



# White River Watershed Management Plan

*May 15, 2004*

Produced by the Wild Rivers Chapter of Trout Unlimited-Wisconsin and the Friends of the White River, with grant support from the Wisconsin Department of Natural Resources.

# White River Watershed Management Plan

## TABLE OF CONTENTS

Introduction .....	3
Background .....	4
• Location .....	4
• Significant Natural Features .....	4
• Land and Ecology .....	6
• Cultural History .....	7
• Land Use .....	7
• Development Trends .....	9
• Community Profile .....	9
Public Participation .....	12
• Bad River Watershed Association .....	12
• Friends of the White River .....	14
• Trout Unlimited .....	14
• University of Wisconsin-Extension .....	15
• Technical Advisory Committee .....	16
• Public Meetings .....	16
• Community Surveys .....	17
• Communication and Outreach .....	20
Goal and Objectives .....	21
• Objective #1: Research and maintain or improve water quality ...	22
• Objective #2: Research and maintain or improve fishery .....	24
• Objective #3: Provide walk-in public access .....	25
• Objective #4: Encourage ecological preservation/restoration to preserve scenic beauty and ecological health .....	26
Evaluation and Revision .....	28
Maps .....	29
Appendix .....	30
Bibliography .....	31

## INTRODUCTION

The White River watershed drains 350 square miles of field, woodland and wetland in northwest Wisconsin's Bayfield and Ashland counties (See Map 1). The system's headwaters are located in the Drummond-Delta area of western Bayfield County; from there the White River flows east and north through the 10,000-acre Bibon Swamp State Natural Area, through the village of Mason, into a flowage formed by a hydroelectric dam, then ultimately to a confluence with the Bad River at Odanah, on the Bad River Indian Reservation.

For the purpose of this plan, the White River watershed is divided into three segments: the upper, the middle and the lower (See Map 2). This plan focuses on the "middle" segment of the river—the stretch from Highway 63 in Bayfield County to Highway 13 in Ashland County. The upper and lower segments of the White River watershed comprise a patchwork of federal, state and tribal land (See Map 3), and as such enjoy a level of study, scrutiny and ecological protection not available to private land.

By contrast, the middle stretch of the watershed comprises entirely privately owned land, where ecological protection depends on county and township land-use plans, zoning ordinances, and the awareness and good will of private landowners.

About three years ago, a group of White River watershed landowners and river users began meeting informally to discuss more deliberate ways to preserve this middle section of the river's exceptional quality for future generations. Regional land prices are escalating, the demand for waterfront property is rising, and land-parcel subdivision and development are rapidly moving northward. Currently, most land parcels in watershed's middle segment are large and are owned by relatively few landowners, and the river corridor has retained a high level of ecological quality and a distinct wilderness character. However, these landowners are facing increasing pressure to subdivide and sell the land, and in turn this segment of the White River is susceptible to ecological damage that often accompanies development.

This group, calling themselves the Friends of the White River, saw that a program of active ecological protection of this middle segment of the White River could, in effect, provide the final piece to a patchwork of conservation that when viewed as a whole, would offer protection to the *entire White River watershed*.

In 2003, the Friends group took steps to bolster their resources and turn some of their ideas into action. They approached the Bad River Watershed Association, Inc., a nonprofit organization working to promote the ecological health of the 675,000-acre Bad River watershed—which includes the White River and its watershed. The Friends group proposed becoming a committee of BRWA; the BRWA board of directors agreed and established the Friends of the White River as a permanent committee of the Bad River Watershed Association.

In addition, on behalf of the Friends of the White River, the Wild Rivers chapter of Trout Unlimited in 2003 applied for and was awarded a Wisconsin Department of Natural Resources River Planning grant to support further investigation into conservation options along this middle stretch of the White River. This plan is one of the products enabled by that WDNR River Planning grant.

## BACKGROUND

### Location

The “middle segment” of the White River watershed is bounded by State Hwy. 63 on the west and State Hwy. 13 on the east. This segment spans parts of Bayfield and Ashland counties, although the majority of the targeted area is located in the Town of Kelly, Bayfield County. Smaller areas of this middle segment are found in Ashland County’s Town of White River and Town of Gingles (See Map 4).

What makes this middle segment of the White River watershed unique is that it is entirely privately owned. By contrast, the upper and lower segments of the White River watershed comprise a patchwork of federal, state and tribal land.

The upper segment of the watershed includes land and headwaters found in the Porcupine Lake Wilderness Area, managed by the U.S. Forest Service and protecting about 4,500 acres of roadless headwater streams, lake bogs and northern hardwood forest. Adjacent to this is the Wisconsin DNR’s White River Fishery Area, which spans several reaches of the upper White River, including the South and West forks. This 3,300-acre area is managed for its fishery, wildlife and recreation potential. Continuing downstream, the White River flows into and through the 10,000-acre Bibon Swamp State Natural Area, which was established as a WDNR property in 1980 to protect and preserve the plants and animals associated with this geologically unique wetland.

