



**STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES**

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February 2008

**Tahquamenon River Assessment
Appendix**

James R. Waybrant

and

Troy G. Zorn

MICHIGAN DEPARTMENT OF NATURAL RESOURCES FISHERIES DIVISION

Special Report 45 Appendix
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Table of Contents

Appendix A	
Known past and present fish distributions in the Tahquamenon River watershed	1
Appendix B	
Archived creel census records from 1929 to 1964 in the Tahquamenon River watershed	56

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Appendix A

Distribution Maps of Fish Species

Known present and past fish distributions in the Tahquamenon River watershed. Distribution maps were compiled from Bailey et al. (2004), Taylor (1954), and records at the Michigan Department of Natural Resources Newberry Operations Service Center and from the Michigan Department of Natural Resources Fish Collection System. No species found in the watershed is 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). Historical records indicate that the threatened lake sturgeon *Acipenser fulvescens* were at one time present in the lower river, but none have been documented in recent times.

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).

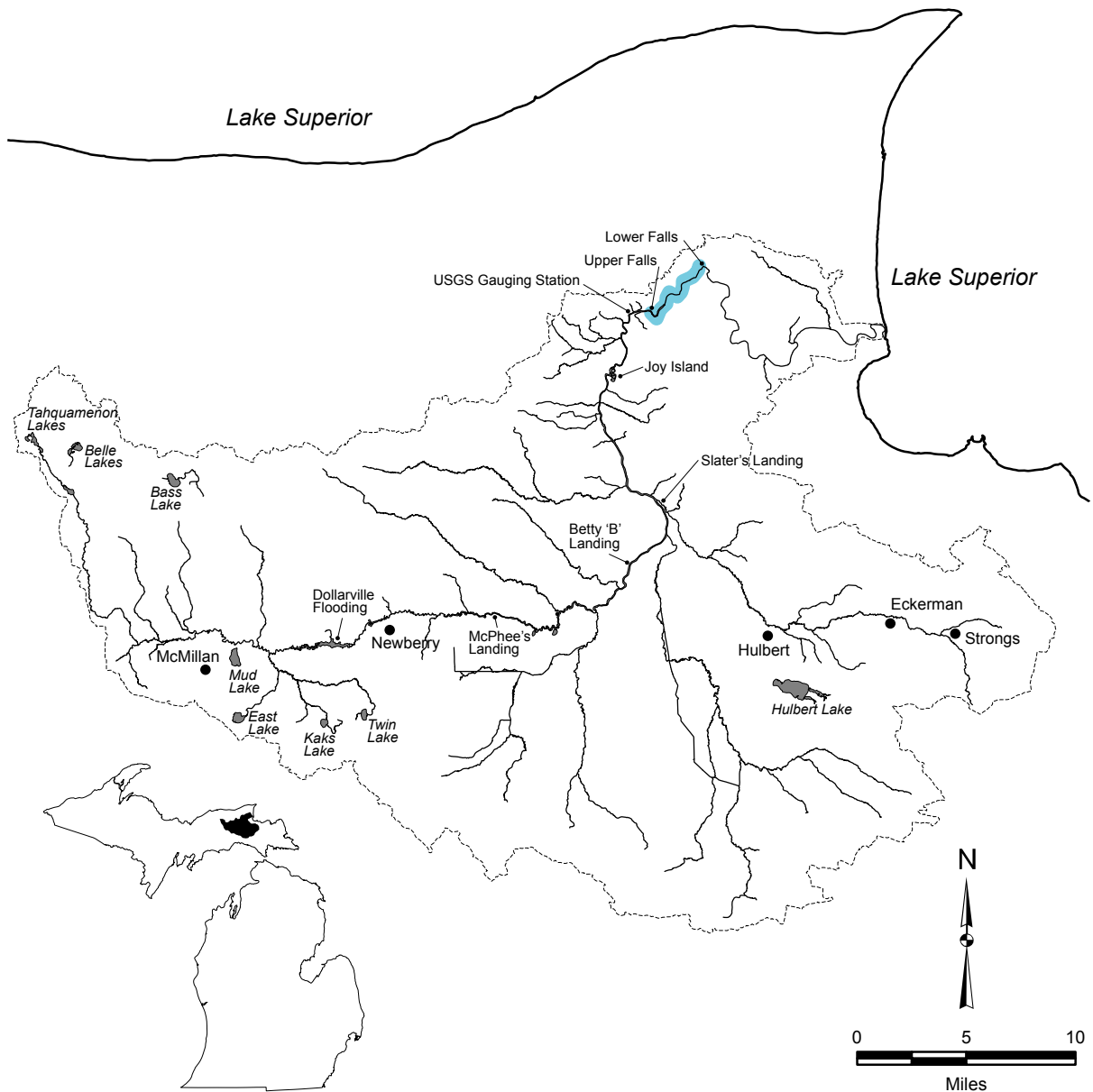
APPENDIX A INDEX

American brook lamprey	4	Largemouth bass	48
Blackchin shiner	12	Longnose dace	20
Blacknose shiner	13	Longnose sucker	23
Blackside darter	54	Mimic shiner	15
Black bullhead	26	Mottled sculpin	43
Black crappie	49	Muskellunge	29
Bluegill	46	Northern logperch	53
Bluntnose minnow	18	Northern pearl dace	10
Brassy minnow	8	Northern pike	28
Brook stickleback	42	Northern redbelly dace	16
Brook trout	36	Pumpkinseed	45
Brown bullhead	27	Rainbow smelt	31
Brown trout	35	Rainbow trout	33
Burbot	40	Rock bass	44
Central mudminnow	30	Sea lamprey	5
Chinook salmon	34	Silver lamprey	3
Cisco {Lake herring}	32	Silver redhorse	25
Common carp	7	Smallmouth bass	47
Common shiner	9	Splake	37
Creek chub	22	Spottail shiner	14
Fathead minnow	19	Trout-perch	39
Finescale dace	17	Walleye	55
Golden shiner	11	Western banded killifish	41
Iowa darter	50	Western blacknose dace	21
Johnny darter	51	White sucker	24
Lake sturgeon.....	6	Yellow perch	52
Lake trout	38		

Silver lamprey *Ichthyomyzon unicuspis*

Habitat:

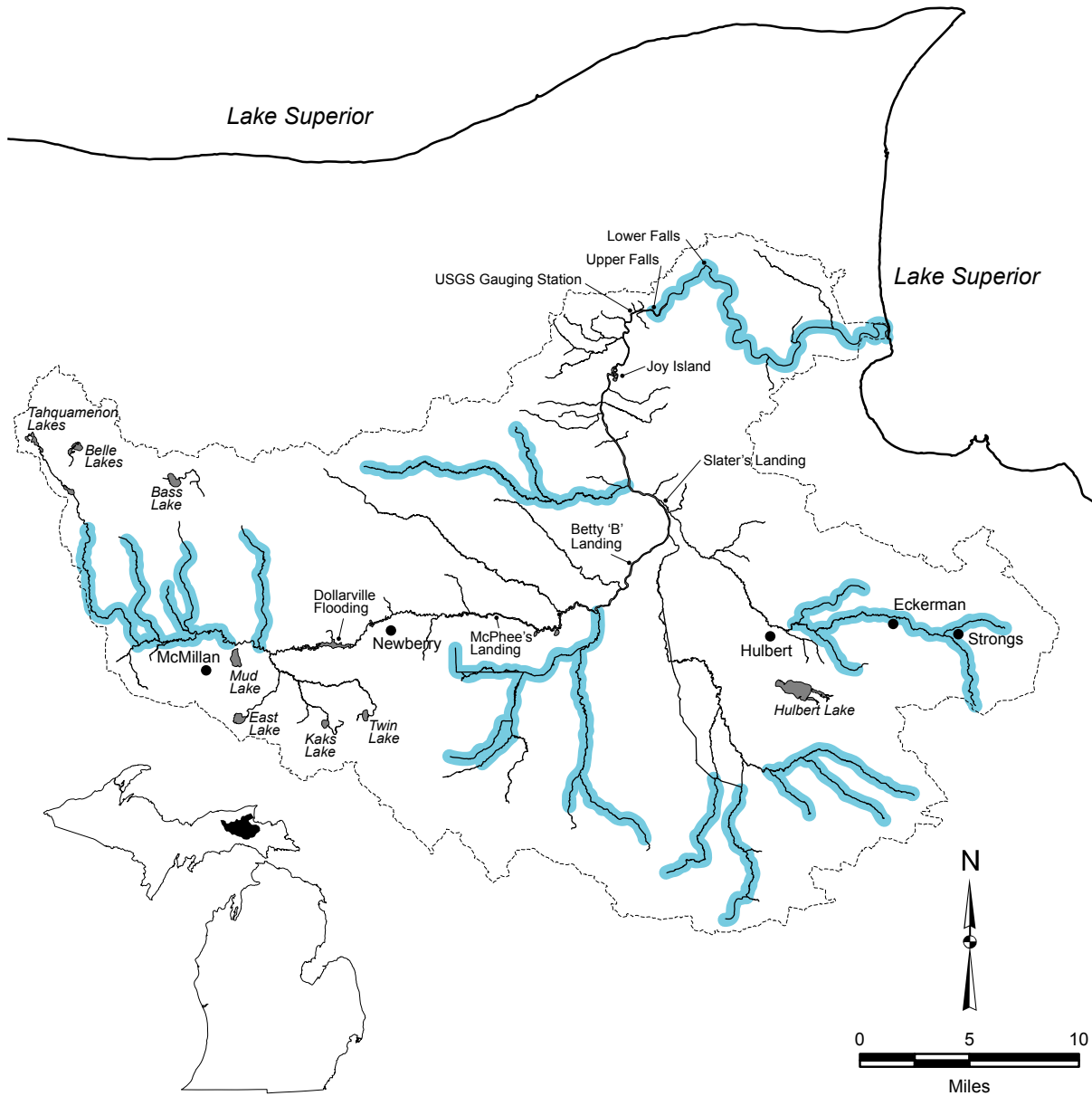
- feeding - young: sand, muck, or organic debris substrate
- adults: clear river water with prey species
- spawning - gravel and sand substrate
- moderate gradient
- moderate size stream
- cannot tolerate silt
- no dams
- winter refuge - ammocetes burrow for 4 to 7 years
 in mud and silt at river margins



American brook lamprey *Lampetra appendix*

Habitat:

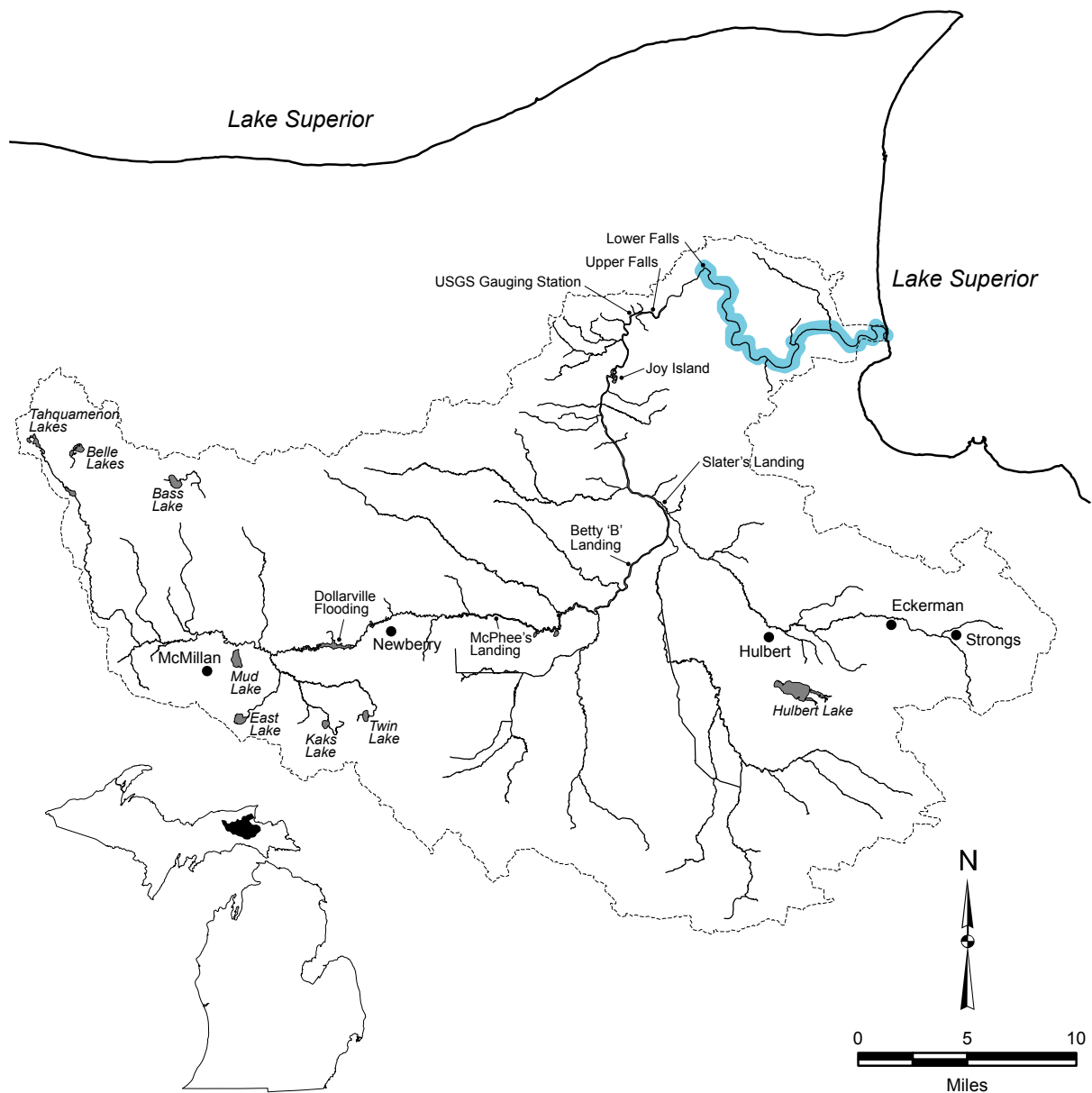
- feeding - young: low gradient, substrate with bars and beds of mixed sand and organic debris
 - clear cool stream water, sensitive to turbidity
- spawning - clear, high gradient streams (>15 feet wide)
 - cold water
 - gravel substrate
- winter refuge - sand or silt substrate for ammocetes



