



HEADWATERS OF THE ST. CROIX/EAU CLAIRE  
LAND USE RECOMMENDATIONS for the WATERSHED

Towns and Villages in the Watershed  
Barnes, Bennett, Delta, Drummond, Gordon, Highland, Hughes, Solon Springs,  
and Wascott



## St. Croix/Eau Claire Headwaters - An Exceptional Resource



[Headwaters of the St. Croix Watershed Study](#) provides an understanding of how area lakes, rivers and wetlands can be better protected and their quality preserved.

A watershed is an area drained by a distinct stream system; all living things in a watershed are linked by sharing the same system.

The St. Croix/Eau Claire Headwaters is a unique and special watershed that covers nearly 335 square miles in both Douglas and Bayfield Counties. Within it are waters and lands of exceptional quality that are native habitat to a diversity of birds, fish, wildlife and the people that call northern Wisconsin home. The area's natural beauty and abundant resources provide visitors and residents with unparalleled recreational opportunity.

Maintaining this natural beauty and water quality is critical to the economic and environmental future of the Headwaters. In general, the water quality and habitat in the watershed are excellent. However, the effects of recent land use trends are showing up in watershed characteristics such as:

- **Water quality and clarity are declining.** Ten lakes have 6% or more impervious surfaces within 300 feet of the lake. Runoff from impervious surfaces, such as, driveways, rooftops, and roads contribute to increased phosphate levels in lakes.
- **Some shoreland and aquatic habitat is stressed.** Aquatic invasive species, historic wetland fill, and negligent development threaten the critical habitat in and along lakeshores, river edges, and wetlands. Declining habitat is, in fact, the primary stressor to our lakes even at a national level.
- **Deep, coldwater fish are at risk.** These fisheries are unique, but recent water quality assessment shows some developed lakes with them are at a tipping point where they may no longer thrive.

Tourism-generated income as well as land values are at risk if water quality and clarity continue to degrade. Fortunately there are actions that community leaders can take to help prevent further water quality degradation. Some of those actions are presented in this packet.

### Life is Good in the Headwaters. Protect the Life – Preserve the Goodness.

*Water is essential for human survival and important to the economy. How fortunate are those who live and recreate in the watershed of the St. Croix/Eau Claire Headwaters where this resource is abundant and clean.*

*With this good fortune comes both economic and ethical responsibilities to conserve and protect this valuable resource. The process begins with understanding the impact land use has on the watershed and continues with community leaders taking actions.*

# Land Use Decisions that Help Preserve the Watershed will Enhance the Area's Economic Future and Contribute to Sustained Property Values.

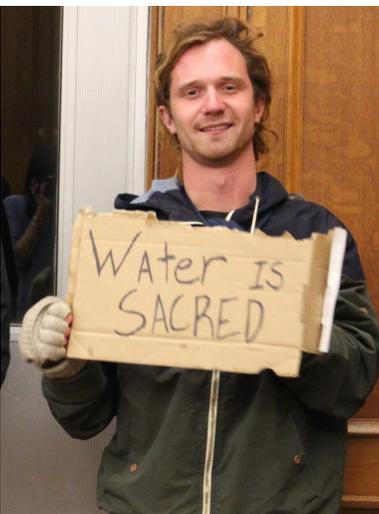


## LOCAL ACTION

Understand your town's location within the watershed.

Evaluate your town's practices as they impact the watershed.

Plan for future protection of the lakes, rivers and wetlands within your community.



Local units of government are positioned to have significant impact on watershed health of the St. Croix/Eau Claire Headwaters. Town and village board and committee members who understand their community's place in the watershed and actively promote choices that will protect, preserve and enhance it, serve their citizens wisely. They recognize that the integrity of the watershed directly impacts the local economy, property values and quality of life.