Below the middle segment, the lower segment of the White River watershed includes the 960-acre White River Wildlife Area bordering State Hwy. 13. This state-owned land protects habitat for deer, ruffed grouse, woodcock, snowshoe hares, muskrats, mink, otters and eagles, and provides recreational opportunities for canoeists and anglers. Eastward to the White River’s confluence with the Bad River, the White River watershed includes large tracts of timber company-owned managed forest land interspersed with tribal trust land of the Bad River Indian Reservation.

### Significant Natural Features

The extraordinary natural resource values of the White River watershed as a whole have been recognized and designated in many ways, including the following:

- At the headwaters area of the White River watershed is found the 4,500-acre Porcupine Lake Wilderness Area that features pristine streams, springs, lake bogs and northern hardwood forest. The area is part of the Chequamegon National Forest, and is managed by the U.S. Forest Service. The North Country National Scenic Trail runs the length of the area.
- Also near the system’s headwaters is found the 3,300-acre White River Fishery Area, managed by the Wisconsin DNR for its superb fishery, wildlife and recreation potential.
- The Wisconsin DNR considers the White River a Class I trout stream for brook and brown trout for its first two miles down to Pike’s Branch at the Section 21/22 line (T46N-R7W: Town of Delta). Several tributaries also are considered Class I trout fisheries. This Class I portion also is considered an outstanding water resource. From this point to the White River Flowage in Ashland County, and then from the outlet of the flowage to the river mouth, it is considered a Class II trout water. This segment is considered an exceptional water resource.

- The White River watershed includes the 10,000-acre Bibon swamp, designated by the State of Wisconsin in 1992 as a State Natural Area because of its size and rare and unique ecological features. The area supports a variety of rare plants and animals, including three state-threatened species: wood turtle, sheathed pondweed, and sweet colt's-foot. Other rare species found here are great gray owl, bald eagle, osprey, and showy lady's slipper.
- The Lake Superior Binational Program has identified the Bibon Swamp State Natural Area as habitat important to the integrity of the Lake Superior ecosystem.
- The entire White River, in various segments, is rated in the top 10 percent of rivers in northwest Wisconsin in terms of natural, recreational and cultural values, according to the WDNR Northern Rivers Initiative. The goal of the NRI is to safeguard stream corridors in northern Wisconsin from the growing pressures that threaten them. The White River segments were scored as follows:
  - White River from its headwaters to the White River Flowage dam: NRI rank among all northwest Wisconsin rivers: 95.7%
  - White River from the White River Flowage dam to the Bad River Indian Reservation boundary: NRI rank among all northwest Wisconsin rivers: 95.1%
  - White River from the Bad River Indian Reservation boundary to confluence with the Bad River: NRI rank among all northwest Wisconsin rivers: 99.2%
- The Wisconsin DNR Northern Rivers Initiative is a group whose goal is “to safeguard rivers and streams in northern Wisconsin from the growing pressures that threaten them.” The group ranked the quality of Wisconsin’s 5,545 rivers and streams according to natural and recreational value. In the first draft of the ranking, the Long Lake branch of the White River was ranked as the top river segment in Bayfield County.
- The state-owned White River Wildlife Area is a 960-acre tract along the White River east of Hwy. 13 in Ashland County that protects high-quality habitat for deer, ruffed grouse, woodcock, snowshoe hares, muskrats, mink, otters and eagles, and provides recreational opportunities for canoeists and anglers.
- The entire White River is noted in the Wisconsin DNR’s Land Legacy Report as one of the places in Wisconsin whose protection is critical to meeting the state’s future conservation and recreation needs over the next 50 years
- Areas of the White River watershed have been noted for unique biological diversity by the Wisconsin Natural Heritage Inventory (NHI) program. This program is part of an international network of NHI programs established by The Nature Conservancy and focusing on locating and documenting occurrences of rare species and natural communities, including state and federal endangered and threatened species.
- The White River flows into the Bad River, which at its mouth is found the Kakagon and Bad River Sloughs, the largest intact freshwater estuary on Lake Superior. This slough area, often called “Wisconsin’s Everglades,” has been designated as a National Natural Landmark by the U.S. Department of the Interior.

## Land and Ecology

### General Description

The middle segment of the White River watershed is located in an area ecologists call the Superior Coastal Plain (See Map 5). The Superior Coastal Plain is Wisconsin's northernmost ecological landscape, bordered on the north by southwestern Lake Superior and on the south by the Northwest Sands, the Northwest Lowlands, and the North Central Forest.

The climate of the Superior Coastal Plain area is strongly influenced by Lake Superior, resulting in cooler summers, warmer winters, and greater precipitation compared to more inland locations. Exposed coastal areas are subject to significant disturbance from windstorms, waves, ice, currents, and periodic water level fluctuations. These disturbances play a significant role in determining both the landform and vegetation characteristics of the shoreline ecosystems.

The major landform in the Superior Coastal Plain is a nearly level plain of lacustrine (lake bottom) clays that slopes gently northward toward Lake Superior. The clay plain is separated into two disjunct segments by the comparatively rugged Bayfield Peninsula. An archipelago of sandstone-cored islands, the Apostles, occurs in Lake Superior just north and east of the Bayfield Peninsula. A ridge of volcanic igneous rock, primarily basalt, forms the southern boundary of portions of the Superior Coastal Plain.

