

The background of the slide is a light blue surface covered with numerous small, realistic water droplets of varying sizes. The droplets have highlights and shadows, giving them a three-dimensional appearance.

LAKE WAUSAU EVALUATION PROJECT

Lake Wausau

- An approximate 2,000 acre impoundment
- Maximum depth of 28 feet and boasts incredible fishery (walleye, northern pike, musky, small and large mouth bass, crappies, and bluegills)
- Hosts national and international kayak racing
- Serves as a power source, recreational area, and a study site
- 11 Public Parks with access to the Lake
- 7 Boat Landings and 82 designated vehicle w/ trailer parking spots
- Centered within our four municipal districts (City of Wausau, Town of Rib Mountain, City of Schofield, and Village of Rothschild)

Lake Wausau Association

- Formed for the purpose of protecting, maintaining, and enhancing recreational and economic values of Lake Wausau and its surroundings
- 501(c)(3) Organization
- Governed by a nine (9) member Board of Directors
- Originally formed May 24, 1988
 - Active in eradicating purple loosestrife
 - Met objectives and went dormant a decade ago

Lake Wausau Association

- Reorganized February 2011 because of citizen concerns of the deteriorating water quality
 - Membership is approximately 100 households and consists of riparian and non-riparian owners who share an interest in Lake Wausau
 - Website developed to communicate news, events and progress of goals
 - By-Laws revised to meet current standards and eligibility requirements for grant funding
 - Last 15 months heavy focus on identifying, prioritizing and formalizing a *Lake Wausau Evaluation Project*

Citizen Concerns Considered

- Aesthetic Appeal

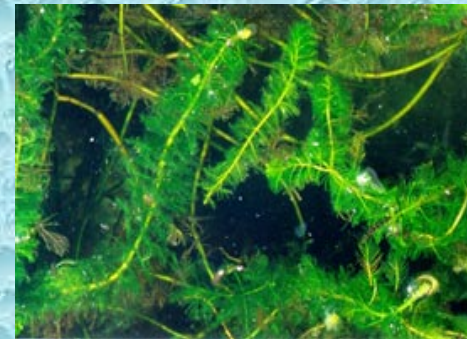
- Weed & algae infested water (bad odor)



- » Purple loosestrife

- » Curly-leaf pondweed (discovered on Lake Wausau in 1981)

- » Eurasian watermilfoil (discovered on Lake Wausau in 1992)



- If untreated, these invasive species can overtake aquatic plant species creating major ecosystem health problems within the lake

- Proactive vs. Reactive

- McClearly Bridge - 14,600 vehicles cross daily (2010)

Citizen Concerns Considered

- Public Health Issues / Concerns
 - Bacteria
 - Blue green algae reported
- Recreational Concerns
 - Navigation issues



