

COMMUNITY ACTION AND COMMUNICATION

Information and education are critical components to the success of this plan. We recognize that there are many ways to get the word out and have identified several modes to inspire people into action.

Goal 5: Citizens, Upper St. Croix Lake Assn, Village of Solon Springs, Town of Solon Springs, and Douglas County work together to manage and protect Upper St. Croix Lake.

Objective 5A: Provide opportunities to learn about lake management in fun and interesting venues.

| Action | Lead Group | Begin/End Dates | Resources |
|---|----------------------------------|-----------------|--|
| Establish demonstration projects in public places with signage (see shoreline section of this document) | To be determined at a later date | | |
| "Garden walk day" organized open-house in back yards to see water and erosion control projects that have been implemented on private property. | USCLA | | |
| Workshops, brochures, newsletters, lake fests and other fun events that involve youth, newspaper articles. | USCLA | | Douglas County Land Conservation Dept. |
| Hands on projects with gifts of native plants for attendance. Multiple stations set up to learn. Involve youth. | To be determined at a later date | | |
| Welcome packets for new landowners around the lake. In addition to information about land management near the lake consider including information about local businesses. | USCLA | | UWEX WDNR Local businesses |

This plan is a "living document". The goals, objectives, and actions contained within this document should be reviewed and updated annually with representatives from Upper St. Croix Lake Association, community members and businesses, Village and Town of Solon Springs, Douglas County, and the Wisconsin Department of Natural Resources.

AQUATIC PLANT COMMUNITY

A healthy native aquatic plant community will provide food and habitat for the fishery and other animals that make up Upper St. Croix Lake's ecosystem. Aquatic plants also help to control the amount of phosphorus that is available for algal growth, help to stabilize the sediments, and reduce the ability for invasive species to become established.

Goal 4: Upper St. Croix Lake will be free of aquatic invasive species.

Objective 4A: Prevent aquatic invasive species (AIS) from entering and/or becoming established in Upper St. Croix Lake.

| Action | Lead Group | Begin/End Dates | Resources |
|--|--|-------------------------|-------------------------|
| Continue Clean Boats/Clean water program at boat landing | USCLA | Spring 2010, April 25th | AIS Coordinator WDNR |
| Continue monitoring for AIS | FOTSCH USCLA Clean Boats/Clean Waters volunteers | Spring 2010, April 25th | AIS Coordinator WDNR |
| Explore sustainable funding options for boat launch monitoring (municipalities, boat launch fees, etc.). | USCLA FOTSCH | ongoing | WDNR USCLA FOTSCH |

Objective 4B: Take action to control aquatic invasive species in the Upper St. Croix Lake ecosystem.

| Action | Lead Group | Begin/End Dates | Resources |
|--|----------------------------------|-----------------|-----------|
| Control purple loosestrife using beetles and hand removal. | To be determined at a later date | | WDNR |
| Investigate control options for rusty crayfish. | USCLA | | WDNR |

| | | | |
|---|-------|---------|---|
| Plant non-invasive trees and shrubs in the shoreland to reduce the direct impact of raindrops which results in greater erosive potential. | USCLA | Ongoing | County Land Conservation Dept. WDNR Forestry Dept. |
|---|-------|---------|---|

Objective 3D: Local and County policies are in place and enforced to ensure shoreland vegetative buffers are established and runoff is managed on shoreland properties.

| Action | Lead Group | Begin/End Dates | Resources |
|--|----------------------------------|-----------------|----------------------|
| Review and understand State and County policies. | USCLA | | County Zoning Office |
| Work with local municipalities to ensure consistency with State and County policies. | To be determined at a later date | | |

Objective 3E: Owners of shoreland properties and municipal board members will be knowledgeable about the purpose of the shoreland zoning ordinance and its content. It is inevitable that there will be changes in land ownership and municipal staff therefore we acknowledge this will be an ongoing process.

| Action | Lead Group | Begin/End Dates | Resources |
|---|------------|-----------------|---|
| Hold workshop about shoreland zoning rules. Partner with CLUE (Lynn Markham). | USCLA | | UWSP Center for Land Use Education (CLUE) |

SHORELANDS

The area where the land meets the water provides essential habitat for many aquatic and terrestrial plants and animals. This is also the area that provides the last chance to reduce runoff and the related soil/particles carried with the runoff before it reaches Upper St. Croix Lake and its tributaries. A healthy vegetated shoreland consists of native flowers, grasses, shrubs, and trees.