### Vegetation

Historically the Superior Coastal Plain was almost entirely forested (See Map 6). A distinctive mixture of white pine, white spruce, balsam fir, paper birch, balsam poplar, trembling aspen, and white cedar occurred on the lake-bottom clays. White pine was strongly dominant in some areas, according to mid-nineteenth century notes left by surveyors of the U.S. General Land Office. Mesic to dry-mesic forests of northern hardwoods or hemlock hardwoods were more prevalent on the glacial tills of the Bayfield Peninsula and throughout the Apostle Islands.

Large peatlands occurred along the Lake Superior shoreline, often associated with drowned river mouths and well-developed sand spits. The most extensive of these wetland complexes were on the Bad and St. Louis rivers. A few large peatlands also occurred at inland sites, such as Bibon Swamp, in the upper White River drainage, and Sultz Swamp on the northern Bayfield Peninsula.

The present clay plain forest has been fragmented by agricultural use, and today approximately one-third of this landscape is non-forested. Most of the open land is in grass cover, having been cleared and then subsequently pastured or plowed. Aspen and birch forests occupy about 40 percent of the total land area, having increased in prominence over the boreal conifers. Older forest successional stages are now rare throughout the Superior Clay Plain.

### Hydrologic Features

The larger rivers include the St. Louis, Nemadji, Bad, White, Amnicon, Flag, Sand, Raspberry, and Sioux. Smaller streams flowing across the clay plain typically occupy short, relatively straight, steep-sided valleys before emptying into Lake Superior.

Other streams originate in the higher elevations of the Bayfield Peninsula and follow meandering courses toward the lake. Inland lakes are rare. Many wetlands still persist, and, collectively, they constitute a regionally significant reservoir of rare plants and animals, intact natural communities, and natural processes. All watersheds have been ranked for groundwater pollution by Wisconsin DNR, and groundwater conditions are among the cleanest in the state. Most watersheds in the Superior Coastal Plain have not been ranked for watershed, stream, or lake pollution.

### Geology and Soils

The repeated advance and retreat of glaciers over the past millennia has created the geology and soils of the Superior Coastal Plain, including those of the White River watershed (See Map 7). Most of the watershed is found in the clay soils region that was the old lakebed for glacial Lake Duluth, an earlier incarnation of Lake Superior. In fact, the southern edge of ancient Lake Duluth runs along a ridge situated east to west through the Town of Kelly, in a line just south of the White River.

North of that ridge is the old lake bottom clay plain, dominated by a soil structure known as Bad River-Odanah-Sandborg, featuring deep clay soils on glacial till ground moraines. Drainage on these clayey soils tends to be poor. Soils south of the ridge are known as Portwing-Herbster-Bohemian, characterized by very deep deposits found on nearly level and gently sloping terrain. Drainage ranges from good to somewhat poor. Clay soils are typically found in lower elevations, with sand over clay and sandy soils more common as the elevation increases. Along the ridge itself is a “transition soils region” that combines characteristics of the two above soil types.

### Cultural History

The area of the White River watershed was first homesteaded by European settlers in the late 19<sup>th</sup> century. Early settlers logged off the forests, then turned to farming when forestry resources were depleted. Farming enterprises struggled with the area’s relatively poor soils and short growing season; as a result, many homesteaders left the area and their land reverted to public ownership.

Today, the region is still dominated by public land. Timber production is an active enterprise, and a limited amount of farming—primarily dairy farming—is still practiced in the area. The region has become increasingly popular for its outdoor recreation potential, and draws many visitors and residents who enjoy hunting, fishing, skiing, hiking, canoeing, kayaking, and other outdoor pursuits.

### Land Use

The entire White River watershed comprises nearly 224,000 acres with land use as follows (See Map 8):

- |   |         |
|---|---------|
| • Urban                                     | 0.02 %  |
| • Agricultural: crops, forage and grassland | 10.26 % |
| • Forest/Woodland                           | 72.50 % |
| • Open water                                | 2.96 %  |
| • Wetland                                   | 12.88 % |
| • Barren                                    | 0.45 %  |
| • Shrubland                                 | 0.93 %  |

Breakdown by township

The targeted “middle segment” of the White River watershed runs primarily through the Town of Kelly, Bayfield County, but also passes through parts of the Town Gingles and Town of White River in Ashland County. Land-use breakdowns for these townships, based on Wisconsin Dept. of Revenue assessment records, are as follows:

Total acreage, Town of Kelly: 23,534 acres

- Residential, commercial, manufacturing 1.8 %
- Agricultural 40.1 %
- Swamp & “waste” 2.3 %
- Forest/Woodland 55.0 %
- Other 0.8 %

Total acreage, Town of Gingles: 24,847 acres

- Residential, commercial, manufacturing 2.9 %
- Agricultural 16.6 %
- Swamp & “waste” 0.8 %
- Forest/Woodland 79.7 %

Total acreage, Town of White River: 22, 887 acres

- Residential, commercial, manufacturing 3.19 %
- Agricultural 39.29 %
- Swamp & “waste” 2.81 %
- Forest/Woodland 54.43 %
- Other 0.28 %

Shoreland Zoning Ordinance Requirements:

Bayfield County: Lots adjoining or including rivers or streams shall meet the following or minimum requirements:

Lot Size	120,000 square feet
Lot Width	300 feet
Shoreline Setback	100 feet
Lot Depth	400 feet
Side Yard Setback	30 feet/60 feet total
Shoreline Vegetation Protection Area	75 feet
View Corridor	30 feet

Ashland County: Lots adjoining or including navigable rivers or streams shall meet the following or minimum requirements:

Lot Size (if not served by public sewer)	30,000 square feet
Lot Dimension along shoreline	150 feet
Lot Width	150 feet
Shoreline Setback: permanent structures	75 feet



Shoreline Setback: “open” structures	35 feet
Shoreline Buffer Zone, existing parcels	35 feet
Shoreline Buffer Zone, new parcels	50 feet

### **Development Trends**

Research by the Wisconsin Department of Natural Resources shows that in the past 40 years, two-thirds of the larger, previously undeveloped lakes in the northern part of Wisconsin have been developed. State records also show the average number of homes on privately owned shorelands has more than doubled over the past 30 years.

As northern Wisconsin’s finite supply of lake frontage becomes fully developed, and lakefront land prices continue to rise, people are looking to river frontage as the next opportunity to live or own land on the water. Development along rivers comes with the same dangers as development along lakes has already shown. Trends from lakefront development should serve as a warning to those working to protect riverfront land.

Demographic research shows that most rural areas of the United States are now growing at the fastest rate in more than 20 years, fueled by an influx of migrants from urban areas and fewer people leaving. In fact, nearly three-quarters of the nation’s rural counties are now growing in population, compared to only 45 percent during the 1980s. Gains are greatest in the Upper Great Lakes, Mountain West, Ozarks, parts of the South and in rural areas of the Northeast.

Of all the White River watershed, the privately owned middle segment will bear the most development pressure as retirees and vacationers continue to buy and develop northern waterfront land. Unfortunately, waterfront development usually results in ecological damage in the form of increased erosion, decreased water quality, decreased and fragmented wildlife habitat, and loss of natural aesthetic beauty.

For instance, a 1998 Wisconsin DNR study surveyed several dozen developed and undeveloped lakes in Vilas, Oneida and Forest counties to measure the abundance of frogs, birds, plants and trees. The study showed that the developed shoreland had lost much of its abundance and diversity of natural plant and animal species. Researchers also found that developed shoreland featured more invasive species such as Eurasian milfoil.

Protecting wild shorelands and water quality, on the other hand, can have an economic benefit to the wider watershed community. Tourism from fishing and hunting in Wisconsin generates \$8 billion annually, provides more than 110,000 jobs and supplies \$262 million in tax revenues.

### **Community Profile**

Recreation is an important contributor to the economy of the Wisconsin’s Superior Coastal Plain region, which includes the White River watershed. The number of state parks, forests and recreation areas, as well as acreage of federal lands, is quite high. Forest products and processing industries contribute about 9 percent to the total industrial output of the region. Agriculture is not a major contributor to the economy. This region not only has the third lowest percent of farmland acreage, but the second lowest market value per acre of products sold, and the third lowest per acre production of both milk and corn. (Farmland is defined as all land under farm ownership, which includes cropland, pastureland, and woodland.) It has seen the greatest decrease in both farm numbers and

acreage in agricultural land since 1970, and still ranks as one of the regions with highest agricultural land sales.

The Superior Coastal Plain region has one of the lowest population densities and growth rates (1970-2000) of all the regions in the state of Wisconsin. The population density of the region (19 persons/mi<sup>2</sup>) is only about one-fifth that of the state as a whole (96 persons/mi<sup>2</sup>). Although there are few minorities, this region has the largest percentage of Native Americans. Economically, the counties of the Superior Coastal Plain are not very prosperous. Not only are the per capita income and average wage relatively low, but this region has the highest poverty rates for both adults and children and the second highest rate of unemployment of all the regions. The counties in the Superior Coastal Plain are highly dependent on the service and government job sectors with one of the lowest percentages of manufacturing jobs.

However, throughout the White River watershed, as throughout Bayfield and Ashland Counties, population, households and housing units are projected to grow steadily into the foreseeable future. Following are estimates from the Wisconsin Department of Administration.

### Population

#### Town of Gingles

Year	Population	Percent Change
1990	492	- 9.7 %
2000	640	+ 30.1 %
2005 (estimated)	707	+ 10.5 %
2010 (estimated)	777	+ 9.9 %
2015 (estimated)	849	+ 9.3 %
2020 (estimated)	920	+ 8.4 %
2025 (estimated)	985	+ 7.1 %

#### Town of White River

Year	Population	Percent Change
1990	771	+ 12.6 %
2000	892	+ 15.7 %
2005 (estimated)	950	+ 6.5 %
2010 (estimated)	1,013	+ 6.6 %
2015 (estimated)	1,078	+ 6.4 %
2020 (estimated)	1,140	+ 5.8 %
2025 (estimated)	1,195	+ 4.8 %

#### Town of Kelly

Year	Population	Percent Change
1990	383	+ 8.2 %
2000	377	- 1.6 %
2005 (estimated)	385	+ 2.1 %
2010 (estimated)	393	+ 2.1 %
2015 (estimated)	399	+ 1.5 %
2020 (estimated)	401	+ 0.5 %
2025 (estimated)	400	- 0.2 %