### Understanding the Areas of the St. Croix/Eau Claire Headwaters

This land use recommendation tool provides a brief education of three key components of the watershed area: Tier 1 areas, Critical Habitat Designations, and Flood Storage Wetlands. Individuals who want more in depth information can reference the November 2013 [\*Watershed Study Report for the Headwaters of the St. Croix River Basin, WI\*](#) and the Wisconsin Department of Natural Resources [\*Critical Habitat\*](#) reports. Detailed maps of your town or village, its location in the watershed and its designated Tier 1, Critical Habitat and Flood Storage Wetlands are included in this packet as separate documents.

### Protect Locally

The studies conclude that land use in Tier 1 areas of the watershed is a major factor in the future health of St. Croix/Eau Claire Headwaters. Once leaders in a community understand how land use impacts the different areas that comprise the watershed, they are able to assess their community's current practices. While state regulations and county zoning ordinances are in place to protect and preserve the lakes, rivers, wetlands and shoreland around them, they are broad and do not address unique characteristics of specific areas.

Seven municipalities in the St. Croix/Eau Claire Headwaters have land within their borders located in Tier 1 areas, reference map on page 4. Each of these towns and villages has the opportunity to take action locally to protect the quality of their waterways and, in doing so, contribute to the future health of the watershed.

### Recommendations for Local Action

Moving forward to promote best land use practices in a town or village in order to protect the watershed can seem overwhelming. The purpose of this document is to provide town and village governments with specific recommendations for action that can be adopted locally. Some of the recommendations are easier to implement than others; every one of them has merit and will help make a difference. The recommendations that follow are organized in three categories by relative ease of implementation; Categories A, B and C, with A being the most simple and C being more complex.

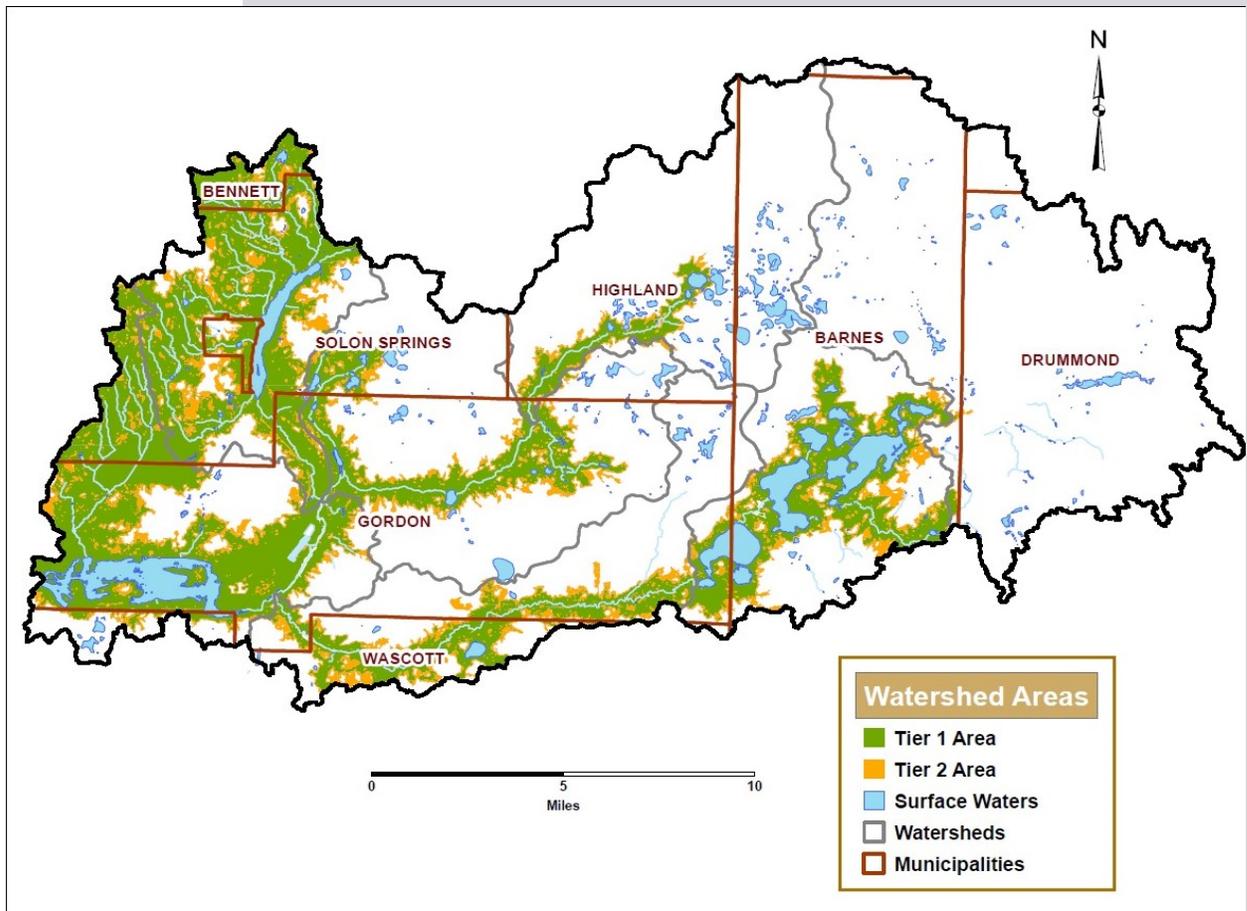
# Understanding Key Components of the Watershed - Tier 1