Sea lamprey *Petromyzon marinus*

Habitat:

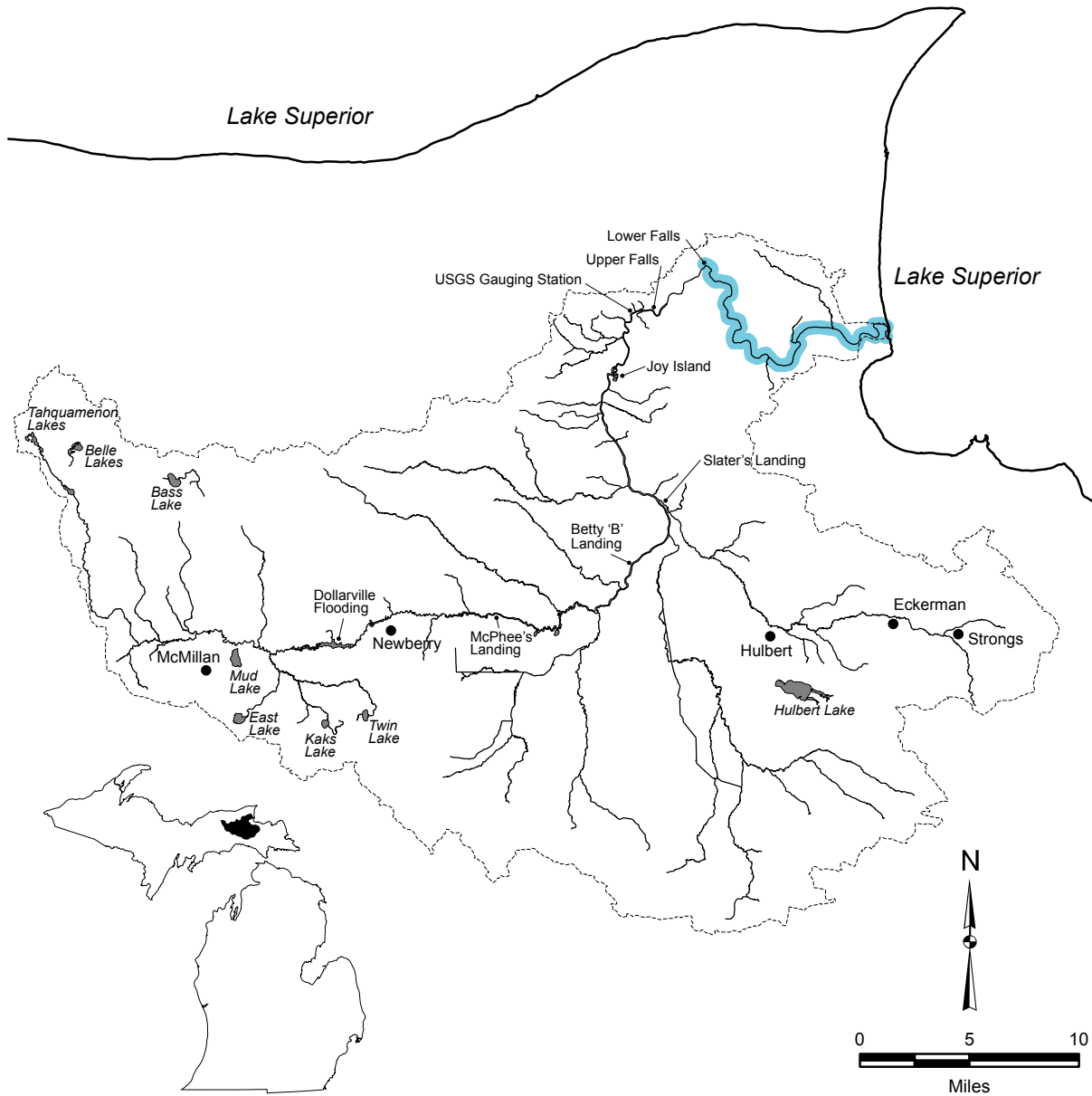
- feeding - young: substrate with beds of sand mixed with organic debris
- cannot tolerate silt
- adults: clear cool water of Lake Superior
- spawning - no dams
- riffles with sand and gravel substrates



Lake sturgeon *Acipenser fulvescens* – threatened

Habitat:

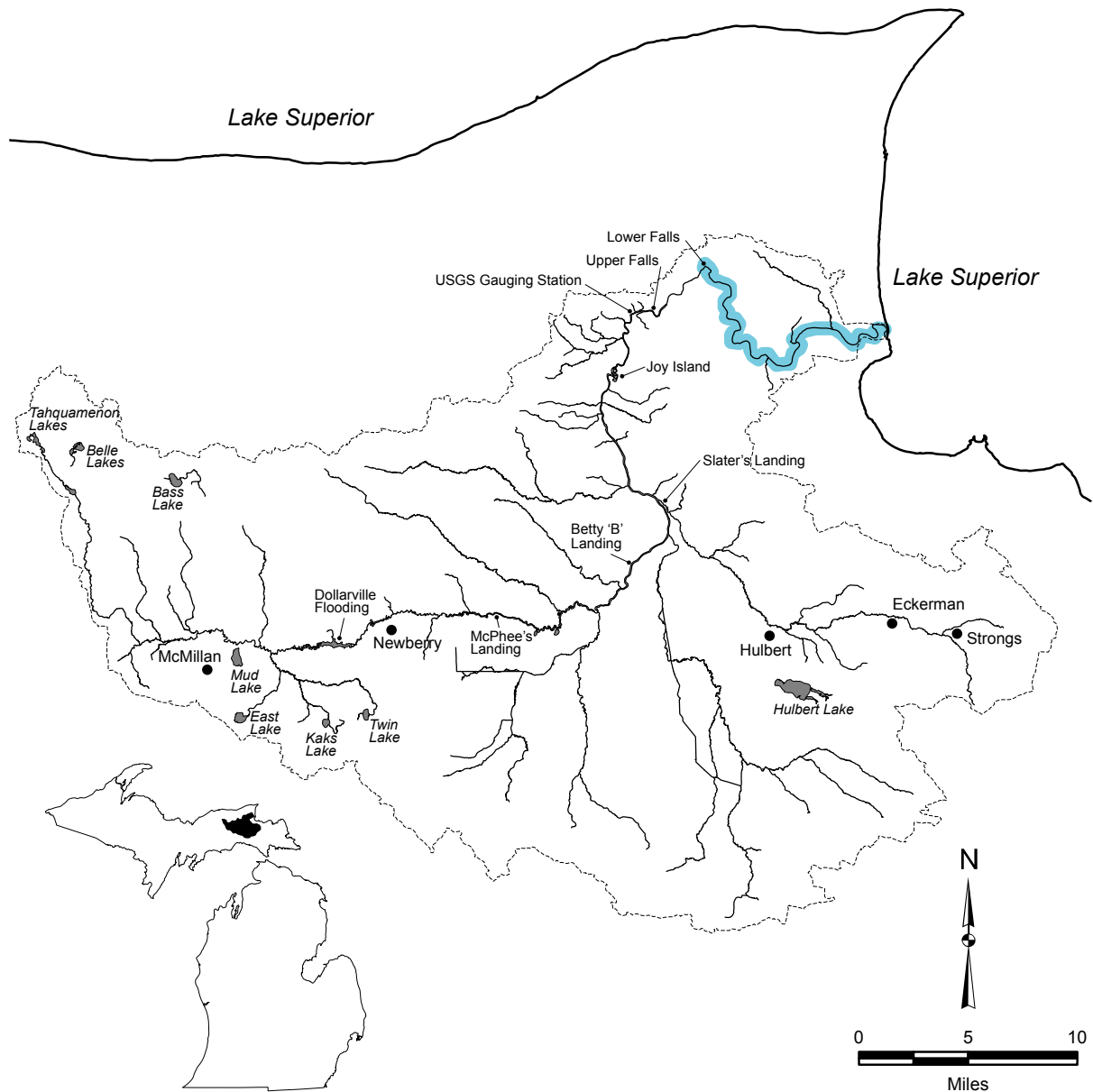
- feeding - shoal areas of large rivers, lakes, and impoundments
- gravel, sand, rock substrates
- spawning - in or before rapids, at the base of dams in rivers
- in 2-15 feet of water
- swift current
- rocky ledges or around rocky islands in Great Lakes



Common carp *Cyprinus carpio*

Habitat:

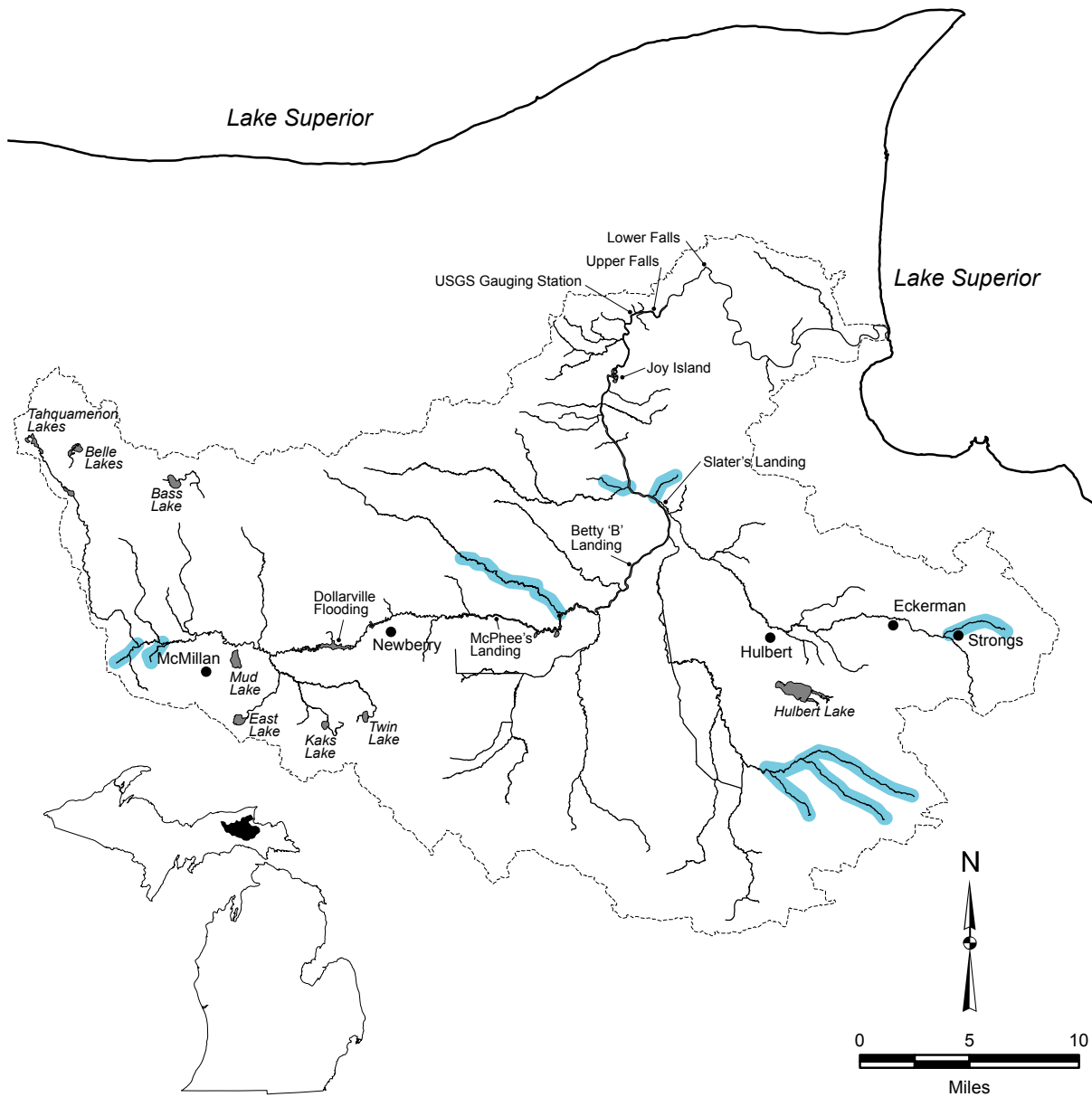
- feeding - low gradient fertile streams, rivers, lakes, and impoundments
- abundance of aquatic vegetation or organic matter
- tolerant of all substrates and clear to turbid water
- spawning - weedy or grassy shallows



Brassy minnow *Hybognathus hankinsoni*

Habitat:

