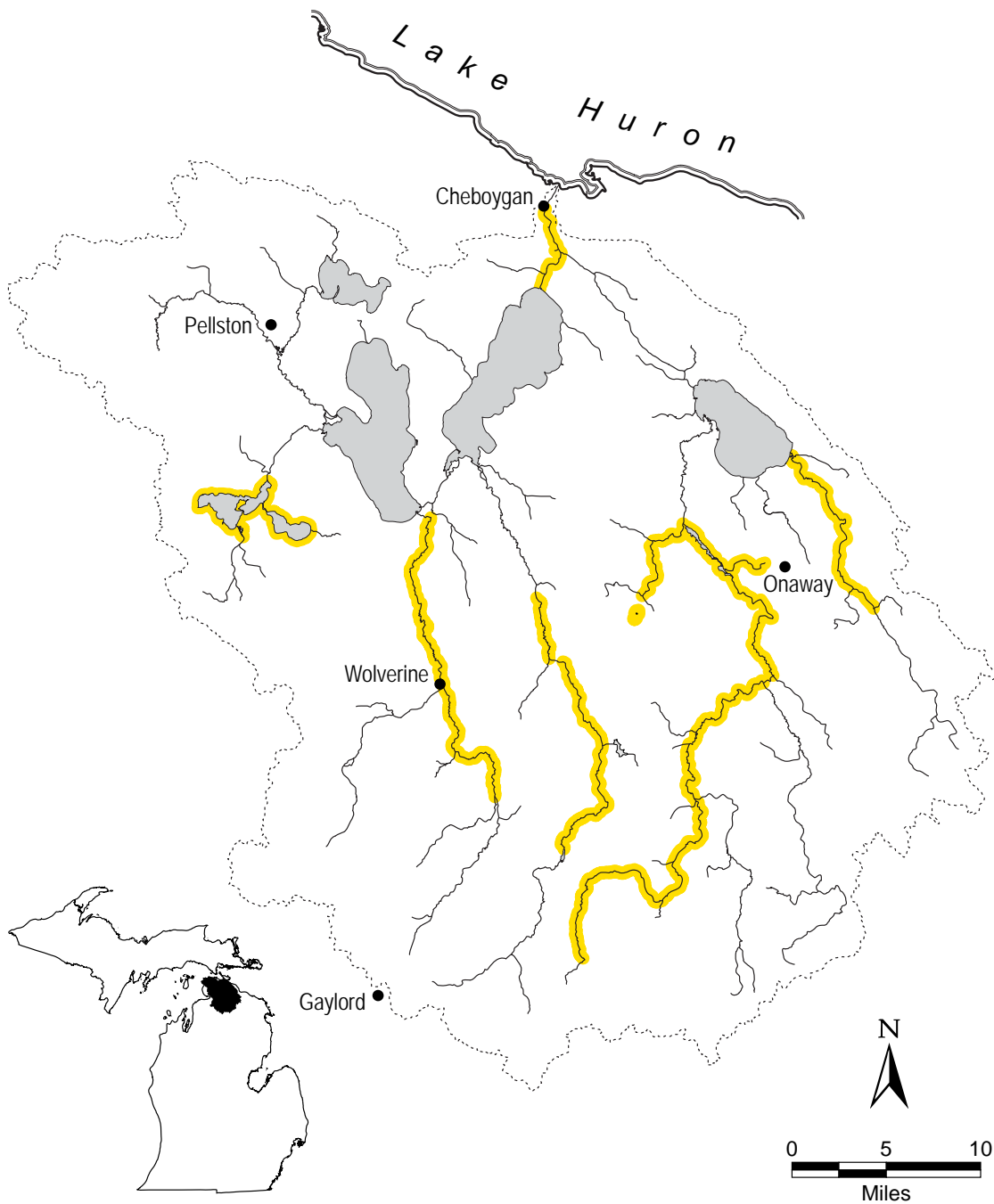
- feeding - small, clear, high-gradient streams and rivers, or shores of clear water lakes and impoundments
 - gravel substrate
 - can tolerate some submerged aquatic vegetation
 - not very tolerant of turbidity or silted waters
- spawning - gravel nests of other fish, especially those at the head of a riffle



Northern pearl dace *Margariscus nachtriebi*

Habitat:

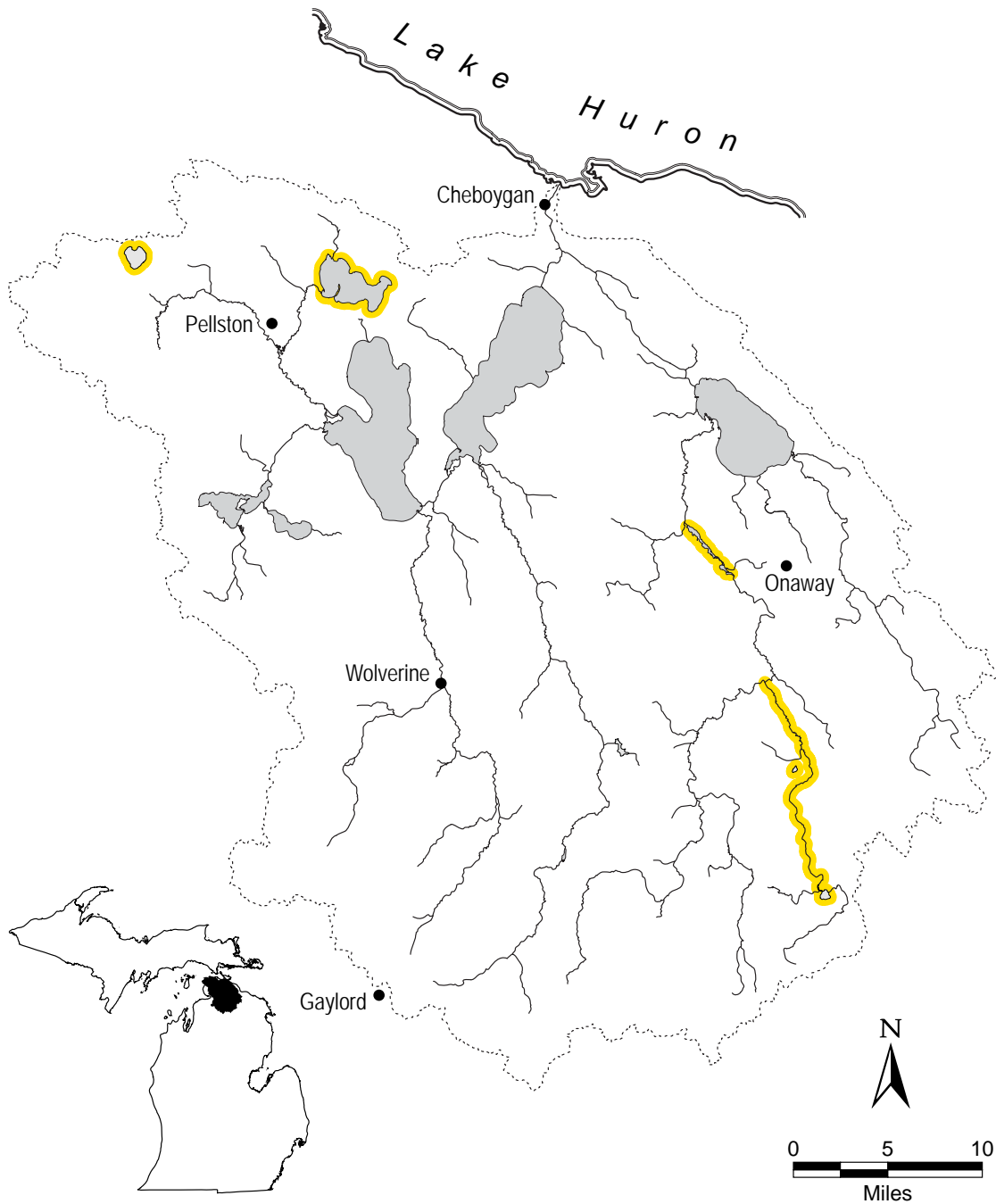
- feeding - cool, neutral to acidic streams and lakes
- clear to slightly turbid water
- spawning - males are territorial
- clear water, 18-24 inches deep
- sand or gravel substrate
- weak to moderate current



Hornyhead chub *Nocomis biguttatus*

Habitat:

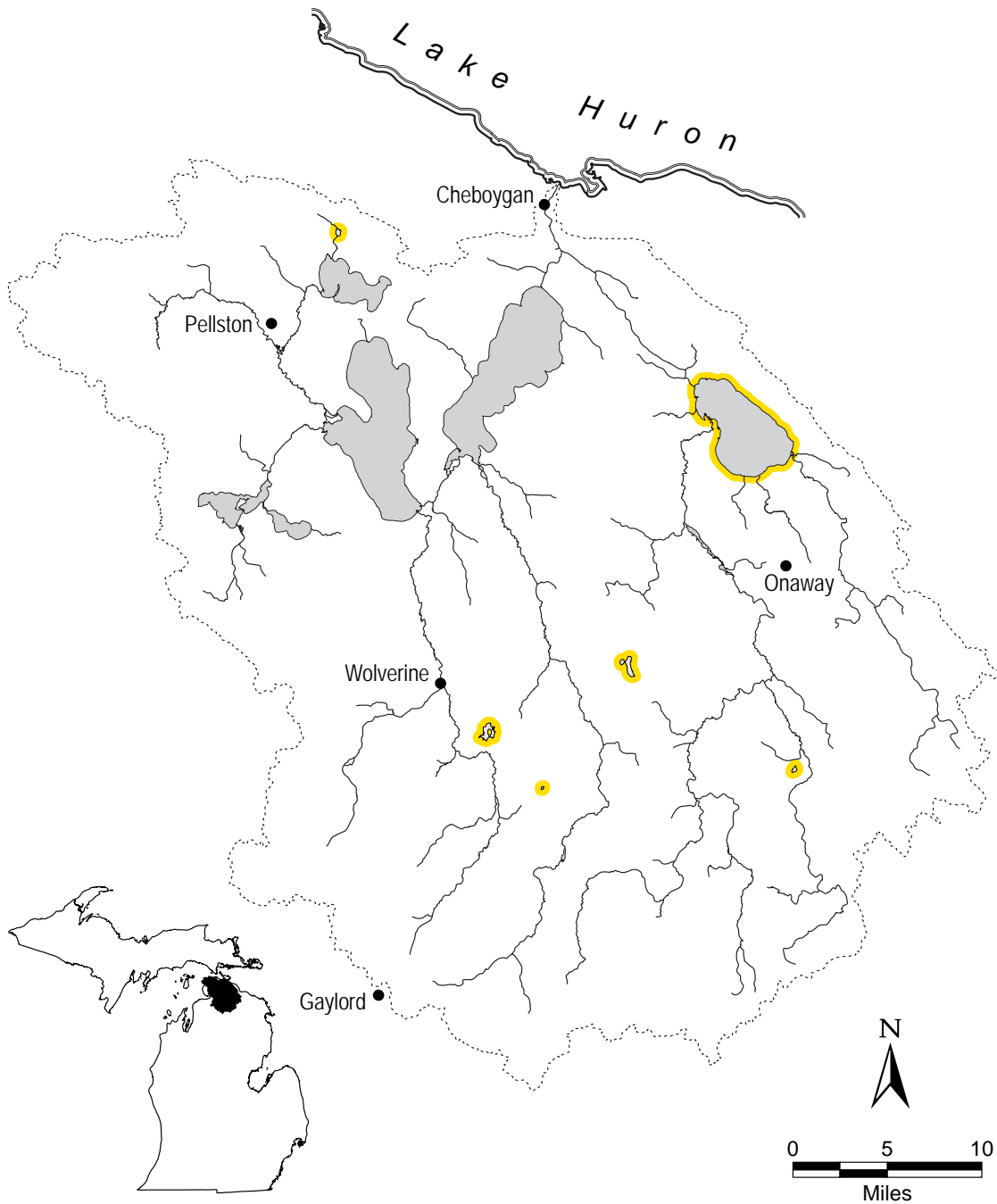
- feeding - adults: near riffles
- young: near vegetation
- clear water, does not tolerate turbidity
- gravel substrate
- low gradient streams that are tributaries to large streams
- spawning - large stones and pebbles present
- often below a riffle in shallow water
- gravel substrate



Golden shiner *Notemigonus crysoleucas*

Habitat:

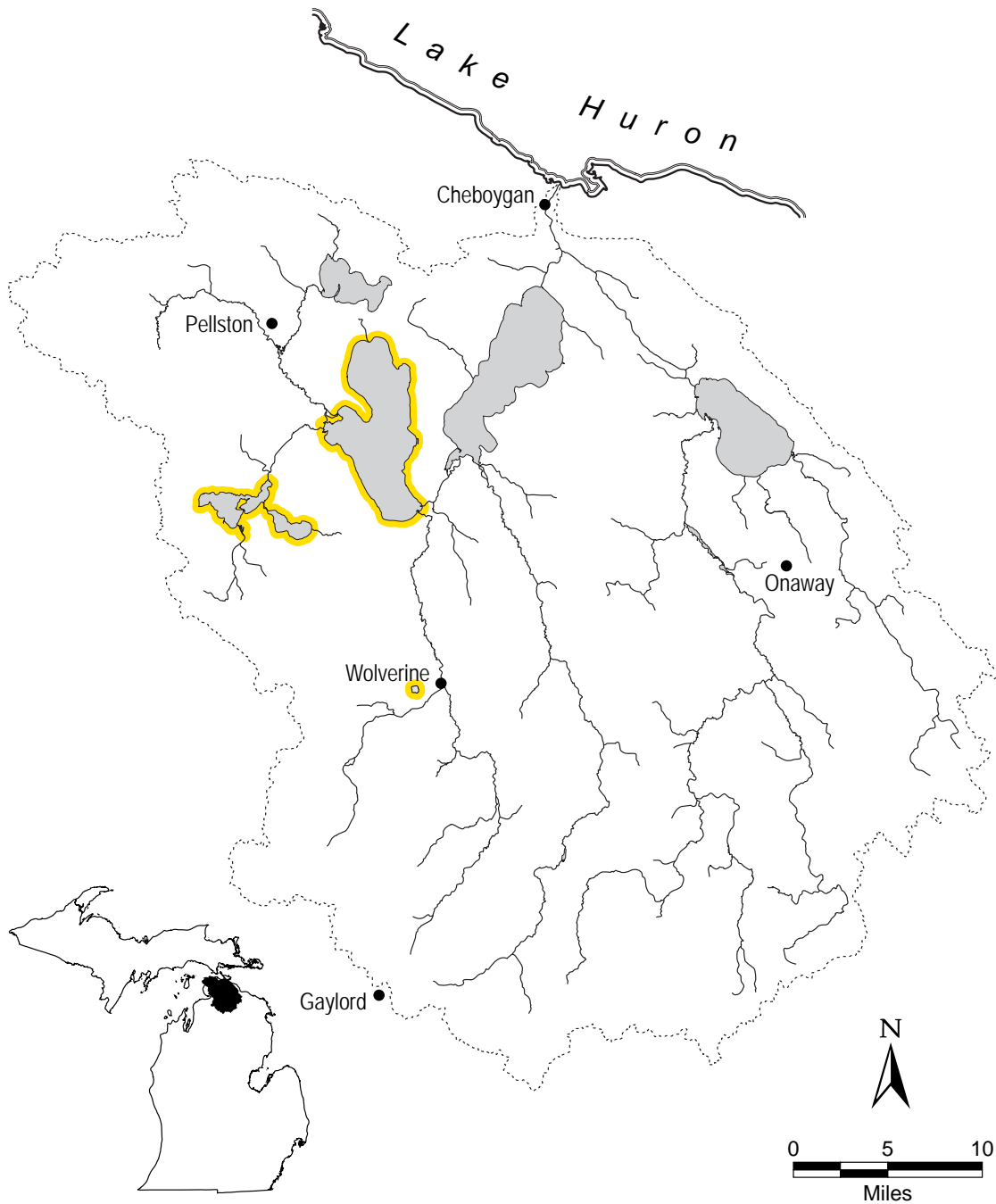
- feeding - lakes and impoundments and quiet pools of low gradient streams
- clear shallow water
- heavy vegetation
- spawning - vegetation



Emerald shiner *Notropis atherinoides*

Habitat:

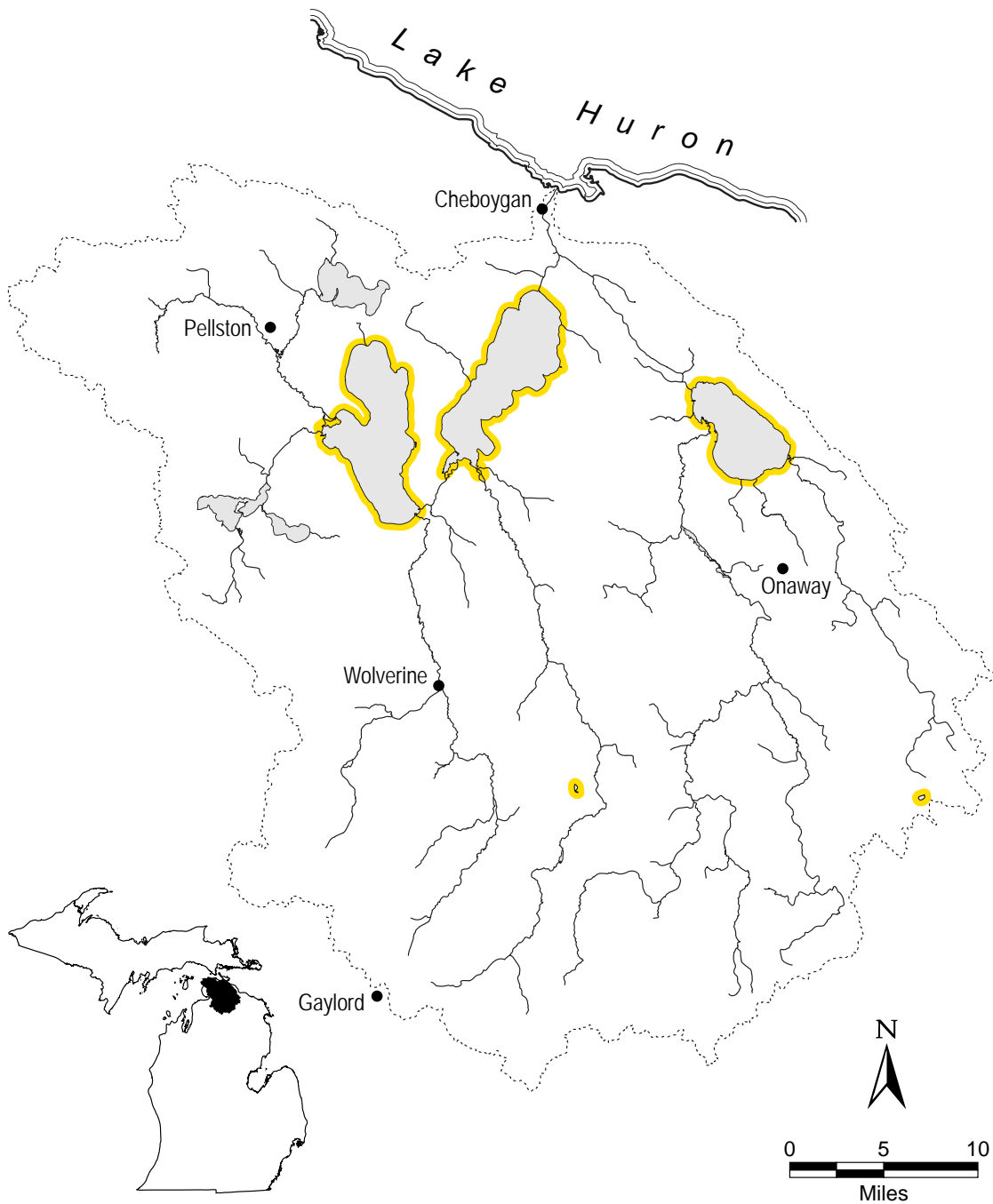
- feeding - open-large stream channels and lake
- low to moderate gradient
- range of turbidities and bottom types
- midwater or surface preferred, substrate of little importance
- avoids rooted vegetation
- spawning - sand or firm mud substrate or gravel shoals



Blackchin shiner *Notropis heterodon*

Habitat:

- feeding - lakes, impoundments, and quiet pools in streams and rivers
- clear water
- clean sand, gravel, or organic debris substrate
- dense beds of submerged aquatic vegetation
- cannot tolerate turbidity, silt, or loss of aquatic vegetation



Spottail shiner *Notropis hudsonius*

Habitat:

- feeding - large rivers, lakes, and impoundments
- firm sand and gravel substrate
- low current
- sparse to moderate vegetation
- avoids turbidity
- spawning - over sandy shoals or gravelly riffles
- near the mouths of small streams