The St. Croix/Eau Claire Headwaters is a resource of exceptionally clean water that provides recreational enjoyment for residents and visitors. Understanding components of the watershed is the first step in knowing how local governments and citizens can help protect it.

Certain areas surrounding waterways contribute more to surface water runoff and therefore to pollution. Tier 1 areas, shown in green on the map below, are where storm water runoff flows directly into waterways. Identifying the properties in a town that are located within Tier 1 is important. Future development in Tier 1 areas presents the biggest threat to the quality of both water and habitat in the Headwaters. In most Headwaters lakes water quality is excellent, however, some lakes are near or above what is considered impaired water quality for summer total phosphorous. Strategic actions within Tier 1 can greatly impact the protection of the lakes and rivers in a town.

This packet contains a map of your town's current land use by parcel overlaid on the section of the watershed map within the town's borders. It shows how land within Tier 1 of the watershed is currently zoned.



# Understanding Key Components of the Watershed - Critical Habitat



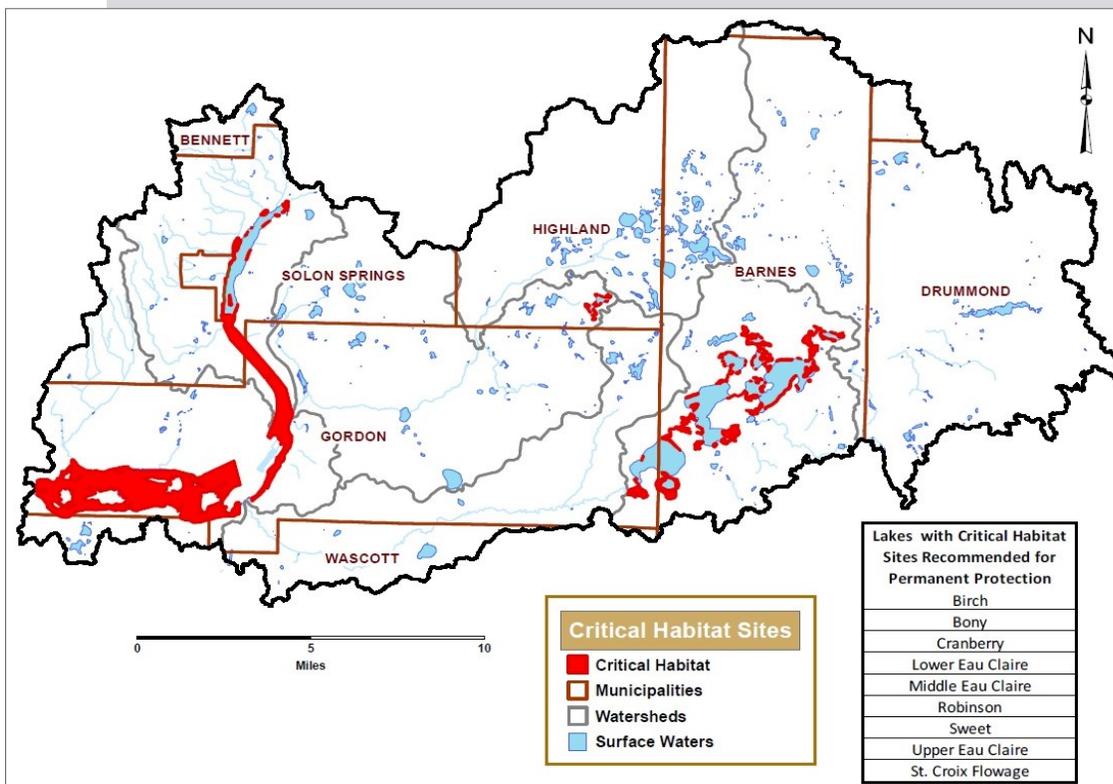
Protecting critical habitat helps ensure sustainable, healthy lakes which are vital to area tourism and recreation economies.