## Households

### Town of Gingles

Year	Households	Percent Change
2000	237	
2005 (estimated)	269	+ 13.5 %
2010 (estimated)	301	+ 11.9 %
2015 (estimated)	334	+ 11.0 %
2020 (estimated)	367	+ 9.9 %
2025 (estimated)	400	+ 9.0 %

### Town of White River

Year	Households	Percent Change
2000	281	
2005 (estimated)	307	+ 9.3 %
2010 (estimated)	335	+ 9.8 %
2015 (estimated)	361	+ 7.8 %
2020 (estimated)	388	+ 7.5 %
2025 (estimated)	413	+ 6.4 %

### Town of Kelly

Year	Households	Percent Change
2000	140	
2005 (estimated)	145	+ 3.6 %
2010 (estimated)	152	+ 4.8 %
2015 (estimated)	157	+ 3.3 %
2020 (estimated)	160	+ 1.9 %
2025 (estimated)	160	0 %

## Housing Units

### Ashland County

Year	Housing Units	Percent Change
2000	8,883	
2001 (estimated)	8,951	+ 0.8 %
2002 (estimated)	9,043	+ 1.0 %
2003 (estimated)	9,122	+ 0.9 %

### Bayfield County

Year	Housing Units	Percent Change
2000	11,640	
2001 (estimated)	11,811	+ 1.5 %
2002 (estimated)	12,003	+ 1.6 %
2003 (estimated)	12,228	+ 1.9 %

## PUBLIC PARTICIPATION

### **Bad River Watershed Association, Inc.**

Many watershed organizations form around highly visible problems—poor water quality, industrial pollution, or dense and inappropriate development. The 675,000-acre Bad River Watershed in northwest Wisconsin has none of the above.

In fact, the U.S. Environmental Protection Agency gives the Bad River watershed its highest rating for environmental quality. The watershed's Kakagon and Bad River Sloughs have been designated as a National Natural Landmark by the U.S. Department of the Interior, and are informally known as "Wisconsin's Everglades." Other areas of the watershed have been noted for unique biological diversity by the Wisconsin Natural Heritage Program and the Wisconsin DNR Land Legacy Report.

The desire to keep this resource in exceptional condition was the spark behind the formation of the Bad River Watershed Association. Like many rural areas in Wisconsin, Ashland, Bayfield and Iron Counties have seen a rapid increase in building permit applications in recent years. The region also is home to agricultural operations, timber harvesting and recreational activities—none of which are necessarily problematic when planned well and done with an awareness of watershed health.

Encouraging that awareness is the central focus of the Bad River Watershed Association. Officially founded in 2002, the BRWA's roots stretch back to the late 1990s, when an ad hoc group of citizens began meeting to map out a strategy for protecting the landscape in Bayfield and Ashland Counties in the face of anticipated development. Starting in Bayfield County, which was under the greatest development pressure, the group identified planning and zoning as key measures of the strategy.

At that time, Bayfield County had no land-use plan, and zoning was not well enforced. Ashland County was worse off, with a zoning ordinance that dated from 1934, and as in Bayfield County, no land-use plan and no plans to plan. The Ashland-Bayfield County League of Women Voters joined the effort by conducting several educational forums to promote sound land-use planning and zoning.

The ultimate result of those efforts was a revised shoreland zoning ordinance in Bayfield County. Fresh from this success, the League turned its attention to Ashland County, where there was no constituency to support either planning or upgrading existing land-use ordinances. The Bad River Tribe, whose reservation is in Ashland County at the mouth of the Bad River, suggested that forming a watershed association might be a way to attract other individuals. This was a brilliant strategy, as it attracted people to something they valued—namely the high quality natural resources—rather than something they might be critical or suspicious of—namely planning and zoning.

An initial interim board of directors made up of League members, a few agency representatives, and some citizens who had been identified earlier was formed to draft a mission statement, structure, and bylaws, and to name the first citizen board of directors of the Bad River Watershed Association.

The first "real" board, elected in late 2002, included town and county elected officials, farmers, timber harvesters, and environmentalists. The group not only inherited organizational documents from the interim board; they also inherited the momentum behind more than two years of planning and discussion, as well as about \$15,000 in funding through grants made to partner organizations for starting the watershed

association. Organizational membership includes all people who express an interest in the Bad River watershed.

Today, in just its second year of “official” existence, BRWA boasts a full resume. Accomplishments thus far have included:

- publishing a quarterly newsletter;
- establishing state and federal nonprofit status;
- conducting a watershed landowner survey collecting people’s attitudes about and future hopes for the watershed;
- holding a summer picnic and annual meeting open to all landowners and friends of the watershed;
- beginning water-chemistry and macroinvertebrate monitoring programs to establish baseline data about watershed health; and
- conducting seasonal volunteer orientation and training sessions.

The BRWA’s most recent successes include securing a \$30,000 grant from the U.S. Fish and Wildlife Service Fish Passage Program to replace three badly eroded fish-passage culverts in Ashland County on Billy Creek. As part of its matching effort for the grant, BRWA volunteers have begun building a comprehensive database of all the roadway-waterway crossings in the watershed—more than 1,000 total.