Goal 3: Shorelands will be managed to minimize the amount of runoff, filter runoff, and provide habitat.

Objective 3A: Protect/Establish vegetative buffers on all properties around USCL (following state and county shoreland ordinance guidelines). We know we have achieved this goal when 90% of the shoreland has vegetated buffers.

| Action | Lead Group | Begin/End Dates | Resources |
|--|----------------------------------|-----------------|---|
| Develop baseline measures/photos/maps of vegetative buffers around USCL. | To be determined at a later date | | |
| Provide information to shoreland property owners in association newsletters. | USCLA | ongoing | UWEX County Land Conservation Dept. |
| Establish demonstration sites with signs. Involve youth. | To be determined at a later date | | |
| Obtain funding to help landowners re-establish vegetative buffers. Record on the deed. | To be determined at a later date | | County Land Conservation Dept. |

Objective 3B: Increase the amount of woody habitat in Upper St. Croix Lake.

| Action | Lead Group | Begin/End Dates | Resources |
|--|----------------------------------|-----------------|--|
| Leave woody habitat in place when trees fall, etc. | To be determined at a later date | | |
| Identify a group of landowners that are willing to add woody habitat that extends from their shoreline into the water. | To be determined at a later date | | WDNR – Fishery Biologist (Scott Toshner) |

Objective 3C: Paths that provide access to the lake should be designed to minimize direct runoff to the lake. (Examples may include using a serpentine design and materials that are not easily eroded and/or establishing tall vegetation (grasses and forbs) adjacent to the path to reduce direct runoff to the lake and to help filter runoff.)

| Action | Lead Group | Begin/End Dates | Resources |
|---|----------------------------------|-----------------|-----------------------------|
| Develop a demonstration site on Village shoreland property. Youth will help to plant and maintain vegetation. | To be determined at a later date | | Village of Solon Springs |

Objective 2B: Local officials, agency staff and citizens will be knowledgeable about and will implement practices to reduce runoff draining directly to streams and the lake.

| Action | Lead Group | Begin/End Dates | Resources |
|---|----------------------------------|-----------------|-------------------------------|
| Design water conduits to direct runoff to retention basins and rain gardens and use pervious pavement in parking lots. | To be determined at a later date | | County Land Conservation Dept |
| Road crossings over tributaries should direct water to depressions where water can infiltrate to groundwater or sediments can settle and be filtered by vegetation before flowing into surface water. Include this goal in local comprehensive plans. | To be determined at a later date | | Highway Dept. |
| Disseminate copies of the WDNR's new booklet "Best Management Practices for Water Quality" that describes methods to reduce erosion from construction, forestry practices, etc. Host a workshop that covers information in this booklet. | To be determined at a later date | | WDNR |

Objective 2C: Land management practices minimize the need for addition of fertilizer to the landscape.

| Action | Lead Group | Begin/End Dates | Resources |
|---|------------|-----------------|---|
| Provide information to landowners and create a demonstration site showing native vegetation (that doesn't require fertilizer) in landscaping. | USCLA | | UWEX Lakes Master Gardeners Local landscapers |
| Host a soil testing program and advertise details about Wisconsin's new phosphorus ban in the lake association newsletter and local paper. | USCLA | Spring 2010 | County UWEX Agent |

Objective 1C: Reduce the stirring of muck that is rich in phosphorus.

| Action | Lead Group | Begin/End Dates | Resources |
|---|---|-----------------|-----------|
| Provide information about newly established 100 foot no wake zones that begin in 2010 (boat landing, poss. use of buoys, maps, etc.) and enforce this regulation. | WDNR (law) Clean Boats/Clean Waters volunteers | ongoing | WDNR |
| Provide information to riparian landowners about minimizing the amount of exposed sediment in the shallows by leaving aquatic plants in place. | WDNR (law) Clean Boats/Clean Waters volunteers USCLA | ongoing | WDNR |

Goal 2: Minimize and control the amount of runoff to surface water from storms and snow melt.

