

FY90-044

THE STATUS OF THE PUGNOSE SHINER,
NOTROPIS ANOGENUS, IN LAKE COUNTY, ILLINOIS

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INTRODUCTION

The pugnose shiner (Notropis anogenus) is rare throughout most of its range (Bailey 1959). A recent survey of Indiana failed to reveal its presence and no reliable records are available for that state since 1943 (Seegert 1988). According to Smith (1979), it has been reported from the following Illinois localities:

Fox R., McHenry County, 1885
Fourth Lake, Lake County, 1892
floodplain lake, Mason County, 1909
Channel Lake, Lake County, 1965
Loon Lake, Lake County, 1968
Grass Lake, Lake County, 1968
East Loon Lake, Lake County, 1984
Deep Lake, Lake County, 1985
Cross Lake, Lake County, 1986

Since all the recent records are from Lake County, my survey was restricted to it. I concentrated on lakes where it either had been collected before or on those that offer the clear water and abundant aquatic vegetation this species prefers.

METHODS

In May 1990, 20 lakes and one stream in Lake County, Illinois were sampled using a 30 ft bag seine with 3/16" mesh (Table 1). Lakes were selected based on the quality of their habitat (clear water, abundant submerged aquatic vegetation), previous occurrence of Notropis anogenus, and accessibility. Several lakes (Druce, Highland, Long, Slough) were visually inspected but were not sampled because of excessive turbidity or lack of aquatic vegetation. The amount of time spent sampling each lake varied according to the fish community. Lakes which yielded only centrarchids and few, if any, associates of Notropis anogenus were typically sampled at only one location for about 0.5 hr. Lakes with good habitat and which yielded common associates of Notropis anogenus (e.g., N. heterodon, N. heterolepis, Etheostoma microperca) were often sampled at two locations for up to two hours.

RESULTS

Pugnose shiner

Pugnose shiners were collected from only 2 of the 21 lakes sampled, Cross Lake and East Loon Lake (Table 2). Thirteen specimens were found in Cross Lake on 11 May 1990, a number comparable to the number I collected there in April 1986. Sampling at two locations on E. Loon Lake on 11 May yielded two pugnose shiners. Larry Page collected several pugnose shiners from East Loon Lake in 1984 and 1985. Four other lakes in Lake County (Deep, Fourth, Loon, and Grass) from which this species has been collected were sampled, but pugnose shiners were not found at any of these historical locations.

Notropis heterolepis and Notropis heterodon

Blacknose and blackchin shiners were abundant in Cross, Loon, and Cedar lakes, common in Wooster Lake, and present in E. Loon Lake.

Fundulus diaphanus

This threatened species was abundant in Cross and Loon lakes and present in East Loon and Cedar lakes.

Etheostoma exile

Single specimens of this threatened species were collected in Loon, Cedar, and Huntley lakes, while 7 individuals were found in Turner Lake.

Other Species of Interest

Etheostoma microperca, a common associate of pugnose shiner, was found in four lakes. It was uncommon in East Loon, Cedar, and Wooster lakes, and abundant in Cross Lake. Fundulus dispar was present only in Loon and East Loon lakes. Single specimens of Erimyzon sucetta were collected from Cross, Wooster, and Turner lakes. Noturus gyrinus was found only in East Loon and Turner lakes. Opsopoeodus emiliae was collected only from Redhead Lake during this survey though I have collected it previously from Wooster Lake.

DISCUSSION

No new pugnose shiner localities were found during my survey and it appears to be extirpated from several historical localities. Its status as an endangered species in Illinois is certainly warranted. I did not find it in Indiana (Seegert 1988) and it may be extirpated from that state. Wisconsin has recently elevated it to threatened status. Increased eutrophication with the attendant increase in turbidity is likely the cause of the decline or elimination of this species throughout most of its range. Although a number of lakes in Lake County have abundant beds of submerged

macrophytes, many of these lakes support nearly monotypic beds of Myriophyllum. I found such lakes to be dominated by centrarchids, with few Notropis species present. Water quality in the Fox Lake chain appears to have declined as judged by high levels of turbidity, intense recreational use, and an overabundance of Myriophyllum. Although the pugnose shiner may still occur in the Chain, its days are probably numbered.

REFERENCES

- Bailey, R. 1959. Distribution of the American cyprinid fish Notropis anogenus. Copeia 1959, 119-123.
- Seegert, G. 1988. The status of the pugnose shiner, Notropis anogenus in NE Indiana. Rpt. to Indiana Non-Game Office.
- Smith, P. 1979. The fishes of Illinois. U. of Illinois Press. Urbana.

TABLE 1. LOCATIONS SAMPLED IN LAKE COUNTY, IL, MAY, 1990.

<u>Location</u>	<u>Lake</u>
1	Cross
2	East Loon
3	Loon
4	Antioch
5	Cedar
6	Deep
7	Crooked
8	Hastings
9	Unnamed
10	Sand
11	Miltmore/Fourth
12	Mill Creek
13	Round
14	Third
15	Wooster
16	Redhead
17	Slocum
18	Sullivan
19	Turner
20	Grassy
21	Huntley

TABLE 2. SUMMARY OF FISHES COLLECTED FROM LAKES IN LAKE COUNTY, ILLINOIS, 1990.

Species	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>
<u>Amia calva</u>		1																			
<u>Esox americanus</u>																				1	
<u>Cyprinus carpio</u>				X			X			X		X			1		1				
<u>Notemigonus crysoleucas</u>															1	5					
<u>Notropis anogenus</u>	13	2																			
<u>Notropis atherinoides</u>	1		3										3								3
<u>Notropis heterodon</u>	>200	3	300		250										60						
<u>Notropis heterolepis</u>	>200	3	250		210										28						
<u>Notropis spilopterus</u>		3	31								1										
<u>Notropis stramineus</u>		3	32		15					35		50					1				1
<u>Opsopoeodus emiliae</u>																	9				
<u>Pimephales notatus</u>	15	1	15		10						6		15		9	12					2
<u>Pimephales promelas</u>											1		6			4	15				
<u>Pimephales vigilax</u>																23					
<u>Erimyzon sucetta</u>	1														1					1	
<u>Ictalurus melas</u>									1									1			
<u>Ictalurus natalis</u>															1						
<u>Noturus gyrinus</u>		1																		3	
<u>Fundulus diaphanus</u>	>100	3	165		6																
<u>Fundulus dispar</u>		3	2																		
<u>Fundulus notatus</u>	7																				
<u>Labidesthes sicculus</u>																					1
<u>Morone mississippiensis</u>									2							4					
<u>Lepomis cyanellus</u>		1	9					X	2							1					
<u>Lepomis gibbosus</u>	2	3	2	X		X	X	X	1	X				X	1			1			
<u>Lepomis gulosus</u>		1	1										1		4						
<u>Lepomis humilis</u>								2	5												
<u>Lepomis macrochirus</u>	10	3	7	X	7	X	X	X		X	1	>100	1	X	4	11					
<u>Micropterus salmoides</u>		5	10	X						X	1				1	1		3	1	100	X
<u>Pomoxis nigromaculatus</u>																1					3
<u>Etheostoma exile</u>			1		1															7	2
<u>Etheostoma microperca</u>	>100	3			7										4						1
<u>Etheostoma nigrum</u>					2																
<u>Perca flavescens</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>—</u>	<u>—</u>	<u>X</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>1</u>	<u>—</u>	<u>1</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Total Species	12	17	15	4	9	3	3	4	5	4	7	2	7	2	12	12	4	3	5	2	6