The Bad River watershed is one of the cleanest, wildest and healthiest natural regions in the upper Midwest, and the Bad River Watershed Association is working to keep it that way.

#### BRWA 2004 Board of Directors

The volunteer board of directors comprises individuals who live and work in the Bad River watershed. In order to ensure wide and diverse participation, BRWA bylaws call for board representation from the Bad River Tribe; the Ashland-Bayfield County League of Women Voters; representatives from Ashland, Bayfield and Iron county governments; and at least three towns within the watershed.

#### Officers:

President: Tom Erickson (Town of Delta board member)

Vice-president: Karen Danielsen (Ecologist, Great Lakes Indian Fish and Wildlife Commission)

Secretary: Laurence Wiland, Marengo (at large)

Treasurer: April Stone-Dahl, Mellen (at large)

#### At-large members:

Jeff Ehrhardt (Suuperintendent of Schools, Mellen School District)

Tracey Ledder (Water Quality Specialist, Great Lakes Indian Fish and Wildlife Commission)

Rae Ann Maday (Bad River Tribal member and employee of Bad River Natural Resources Department)

George Mika (Ashland County board member, Town of White River board member)

Neil Paulson (Bayfield County board member)

Terry Peters, Mellen (at large)

Steven Smith (Iron County board member)  
Jack Wichita (League of Women Voters representative)

Ex-Officio members:

Dorothy Lagerroos (Northland College faculty member)  
Rose Lahti (The Nature Conservancy, Ashland)

### **Friends of the White River**

About three years ago, a small group of White River watershed landowners and river users began meeting informally to discuss ways to preserve this middle section of the river's exceptional quality for future generations. Regional land prices are escalating, the demand for waterfront property is rising, and land-parcel subdivision and development are rapidly moving northward. Currently, most land parcels in watershed's middle segment are large and are owned by relatively few landowners, and the river corridor has retained a relatively high level of ecological quality and a distinct wilderness character. However, these landowners are facing increasing pressure to subdivide and sell the land, and in turn this segment of the White River is susceptible to ecological damage that often accompanies development.

In 2003, this group, calling themselves the Friends of the White River, took steps to bolster their resources and turn some of their ideas into action. They approached the Bad River Watershed Association, Inc., a nonprofit organization working to promote the ecological health of the Bad River watershed—which includes the White River watershed. The Friends group asked to become a committee of BRWA; the BRWA board of directors agreed and established the Friends of the White River as a permanent committee of the Bad River Watershed Association.

In addition, on behalf of the Friends of the White River, the Wild Rivers chapter of Trout Unlimited in 2003 applied for and was awarded a Wisconsin Department of Natural Resources River Planning grant to support further investigation into conservation options along the middle segment of the White River. This plan is one of the products enabled by that WDNR River Planning grant.

### **Friends of the White River Steering Committee**

After two public meetings early in 2004, a group of people emerged as those willing to devote additional time and effort to the development of the Friends of the White River, and were named to the Friends of the White River Steering Committee. At least one representative of this group attends and delivers reports at meetings of the board of the Bad River Watershed Association.

This group includes Myron Anderson, Harvey Carlson, Jean Hansen, Bill Heart, and Gary Steen. They have been assisted in their efforts by UW-Extension Lake Superior Basin Coordinator Mike Kroenke, and technical assistant Laurence Wiland.

### **Trout Unlimited**

Founded in 1959, Trout Unlimited has grown from a small group of Michigan anglers to an international organization whose mission is to conserve, protect and restore North America's trout and salmon fisheries and their

watersheds. TU accomplishes this mission on local, state and national levels with an extensive and dedicated volunteer network.

The Wild Rivers Chapter of TU is one of 27 local chapters in Wisconsin, representing seven counties in the northwest corner of the state. Earlier this year, the Wild Rivers Chapter was awarded the “Silver Trout Award” from the Wisconsin Council of TU in recognition of the work the chapter has done in the region. That work has included:

- cooperating with the U.S. Fish and Wildlife Service and Wisconsin Department of Natural Resources to reintroduce coaster brook trout into Bayfield County’s Whittlesey Creek;
- cooperating with state and federal agencies to make stream improvements on the upper White River in order to curb stream sedimentation;
- working with fish biologists to gather population estimates on the upper White River and on 18 Mile Creek; and
- working with the Bad River Watershed Association to support and conduct water quality monitoring throughout the Bad River watershed.

These local projects mirror the successes that TU has had on a national and international scale, some of which include:

- reaching agreement with New York State to restore Catskills trout fisheries damaged by stream work following 1996 floods;
- aiding in the removal of the Edwards dam on Maine’s Kennebec River, which reopened 17 miles of habitat to Atlantic salmon and other fish;
- helping break a stalemate over the U.S./Canada Pacific Salmon Treaty, which governs salmon harvest by both nations; and
- launching the North Coast Coho Project to restore watersheds in California’s commercial forests.

The work of TU on both the local and national level provides an excellent model of how private citizens committed to resource conservation can have a positive influence on the health and sustainability of their natural resources.

