Cloverleaf Lakes
Long-Range Comprehensive Lake Management Plan

FINDINGS AND RECOMMENDATIONS

AQUATIC PLANTS GROUP

Finding	Recommendation	Implementation
Invasion of unwanted species puts the long-term health of the lakes at-risk.	Form a permanent Action Committee to provide a proactive management approach for monitoring and controlling invasive species.	Management strategies: 1. Monitor annually. 2. Educate residents. 3. Treat invasive species. 4. Identify sustainable funding to support financial demands of treatment program.

INVASIVE AND NUISANCE SPECIES GROUP

Findings	Recommendations	Implementation
1. **Zebra mussels** have been discovered in Shawano Lake. Boaters could easily introduce them into our Lakes.	Continue and upgrade the boat monitoring at the boat launch by: 1. Hiring part time coordinator; 2. Continue use of trained volunteers; 3. Provide materials at boat launch to encourage boats to wash before entering Cloverleaf Lakes if coming from an infested lake; 4. Monitor zebra mussel infestation annually; 5. Annually update written materials at boat launch to include warnings of newly infested lakes; 6. Include information in Welcome Wagon materials.	1. Apply for DNR Invasive Species Grant to fund part time college student as the program coordinator. 2. Set up a washing point for boats coming into lakes. 3. Continue to encourage local volunteers to help. 4. Determine proper avenue of response to authorities if an infested boat is launched into Cloverleaf Lakes.

2. **Rusty Crayfish** have been found in Cloverleaf Lakes.	Initiate an aggressive program combining trapping large crayfish and having bass and perch prey on smaller crayfish.	1. Monitor annually. 2. Buy traps and encourage trapping by residents. 3. Do plant studies to look for effect of rusties. 4. Encourage catch/release of fish that feed on rusties. 5. As divers check for EMW also check for rusties. 6. Remove rocks that are serving as spawning beds.
3. **Gypsy moths** have been found in the Cloverleaf Lakes area during 2003 and 2004. The moths produce egg masses that hatch into caterpillars. The caterpillars defoliate trees and produce a sticky mess.	Ask the Belle Plaine gypsy moth coordinator to verify that caterpillars are gypsy moths. If so, have him recommend treatment methods.	Educate residents about how to get rid of egg masses, caterpillars, and adult gypsy moths.
4. A **frog study** in spring 2005 found that every species of frog and toad living in Wisconsin are found in and around Cloverleaf Lakes. Frogs are an "indicator species" that give hints about the health of the environment.	Using this study as a baseline, replicate the study periodically to determine if there is an increase or decrease in frog population.	Ask a biology or environmental sciences student or college class to conduct a similar survey duplicating the conditions, then compare the results.
5**. Mosquitoes**: Our lakes and surrounding marshland produce mosquitoes that, depending on their numbers, can negatively affect citizen activity, especially children. Mosquitoes are also carriers of disease.	1. Provide residents with information on how to protect themselves and guests from mosquitoes. 2. Develop a treatment methodology dependent on the level of the threat of mosquito-borne diseases.	1. Watch for diseases in birds and mosquitoes. 2. Eliminate large and small breeding sites. 3. Educate about personal measures to prevent or reduce exposure. 4. Spray to control infestation if adult mosquito population is deemed a serious threat. 5. Encourage residents to install houses for insect-eating birds. 6. Research the potential of the newly introduced propane mosquito traps.

6. The local population of **Whitetail Deer** has expanded to become a nuisance for lake residents.	Inform lake residents of deer-proofing landscapes and deer-resistant landscape plants.	See complete recommendation for implementation strategies.
7. **Muskrats** make their homes in dens along shorelines, which can cause considerable damage and erosion to lake property.	Muskrat population should be controlled through shoreline protection and trapping.	1. Continue to pay $5 bounty for trapped muskrats. 2. Continue to hire trapper to do wide coverage trapping toward end of open water season. 3. Continue to apply to DNR for annual permit to trap or destroy muskrats causing damage. 4. Maintain list of area trappers. 5. Give residents information about shoreline protection.
8. As resident **geese** populations increase, their populations have developed into infected neighborhoods with destroyed natural habitats, personal danger from aggressive/protective mother geese and health risks form mass droppings in the water systems and to the humans around them.	• Educate residents so they do not feed the geese or provide a safe environment that will encourage them to stay. • Suggest methods for landowners to control geese population growth.	See complete recommendation for strategies to reduce geese population.

