

# Echo Lake Reservoir Muskies and Bass

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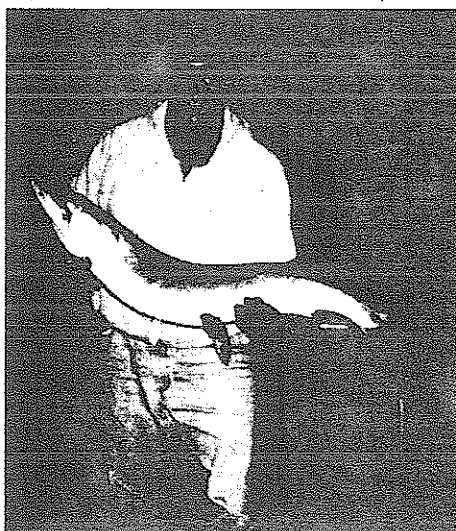
"Those muskies are eating all the bass in the lake!" Members of Chapter #22 have heard this cry from some angling circles for a long time now. And no matter how convincingly we provide the truth about muskies, we still are faced with a "perception" that this species is a problem fish. In the past, muskies were often portrayed in a negative light. Articles are filled with "facts" that muskies will kill for the sheer fun of it or will eat all the fish out of a lake. Unfortunately this "killer" image continues in the minds of some of today's anglers. This has been best illustrated through the experiences of Chapter #22 at Echo Lake Reservoir, West Milford, New Jersey.

Echo Lake Reservoir is part of the expansive Newark Watershed Conservation Development Corporation (NWCDC) property in Passaic County. In 1991, Chapter #22 sponsored a muskie stocking program at the 300-acre impoundment, and from all accounts the program appears to be a glowing success. The 325 yearling-size muskellunge that were stocked that year survived and grew, and currently provides an excellent muskie fishery. So much so that Echo Lake Reservoir is now producing an exceptional number of 40+ inch, 20 lb. fish. This indicates that the future for 25-30 lbs. muskie looks extremely bright.

In July 1993, based largely on the success of the Echo Lake Reservoir stocking, the chapter proposed an expansion of the muskie stocking program into a sister NWCDC waterbody, Canistear Reservoir. At the request of Mr. Jonathan Rosenberg, NWCDC Resources Manager, members of Chapter #22 and the New Jersey Division of Fish, Game and Wildlife (DFGW) held a public hearing to answer questions about the proposed stocking program. In attendance were several NWCDC anglers and representatives of a couple of local bass fishing clubs that use the NWCDC waterways. An evening of presentations and open discussions ensued and while the concerns of the majority of attendees were addressed, the local bass fishing clubs were steadfast in their opposition to muskie stocking. The clubs claimed to have had a poor year of bass fishing (1992-93) at Echo Lake Reservoir and

were convinced that the muskellunge could have something to do with it. They wanted an assessment of the impact that muskellunge have upon the bass fishery at Echo Lake Reservoir before supporting expansion of the program to another waterbody. The NWCDC decided to wait until the DFGW completes a 1995 fish survey at Echo Lake Reservoir before making a decision about allowing muskellunge into Canistear Reservoir. An overview of the results of the DFGW surveys are provided herein.

The initial DFGW fish survey was conducted in the spring of 1991. That was also the same year the chapter first stocked muskellunge. The purpose of the



*A great 40 plus is becoming more common on this great fishery.*

assessment was to determine the structure of the largemouth bass population for fisheries management purposes. The survey indicated that the reservoir held a good largemouth bass population with all age groups represented. Since the muskies had only been recently stocked, the bass population may be considered at "pre-muskie condition." This data would then be compared to the results of the 1995 surveys.