The Wild Rivers Chapter of TU is an active partner with the Bad River Watershed Association. TU members are particularly involved in the Friends of the White River committee of BRWA.

### **University of Wisconsin-Extension**

University of Wisconsin-Extension extends the boundaries of the state’s university system to support and serve the needs of Wisconsin citizens. The UW-Extension Basin Education program is designed to provide natural resource-related support throughout the major watershed areas of the state.

The UW-Extension Lake Superior Basin Education program has long been a supportive partner to citizen groups and conservation organizations in northwest Wisconsin, including parts of Douglas, Bayfield, Ashland, and Iron counties. The Extension program provides information resources, educational opportunities, and organizational support to groups that focus on the landscapes, shorelands and waterways unique to the region.

Among those groups benefiting from Extension support are the Bad River Watershed Association and its Friends of the White River Committee, and the Wild Rivers Chapter of Trout Unlimited. Mike Kroenke, the Lake Superior Basin Educator, has and continues to play a critical role in focusing and organizing the work of the Friends of the White River.

### **Technical Advisory Committee**

The following group of professionals serves as the Technical Advisory Committee of the Bad River Watershed Association, Inc. Because the Friends of the White River is a committee of the Bad River Watershed Association, this committee also is available to consult on projects related to the White River watershed.

- Kirsten Cahow (Bad River Natural Resources Dept.)
- Tom Cogger (Natural Resources Conservation Service, Ashland)
- Matt Dallman (The Nature Conservancy, Ashland)
- Diane Daulton (ABDI County Land Conservation Dept.)
- Tom Doolittle (Bad River Natural Resources Dept.)
- Mike Gardner (Sioux/Onion River Watershed Council)
- Gary Haughn (Natural Resource Conservation Service, Ashland)
- Bill Heart (Trout Unlimited Wild Rivers Chapter)
- Dale Higgins (Chequamegon National Forest)
- Tim Kane (UW Extension, Bayfield County)
- Mike Kroenke (UW Extension, Lake Superior Basin Educator)
- Mark Kuester (Bureau of Indian Affairs)
- Tracey Ledder (Great Lakes Indian Fish & Wildlife Commission)
- Dennis Pratt (Wisconsin DNR)
- Becky Sapper (The Nature Conservancy, Ashland)
- Jane Silberstein (UW Extension, Ashland County)
- Erv Soulier (Bad River Natural Resources Dept.)
- Scott Toshner (Wisconsin DNR)
- Chris Worth (Chequamegon National Forest)

### **Public Meetings**

Through the early part of 2004, a series of public meetings was scheduled to raise awareness of the Friends of the White River and solicit input for the group's goals and activities. Meetings were publicized in the following ways:

- Articles in the Bad River Watershed Association's newsletter *Watershed Waves*
- Letters of invitation sent to landowners in every township section that bordered the middle segment of the White River. A database of landowners was assembled from Ashland and Bayfield county tax records.
- Creation and mailing of winter 2004 and spring 2004 issues of the "Friends of the White River" newsletter.
- News releases sent to local media, including the *Ashland Daily Press*



The schedule of public meetings included:

**January 8, 2004:** An initial meeting to attract interest and participation in the Friends of the White River. Eighteen people attended. The group learned of landowner survey results collected by a Bad River Watershed Association landowner survey the prior year. Friends of the White River group founders Myron Anderson and Bill Heart spoke of the group's desire to preserve and protect the White River. UW-Extension Lake Superior Basin Educator Mike Kroenke led the group through a "Strengths/Weaknesses/Opportunities/Threats" exercise and input was recorded. For results of this "SWOT" analysis, see the Appendix.

**January 29, 2004:** This meeting attracted 21 attendees. The meeting focus was to discuss conservation tools and options for protecting and preserving the health and beauty of the White River watershed. The agenda included a presentation on private land trusts by Ruth Oppedahl, director of the Bayfield Regional Conservancy. Diane Daulton, director of the ABDI County Land Conservation Department, and Gary Haughn of the Natural Resources Conservation Service, spoke of cost-share conservation programs available to private landowners through their respective organizations.

**February 11, 2004:** A meeting of the five-member Friends of the White River Steering Committee was convened to clarify and further develop the group's goals and objectives for the watershed management plan being developed.

**April 17, 2004:** Twenty White River landowners and river users attended this public meeting at which copies of the draft watershed management plan were available and a short powerpoint presentation about the plan was made. Questions and ideas that came up in discussion at this meeting will be incorporated into the draft. Attendees also were encouraged to take home a draft copy, study it, and send additional comments. The plan will be finalized by the group's next scheduled meeting.

**May 15, 2004:** This public gathering, to be held at the Mason Town Park on the White River, will serve as a celebration of the work done thus far by the Friends of the White River, and an opportunity to gather more active membership and support for the Friends.

### Community Surveys

The Friends of the White River are motivated to conserve and protect the ecological health and wilderness character of the White River watershed, and in particular that segment of privately owned land between Highway 63 in Bayfield County and Highway 13 in Ashland County. This desire is very much in tune with the wishes of landowners and residents throughout the region, as shown by the results of various surveys conducted in recent years. Highlights of these surveys follow.