07/12/2009





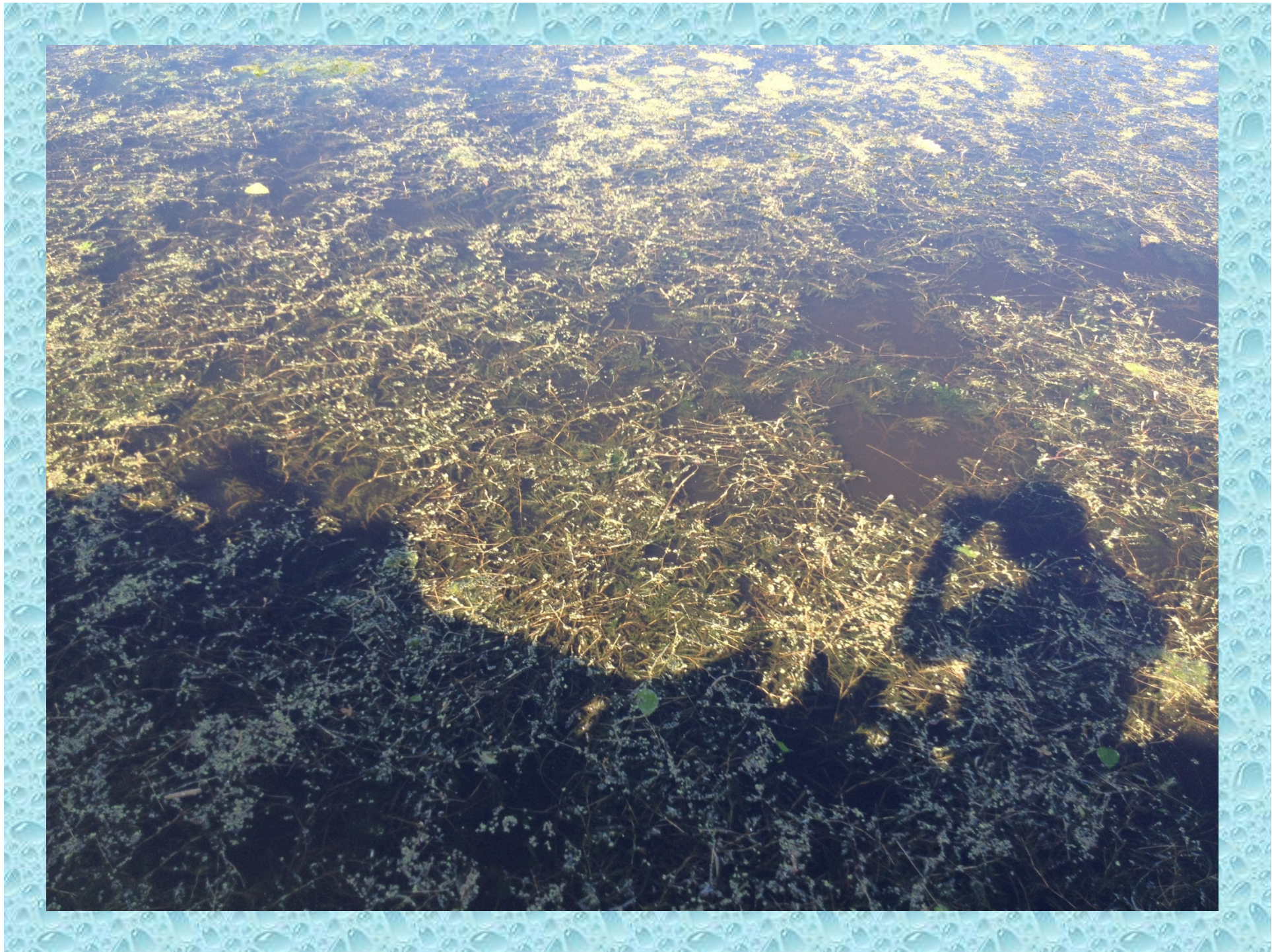


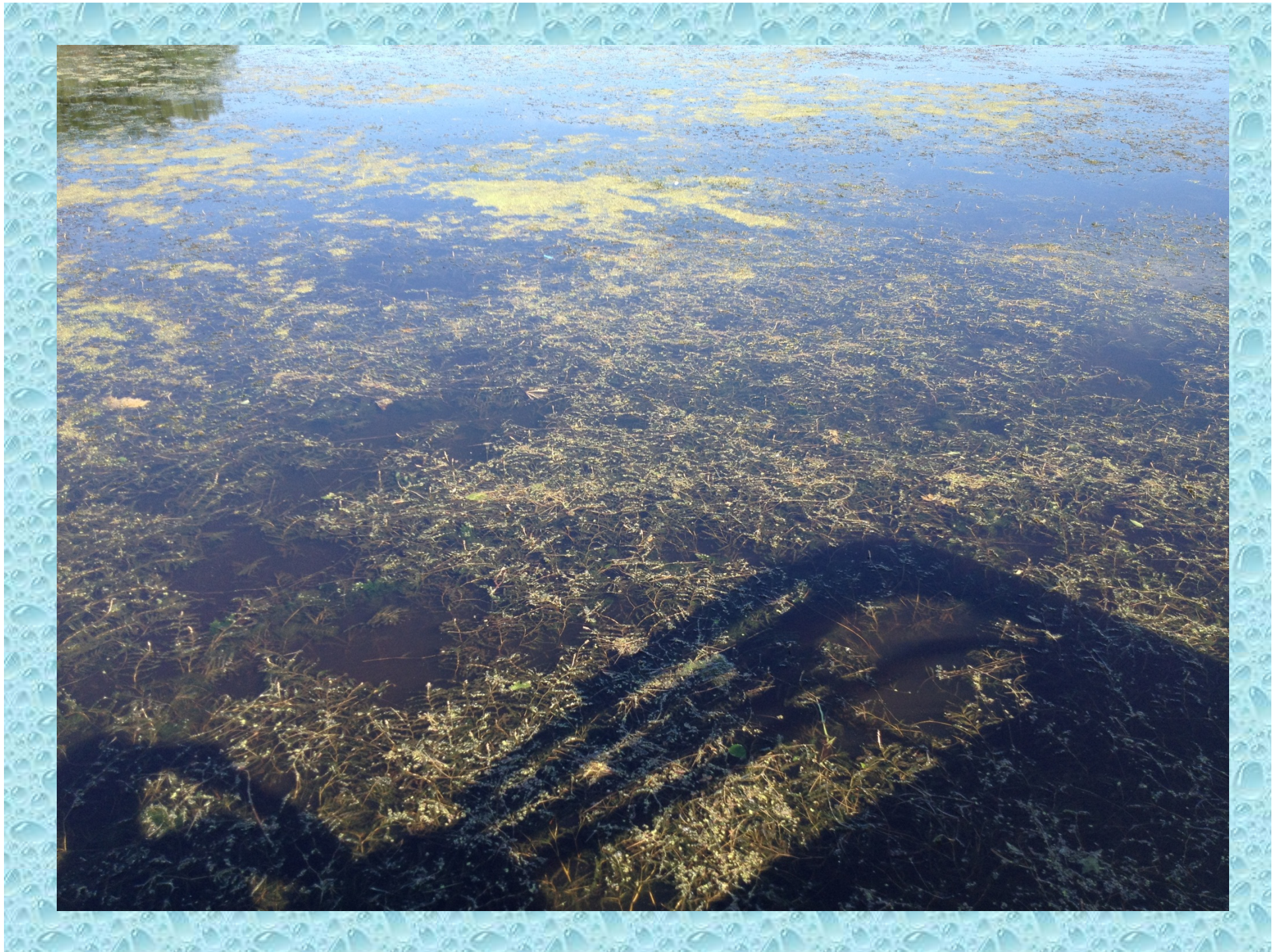














Lake Wausau Evaluation Project

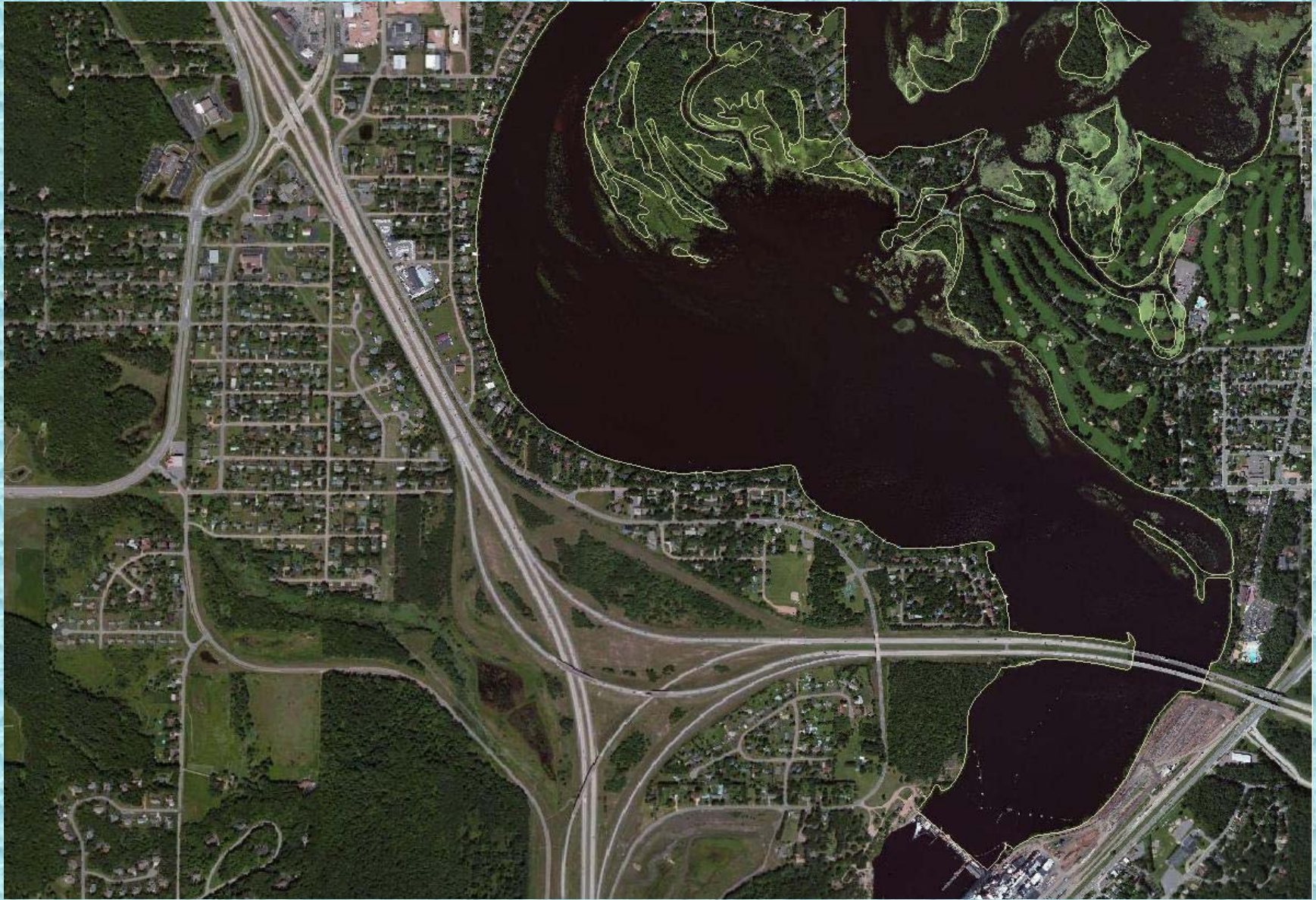
- LWA is pleased to partner with our municipalities in the evaluation project
- The project is the result of community efforts and involvement
- A comprehensive evaluation is critical to improving the conditions of Lake Wausau
- Contracted with UW Stevens Point and the Army Corp of Engineers to conduct the research
- Received state grant funds from the WI DNR and federal funds toward the cost of the project
- Evaluation will be conducted in 3 phases spanning over a 2 – 3 year period, beginning spring of 2012
- Weed and Algae Control Committee will serve as the planning committee for this project under the Board of Director's supervision

Lake Wausau

- Boundaries of the evaluation are Wausau dam, Schofield dam, Domtar dam, HWY 51 Rib River bridge



Southern Area Of Lake Wausau



Central Area Of Lake Wausau



Northern Area Of Lake Wausau



Project Research Tasks

- Hydrodynamic Modeling (Task 1) and Dye Trace Studies (Task 2)
 - Done by US Army Corp of Engineers - Phases 1, 2, & 3
 - Critical areas are the backwaters and side channels
 - Critical habitat for spawning and young fish
 - Deteriorated connection to the Rib River
 - Extensive aquatic plant beds act as barriers to water exchange from the Eau Claire River
 - Lack of flushing and water exchange
 - Stagnant conditions under aquatic plant beds
 - Poor water quality and dissolved oxygen results in poor habitat
 - Analysis of water movement and flow distribution to assess the effect of various alternatives on hydrological connectivity and water quality in the lake