In May and October 1995 the DFGW conducted a second round of fish surveys. The objectives were again to assess the largemouth bass population as well as the recently stocked smallmouth bass and to determine if significant changes in the bass population had occurred since

the introduction of muskellunge. The DFGW surveys compared various biological measurements used to evaluate the status of a lake's bass population. They included length frequency indices (proportional stock density (PSD) and relative stock density (RSD)) and catch per unit effort (CPUE) for each survey period. The results for the comparable 1991 and 1995 surveys were very similar. The CPUE values indicated a moderate to high bass density. The RSD were at the upper end or slightly above the range considered by fish managers to indicate a balanced or good bass population. The RSD15 values (% of bass > 15 inches) are identical for the two survey periods and much higher than the mid-range values used to indicate a balanced population. The recruitment indices (bass < 10 inches) was moderate in the spring 1991 and low and in the spring 1995 survey, whereas the fall 1995 (night survey) indicated a high recruitment density. In each survey bass of all age groups were collected and many 1+ and 2+ (year old) bass were included in the fall survey results. Overall, the 1995 bass population structure as profiled by these indices is more representative of a "quality bass fishery."

The results of the 1991 and 1995 surveys indicate that the structure of the largemouth bass population was essentially the same for the periods tested. The DFGW concluded that Echo Lake Reservoir continued to maintain a largemouth bass population characterized as a quality bass fishery. There is no indication that the largemouth bass population has suffered significant changes due to the introductions of either muskellunge or smallmouth bass, or that the draw-down conditions had any profound adverse impact. These results mirror similar findings in the scientific literature that point out that the likelihood of negative interactions between muskellunge and other gamefish is minimal and that the presence of trophy class muskellunge in a waterbody with a diverse fishery structure is not detrimental to other gamefish populations.

It should be noted that throughout 1994 and 1995 Echo Lake Reservoir was drawn down approximately 15 feet to facilitate dam repairs. This reduced the waterbody by an estimated 20% of the

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surface area. The decreased lake size was considered a major concern as it tended to "crowd" the muskellunge and bass together and thereby increasing the potential for predation. It was suggested that this worst-case condition might cause a negative interaction between the two species and was considered an important factor that might potentially impact upon the bass population.

Note, too, that at the time of the 1995 survey the majority of the 1991-year class muskies had reached 36-50 inches. It had been suggested that muskies of this size and number might potentially have the most impact upon the 6-10 inch bass population. However, the data obtained from these surveys did not bear out those concerns. Also though not reported directly, a good number of 1+ and 2+ year-old pickerel were also observed during the fall 1995 survey. Though this data is not conclusive, their presence could suggest that the ruinous impact that muskellunge are "implied" to have on pickerel populations may not be as valid as previously thought. However, it's apparent that more work is needed to

arrive at any concrete conclusions concerning any muskie-pickerel interactions.

Since muskies grow large (30+ lbs.) and have impressive teeth, some New Jersey anglers think that muskies will eat all the fish from a lake or that once



*The bassin' is pretty good too.*

stocked muskellunge will spawn and overpopulate a lake, or will out-compete other gamefish for available food supply. However, these concerns are not based upon fact, but rather on erroneous assumptions concerning this species' niche in a freshwater ecosystem. The

apprehension expressed about the presence of muskellunge in a particular lake often stems from a direct bias by some anglers that want to "protect" their favorite fishery. It's been stated several times that certain groups don't want muskies in "their" waters because they may eat all of "their" bass, trout, walleye, etc., etc. However, the experiences at Echo Lake Reservoir and from other states all around the country doesn't justify that concern. Fortunately when it comes to stocking muskies the cry of NIMBY (not-in-my-back-yard) is not commonly shared by the angling community at large.

The chapter is currently working with the DFGW and NWCDC to determine if the expansion of muskellunge stocking into Canistota Reservoir is possible in the near future. At the same time the chapter is also actively seeking other waterbodies that may be suitable candidates for generating another muskellunge fishery. In this way more New Jersey anglers can have the opportunity of catching a truly trophy size fish and many more can enjoy the thrills of muskie fishing.