

# Walleye re-introduction update and characterization of walleye spawners: 2000-2006

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## INTRODUCTION

In 2000 a multi-year project was initiated to re-introduce walleye to Otsego Lake with the management goal of re-establish the fishery. Oneida strain 5-d old walleye fry were provided by the New York State Department of Environmental Conservation (NYSDEC) to private growers contracted by the SUNY Oneonta BFS. These growers were to provide pond (40-50mm) and advanced fingerling (100-150mm) walleye to stock Otsego Lake. In addition to these fish grown privately, the NYSDEC fish culture section has annually (since 2004) provided 40,000 pond fingerling walleye to Otsego. The goal of the project was to annually stock at the NYSDEC recommended stocking rate of 50 fish per hectare or 80,000 walleye lake-wide.

An additional benefit of stocking walleye was to provide additional predation pressure on abundant alewife. Walleye are opportunistic predators (Smith, 1983) frequently occupying the open water areas of large lakes (Festa 1987) where they will encounter significant numbers of Otsego Lake alewife.

Otsego alewife have been linked to decreased mean zooplankton size, biomass and grazing rate (Warner 1999), decreased mean summer Secchi transparencies, increased nutrient cycling rates and chlorophyll *a* concentrations (Harman et al. 2002), and increased rates of hypolimnetic oxygen demand (Albright 2001). Cornwell (2005) described walleye stocking success, their potential impact on the alewife population and the increase in *Daphnia* that has been observed subsequent to walleye stocking.

## MATERIALS AND METHODS

Pond fingerling walleye were delivered by truck to Otsego Lake by the NYSDEC and were stocked at the Three Mile Point access site. In most years, Steve Sanford of Sanford's bait farm also delivered pond fingerlings. These pond fish were loaded into transport tanks on the BFS barge and were stocked along the littoral on east and west shorelines. All pond fingerlings have been stocked in late June or early July. Larger fall fingerlings have been stocked in late October or early November. Those fish are typically clipped so that they can be differentiated from spring stocked fish. The fins clipped varied by year so that the year of stocking of recovered fish can be ascertained.

Walleye-specific gill netting was performed by the NYSDEC Region 4 Fisheries office on 24, 25 and 26 September 2002 with 10 monofilament experimental gill nets. Gill nets were composed of six (6) twenty-five foot panels, one each ¾", 1", 1 ¼", 1 ½", 1 ¾", 2" for 150' of total net (Linhart, 2003). Nets were positioned around the lake in the epilimnion according to the percid sampling manual (Forney 1994). Scale samples from each walleye were collected.

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Length and weight measurements were recorded on all dead fish. Stomach contents were described.

Casts net (4m diameter) were used to collect spawning walleye in Cripple Creek on 8- 11 April 2007 at night. The intent was to capture healthy, adult fish into which to insert sonic tags for a behavioral study (Golding et al. 2006). The length, gender and existence of fin clips are reported here.

## RESULTS AND DISCUSSION

To date, Otsego Lake has been stocked with over four hundred thousand walleye. The numbers of spring and fall stocked fish are summarized in Table 1. Also provided are mean, minimum and maximum sizes of 30 randomly measured walleye.

	2000	2001	2002	2003	2004	2005	2006	Totals
# Pond Fings. Stocked	80,000	45,000	45,000	4,500	80,000	40,000	70,000	364,500
Mean Length (mm)	44.8	53.6	53.0	50.0	40.0	40-50	40-50	
min	32.0	41.0	N/A	N/A	36	N/A	N/A	
max	56.0	65.0	N/A	N/A	56	N/A	N/A	
# Fall Fings. Stocked	0	8,000 (RV and RP)	8,000 (LV)	15,000 (RV)	0	15,000 (RV)	5,000 (LV)	51,000
Mean Length (mm)		121.5	105.4	120.1	N/A	100-150	100-150	
min		93.0	76.0	72.0	N/A	N/A	N/A	
max		180.0	145.0	165.0	N/A	N/A	N/A	
Project Total								415,500

Table 1. Walleye stocking summary 2000-2006. Mean, maximum and minimum lengths are reported for approximately 30 fish measured at each stocking date. (\* RV = right ventral fin clip, LV = left ventral fin clip and RP = right pectoral clip.),

The last formal survey for walleye was done by the NYSDEC in 2002. This gill netting was for walleye only. Walleye from all three stockings (2000, 2001 and 2002) were present in the gill netting. Walleye ranged in total length from 163mm to 479mm, with 78 walleye (56%) greater than 381mm (15") legal size. It is probable that the population of walleye has increased since four years of stocking (2003-2006) have added an additional 193,500 walleye since 2002. Table 2 provides that catch rate of Otsego Lake, as well as 7 other NYS lakes known to contain walleye. It is also interesting to note that within NYSDEC Region 4, the Otsego Lake gill net catch rate (12.4 fish/net) is second only to Canadarago Lake (a notable walleye fishery, 18.1 fish/net) after only three years of stocking.