Wisconsin residents are concerned about the growing number of threats to sustainable healthy lakes. Increased shoreline development is changing lake ecosystems and the conversion of natural lakeshore has greatly accelerated in the past 30 years. The shoreline areas most sensitive to these conversions are classified as *critical habitat*.

Every waterbody has critical habitat— those areas most important to the overall health of the aquatic plants and animals. As many as ninety percent of living things in lakes and rivers are found along shallow margins and shores of lakes. The DNR *Critical Habitat Designation* recognizes those areas and maps them so everyone knows which areas are most vulnerable to impact from human activity. A critical habitat designation assists waterfront owners by identifying these areas so they can plan their waterfront projects to protect the habitat and ensure long-term health of their lakes.

Thirteen lakes in the St. Croix/Eau Claire Headwaters and the St. Croix River have Critical Habitat sites mapped. This packet contain maps of those lakes that are located within your town/village. The maps label each critical habitat area and the legend on each map lists the *Justification Feature* (the basis for the designation) for each area.

The map below shows the lakes and rivers with critical habitat sites.



# Understanding Key Components of the Watershed - Flood Storage Wetlands

Wetlands reduce flooding peaks by as much as 60% and the EPA estimates 1 acre of wetland can store 1 - 1.5 million gallons of flood water.

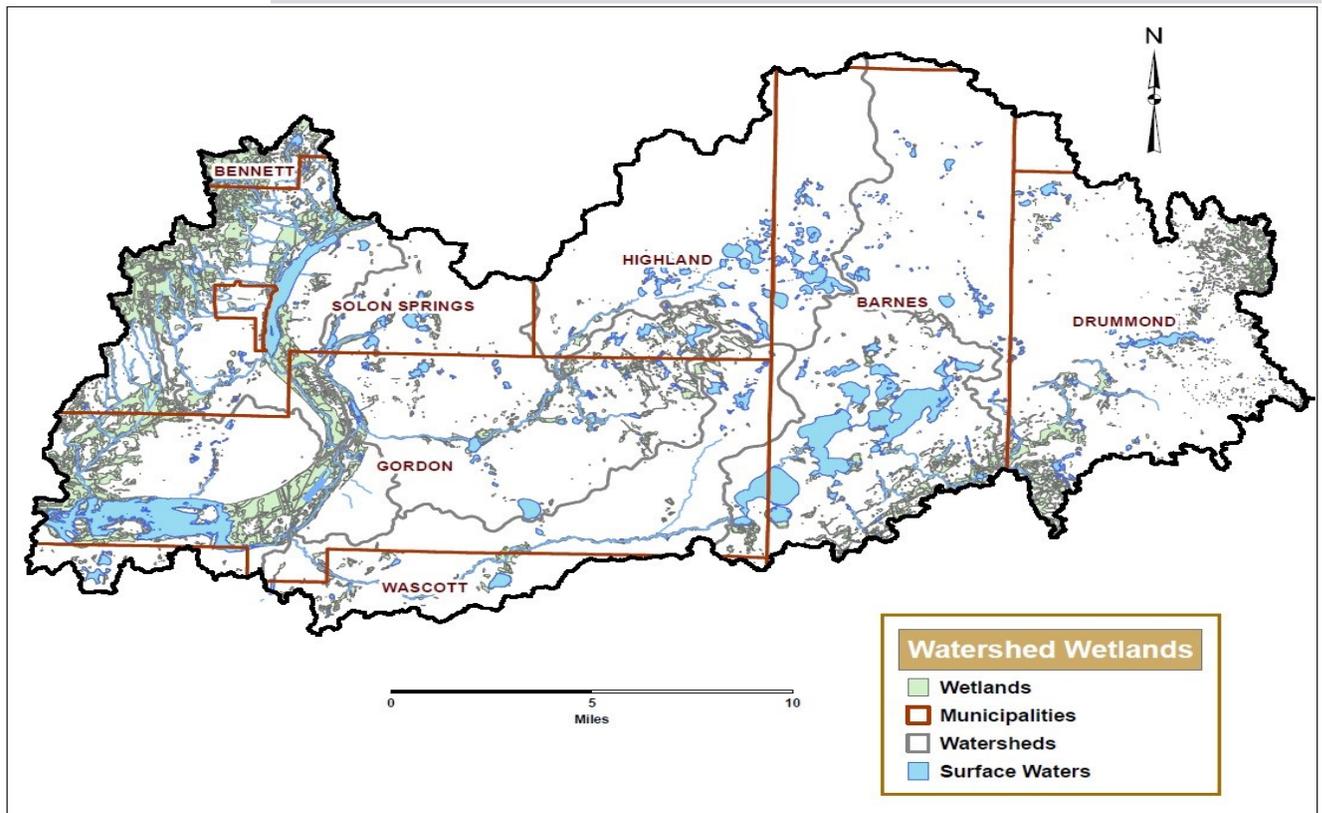


Wetlands filter and reduce runoff keeping water clean.