Project Research Tasks

- Hydrodynamic Modeling (Task 1) and Dye Trace Studies (Task 2) - Continued
 - Hydrodynamic Modeling
 - Conducted Summer 2012 through Fall 2012
 - Final reports and models submitted November 2012
 - Dye Trace Studies
 - Field: Summer 2012
 - Spreadsheet: Fall 2012
 - Temperature and concentration data will be compiled and delivered for hydrodynamic model calibration
 - Report: Winter 2012
 - Report will describe water movement and circulation in the Eau Claire River embayment of Lake Wausau

Project Research Tasks

- Aquatic Macrophyte Survey and Aquatic Plant Management Plan (Task 3)
 - Done by UWSP Center for Watershed Science and Education (CWSE), Nancy Turyk and Jen McNelly – Phase 1
 - Point interception surveys conducted to identify current locations of aquatic plant beds, diversity and health of the plant community, exotic/nuisance and unique species
 - Conducted in June targeting curly-leaf pondweed
 - Conducted again in late summer to survey the plant community for composition, density, and spatial distribution
 - Necessary for fishery management, critical habitat designations, and hydraulic modeling

Project Research Tasks

- Aquatic Macrophyte Survey and Aquatic Plant Management Plan (Task 3) - Continued
 - Survey – Summer 2012
 - Report – Winter 2012
 - Statistical analysis of the plant community
 - Maps of sampling locations
 - Dominant species
 - Non-native and sensitive species
 - Discussion and recommendations
 - Plan – Spring 2013

Project Research Tasks

- Bathymetry and In-Lake Habitat (Task 4)
 - Done by UWSP, Ron Crunkilton and Christine Koeller – Phase 1
 - Evaluate depth distribution to monitor change over time
 - Current map dates back to 1973
 - Changes to the shoreline and depth distribution caused by heavy flooding
 - Critical to hydrodynamic modeling, mapping accuracy, identification of areas that are filling in, and scouring resulting in susceptible shoreline loss
 - Map In-Lake Habitat to identify critical habitat areas/information
 - Digitally created with side-scan sonar technology
 - Results show attributes important to fishery (i.e., substrate, aquatic plant beds, coarse woody habitat, etc.)
 - Tool for DNR to designate critical habitat areas in the lake
 - Identify good or absent spawning habitat and habitat required for other aquatic organisms
 - Useful for protection and management to improve conditions (tool for tracking and monitoring, layer sampling for future studies)
 - Community resource
 - Business Bureaus
 - Access Points (boat launches, etc.)
 - Navigation

Project Research Tasks

- Bathymetry and In-Lake Habitat (Task 4) - Continued
 - Bathymetric Map
 - Data Collection: Spring 2012 – Summer 2012
 - Data analysis: Ongoing
 - Map preparation: Spring 2013
 - In-Lake Habitat Map
 - Data collection: Spring 2013 – Summer 2013
 - Data analysis: Ongoing
 - Map preparation: Fall 2013
 - Up to 10,000 printed map packages (17" x 11" on 80lb gloss paper with water resistant overlay)



Lake Wausau

- Point interception sampling grid
- Overview of 90m grid

Project Research Tasks

- Shoreland Habitat Survey (Task 5)
 - Done by UWSP CWSE, Nancy Turyk and Jen McNelly – Phase 3
 - 74 miles of shoreland on the lake will be inventoried to record health of shoreland habitat
 - Depth of vegetative buffer
 - Erosion
 - Direct drainage
 - Outfalls
 - Structures
 - Will be used to evaluate change over time

Project Research Tasks

- Shoreland Habitat Survey (Task 5) - Continued
 - Survey: Summer 2013
 - Report: Winter 2013
 - Spatial data will be mapped, evaluated and included in a report
 - The mapped shoreland attributes and photographs will be made available for use with ArcGIS and could be linked to Google Earth.

