

CARP CONTROL - Tagging for Population Estimates with Volunteers

Purpose

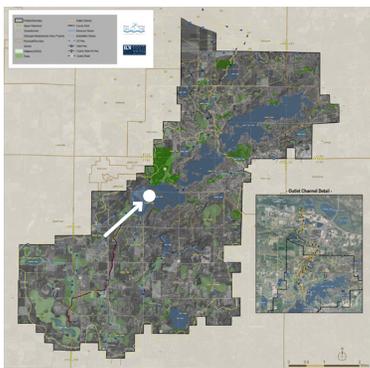
The Prior Lake – Spring Lake Watershed District (District) has a goal of improving and maintaining the water quality of the lakes within the District, including Spring, Upper Prior, Lower Prior, Fish, and Buck lakes. This goal encompasses both protection and enhancement of the native vegetative community, and improving concentrations of chemical and physical parameters, such as total phosphorus. Management of carp is integral to both objectives.



Michael Majeski (EOR) with carp and Prior Lake-Savage Area Schools students.

Goal Setting

Recent research at the University of Minnesota indicates that carp concentrations of 100 lb/acre may allow for significant impact to the native vegetation community, and that 30 lb/acre may be a more appropriate management target (Bajer, Sullivan, & Sorenson, 2009). Previous District studies identified 100 lb/acre as a potential goal. If the concentration of carp in the system is greater than 100 lb/acre, carp are almost certainly causing local impacts and require management. If the concentration is lower than 30 lb/acre, the District will focus on determining the potential for sharp increases in population, and not focus on direct management actions.



Weighing.



Tagging.



Tagged and clipped.

Scoping

Concentration can be determined through two separate actions – tagging of carp, and later carp re-capture. By comparing the ratio of tagged to non-tagged carp in the second catch with the number of carp that were tagged in the initial catch, a population estimate can be made. To build a long term dataset, these actions would need to be repeated over some interval. The District plans to capture and tag carp every year for the first three years, and survey without re-tagging subsequent years. Other actions include compilation of carp sightings and visual inspection of spawning routes during spawning season.

Field Work

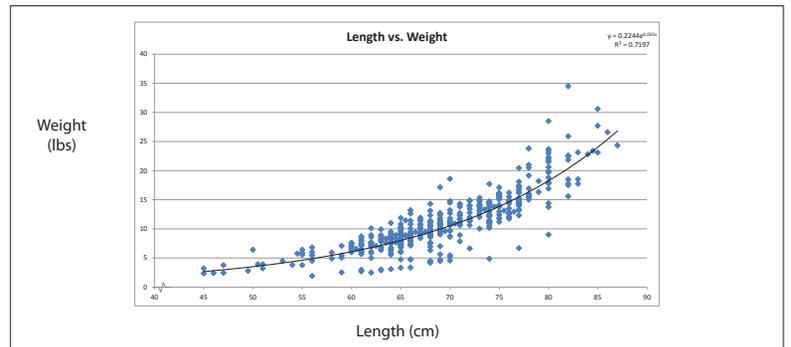
Keys to the success of the carp tagging effort were working with volunteers, visiting tagging efforts conducted by the U of M's Peter Sorensen, and working with a knowledgeable commercial fisherman. Students from the local school district, staff from EOR, and two U of M students volunteered their time to weigh and tag fish, which allowed us to process many more fish than would otherwise have been possible. Observing Professor Sorensen at work before conducting the tagging helped us to identify needs that were not immediately obvious, such as bringing extra buckets for moving fish and bringing appropriate cold weather apparel and field equipment; his insight was also invaluable in ensuring that our procedures were scientifically and statistically valid.



Seining.



Don Geyer (commercial fisherman) and Nat Kale (PLSLWD).



Next Steps

During our February 2012 seining we successfully tagged 1,752 carp, but our attempt to recapture in early March for an initial population estimate was unsuccessful due to weather conditions and seining problems. In 2013 our focus will be on recapturing carp in Spring Lake to establish an initial population estimate.

Once the current carp concentration and reproductive potential is known, management of population becomes the focus. If carp concentrations and proliferation potential are beneath established thresholds, such as 30 lb/acre, then minimal management is required. If present concentrations or proliferation potential are high, for example over 100 lb/acre, then more aggressive action will be required.

Bajer, P. G., Sullivan, G., & Sorensen, P. W. (2009, 10 1). Effects of a rapidly increasing population of common carp on vegetative cover and waterfowl in a recently restored Midwestern shallow lake. *Hydrobiologia*, 632(1), pp. 235-245.