The St. Croix/Eau Claire Headwaters watershed is rich with wetland resources. These wetlands provide critical habitat for fish and wildlife and maintain the health of lakes and rivers important to the local community and economy. Wetlands also provide key functions or ecosystem services that influence water quality, flood storage, water levels, sediment and nutrient cycling, and recreational opportunities.

The 2013 wetland study assessed the various ecosystem services provided by wetlands in the watershed. Some wetlands were identified as important for capturing and detaining surface water helping to lower flood potential. By protecting wetlands, local communities can minimize the impacts of flood damage and the expense of stormwater infrastructure.

This packet contains two maps showing wetlands in your community—all wetlands and key flood storage wetlands. Additional maps are available for other wetland functions (e.g. water quality). For more local government resources and ideas on how your community can take action visit [WI Wetlands Association's Land Use and Wetlands](#) website.



# Category A Recommendations

## Promote Protection of Tier 1 Areas, Critical Habitat and Wetlands



Recommendations for managing shorelines can be found in the publication [Protecting Your Waterfront Investment](#).



Future development is the greatest threat to the health of the water and habitat in the Watershed. Protection of land within Tier 1 areas, parcels adjacent to Critical Habitat, and Flood Storage Wetlands can help control the impact of development. Recommended action starts with education.

### **1. Facilitate easy access to conservation easement information.**

Because few citizens are knowledgeable about permanent protection through conservation easements, include links on the town website to West Wisconsin Land Trust (WWLT) and Bayfield Regional Conservancy (BRC), two local Wisconsin non-profit firms specializing in conservation easements.