Objective 2A: Manage storm water and snow melt to minimize runoff and encourage infiltration.

| Action | Lead Group | Begin/End Dates | Resources |
|---|--|----------------------------------|--|
| Work with the Village to control runoff from buildings, streets, Town and Village Industrial Park. | Village Jim Heim USCLA | Have begun to discuss this issue | County Land Conservation Dept WDNR Lake Grants |
| Control runoff into and out of Park Pond. | Village Douglas County Forestry Dept. WDNR | ongoing | |
| Provide information about rain gardens to shoreland landowners and Village residents and businesses in newsletters, newspaper, etc. | USCLA Our group (collective) | Spring 2010 | WDNR UWEX Lakes |
| Establish rain garden demonstration sites with signs. Involve youth (posters around town). | Ariel Johnson FOTSCH USCLA Local school | Winter 2010 | Education grant (Murphy OH, Minnesota Power, American Transmission, etc) Local contributions from hardware store, Garden House, etc |

WATER QUALITY AND WATERSHED

The water quality in Upper St. Croix Lake is a reflection of the land management in its watershed. Clean water is important to many of the lake users, local businesses, and landowners. Poor water quality can alter the types of fish and other animals found in Upper St. Croix Lake, make lake use less desirable, and reduce the economic value of nearby real estate and the vibrancy of the local community. Although some land uses are not easily changed, land management practices for many types of land uses can often be altered to improve water quality in streams and lakes.

Goal 1: Reduce phosphorus loading from residential areas and the watershed to reduce the frequency of algae blooms. This goal will be achieved when monitoring indicates that median summer (5 samples/summer) total phosphorus levels are 40 ug/L or below for 3 consecutive years.

Objective 1A: Collect water quality data to establish current conditions and evaluate success of land and lake management actions.

| Action | Lead Group | Begin/End Dates | Resources |
|---|---------------------|----------------------|-----------------------------------|
| Continue annual USCL water quality monitoring 5 times/summer for Secchi, Chlorophyll a, TP and during spring overturn for Secchi and TP | USCLA | ongoing | WDNR Volunteer Monitoring Program |
| Collect monthly dissolved oxygen profiles under ice. | UM Duluth | Winter 2010 and 2011 | |
| Continue Level 2 WAV monitoring on tributaries. | FOTSCH and students | ongoing | WDNR River Alliance |
| Spring/fall water quality monitoring in lake and tributaries | Local students | ongoing | Lion's Club Adopt-a-stream |

Objective 1B: Prevent/reduce phosphorus inputs from wastewater treatment ponds into groundwater feeding Leo Creek and Upper St. Croix Lake.

| Action | Lead Group | Begin/End Dates | Resources |
|--|--|--------------------|-------------------------------|
| Work with the Village to get additional protection/phosphorus control into "new" infiltration ponds. | Upper St. Croix Lakes Sanitary District | Already started | Village WDNR Consultant |
| Investigate options to locate and control sewerline leaks. | Board of Upper St. Croix Lake Assoc. Sanitary District | Constant vigilance | Village Town |
| Work with the Village to analyze phosphorus in groundwater samples collected from monitoring wells and effluent entering recharge cells and to share the results with local advocacy groups. | Chuck Olson, WDNR Wastewater Engineer | Already started | |
| Provide information about the selection of household products that don't contain phosphorus (and other harmful chemicals). Consider including in the utility bill. | USCLA | | |

This plan was developed by members of the community and lake specialists. Committee members met several times in November and December 2009. The plan is designed to guide activities that will improve conditions in Upper St. Croix Lake. Fewer algae blooms, better water quality and fishing will ultimately provide better experiences for recreational users, landowners, and community members and will benefit the aquatic ecosystem. Members of the planning committee recognize the importance of Upper St. Croix Lake to Solon Springs and the adjacent community.

The Plan Committee Team:

James Heim, Bud Hinaus and Doug Nagle, John Seely, Upper St. Croix Lake Association Board

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Susan Zeman, Town of Solon Springs Treasurer

Scott and Susan Peterson, Friends of the St. Croix Headwaters

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UPPER ST CROIX LAKE STUDY STRATEGIC PLAN



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Prepared by UW-Stevens Point Center for Watershed Science and Education