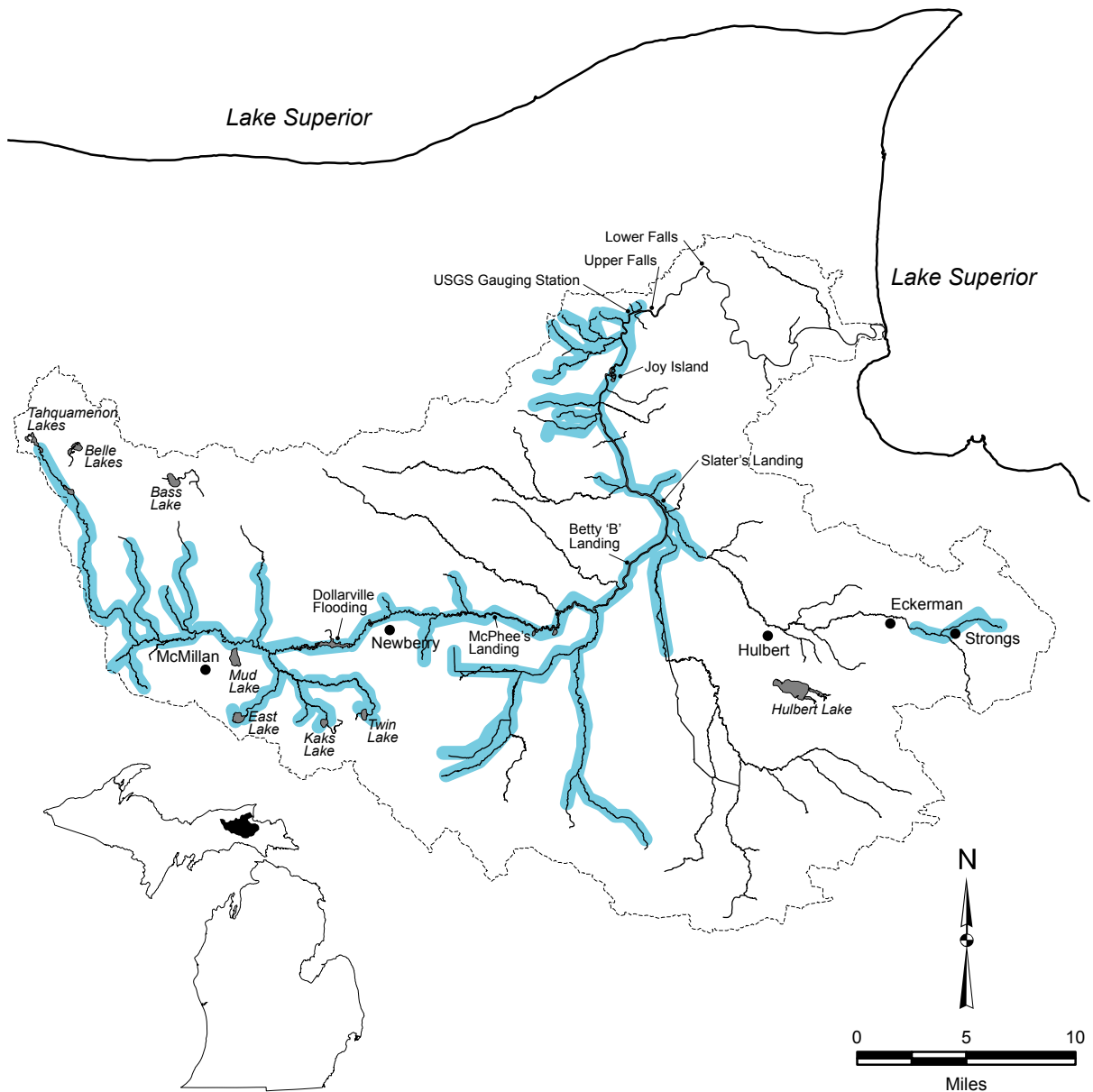
- feeding - cool acidic streams
- slow to moderate current
- sand or gravel substrate



Common shiner *Luxilus cornutus*

Habitat:

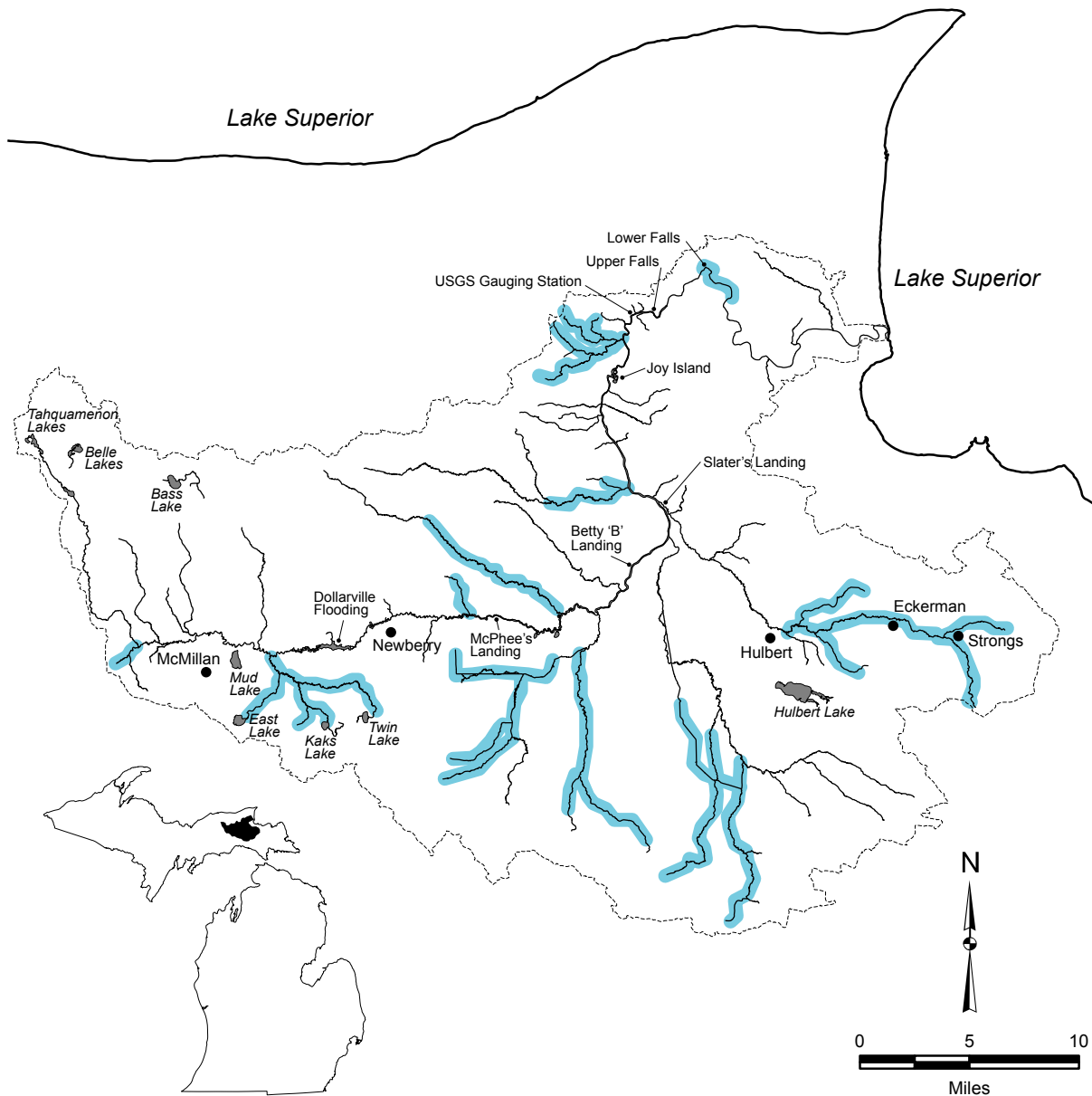
- feeding - small, clear, high-gradient streams and rivers, or shores of clear water lakes and impoundments
 - gravel substrate
 - can tolerate some submerged aquatic vegetation
 - not very tolerant of turbidity or silted waters
- spawning - gravel nests of other fish, especially those at the head of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



Northern pearl dace *Margariscus nachtriebi*

Habitat:

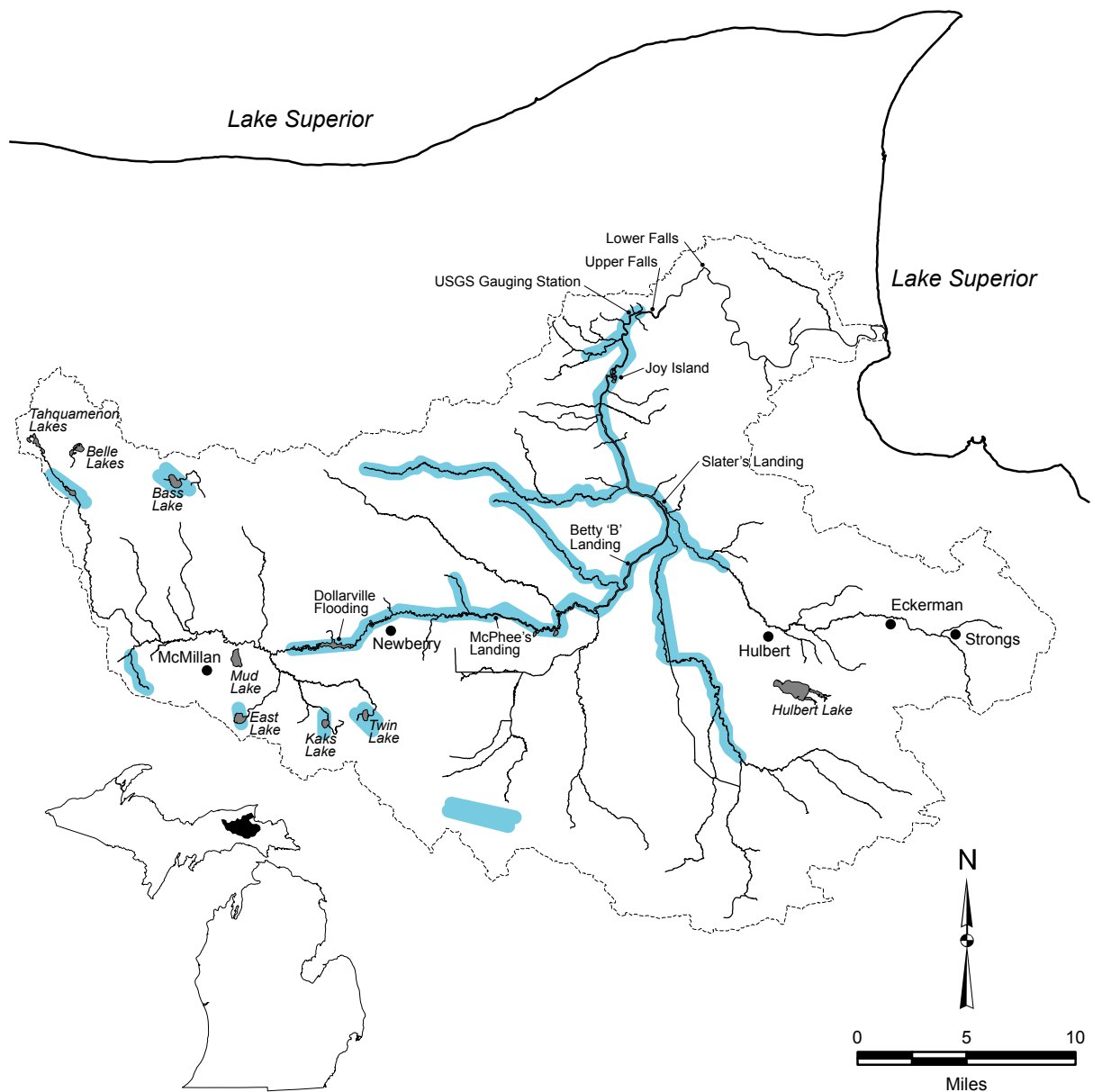
- feeding - cool, neutral to acidic streams and lakes
- clear to slightly turbid water
- spawning - males are territorial
- clear water, 18-24 inches deep
- sand or gravel substrate
- weak to moderate current



Golden shiner *Notemigonus crysoleucas*

Habitat:

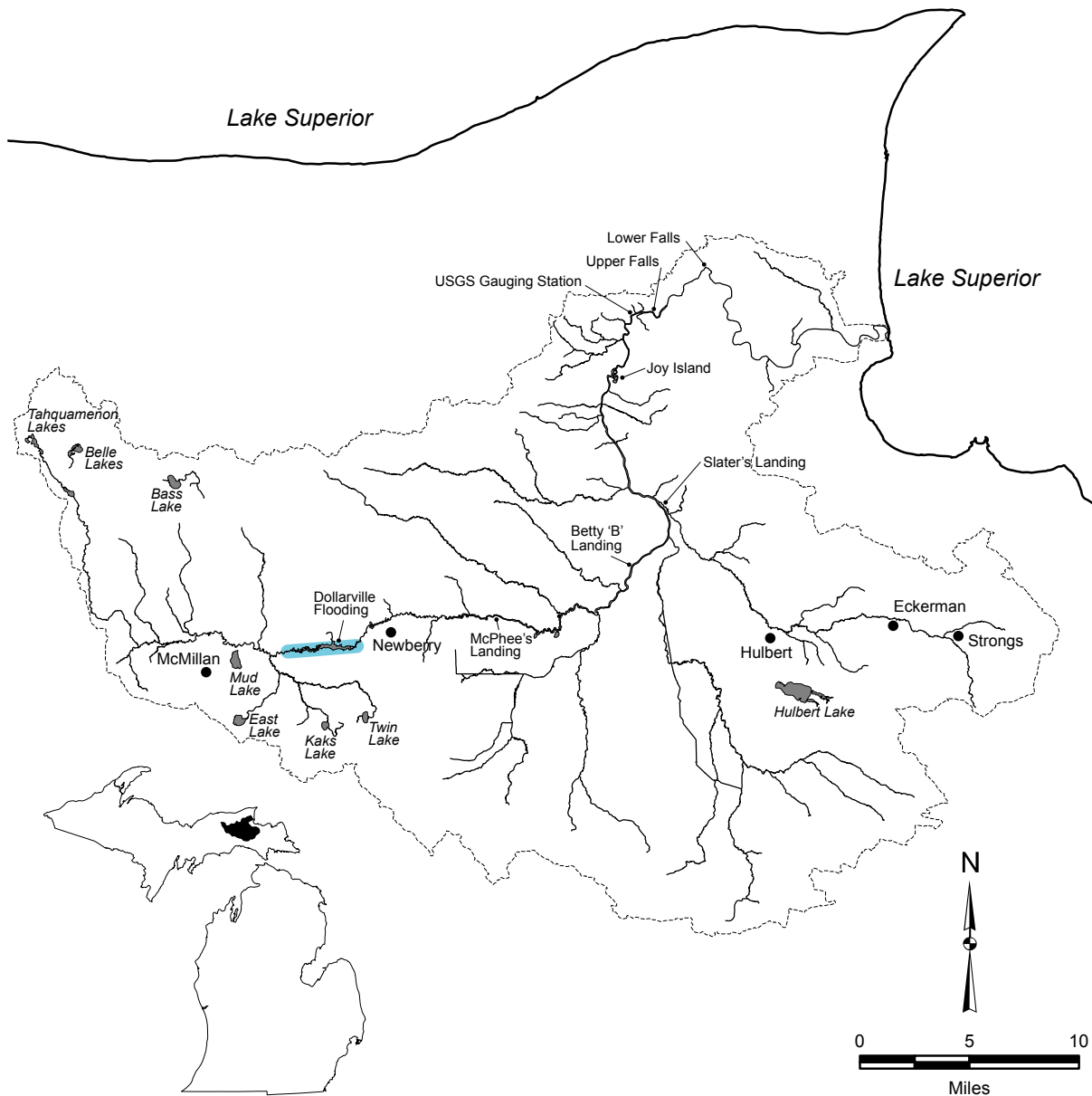
- feeding - lakes and impoundments and quiet pools of low gradient streams
- clear shallow water
- heavy vegetation
- spawning - vegetation