### **2. Take a proactive approach to the protection and restoration of Tier 1, Critical Habitat and Wetland areas.**

- A. If the town owns Tier 1 parcels, wetland parcels or parcels adjacent to mapped Critical Habitat protect them with permanent conservation easements and implement best management practices.
- B. Educate citizens who own parcels adjacent to critical habitat areas about protection options available to private property owners.
  - Inform local property owners if their shoreline is adjacent to a Critical Habitat.
  - Promote awareness and protection of Critical Habitat through local publications and town websites.
- C. Refer citizens to county or village zoning departments for information on wetland maps, protection laws, and information before they buy or build. [DNR's Locating Wetlands](#) and [Wetland Identification Program](#) are two resources available.
- D. Refer citizens to county conservation departments for information on restoration projects and best management practices for these areas.

**In addition to providing protection for the watershed a conservation easement can ensure public access to resources.** *The Town of Union provides public canoe and kayak access to the Black River through a WWLT conservation easement. The easement also protects the 1 acre parcel from future development.*

## Category A Recommendations

Best Management Practices for Ditch and Road Maintenance can be found at:

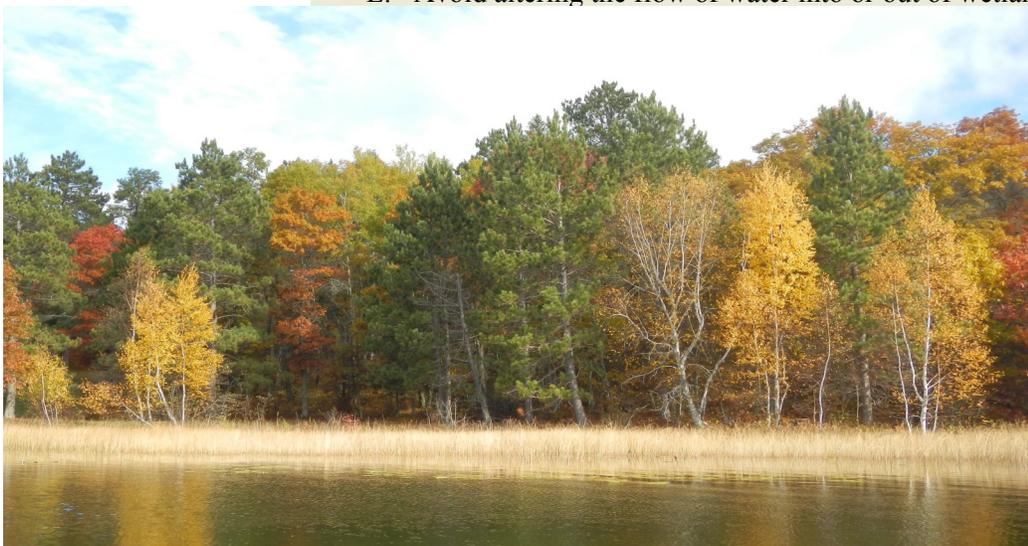
[www.seagrant.umn.edu/publications/SH14](http://www.seagrant.umn.edu/publications/SH14)

### Minimize runoff and sediment load from town/village properties in Tier 1 areas.

When runoff is generated in a Tier 1 area it will carry pollutants directly to the waterbodies. Tier 1 areas cover approximately 27 percent of the Watershed and within that area are numerous roads, intersections and municipal facilities.

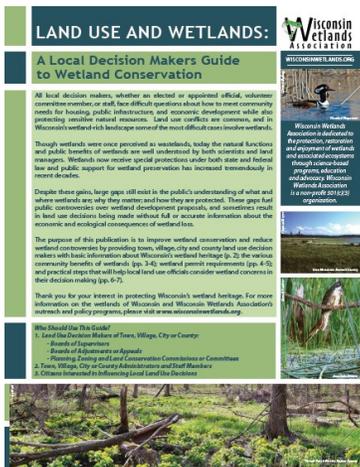
**Towns can manage runoff and lessen pollution by implementing the following:**

- A. Manage town/village waterbody road crossings in Tier 1 areas to reduce sedimentation and improve riparian habitat by implementing best management practices.
- B. Use ditch maintenance best management practices in Tier 1 areas to reduce sedimentation, slow runoff velocities, and increase infiltration.
- C. Implement best management practices for road maintenance adjacent to waterbodies, for example, change salt/sand application procedures to protect water quality.
- D. Limit and or mitigate town/village impervious surfaces in Tier 1 areas, for example, use pervious surfaces in place of impervious surfaces for parking lots and other occasionally used areas and install rain gardens/rain barrels/infiltration basins to capture, divert, and infiltrate runoff from town/village roofs.
- E. Avoid altering the flow of water into or out of wetlands.



