



New Mexico Department of Game and Fish

Tiger Muskie Population Summary - Bluewater Reservoir 2015

We continued annual fish population surveys of Bluewater Reservoir using gill nets and electrofishing capture methods. The spring survey was conducted from May 11-13, 2015 when a total of 168 tiger muskie were captured, 15 of which were recaptures from previous years. The average size was 31 inches and average weight was 6.6 pounds. The largest muskie captured this spring was 48 inches weighing about 16 pounds. Average relative weight was 84.5 (Fig. 1) (100 representing the nationwide "average").

The fall survey was conducted from September 14-16, 2015 when a total of 45 tiger muskie were captured, seven of which were recaptures. The average size was 31 inches and average weight was 6.8 pounds. The largest tiger muskie captured was 36 inches weighing 13.5 pounds. Average relative weight was 82.1(Fig. 2) continuing the downward trend since 2012 (Fig. 3).

Capture rates for tiger muskie in Bluewater Reservoir appeared to decrease significantly this year while a uniform size distribution persisted (Fig. 4). The 2015 population estimate is approximately 3,486 tiger muskie which equates to a density of 15 fish per surface acre. This estimate indicates a significant reduction in population size compared to 2013-2014 shifting towards our management goal of 4 tiger muskie per surface acre for Bluewater Reservoir. Tiger muskie densities were calculated based on average reservoir level reported on the U.S. Geological Survey water data website from August through mid-September each year (Table 1). http://waterdata.usgs.gov/nwis/uv?site_no=08341400

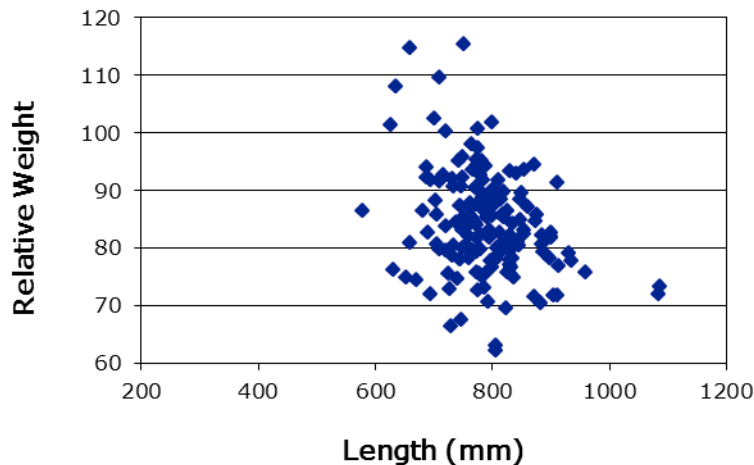


Figure 1. Relative weights vs. length of tiger muskie captured at Bluewater Reservoir (May 11-13, 2015).

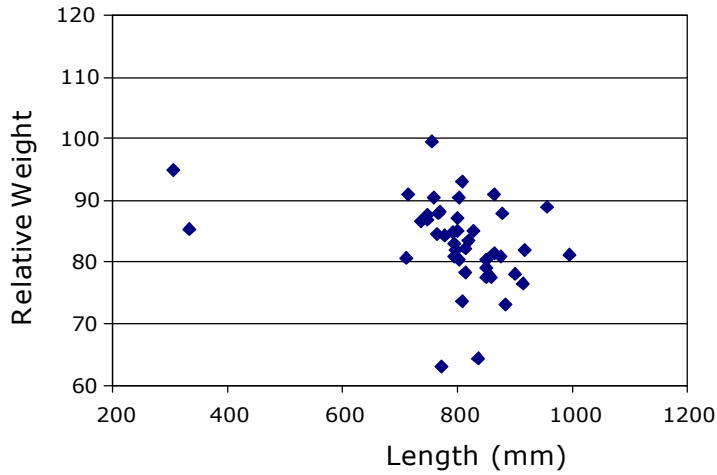


Figure 2. Relative weights vs. length of tiger muskie captured at Bluewater Reservoir (September 14-16, 2015).

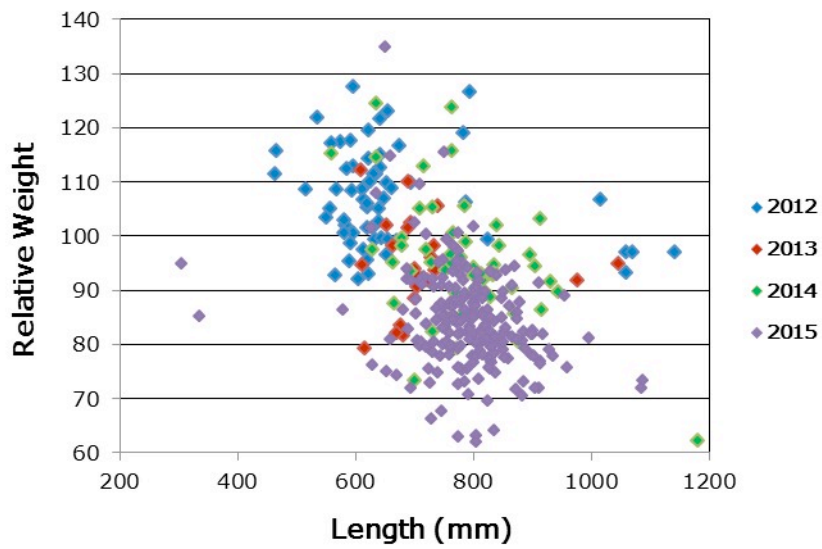


Figure 3. Annual comparison of relative weights vs. length of tiger muskie captured at Bluewater Reservoir during surveys conducted between 2012 and 2015.

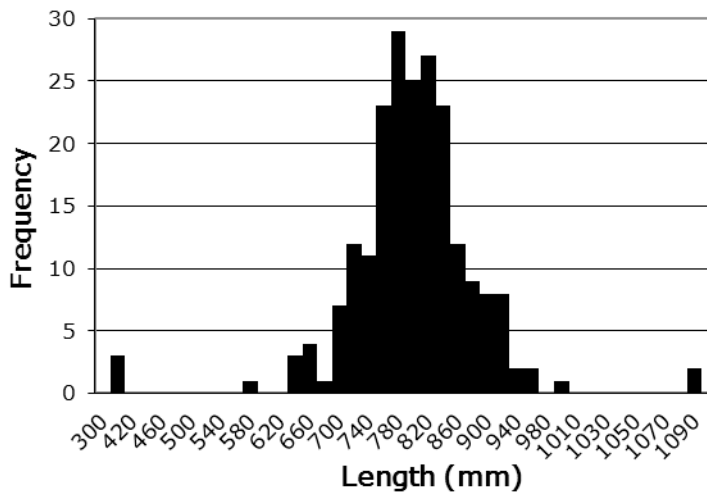


Figure 4. Length frequency histogram of tiger muskie captured at Bluewater Reservoir in 2015.

Table 1. Tiger muskie population estimates at Bluewater Reservoir 2013-2014.

Year	Population Estimate	Reservoir Level (Surface Acres)	Fish per Surface Acre
2013	8,834	252	35
2014	7,168	280	26
2015	3,486	236	15

The apparent decrease in density of tiger muskie prompted stocking catchable size (> 8") Rainbow Trout which resumed at Bluewater Reservoir in October 2015. Stocking Rainbow Trout provides angling opportunity in addition to the popular tiger muskie fishery. Current management objectives include maintaining both Rainbow Trout and tiger muskie populations at sustainable levels while controlling undesired fish species. Achieving these objectives will involve continuing annual fish population surveys and using survey results to adjust management strategies accordingly.