

\*Press Release from Joint Lake Committee\*

On December 2, 2009, Spicer Group and JFNew met with Coloma and Watervliet Township officials to share data and information pertaining to recent aquatic vegetative surveys, bottom sediment and substrate analysis, characterization of the lake bottom, and methods for controlling aquatic nuisance weeds and moreover the release of phosphorous into the water column of the lake. Phosphorous is inherent in the soils of Michigan, but has also been entering Paw Paw Lake for hundreds of years through overland runoff (from riparian properties) and surface water runoff (drains and watercourses carrying sediment from non-riparian properties).

JFNew collected 21 representative bottom sediment samples and had them analyzed for Total Phosphorous. Nearly all of the bottom sediment samples showed high levels of phosphorous; phosphorous levels ranged from .023 to 58 parts per billion (ppb) with the majority being above 0.980 ppb. These levels are high but not uncommon in lakes having one or more sources of surface water input that are coming from rural and agricultural areas.

This information tells us that there is a large source of phosphorous in the sediments that can be made available to nuisance weeds if oxygen levels at the bottom of the lake goes anoxic (without oxygen). If oxygen is present, then phosphorous will stay bound into the bottom substrates. Unfortunately, there are times of the year that the bottom of Paw Paw Lake goes anoxic and phosphorous is released into the water column and made available to plants to use.

Review of the Water Quality Studies of Big Paw Paw Lake conducted and reported by Dr. Wallace Fusiler (2004-2008) has shown an increase in Total Phosphorous from 2004 to 2008 and in the latter year exceeding 20 ug/l in all samples taken from April and August of 2008. Typically, lakes having phosphorous levels above 20 ug/l are considered to be eutrophic lakes. These high levels of phosphorous in the water column and in the sediments, coupled with anoxic conditions which releases more phosphorous into the water column presents concerns for controlling aquatic nuisance weeds which thrive in these phosphorous abundant waters.

Several methods were presented, discussed and will be further assessed to provide township officials a cost benefit analysis of the various methods/alternatives for controlling the input and/or release of phosphorous into the lake. Methods that will be further assessed and placed into a cost-benefit matrix for ease of comparison, includes, but may not be limited to: aquatic weed harvesting, alum treatments (bind up phosphorous in the sediments), aeration (keep bottom of lake

oxygenated to prevent phosphorous release from sediments), herbicides (of varying types and concentrations), dredging, promoting restrictive fertilizer/riparian buffer ordinances, and limiting the input of phosphorous from various watercourses/drains that discharge into the lake.

In addition to testing for phosphorous, 7 sediment samples were also tested for heavy metals. These samples were analyzed to determine if the dredged spoils were above or below the State of Michigan's default level for dredged spoil disposal. All 7 of these samples were determined to have at least 4 heavy metals each above the default levels and therefore must be disposed of at (1) a licensed Type II landfill or

(2) at a property that can be capped with inert (clean) fill material and have a restrictive covenant placed on the title to the property.

Existing levels of the same heavy metals on possible disposal sites will be assessed and discussed with MDEQ staff to determine if dredged spoils having lower heavy metal levels than proposed disposal sites (e.g. agricultural field) may be utilized without having to cap or place restrictive covenants on the property.

Currently, Spicer and JFNew are working on assessing the various alternatives and methods for controlling phosphorous and aquatic nuisance weeds in the lake to aid in the development of an overall lake management plan. An early spring meeting is planned to present a report and costs-analysis matrix of the alternatives assessed.