Blackchin shiner *Notropis heterodon*

Habitat:

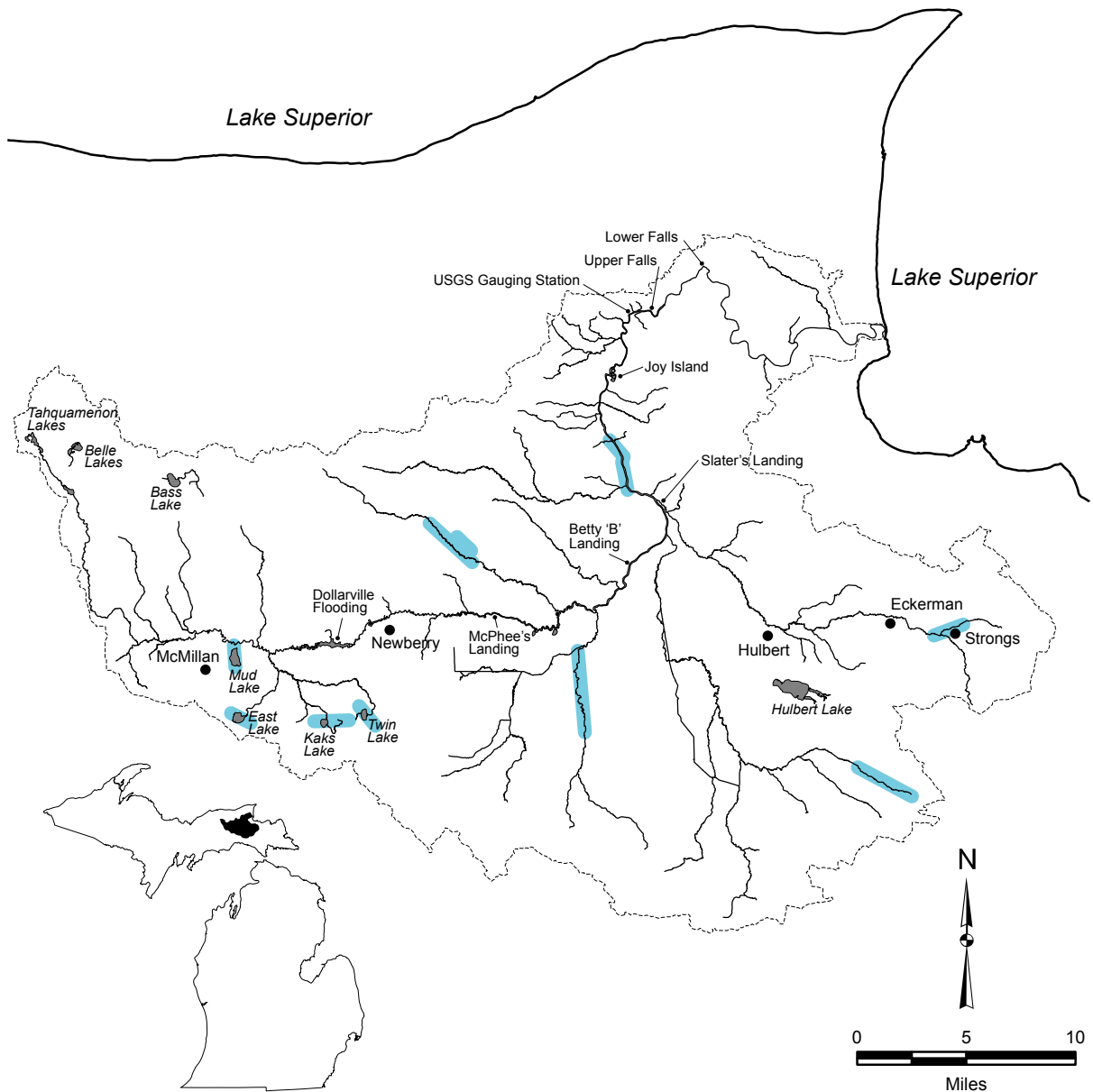
- feeding - lakes, impoundments, and quiet pools in streams and rivers
- clear water
- clean sand, gravel, or organic debris substrate
- dense beds of submerged aquatic vegetation
- cannot tolerate turbidity, silt, or loss of aquatic vegetation



Blacknose shiner *Notropis heterolepis*

Habitat:

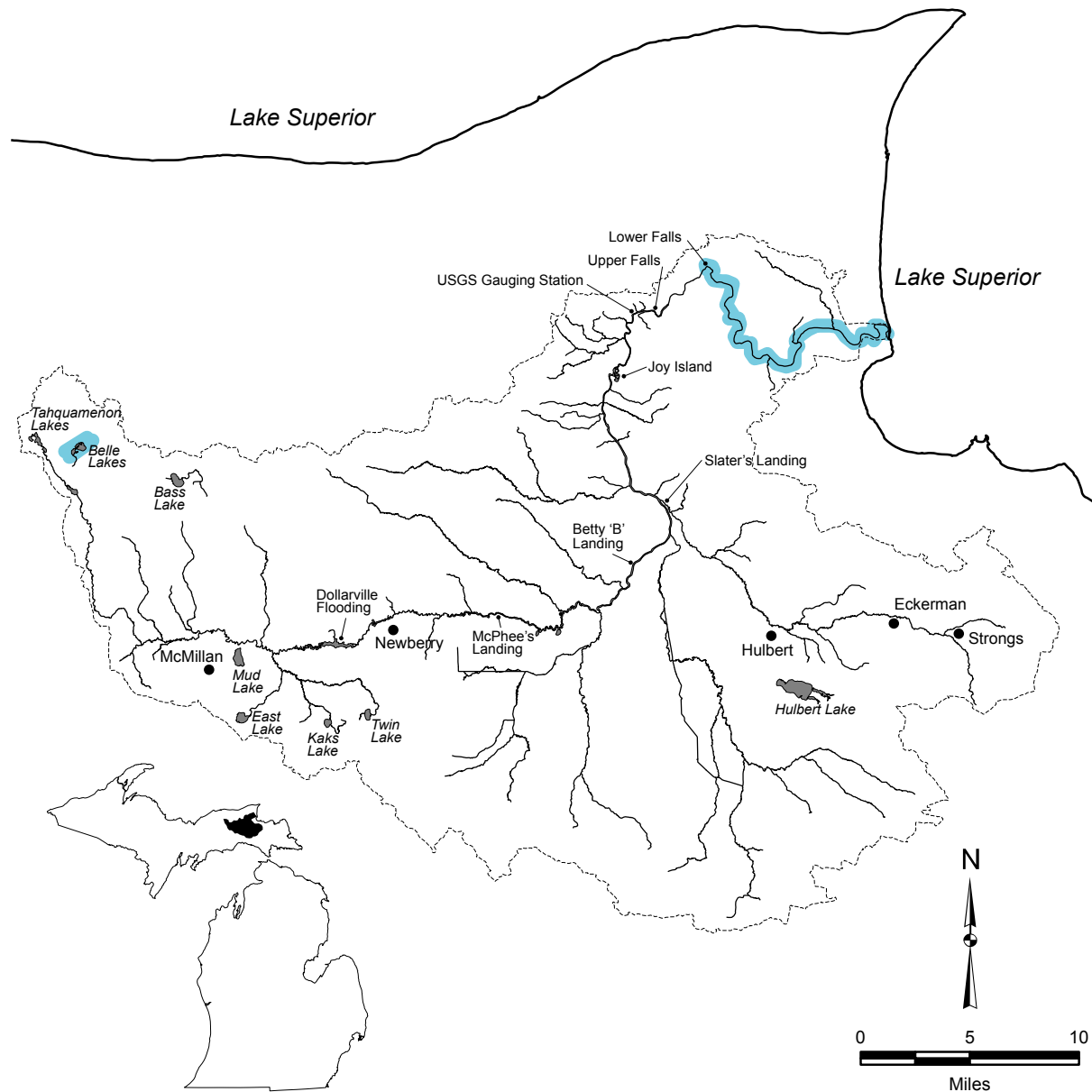
- feeding - clear lakes, impoundments, and pools of small, clear, low-gradient streams
- aquatic vegetation
- clean sand, gravel, marl, muck, peat, or organic debris substrate
- cannot tolerate much turbidity, much siltation, or loss of aquatic vegetation
- spawning - sandy substrate



Spottail shiner *Notropis hudsonius*

Habitat:

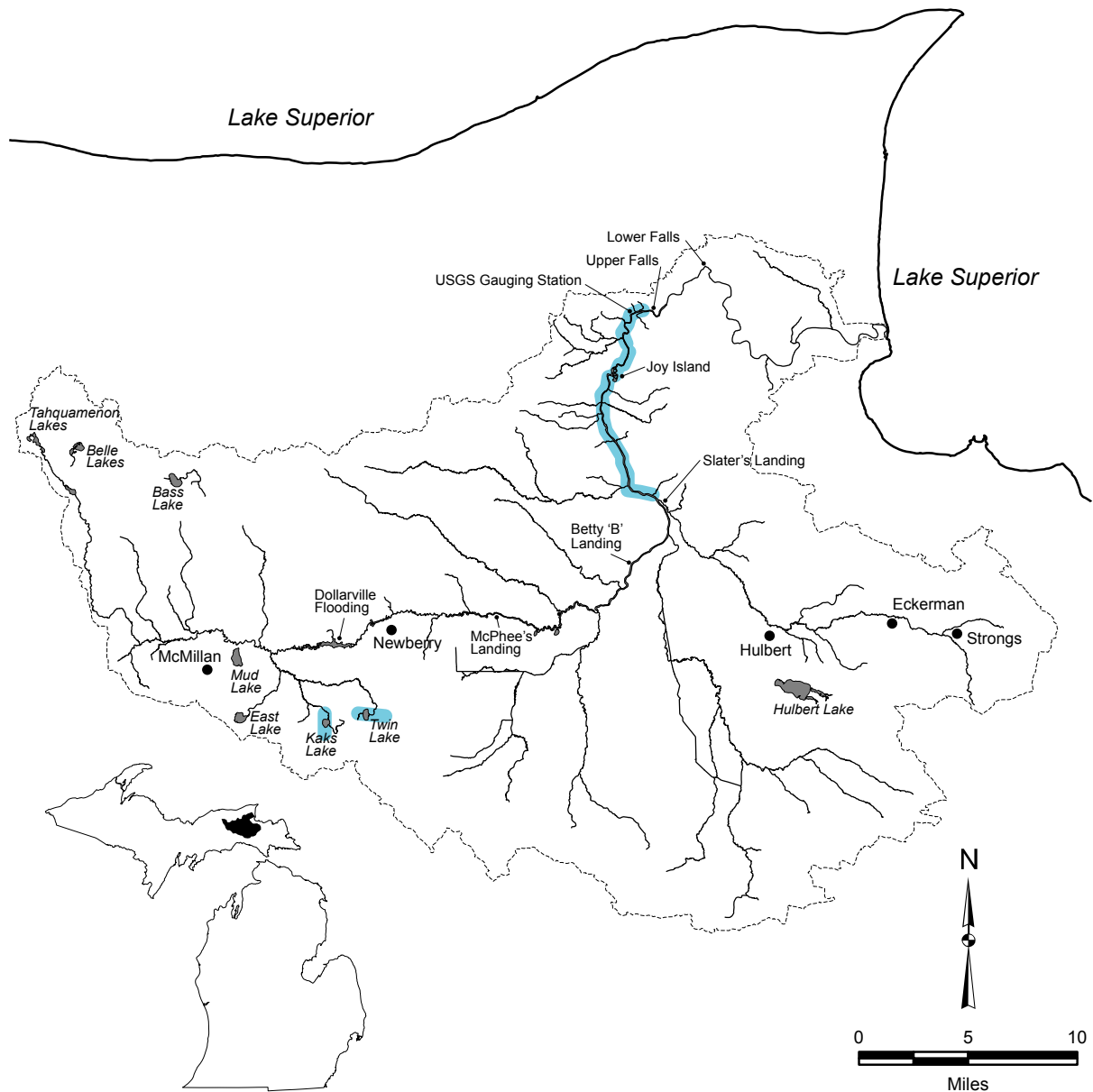
- feeding - large rivers, lakes, and impoundments
- firm sand and gravel substrate
- low current
- sparse to moderate vegetation
- avoids turbidity
- spawning - over sandy shoals or gravelly riffles
- near the mouths of small streams



Mimic shiner *Notropis volucellus*

Habitat:

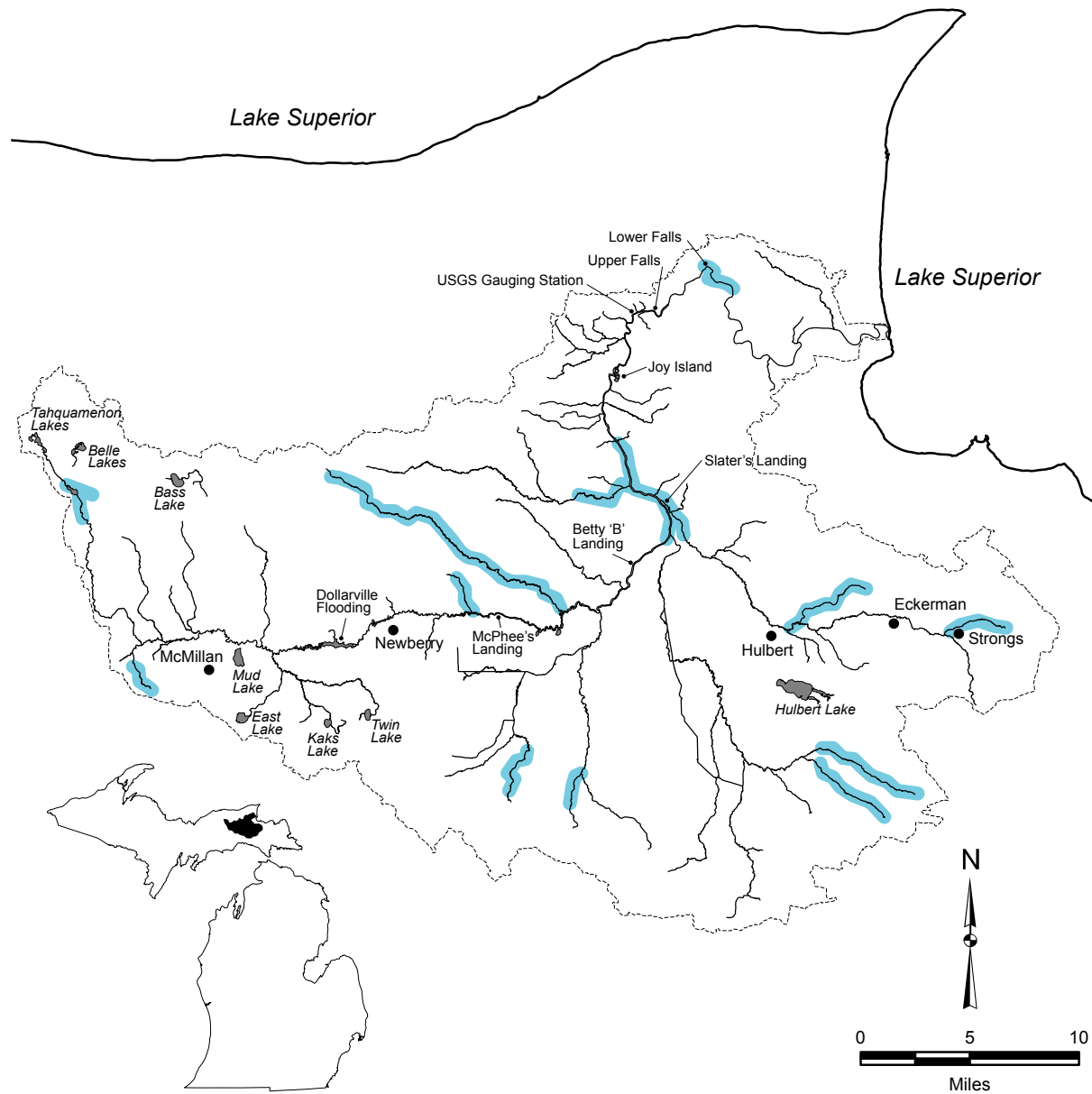
- feeding - pools and backwater of streams, moderately weedy lakes and impoundments
- quiet or still water
- clear shallow water
- spawning - aquatic vegetation necessary



Northern redbelly dace *Phoxinus eos*

Habitat:

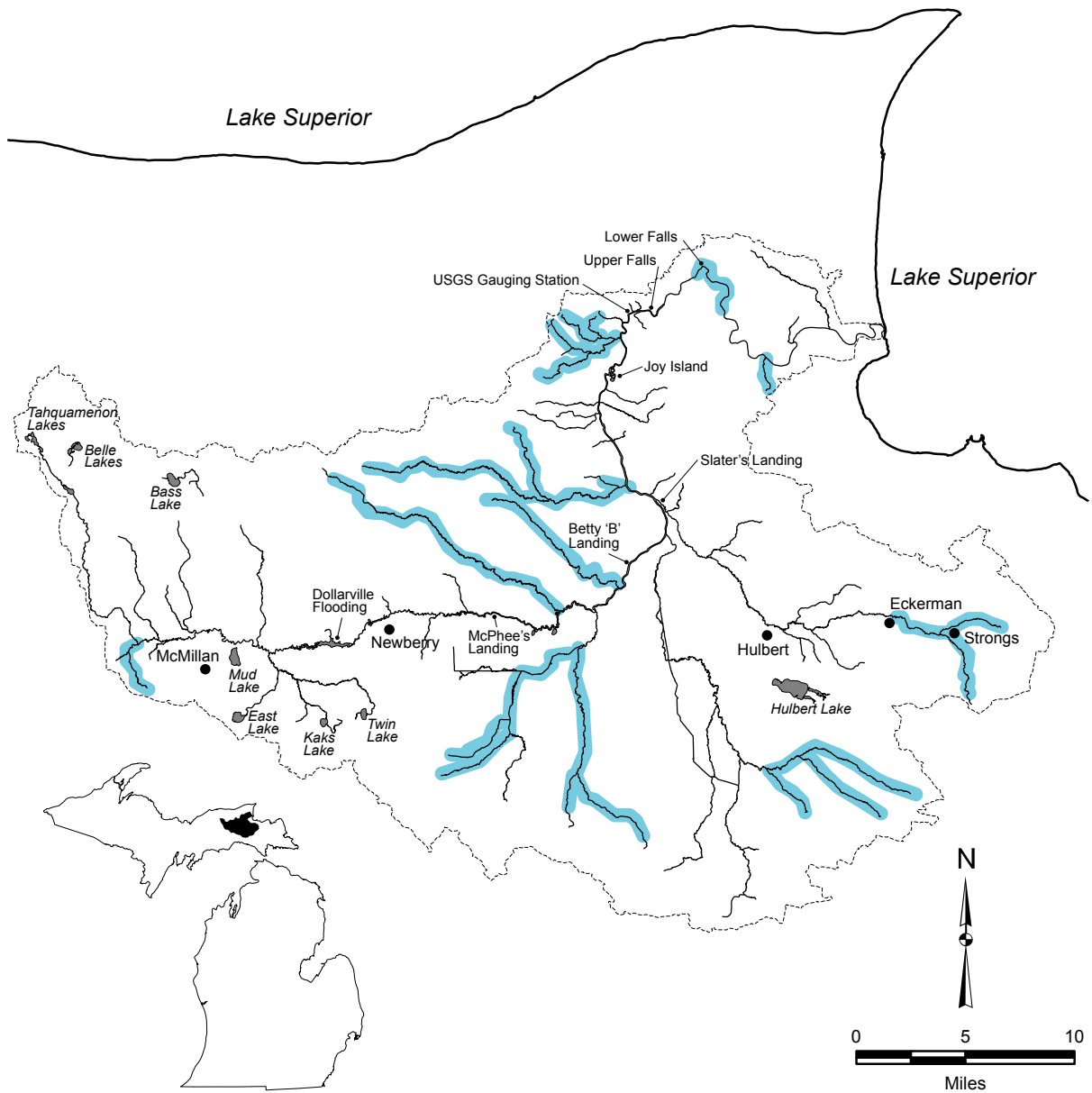
- feeding - slow current
- in boggy lakes and streams
- detritus or silt substrate
- clear to slightly turbid water
- spawning - filamentous algae needed for egg deposition



Finescale dace *Phoxinus neogaeus*

Habitat:

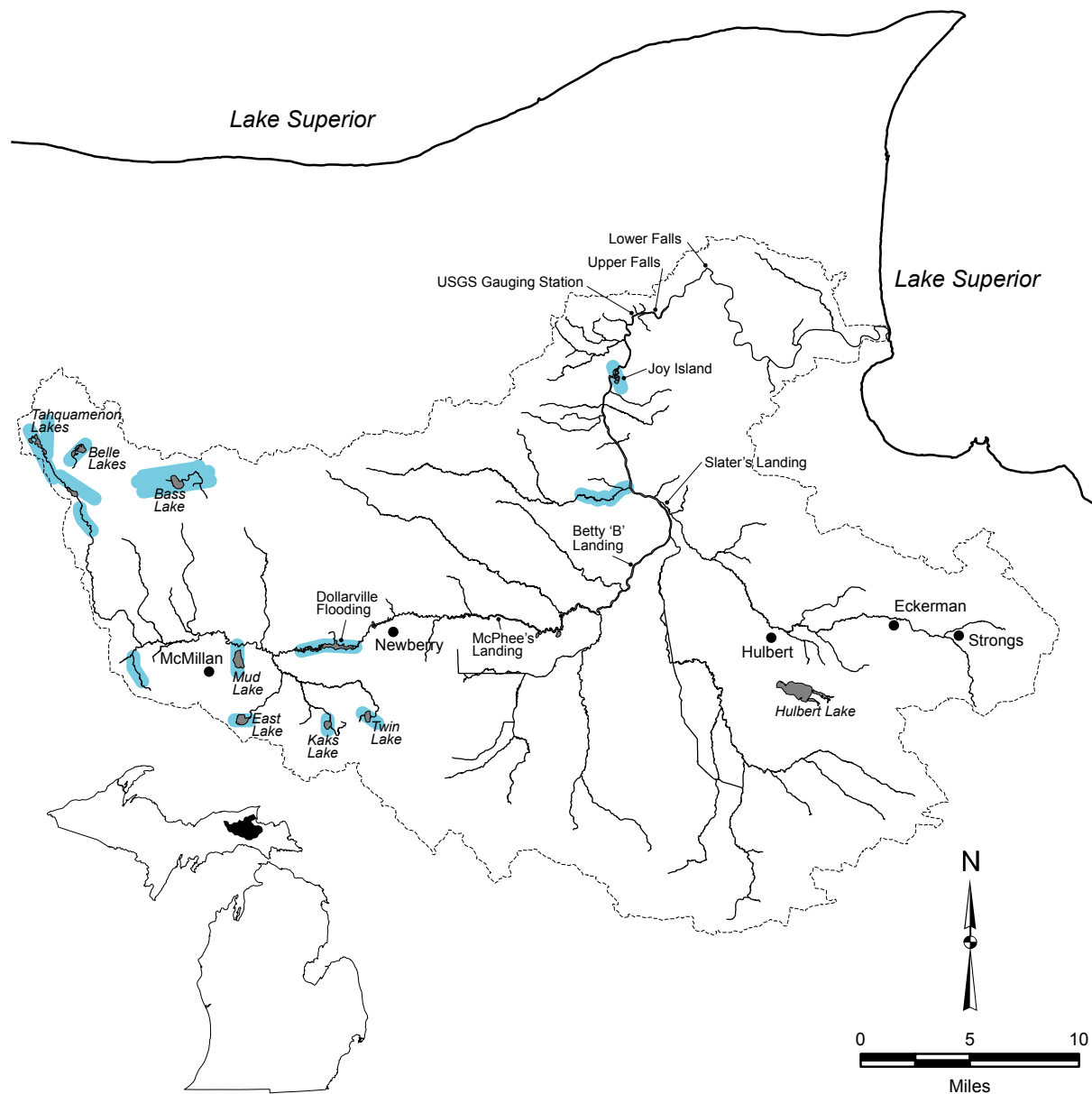
- feeding - cool bog lakes and streams
- neutral to slightly acidic waters
- various substrates



Bluntnose minnow *Pimephales notatus*

Habitat:

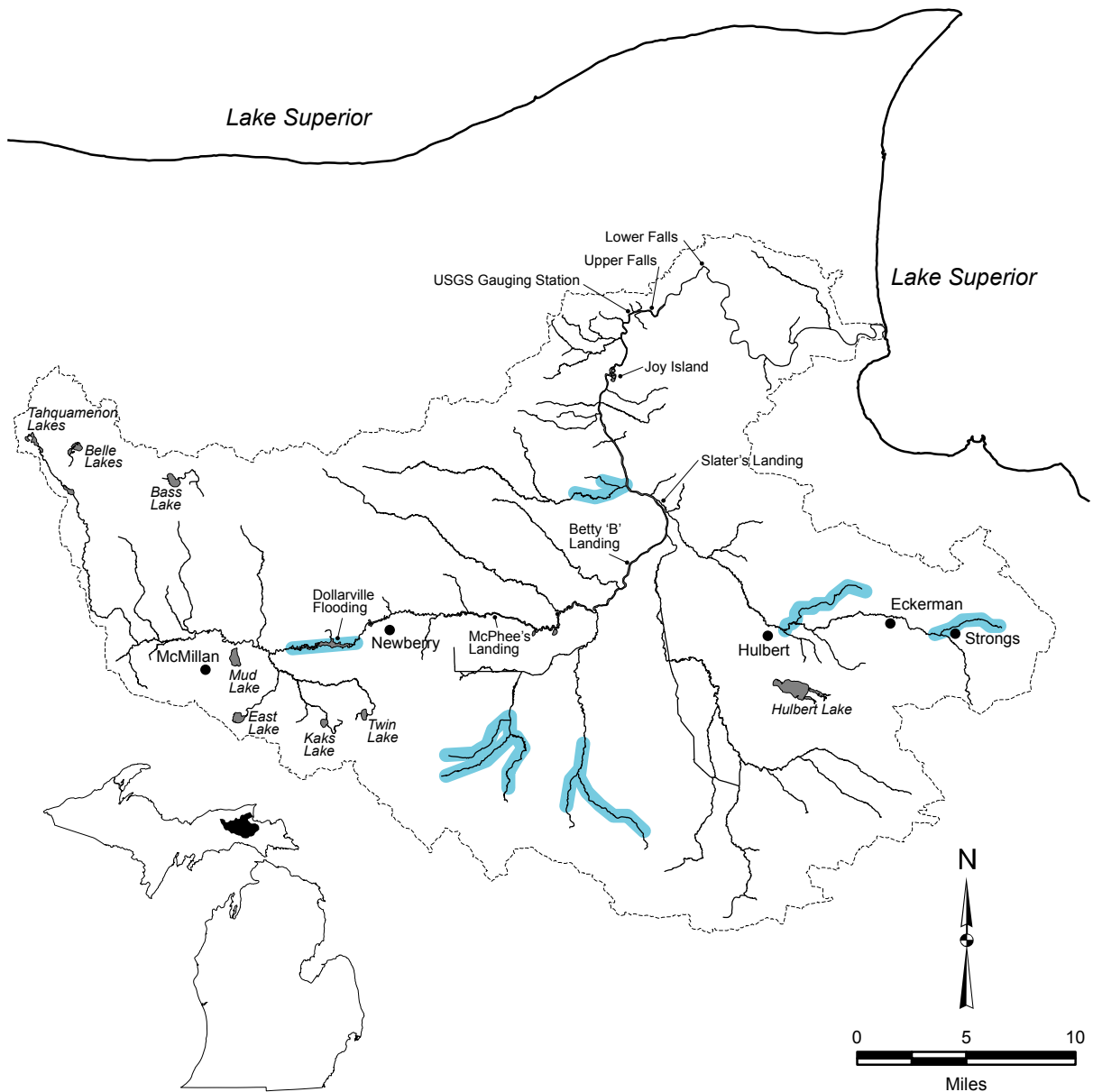
- feeding - quiet pools and backwaters of medium to large streams, lakes, and impoundments
- clear warm water
- some aquatic vegetation
- firm substrates
- tolerates all gradients, turbidity, organic and inorganic pollutants
- spawning - eggs deposited on the underside of flat stones or objects
- nests in sand or gravel substrate