# Category B Recommendations

Maps included in this packet label critical habitat areas. The legend on each map lists the *Justification Feature* for each area.



## Best Management Practices for Shorelines

can be found on the UW-Steven's Point—UWEX Lakes website.

## Integrate Headwaters Study information into Town and County Comprehensive Land Use Plans.

Most town Comprehensive Land Use (CLU) plans were adopted prior to the Headwaters basin study and 2013 report. Findings of that study include the impact of land use within the watershed and provide information to those planning at local levels. When conducting a review of the county's or town's CLU plan, taking action to protect the Watershed can be included.

### 1. Include the following in the town's CLU plan to provide local planning groups with easy access to maps illustrating the town's location in, and impact on, the watershed:

- Maps of the St. Croix/Eau Claire Headwaters watershed overlaid on town/village current and future land use maps that also include Tier 1 Areas, Critical Habitat and Flood Storage Wetlands.

### 2. Update the town's future land use goals relative to how they will impact the quality of both water and habitat in the St. Croix/Eau Claire Headwaters as follows:

#### A. Evaluate the *Future Preferred Land Use Maps/Future Land Use Maps* to determine that parcels located in Tier 1 areas, Flood Storage Wetlands and parcels adjacent to Critical Habitat are classified as *Residential, Recreational, Agricultural or Forest*.

- If parcels are classified *Industrial, Commercial or Municipal* revise their classifications to one of the four listed above.

### 3. Include the protection of Tier 1 Areas, Critical Habitat and Flood Storage Wetlands in the CLU plan as follows:

#### A. In the *Land Use* section add a goal with objectives and policies that recommends best management practices be followed in Tier 1 Areas, Critical Habitat and Flood Storage Wetlands. For example, include shoreline and wetland restoration, stormwater runoff control and conservation of these areas.

## Integrate wetland "avoidance and minimization" standards

- Require a permit for any proposed land disturbing activity directly in or in close proximity to a wetlands and require projects to minimize wetland loss if the project cannot avoid the wetland. Withhold final approval of projects with unavoidable wetland impacts until state and federal permits have been issued.
- Establish development standards, such as wetland setbacks and buffers and criteria to avoid altering flow both in and out of wetlands.

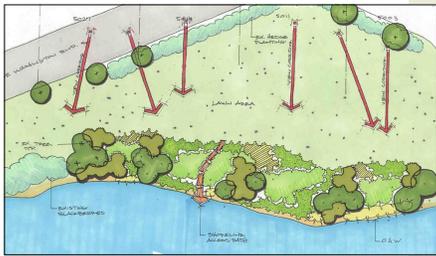
## Category C Recommendations



### Encourage watershed best management practices by educating citizens about available opportunities or offering guidance and cost-sharing

Watershed best management practices are practices that can apply to all types of landowners from residential to commercial and agricultural but generally work to intercept runoff and allow it to infiltrate before it reaches any waterbodies. There are many programs available to help landowners install watershed best management practices on their property.

**A town can encourage increased protection for Tier 1 Areas, Critical Habitat, and Flood Storage Wetlands by educating citizens about program opportunities or by offering guidance and cost sharing as follows:**



- A. Compile a directory of assistance available to landowners for help in designing, installing, and paying for watershed best management practices; distribute this information to citizens targeting specific landowners, practices, and/or critical land areas.
- B. Solicit shoreline owners interested in improving their runoff management and habitat on their property; sponsor and implement DNR Healthy Lakes protection grant projects with these landowners providing guidance and cost sharing to install conservation practices



**LAND USE AND WETLANDS:  
Zoning Opportunities to  
Improve Wetland Protection**



www.wisconsinwetlands.org



### Implement or support a Shoreline Incentive Program to encourage shoreline buffer restoration.

Shoreland properties within Tier 1 of the watershed generate runoff and carry pollutants to the water. Buffer zones filter the runoff and serve as the best protection for the lakes and rivers. While current county zoning requires restoration of shoreline buffers as a condition of new building, many existing properties do not meet the minimum buffer size. Action to encourage restoration can be highly effective.