RECREATIONAL USE GROUP

Findings	Recommendations	Implementation
1. Biological Indicators: Cloverleaf Lakes is a healthy biological system. Unless indicators change over time, no additional constraints should be put on recreational use of lakes.	Develop a measurable set of biological indicators. Establish a baseline and a schedule of regular measurements.	1. Develop indicators. 2. Establish baseline measures of indicators and measurement time frames. 3. Monitor for changes in indicators; determine cause of change.

2. Education & Marketing: Residents are not all aware of lake ordinances and DNR requirements. Increased compliance would maintain peace and tranquility.	Develop an educational/ marketing approach about: • Concept of public lake • Concept of carrying capacity • Slow no-wake ordinance in channel • Water levels • Fees for boat launch • Boating rules • Night lighting	1. Establish a marketing/education committee. 2. Ask committee to develop an educational project to address issues identified by this team and the others.
3. Signage: Signage is unclear which leads to ambiguity about no-wake rules.	Check signage for ambiguity and make adjustments.	Appoint a sub-committee to review signage and recommend changes.
4. Boat Monitor Data: Boat monitoring data is valuable; however, it remains in raw form. It is not possible to analyze patterns and trends.	Develop a database system that includes all boat monitoring data, including the past two years.	1. Set up database system. 2. Enter past data. 3. Regularly enter data during boating season. 4. Train a local volunteer to extrapolate data as needed.
5. Boat Safety Course: Boat safety courses will increase awareness of boating rules.	1. Offer local boating course for children. 2. Promote courses being offered in the region.	1. Determine feasibility of children's boating course on Cloverleaf Lakes. 2. Promote other courses in newsletter.
6. Water Trail: Many residents and their guests are unaware of our lake "treasures."	Develop a "seek and find" water trail document.	Education/Marketing Committee asked to consider develop of document that could be used with residents and their guests as well as in new resident's welcome packets.
7. Ice Fishing Garbage: Ice fishermen leave debris which ends up entering the lakes.	Post signage at boat launch reminding ice fishermen to remove their trash. Post reminders on shanties.	Make a sign for boat launch and post reminders on shanties.

8. Legislative Observer: CLPA needs to stay informed about legislative issues affecting the lakes. It is also critical that the CLPA have a voice at hearings.	Appoint a person to represent CLPA at legislative hearings and other meetings.	Appoint a legislative liaison who makes periodic reports to CLPA.

WATERSHED ISSUES GROUP

Findings	Recommendations	Implementation
1. Nutrients: Nutrients often applied to lawns/gardens, as well as those found in grass clippings and leaves, find their way into lake causing nuisance algae blooms or dense mats of vegetation.	1. Encourage elimination of phosphorous-containing fertilizers. 2. Consider town ordinance banning phosphorous fertilizers. 3. Encourage vegetated buffers. 4. Educate about ordinances re tree/shrubbery cutting. 5. Encourage use of rain gardens and rain barrels. 6. Educate on proper use of fertilizer. 7. Educate on proper disposal of yard waste.	1. Hold a "lake fair" with materials to educate. 2. Develop directory with information on permits, ordinances, resources. 3. Encourage use of rain gardens through brochures. 4. Furnish brochures describing proper use of fertilizers. 5. Furnish directions to the burning and compost site.
2. Petroleum Products: These products are a problem when improperly stored, used, and disposed of near or in lakes.	1. Identify and distribute information on proper disposal locations and techniques. 2. Encourage compliance with storage tank regulations.	Distribute information sheets regarding the regulations and disposal methods to lake residents.
3. Sediment: Removal of natural shoreline vegetation and increased runoff contribute to the flow of sediment into lakes.	1. Educate residents on impacts of sediments. 2. Encourage use of vegetated buffers to decrease runoff. 3. Encourage use of other devices (ponds, porous pavers) to reduce runoff. 4. Promote proper types and amounts of vegetation.	Make publications available to all lake property owners.