Adult walleye have been observed in Cripple Creek, a historic spawning site for walleye, in April of 2004, 2005 and 2006. Fifty walleye (Total length range 598mm-355mm) were captured by cast net on 6, 9, 10 and 11 April 2006. The date captured, length, gender and presence of fin clips is summarized in Table 3. Eight walleye were observed to have clips (16% of total), indicating that they had been stocked as advanced Fall fingerlings (100-150mm) in October and not as pond fingerlings (40-50mm). Fall fingerlings have comprised 12% of the total stocking to date. Interestingly, left pectoral clips were observed in spawners even though no such clips were given to stocked fish. This indicates an error, either by a clipper failing to

clip the appropriate fin or by the spawning observer not recording the fin clip correctly in April 2006 observations. Aside from this error, the clip still indicates that both fall and pond fish are recruiting to spawning size.

Lake	Catch/net	Date Sampled	Status
<b>Otsego</b>	<b>12.4</b>	<b>September 2002</b>	<b>stocked</b>
Canadarago	18.1	2001	wild
Crescent	1.4	June 1979	wild
Vischer Ferry	0.8	June 1980	wild
Schoharie Reservoir	3.2	June 2002	wild
Goodyear Lake	1.7	1980	wild
Alcove Reservoir	5.6	1970	wild
Tomhannock Reservoir	1.8	mid-summer 1991	wild
Dyken Pond	2.0	Sept 01	stocked

Table 2. Comparison of Otsego Lake and other Region 4 walleye waters from McBride (2003).

Date	Sex	Length	Fin Clip	Date	Sex	Length	Fin Clip
4/9/2006	F	598		4/10/2006	M	504	
4/11/2006	F	593		4/9/2006	M	501	
4/11/2006	F	545		4/8/2006	M	498	
4/9/2006	M	560		4/10/2006	M	496	
4/11/2006	M	557		4/9/2006	M	493	
4/11/2006	M	546		4/11/2006	M	489	
4/10/2006	M	536		4/10/2006	M	486	
4/8/2006	M	535		4/10/2006	M	484	
4/8/2006	M	535		4/11/2006	M	484	
4/11/2006	M	534		4/9/2006	M	478	
4/11/2006	M	533		4/11/2006	M	476	Left Pelvic
4/8/2006	M	529		4/10/2006	M	474	
4/11/2006	M	527		4/10/2006	M	474	Right Pectoral
4/10/2006	M	524		4/10/2006	M	473	
4/9/2006	M	521		4/8/2006	M	471	
4/8/2006	M	520		4/11/2006	M	469	Left Pelvic
4/8/2006	M	520		4/10/2006	M	465	Left Pelvic
4/8/2006	M	519	Right Pelvic	4/11/2006	M	462	
4/10/2006	M	517		4/11/2006	M	459	
4/10/2006	M	516		4/8/2006	M	456	Left Pectoral
4/10/2006	M	516		4/8/2006	M	456	Left Pectoral
4/9/2006	M	512		4/10/2006	M	437	Right Pelvic
4/9/2006	M	507		4/8/2006	M	434	
4/8/2006	M	506		4/10/2006	M	373	
4/8/2006	M	505		4/8/2006	M	355	

Table 3. Characterization of Spawning Walleye in Cripple Creek April 2006 (From Golding, Pers. Comm. 2006).

Walleye are doing well in Otsego Lake. Additional walleye have been captured during routine alewife gill netting done by the BFS and by the NYSDEC during regular salmonid gill netting. These walleye were released unharmed and in good condition. Walleye specific gill netting by the NYSDEC is planned for Otsego Lake in fall of 2007. Walleye stocking may be hampered in 2007 by Viral Hemorrhagic Septicemia (VHS). The NYSDEC has indicated that they will not provide walleye fry to cooperators for grow-out in 2007 in hopes of curtailing the spreading of that disease (Stang 2007).

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