Fathead minnow *Pimephales promelas*

Habitat:

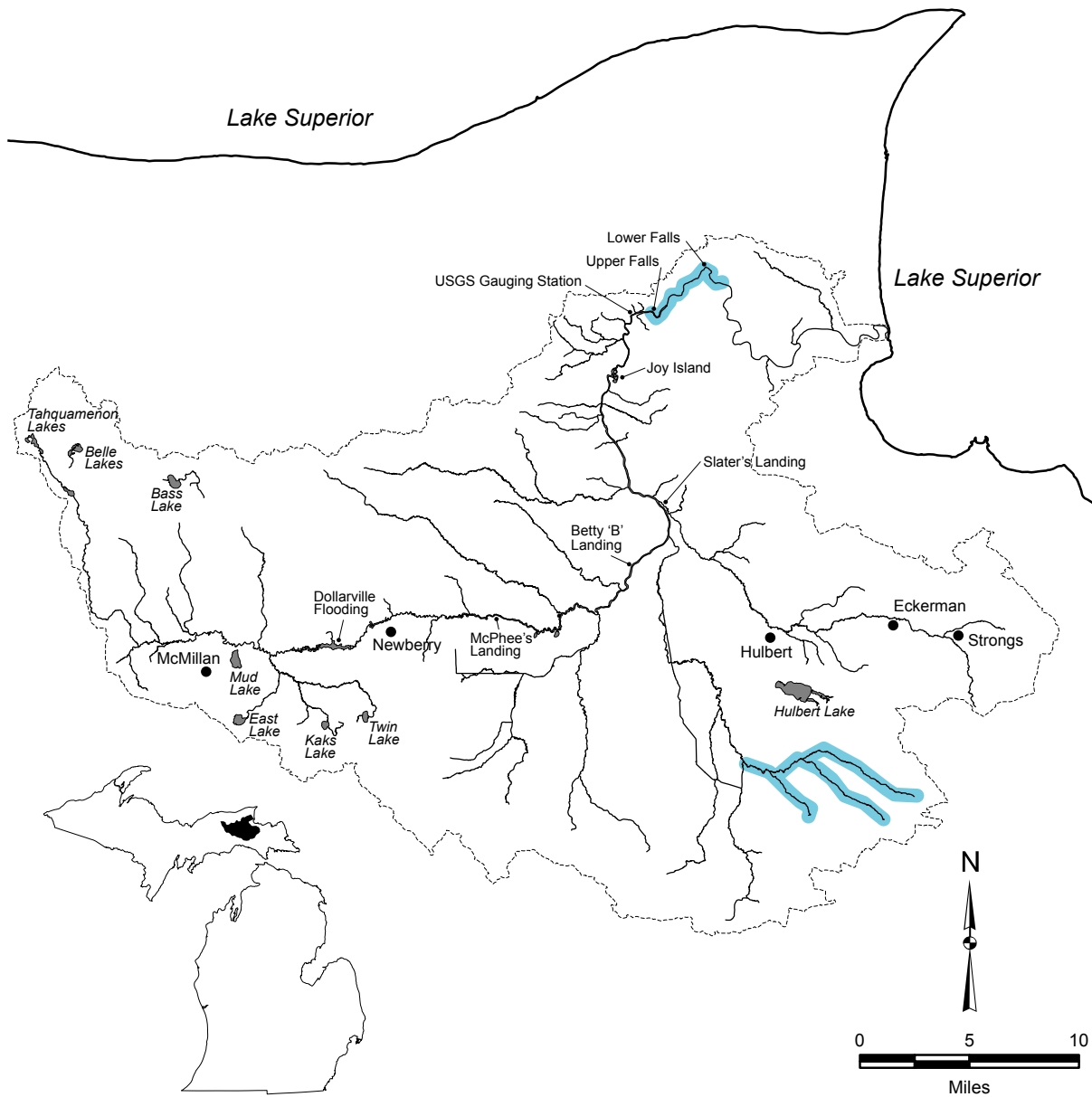
- feeding - pools of small streams, lakes, and impoundments
- tolerant of turbidity, high temperatures, and low oxygen
- spawning - on underside of objects in water 2 to 3 feet deep
- prefer sand, marl, or gravel substrate



Longnose dace *Rhinichthys cataractae*

Habitat:

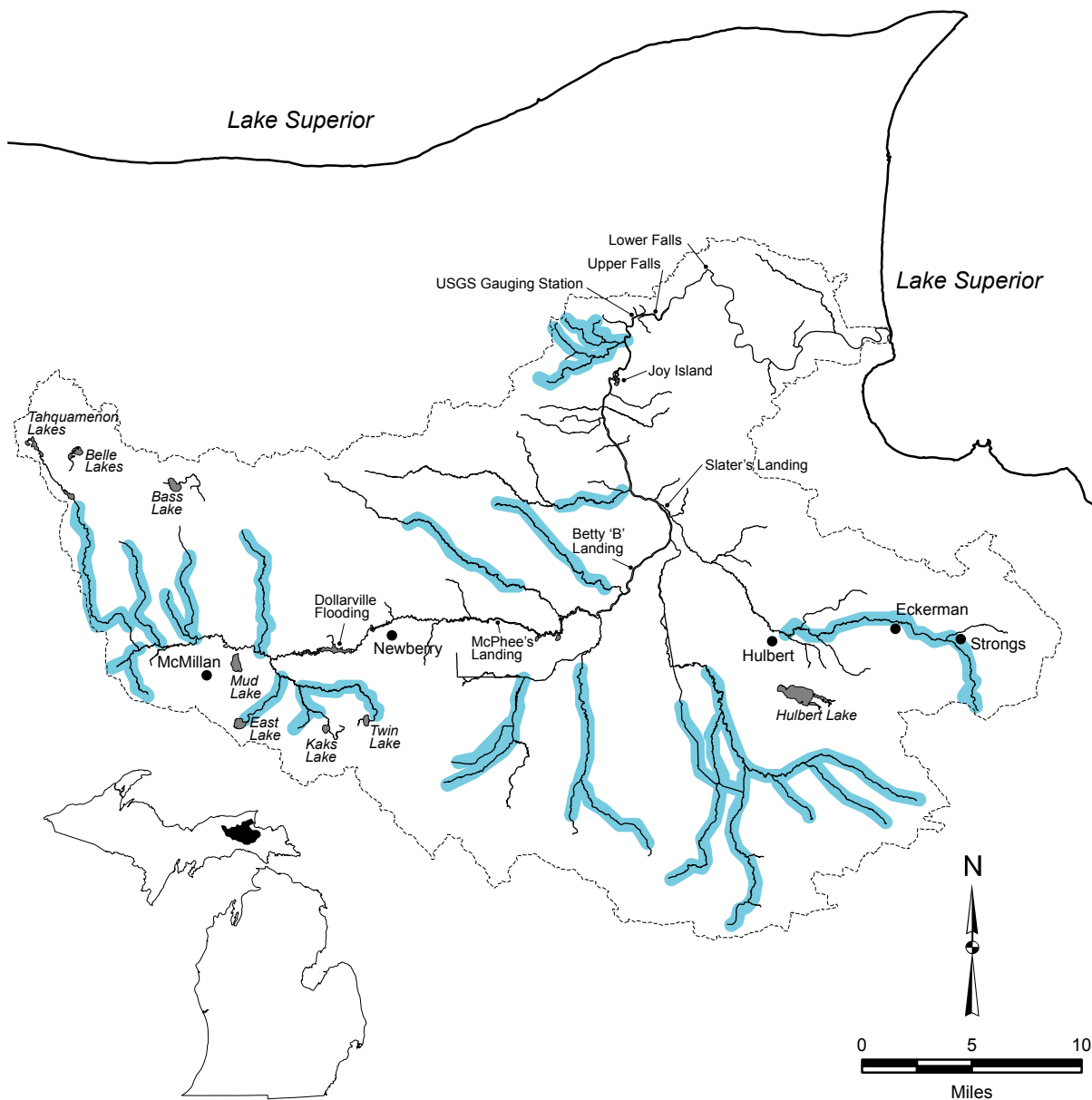
- feeding - lakes and streams
- high gradient
- gravel or boulder substrate



Western blacknose dace *Rhinichthys obtusus*

Habitat:

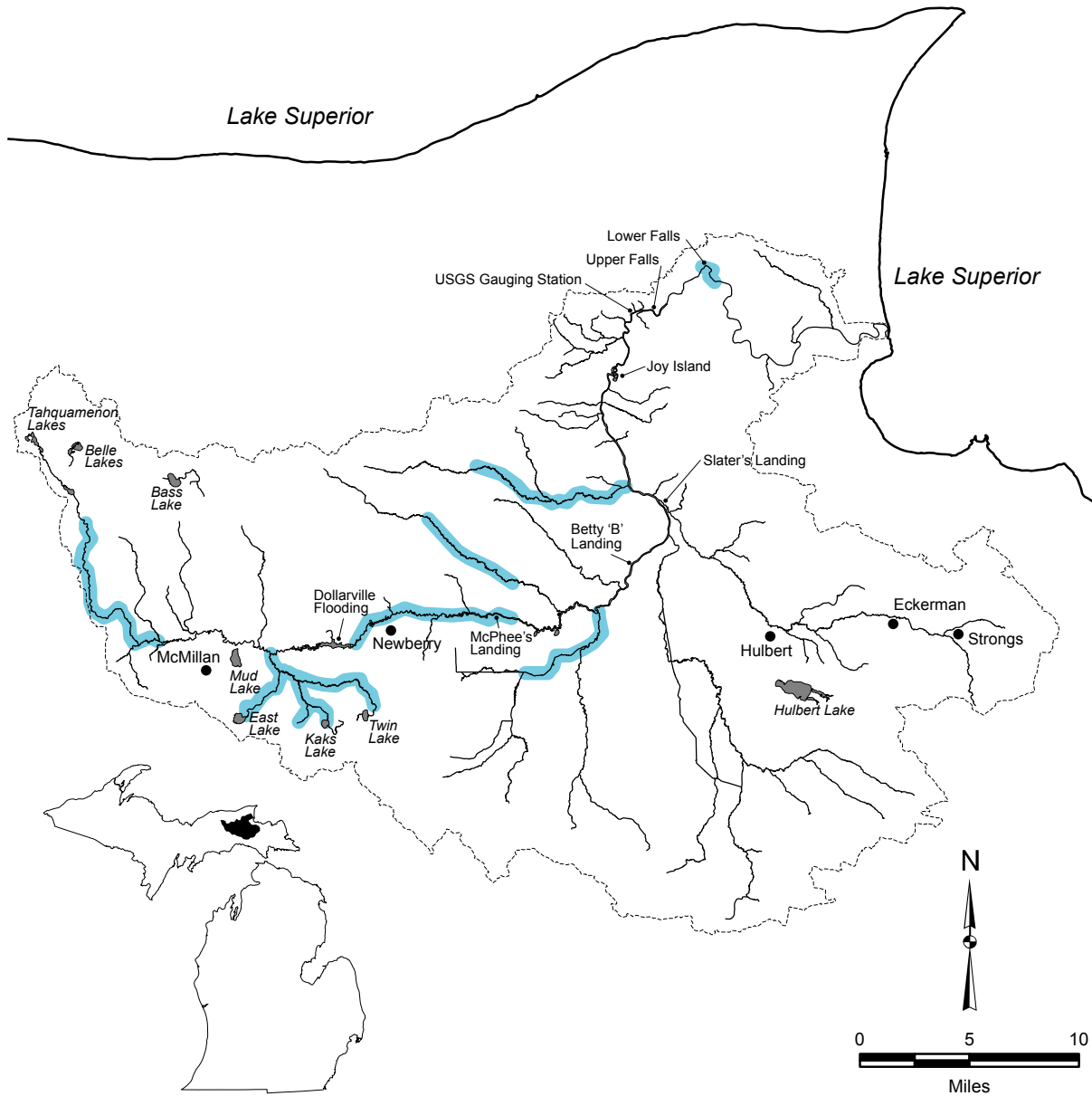
- feeding - moderate to high gradient streams
- sand and gravel substrate
- clear cool water in pools with deep holes and undercut banks
- does not tolerate turbidity and silt well
- spawning - riffles with gravel substrate and fast current
- winter refuge - larger waters



Creek chub *Semotilus atromaculatus*

Habitat:

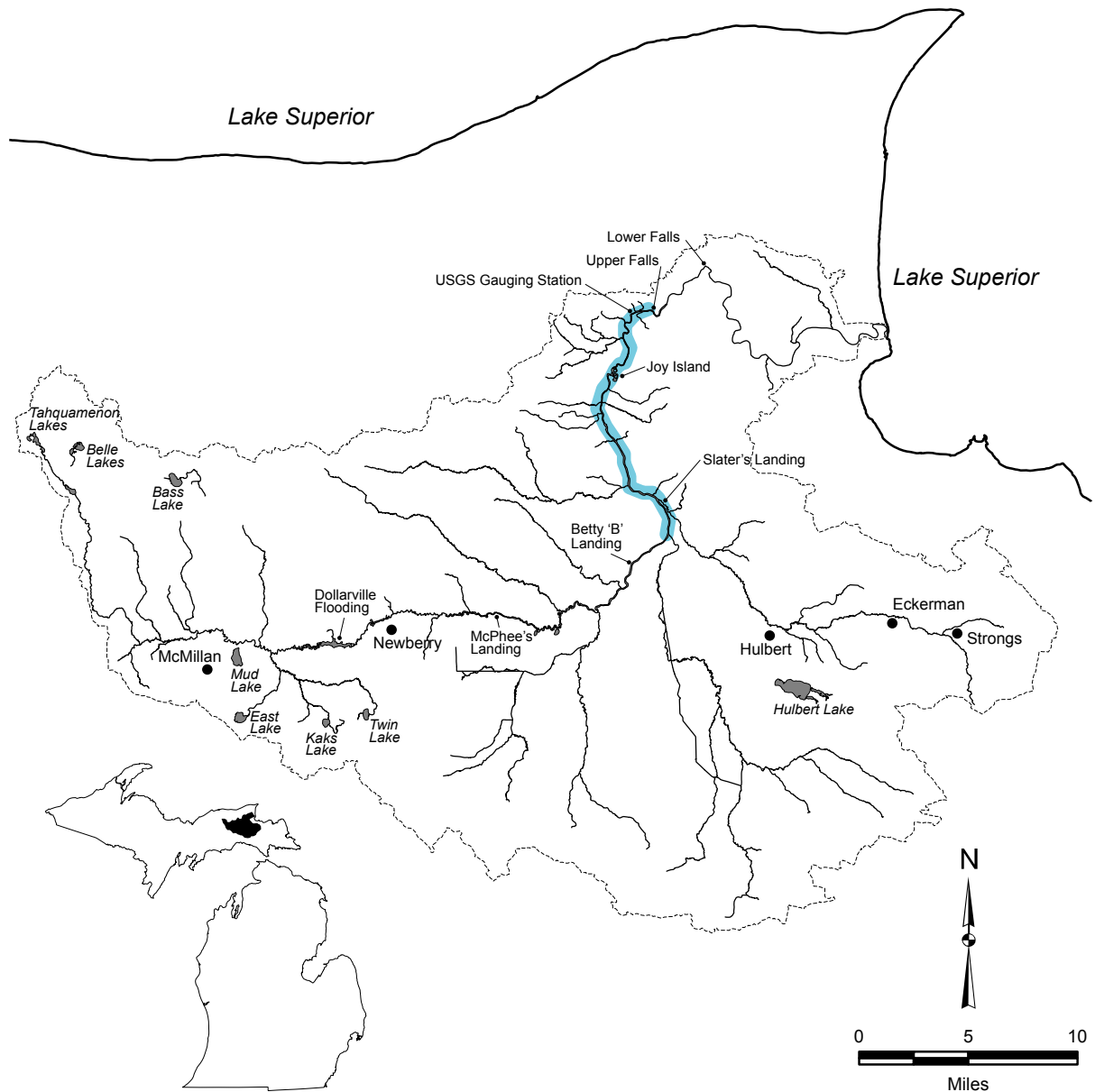
- feeding - streams, rivers, or shore waters of lakes and impoundments
 - can tolerate intermittent flows
 - tolerates moderate turbidity
- spawning - gravel nests
 - low current
- winter refuge - deeper pools and runs



Longnose sucker *Catostomus catostomus*

Habitat:

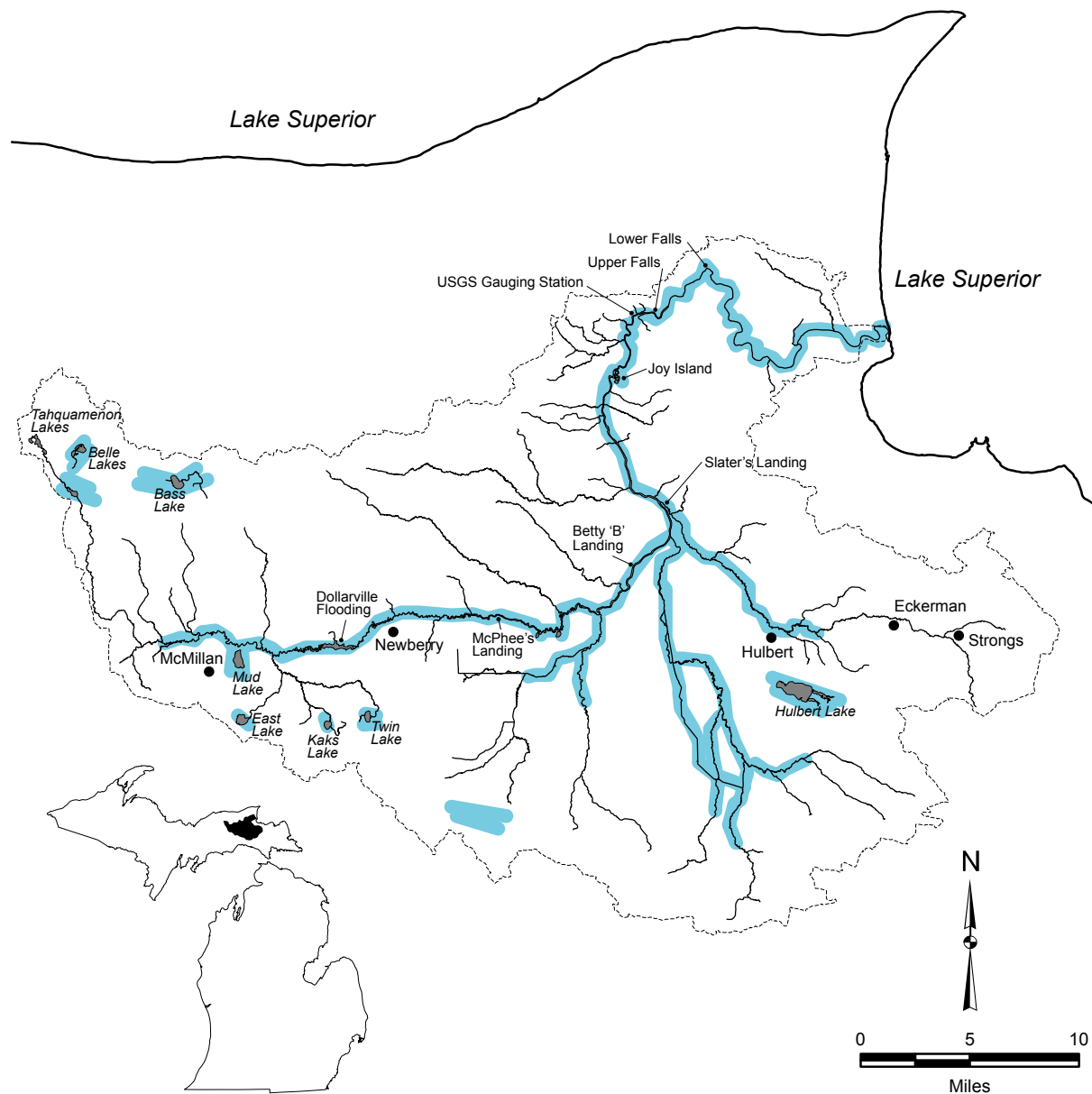
- feeding - clear, cold rivers and lakes
- spawning - in streams or lake shallows
 - current
 - gravel substrate



White sucker *Catostomus commersonii*

Habitat:

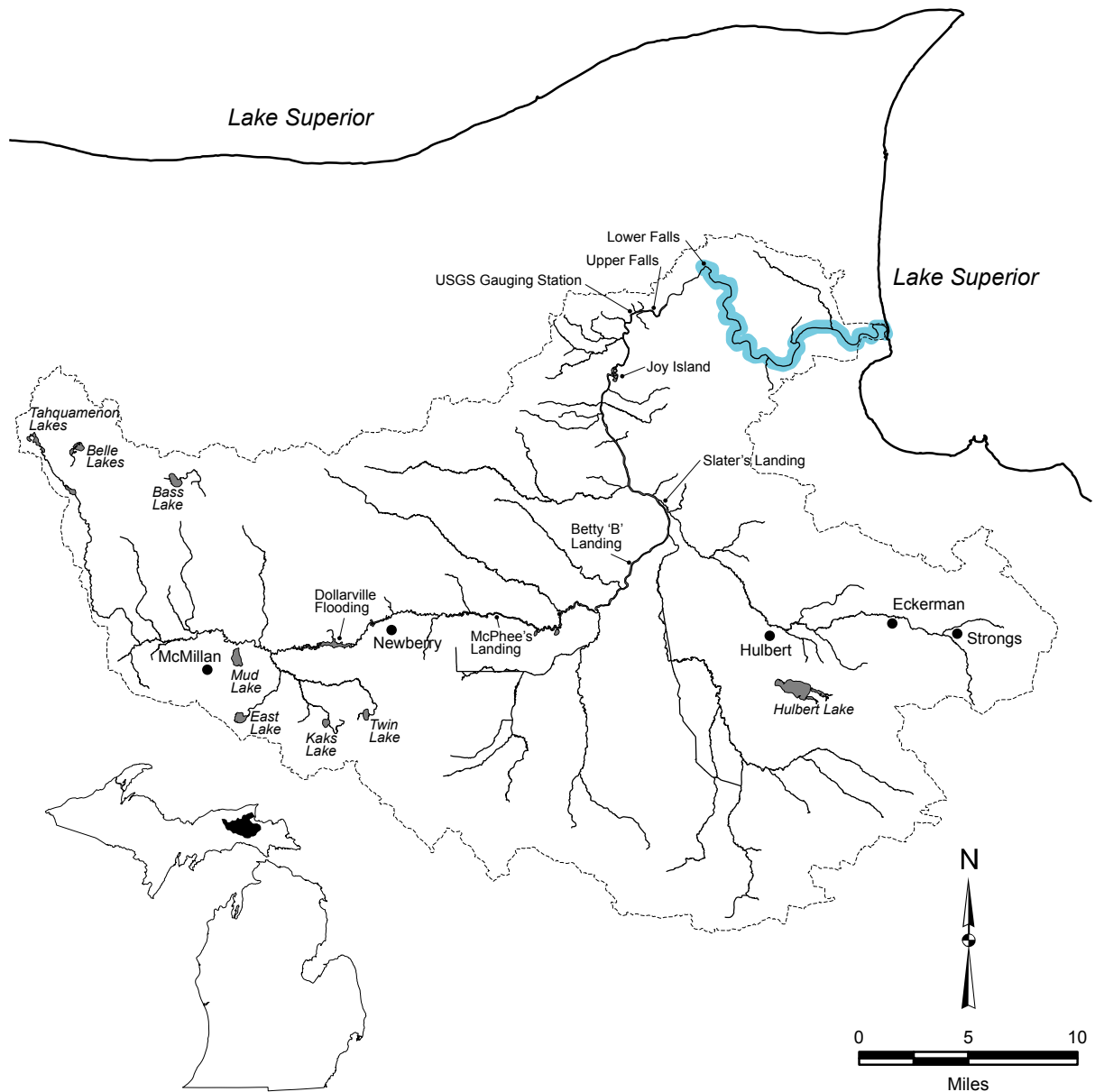
- feeding - streams, rivers, lakes, and impoundments
- can inhabit highly turbid and polluted waters
- spawning - quiet gravelly shallow areas of streams



Silver redhorse *Moxostoma anisurum*

Habitat:

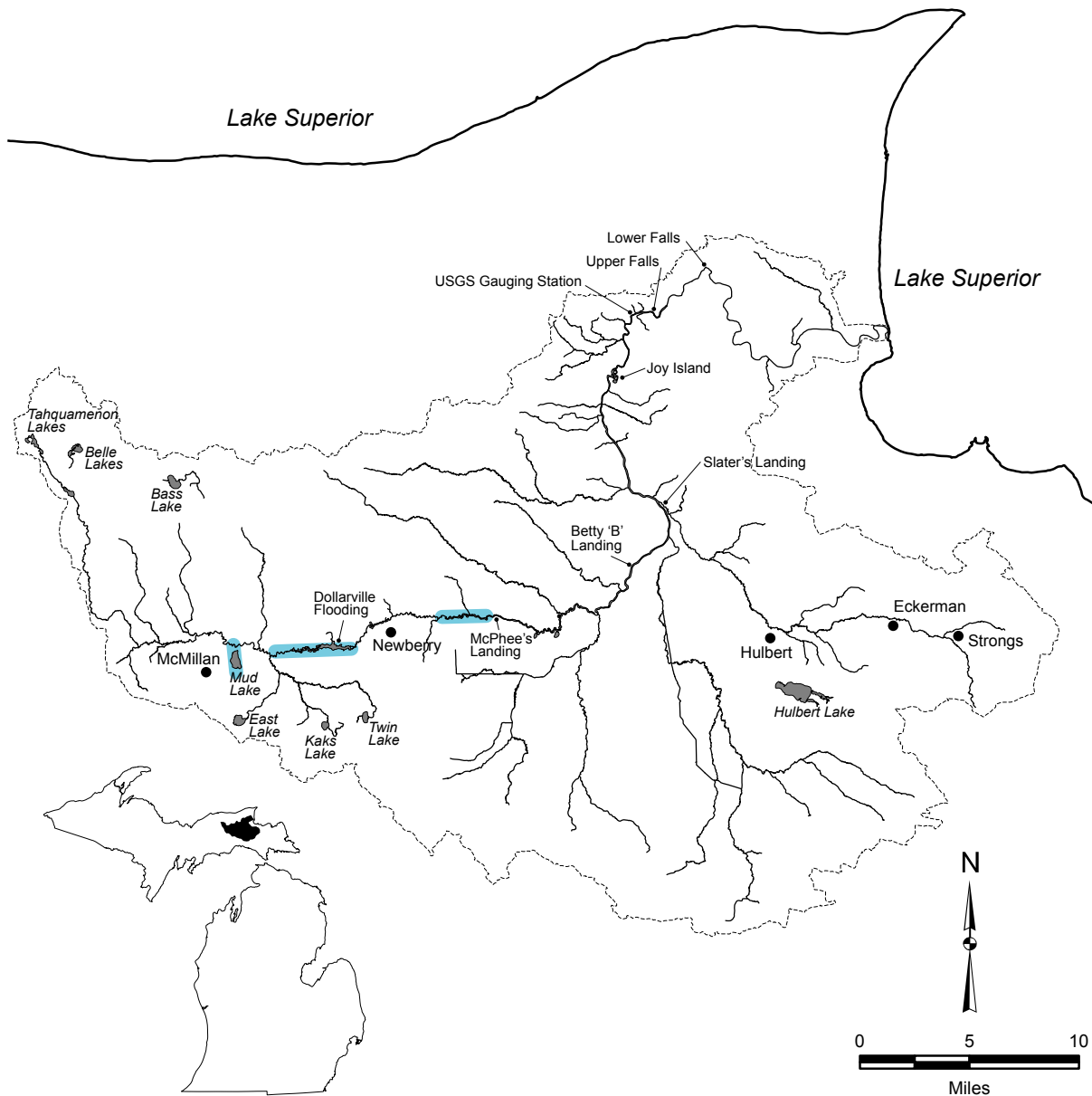
- feeding - streams, rivers, lakes, and impoundments
- low current
- pollution and turbidity intolerant
- spawning - swift current in rivers, do not spawn in tributaries
- males territorial
- gravel to rubble substrate



