

# Summary of littoral fish trap net catch at Rat Cove and Brookwood Point, Otsego Lake, summer 2003

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## INTRODUCTION

Trap netting during the summer of 2003 continued as an on going effort to monitor the littoral fish community. It is here along the shore lines that the pelagic alewives (*Alosa pseudoharengus*) congregate in the summer months to breed. Research of the fish community in Rat Cove began in 1979 (MacWatters 1980). It has gone on regularly most years between 1989 and the present. Trap netting can supplement other fish surveying methods such as haul seining, gill netting and electro-fishing. In 1982, 37 species of fishes representing 12 families were documented in the lake (MacWatters 1983). Currently, however this species richness is threatened by the exotic alewife, introduced in 1986 (Foster 1989); alewife catch increased 10 fold between 1989 and 1990 and has been the most abundant littoral species every year since.

Because of the forage base offered by the alewife, a New York State Department of Conservation-permitted walleye (*Sander vitreus*) stocking program began in 2000. Data presented here, as well as those collected by Warner (1999) and Cornwell (in prep.) describe alewife densities prior to and following the re-establishment of walleye. Evaluations of other biological, physical and chemical aspects of Otsego Lake may reflect cascading trophic changes brought about by increased predation of the alewife (Cornwell in prep.; Albright 2004).

## METHODS

Trap nets were set at both Rat Cove and Brookwood Point Monday through Thursday from 3 June to 8 August. Traps were set perpendicular on the north shores at each site (Figure 1). Nets were pulled Tuesday through Friday and often patched when required. Native fish species were carefully removed from nets then placed into a bin so as not to cause extensive trauma. Fish were next transported to the BFS dock, where they were identified, and measured and weighted. The lengths were recorded in millimeters and weight in grams. Fish were then released, except for alewives which tend not to survive this process anyway.

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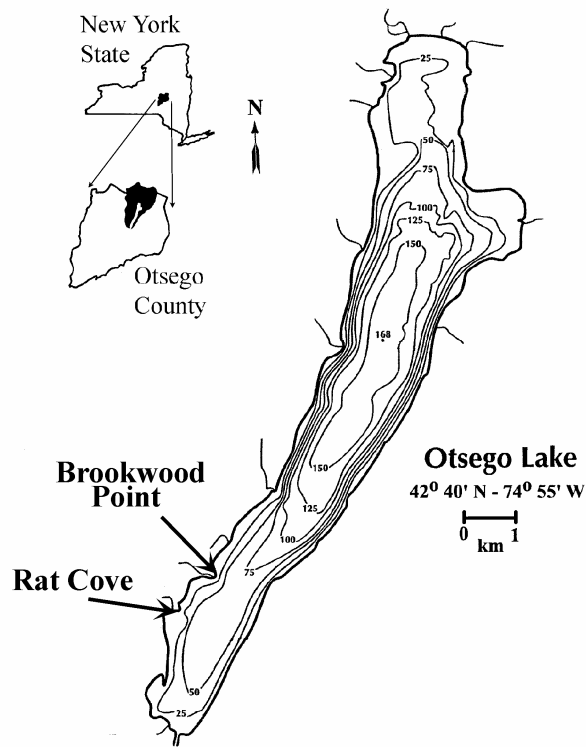


Figure 1. Otsego Lake, NY showing sites of trap netting.

## RESULTS

Tables 1 and 2 summarize mean weekly catches, for all species, as well as the proportion contributed by each species, for years for which data are available for Rat Cove and Brookwood Point, respectively. The community composition of the two sites was similar, with alewife and pumpkinseed the most dominant species. Together, the two comprised approximately 90% of the total catch at both sites.

Figures 2 and 3 illustrate the catch per unit effort (CPUE; catch per 24 hour set) of alewife over the summer at Rat Cove and Brookwood Point, respectively. Because alewives are a pelagic species which come in shore to spawn, periods of high CPUE are indicative of spawning activity.

Rat Cove	1997	1999	2000	2001	2002	2003
Mean catch per week	NA	NA	141	96	41	87
Alewife	54.5	79.6	85.2	70.6	19.5	52.0
Golden Shiner	2.2	0.5	0.4	0.3	1.0	0.8
European Rudd	0.2		0.1		0.7	0.8
Pumpkinseed	12.1	11.1	6.9	21.7	36.8	37.7
Blue Gill	22.7	3.3	1.4	3.0	9.0	2.0
Redbreast Sunfish	1.0		0.6	0.6	0.7	0.5
Rock Bass	1.6	1.3	1.1	1.6	9.3	1.2
Large Mouth Bass	0.1		0.1	0.6	0.7	0.4
Chain Pickerel	0.1	0.6	0.4	0.5	0.2	0.2
Atlantic Salmon				0.1		0.1
Yellow Perch	2.1	2.1	1.8	0.5	3.1	0.4
White Sucker	0.5		0.7	0.2	1.5	0.1
Common Sucker			0.1		1.2	
Common Carp	0.2	0.5	0.2	0.3	0.6	0.6
Brown Bullhead	2.6	0.2	1.2	0.1	15.6	3.0
Blunt Nose Minnow		1.0				
Spot Tail Shiner						0.1
Small Mouth Bass					0.2	

Table 1. Total mean weekly catch at Rat Cove and the percent contributed by each species, 1997-2003.