**Highlight the importance of shoreline buffers and increase compliance by offering shoreline restoration incentives to property owners:**

- A. Offer incentives or cost sharing to riparian landowners who voluntarily restore their shoreline buffer.
- B. Support development of a county shoreline incentive program. (Use Burnett County program model to offer tax refunds as incentive payments.)



# Agency and Organization Reference Guide

There are many partners available who provide regulatory and technical assistance and administer incentive and grant programs.

## **County Planning and Zoning and Land and Water Conservation Departments**

### **Bayfield County Planning and Zoning Department**

Phone: 715-373-6138  
[www.bayfieldcounty.org](http://www.bayfieldcounty.org)

### **Douglas County Planning and Zoning Department**

Phone: 715-395-1380  
[www.douglascountywi.org](http://www.douglascountywi.org)

### **Bayfield County Land and Water Conservation Department**

Phone: 715-373-6167  
[www.bayfieldcounty.org](http://www.bayfieldcounty.org)

### **Douglas County Land and Water Conservation Department**

Phone: 715-395-1380  
[www.douglascountywi.org](http://www.douglascountywi.org)

## **State Agencies**

### **WI Department of Natural Resources Spooner Office**

Phone: 715-685-4073  
[www.dnr.wi.gov](http://www.dnr.wi.gov)

### **WI Department of Agriculture, Trade, & Consumer Protection**

Phone: 608-224-5012  
[www.datcp.wi.gov](http://www.datcp.wi.gov)

## **Federal Agencies**

### **Natural Resources Conservation Service**

Phone: 715-682-9117  
[www.nrcs.usda.gov](http://www.nrcs.usda.gov)

### **U.S. Fish and Wildlife Service**

Phone: 1-800-344-WILD  
[www.fws.gov](http://www.fws.gov)

## **Non-Governmental Conservation Organizations**

### **Bayfield Regional Conservancy**

Phone: 715-779-5263  
[www.brcland.org](http://www.brcland.org)

### **West Wisconsin Land Trust**

Phone: 715-235-8850  
[www.wwt.org](http://www.wwt.org)

### **Wisconsin Wetlands Association**

Phone: 608-250-9971  
[www.wisconsinwetlands.org](http://www.wisconsinwetlands.org)

## **Online Resources**

### **Critical Habitats**

[www.dnr.wi.gov/lakes/criticalhabitat/](http://www.dnr.wi.gov/lakes/criticalhabitat/)

### **Land Use and Wetlands**

[www.wisconsinwetlands.org/localgovs.htm](http://www.wisconsinwetlands.org/localgovs.htm)

### **Healthy Lakes**

<http://www.uwsp.edu/cnr-ap/UWEXLakes/Pages/healthylakes/default.aspx>

[www.dnr.wi.gov/topic/watersheds/hwa.html](http://www.dnr.wi.gov/topic/watersheds/hwa.html)

*This document was created with input and guidance from the St. Croix/Eau Claire Headwaters Watershed Land Use Sub-Committee and advisors.*

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Susan Peterson, Douglas County Citizen  
Barb Romstad, Bayfield County Citizen  
Jane Anklam, West Wisconsin Land Trust  
Cherie Hagen, WI Dept. of Natural Resources



**For more information about the St. Croix/Eau Claire Headwaters Watershed Project, the November 2013 “Watershed Study Report for the Headwaters of the St. Croix River Basin, WI” and the Wisconsin Department of Natural Resources “Critical Habitat” reports visit the Douglas County website at [www.douglascountywi.org/watershed](http://www.douglascountywi.org/watershed).**