Black bullhead *Ameiurus melas*

Habitat:

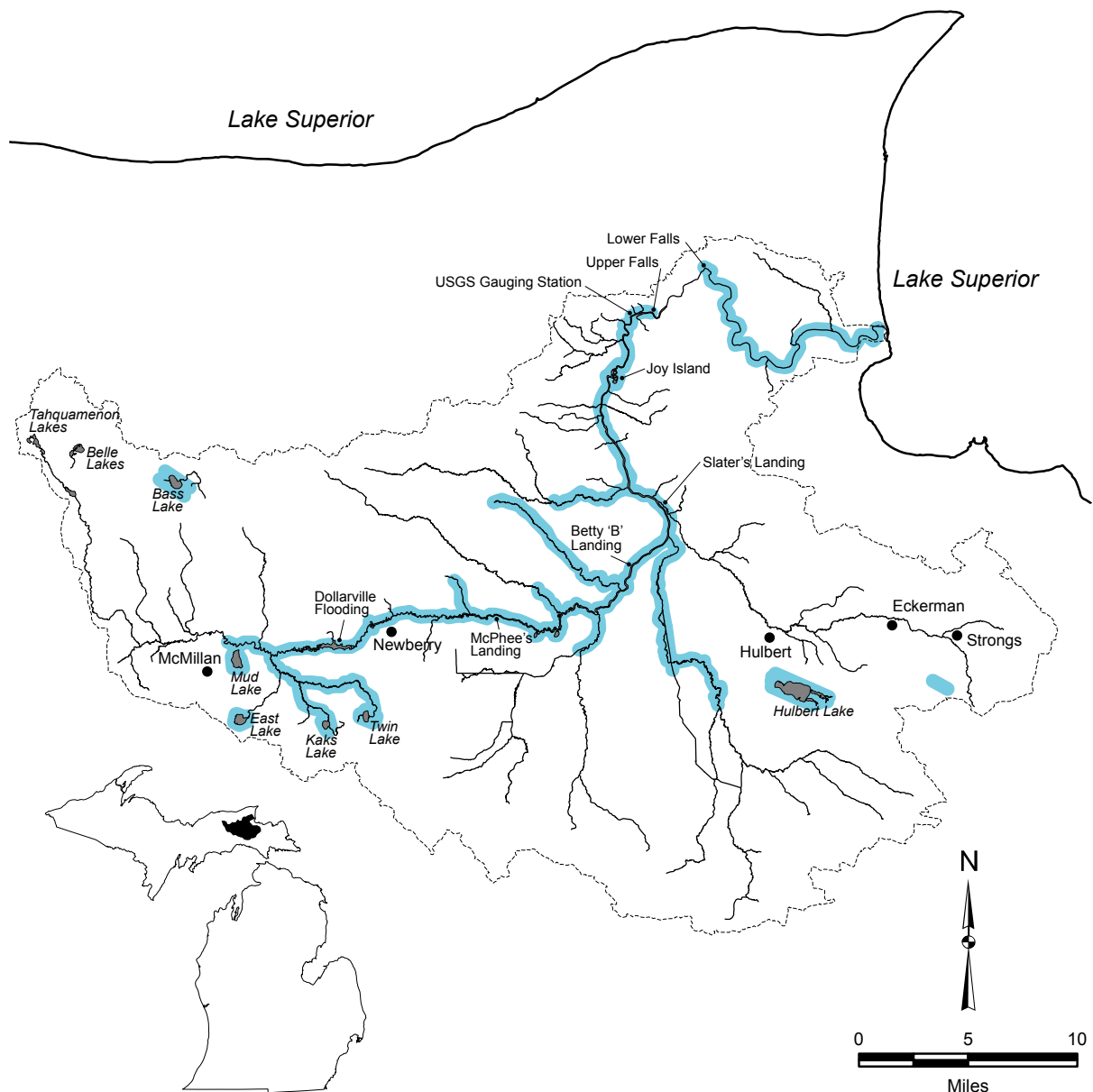
- feeding - turbid water
- silt bottom
- low gradient small to medium streams, pools, and headwaters of large rivers; also in lakes and impoundments
- can tolerate very warm water and very low dissolved oxygen
- spawning - nest in moderate to heavy vegetation or woody debris and under overhanging banks



Brown bullhead *Ameiurus nebulosus*

Habitat:

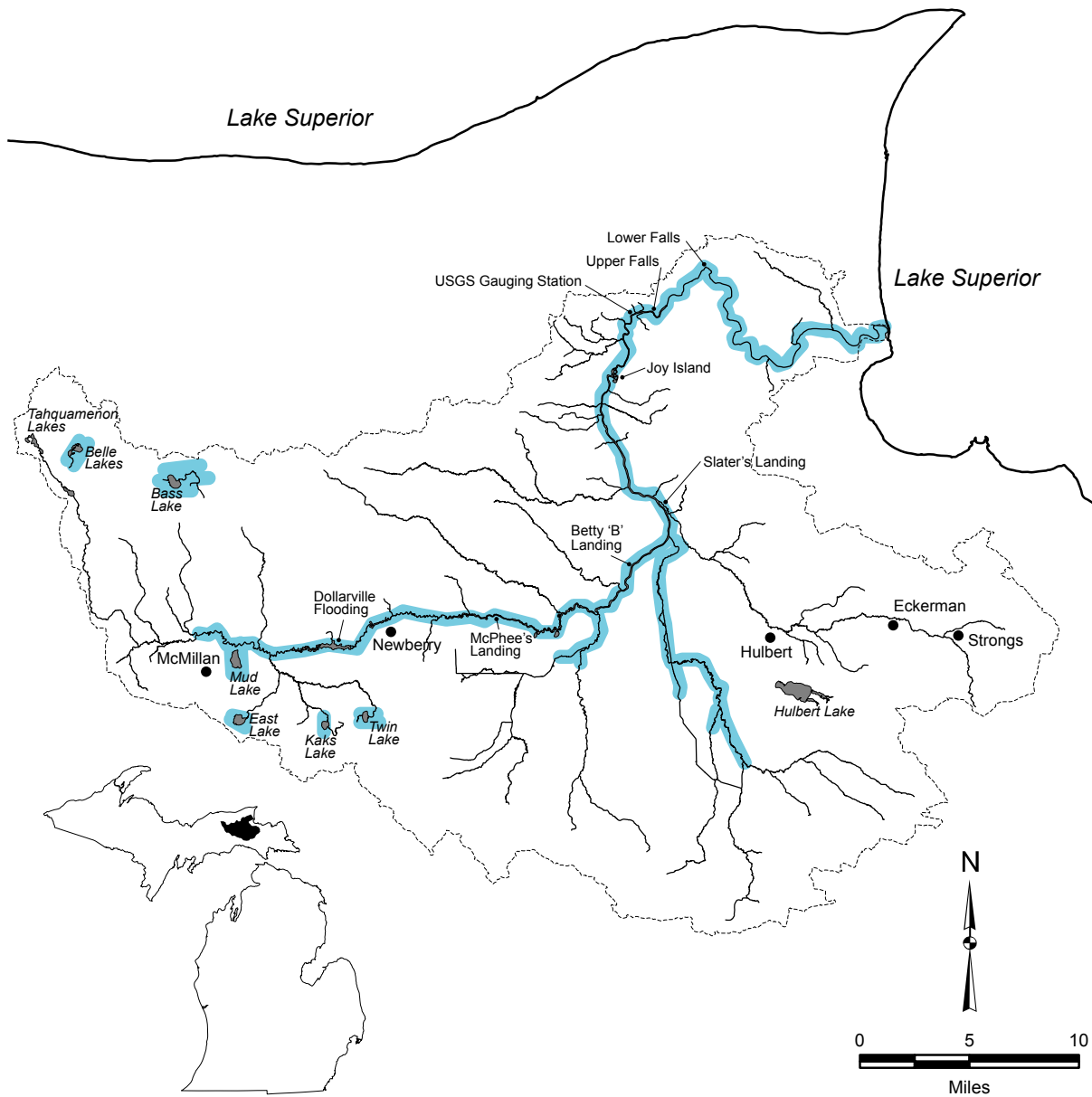
- feeding - larger streams and rivers, lakes and impoundments
- clear cool water with little clayey silt
- moderate amounts of aquatic vegetation
- sand, gravel, or muck substrate
- not tolerant of turbid water
- tolerant of warm water and low oxygen
- spawning - nest in mud or sand substrate among rooted aquatic vegetation
usually near a stump, tree, or rock
- winter refuge - in muddy bottoms



Northern pike *Esox lucius*

Habitat:

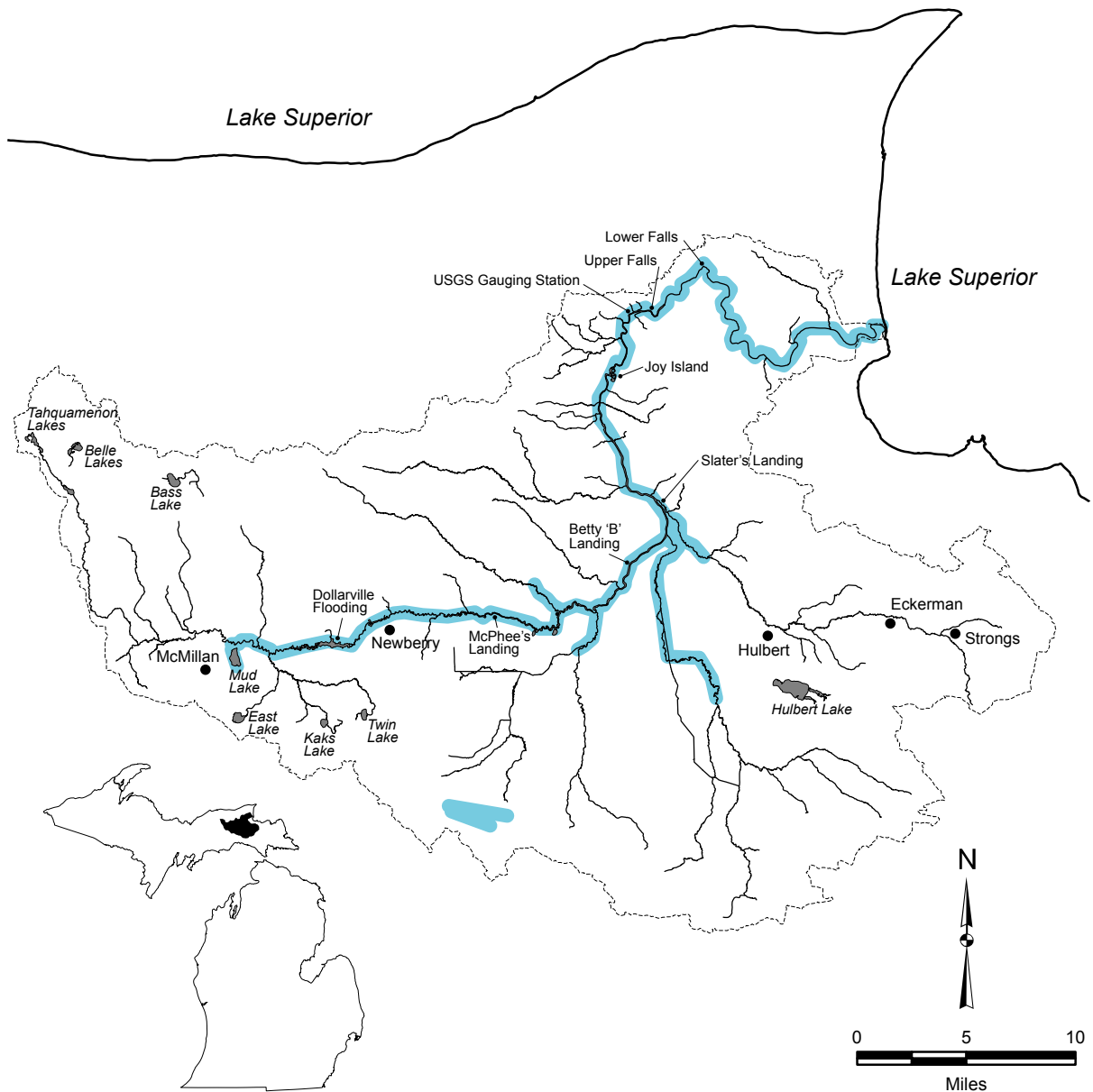
- feeding - cool to moderately warm streams, rivers, lakes, and impoundments
 - vegetation in slow to moderate current
- spawning - submerged vegetation with slow current in shallow water



Muskellunge *Esox masquinongy*

Habitat:

- feeding - warm, heavily vegetated lakes, stumpy weedy bays, and slow heavily vegetated medium to large rivers
- shallow cool water
- tolerant of low oxygen
- spawning - clear shallow waters (15-20") in heavily vegetated areas



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