Project Research Tasks

- **Social and Economic Values Study (Task 6)**
 - Done by UWSP Center for Land Use Education (CLUE) – Kristin Floress, Aaron Thompson, Melinda Vokoun
 - Community Capacity Analysis - evaluate existing community capacity and coordination of management efforts related to the lake
 - Conduct assessment of previous management decisions to understand influences of successful management efforts
 - Data collection: Spring 2012 – Spring 2013
 - Data collection content analysis: Spring 2012 - Fall 2012
 - Data analysis: Ongoing
 - Final report: Spring 2013
 - » Water governance report detailing current plans, ordinances, and programs that affect Lake Wausau

Project Research Tasks

- Social and Economic Values Study (Task 6)
 - Continued
 - Social and Economic Values - Identify different attitudes held by the general public toward the lake
 - Includes exploring the importance of economic variables among survey respondents (i.e., direct production value such as energy production and recreational values, and indirect amenity values, etc.)
 - Survey: Fall 2012 – Fall 2014
 - Data collection: Oral history (recording & transcriptions) – ongoing
 - Survey Development: Fall 2012 – Spring 2013
 - Survey Implementation: Summer 2013
 - Data analysis: Summer 2013 – Fall 2014
 - Final report of survey results: Fall 2014

Project Research Tasks

- **Develop Lake Management Plan (Task 7)**
 - Done by UWSP CWSE and CLUE – Phase 3
 - Provide direction for the implementation needed to achieve goals related to water quality/hydrology, recreation, shoreland management, fishery management, communication, and water governance
 - The Plan will identify the steps that are required to achieve the goals and the parties that are responsible for the action steps.
 - Ideally comprised of citizens, municipality representatives, agency staff
 - The Plan will be developed during a series of 4-5 public forums with assistance from the researchers, municipalities, and other technical staff
 - Deliverable is to be determined following completion of Tasks 1 - 6

Sharing of Results

- Results will be shared with the community throughout the project and culminating with a public meeting outlining the contents of the lake management plan
- Technical meetings will take place over the first year on a quarterly basis with board members and municipal representatives
- Adoption of the lake management plan will be done through a public meeting process

Project Funding

- Total estimated cost: \$166,000
- State grants anticipated: \$66,500
 - \$25,000 received through first grant application submitted February 1, 2012
 - Next grant application due August 1, 2012
- Federal grant received: \$65,000
- In-Kind Services estimated: \$3,000 minimum
- Local Cash: \$33,000
 - City of Wausau, City of Schofield, Village of Rothschild, and Town of Rib Mountain all contributed \$2,500 (total of \$10,000)
 - LWA contribution is \$6,500
 - County of Marathon match is \$16,500

Lake Management Plan Implementation

- Funding for implementation will be necessary and could be substantial
- LWA intends to partner with...
 - Local Foundations
 - Surrounding municipalities
 - Businesses and other local organizations that share in our missions
 - Neighboring impoundment groups
 - Big Eau Pleine Citizen Organization (BEPCO)
 - Petenwell and Castle Rock Stewards (PACRS)
- LWA is eligible to apply for a Lake Protection Grant
 - Awards may fund up to 75% of project costs
 - Maximum grant amount is \$200,000
 - Grant application deadline is annually on May 1
 - DNR must review and approve the lake management plan and the recommendations for which funding is requested

Long-Term Community Benefits

- Improved aesthetics
- Increased boat launch fee revenue
- Increased tourism opportunities
- Increased spending to local businesses
- Increased property values
- Improved recreation
- Improved fish habitat

What We Need...

- Continued support and involvement from community members who value Lake Wausau as a significant resource to our community
- Volunteers to help with in-kind services
- Membership growth to help us sustain our activities and achieve our goals

There is Strength in Numbers....