



## Upper Bushman Lake

Oakland County, T4N R9E Sec 3  
Clinton River Watershed, last surveyed 2011

### Management Plan

Based on

Status of the Fishery Resource Report 2011-119

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#### Objectives:

Based on a 2011 fish survey, Upper Bushman Lake contains a unique fish community that exhibits characteristics (high catch rates, mature age structure, and size structure skewed towards large fish) of an unexploited population. Catch rates were 4-7 times higher for pumpkinseeds, 2-3 times higher for largemouth bass, and 2-4 times higher for northern pike, relative to mean catch rates in other lakes in the management unit. Growth rates were above average for older bluegills, younger largemouth bass, and all pumpkinseeds, and average for northern pike. Bluegill were evaluated using Schneider's Index, which is a relative measure of the quality of bluegill size in a lake. The bluegills in Upper Bushman Lake scored just shy of a perfect score and had the highest score Schneider's Index of any lake in the management unit. Largemouth bass averaged an impressive 15.8 inches and northern pike averaged 23.2 inches. Age-1 to age-13 largemouth bass were represented in the catch, with almost one-quarter of the catch made up of age-10 and older largemouth bass. The management objective for Upper Bushman Lake is to maintain the high quality fishery in this relatively small lake.

#### Proposed Management Action:

Catch-and-release fishing is recommended to maintain higher quality angling opportunities at Upper Bushman Lake. Above average catch rates, abundance of older fish, and abundance of large fish are reflective of populations with low exploitation. When unexploited populations are opened to fishing, length and age frequency distributions typically shift toward smaller and younger fish, and total mortality increases as a result of increased fishing mortality. Restrictive fishing regulations on Upper Bushman Lake will provide diverse public fishing opportunities by managing for quality fishing which includes maximizing the size of fish and the subsequent catch of large fish. This would make Upper Bushman Lake the first public quality non-trout fishing lake in Lake Erie Management Unit.

In addition to the biological potential to support a high quality fishery (high catch rates and large-sized fish), there are other considerations to list Upper Bushman Lake as a quality non-trout fishing lake. First, the shoreline of the lake has extensive wetlands that ring the lake, making it inaccessible to shore anglers. This creates two advantages, 1) limiting access which aids in enforcement; and 2) provides an "up-north" feel to the lake. Second, visual observations indicate limited spawning habitat for sunfish and bass. With no fishing pressure, these species have had good production. However, allowing fishing under standard bag limits opens the potential to overharvest. This would be a detriment to the lake because the presence of large fish is more important than just providing good fishing opportunities. Maintaining an adequate number of large predators provides ecological balance to the lake.

Oakland County Parks manages Upper Bushman Lake within Independence Oaks-North County Park. Management goals for the Upper Bushman Lake property include allowing visitors to enjoy the property for non-motorized, passive recreational activities. The property provides excellent opportunities for hiking, birding, non-motorized boating, canoeing, photography, and natural resources education. Oakland County Parks is supportive of the proposed catch-and-release regulations and have facilitated discussions with the public to conclude that there is support for this order.

#### Expected Results:

The goal of the catch-and-release regulation is to maximize the size of fish and the subsequent catch of large fish. The reason for the high quality fishery that was observed in the spring 2011 fish survey was due to a lack of fishing pressure. As unexploited lakes are opened to fishing, length and age frequencies typically shift to smaller and younger fish, as total mortality increases due to increased fishing mortality. Upper Bushman Lake was opened to the public on May 28, 2011 and statewide fishing regulations apply. The request to manage Upper Bushman Lake as a Quality Non-Trout Fishing Lake would go into place on April 1, 2012 at the earliest. Therefore, the lake will be open to harvest for approximately 11 months and will likely result in some reduction in abundance and average size of fish. However, access is limited to the lake which will likely limit the amount of harvest. In addition, the survey results indicate that the lake has the biological potential to return to pre-harvest conditions.

#### Evaluation Plan:

A general fish survey should be completed in spring 2017 to evaluate the effects of the regulation change. Growth rates, catch rates, size structure and age structure will be compared between surveys to evaluate if the regulation change is working as intended.