	5. Promote best management practices when earth-disturbing activities are done.	
4. Hazardous Chemicals: Household and non-household (road salt) chemicals can impact the lakes through improper storage, use, and disposal.	1. Promote county's Clean Sweep Program. 2. Encourage Shawano County to establish a more local Clean Sweep collection point. 3. Start a healthy driveway campaign to promote alternatives to using road salt. 4. Ask Shawano Co. Highway Dept if an alternative to road salt is feasible.	Use newsletter, e-mail, and brochures to educate about alternatives to road salt and times and places of Clean Sweep Program. Establish a committee to have a dialogue with Shawano County officials re Clean Sweep Program and alternatives to road salt.
General: Testing wells and soil samples would provide residents with evidence of the need to abide by ordinances and regulations.	1. Develop a directory with all information on permits, violations, enforcement, and information numbers. 2. Implement well testing program. Establish baseline data and subsequent testing. 3. Implement soil testing programs. Establish baseline data and subsequent testing. 4. Enforce existing zoning regulations regarding land and brush clearing around lakes. 5. Promote use of various types of birdhouses to attract birds that are insect feeders.	1. Develop an action committee to produce directory. 2. Contact Center for Watershed Science and Education for well testing. 3. Soil testing can be handled by taking soil samples to the Soil and Forage Center. 4. Printed reminders of zoning laws regarding land and brush clearing could be included in packets and newsletters. 5. Packets and lake fairs could include instructions on how to build birdhouses.

WATER QUALITY AND HABITAT GROUP

Findings	Recommendations	Implementation
Carp: There is a growing population of carp in Cloverleaf Lakes. Since they have no predators, they multiply wildly, completely displacing native species, destroying native vegetation, increasing water turbidity, lowering oxygen levels, and starving out largemouth bass.	1. Continue to observe the carp situation in early spring when they start to spawn. 2. Encourage bow hunters to shoot carp and see if carp shoots could be done in Cloverleaf Lakes. 3. Contact DNR to obtain Carp census.	1. Get in touch with bow hunter groups hat do carp shoots. 2. Offer a bounty for carp. 3. Encourage fishing for carp. 4. Publicize problem and gain interest in eliminating carp. 5. Monitor regularly so elimination can occur when needed.
Sediment: The shallow nature of Pine and Grass Lakes in combination with increasing recreational use, is resulting in reduced water clarity because bottom sediments are being churned up.	Develop a lake use plan for recreational boating that reduces turbidity, such as: 1. Water skiing where water depths are more than 5' 2. Not motoring at full throttle within 150' of shoreline 3. Extend slow-no-wake restricted areas 4. Educate residents and visitors	1. Develop a Recreational Water Use Plan. 2. Establish a long-term working committee to create and establish practices to improve and maintain water clarity. 3. Use newsletters, signage, and brochures to educate users of the lakes.
Phosphorous: Too much phosphorus in lakes leads to excessive plant growth, algae blooms, and poor water clarity.	Develop phosphorus/ nutrient mgt program to address the following long-term issues: 1. Land use planning 2. Public education 3. Protection/restoration of shoreland vegetation & buffer zone areas 4. Stormwater/runoff 5. Lawn/garden care 6. Proper fertilizer 7. Recreational use 8. Lake monitoring	1. Develop strategies to control phosphorus/ nutrient levels. 2. Establish a long-term committee to deal with water quality issues. 3. Galvanize community interest. 4. Monitor phosphorus levels and overall water quality in Cloverleaf Lakes watershed. 5. Identify an entity to manage & regulate water quality issues.