Brookwood	2000	2001	2002	2003
Mean catch per week	258	151	101	121
Alewife	86.9	90.9	76.6	78.3
Golden Shiner	0.1	0.2	1.1	1.5
European Rudd		0.2		0.1
Pumpkin Seed	1.2	4.9	11.9	10.8
Blue Gill	2.5	0.6	0.9	0.8
Redbreast Sunfish	0.1		0.9	0.2
Rock Bass	3.0	2.3	4.0	3.1
Large Mouth Bass	0.1	0.2	0.7	0.7
Chain Pickerel	0.1		0.3	0.2
Atlantic Salmon		0.2		
Yellow Perch	0.7	0.2	0.2	
Walleye				0.1
White Sucker	1.9		1.7	0.6
Common Sucker				
Common Carp	0.8	0.2	0.6	0.1
Brown Bullhead	2.6		1.0	3.0
Bluntnose Minnow	0.1			
Small Mouth Bass				0.5
Common Chub			0.1	
Eastern Shiner			0.1	
Spot Tail Shiner		0.4		

Table 2. Total mean weekly catch at Brookwood Point and the percent contributed by each species, 1997-2003.

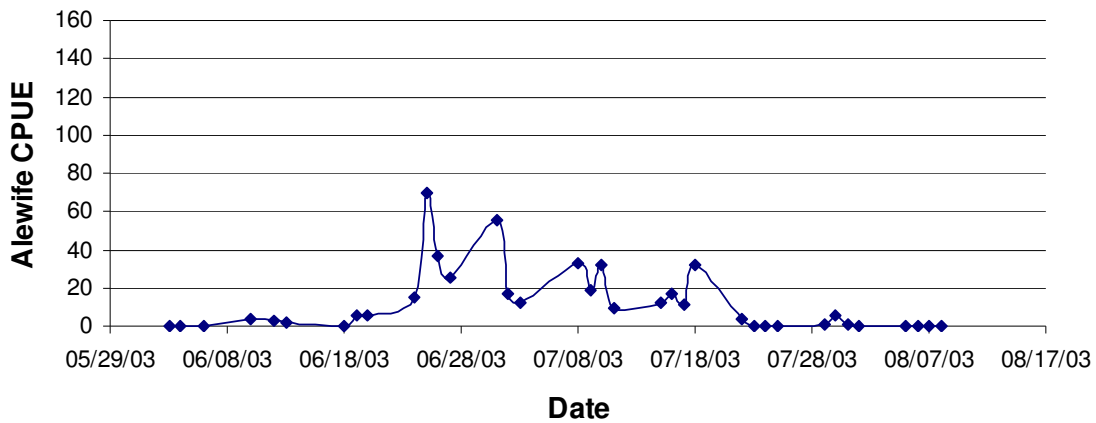


Figure 2. Alewife catch per unit effort (fish per 24 hour set) at Rat Cove, summer 2003.

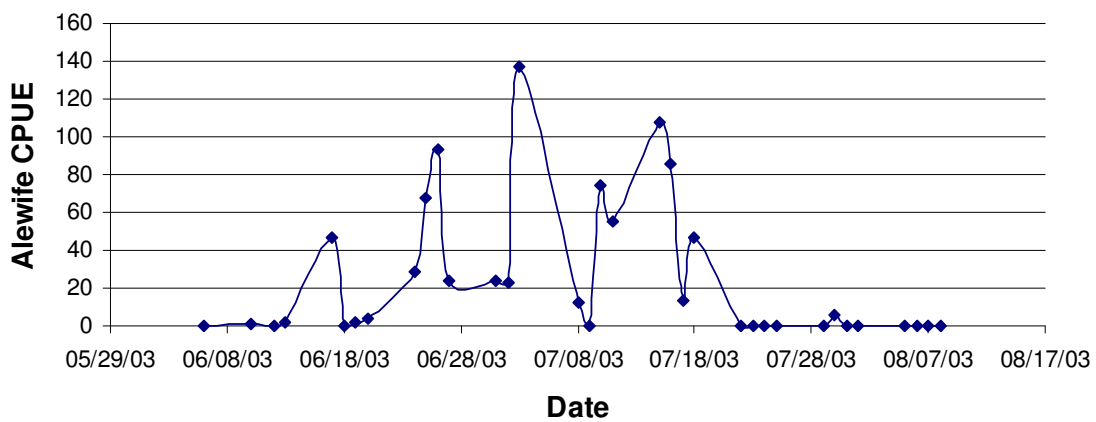


Figure 3. Alewife catch per unit effort (fish per 24 hour set) at Brookwood Point, summer 2003.

### CONCLUSIONS

Continued monitoring of Otsego Lake's littoral fish community allows for a better understanding of the competitive impacts of the non-native alewife as well as a means of evaluating whether the re-establishment of the walleye will effectively reduce alewife densities. Despite an early indication of successful survival beyond year one, and diet analyses which have documented foraging solely upon alewives (Cornwell 1993), predation by walleyes has yet to substantially reduce the number of spawning alewives.

## REFERENCES

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