#### 1. Bayfield County Land Use Survey, 2000:

This survey was developed by the Bayfield County Land Use Plan Steering Committee and mailed to all county property owners and residents. Below are percentages of respondents who marked "strongly agree" or "agree" to the following items:

- 95% feel that the surface waters of Bayfield County (its lakes, rivers, streams and wetlands) should be protected from degradation.
- 93% feel that preserving the county's environmental quality is important.
- 91% feel that provisions should be made to preserve the aesthetic beauty of lake, river and stream shorelines.
- 87% feel that public lands are important to the county.
- 77% feel that the county should place more restrictions on logging practices along lakeshores and streambanks.
- 73% feel that zoning restrictions protect areas more than they detract from them.
- 70% feel that the county should place more restrictions on the development of land with unique natural features.
- 69% feel that the county should place more restrictions on the development of wetlands and floodplains.
- 64% feel that developing new parks, trails and other public recreational facilities is important.
- The survey asked respondents to rank the top three issues of their concern, from a provided list. The top three results were:
  1. Water quality protection
  2. Protection of natural resources
  3. Maintaining rural character

2. Ashland County Land, Water, and Habitat Issue Identification Workshop, 2004:

Sixty participants from various backgrounds and fields of expertise met in a day-long workshop in April 2004 to hear presentations and learn about natural resource management issues in Ashland County. The event was sponsored by Ashland County, UW-Extension Ashland County, ABDI Land Conservation Dept., and the Center for Land Use Education at UW-Stevens Point. As part of the event, attendees participated in an issue prioritization exercise designed to identify and prioritize the top natural resource issues in Ashland County.

- Of the top 12 issues identified at this workshop, the issue deemed most important was “the protection of watersheds and watershed systems, including headwaters, riparian zones and buffers to keep water clean.”

3. Bad River Watershed Association Landowner Survey, 2002:

This survey was sent to 2,918 landowners with Bad River watershed addresses, including those in Ashland, Bayfield and Iron counties as well as on the Bad River Indian Reservation. Fifty-seven of the respondents to the survey were landowners in the White River subwatershed. From this cohort, below are percentages who marked the following issues:

- 85% are “concerned” or “very concerned” about the degradation of wildlife habitat in the White River watershed.
- 82% are “concerned” or “very concerned” about runoff and erosion in the White River watershed.
- 80% are “concerned” or “very concerned” about loss of scenic beauty in the White River watershed.

- 72% are “concerned” or “very concerned” about the spread of invasive species in the White River watershed.

An open-ended question asked what respondents hoped to see in their watershed in the next 20 years. The answers strongly reflected these themes: keeping a rural, natural character to the land and waterways; restricting development; maintaining or improving fish and wildlife habitat.

4. Town of Kelly Land Use Plan, 2000:

This citizen-written plan included the following goal: “Protect the natural resources and scenic beauty of the Town of Kelly.” This goal featured the following suggested actions:

- Support the State of Wisconsin Department of Natural Resources structure setback requirements along our pristine waterways.
- Support sound conservation practices along waterways to prevent erosion.
- Discourage development along the town’s scenic waterways.

In addition, the town’s land use plan featured these results from a survey prepared by the town’s Land Use Planning Committee and distributed to all town property owners:

- 89% of respondents feel that it is important to protect the water resources in the town.
- 51% feel concern about maintaining the quality of water resources in the town.
- 56% favor “no development” along the White River.

5. Town of Gingles Land Use Plan, 2001:

This citizen-written plan included the following goal: “Preserve and protect the natural resources and wildlife habitat in the Town.” This goal featured the following suggested actions:

- Support sound conservation practices.
- Identify and clearly designate wetlands, sensitive environmental areas and prime forest lands.
- Support responsible landscaping practices.
- Encourage construction practices which preserve as much of the existing forest land as possible.
- Encourage more sensitive forestry practices.

Another goal: “Maintain the Town’s rural character.” This goal featured the following suggested action:

- Designate areas desirable for development as well as nondesirable areas for development.

In addition, the plan featured results from a 1999 Town of Gingles survey that collecting public input on issues affecting future growth and development in the town. Responses included:

- 87% of respondents felt it important to preserve and protect the unique characteristics and natural resources of the Town of Gingles (e.g. woodlands, wetlands and water quality, etc.)

## Communication and Outreach

Because of its affiliation with the Bad River Watershed Association, Inc., the activities of the Friends of the White River have a ready-made constituency and outreach infrastructure, which includes the following venues.

- The Bad River Watershed Association produces a quarterly newsletter, *Watershed Waves*, that is sent to a mailing list of approximately 650. Space is regularly reserved in the newsletter for reports and feature articles highlighting BRWA committee projects and activities, including the work of the Friends of the White River committee.
- In spring 2004, the Bad River Watershed launched a web site, [www.badriverwatershed.org](http://www.badriverwatershed.org). This site, whose management is a responsibility of the communications committee of the Bad River Watershed Association, provides online access to information about the organization and its activities, including the activities of the Friends of the White River.
- The Bad River Watershed Association enjoys supportive connections with a long list of conservation groups, resource agencies, educational institutions, and others throughout the region and state, and can use these connections for outreach purposes. For example, mention of the activities of the Friends of the White River already has appeared in an article in *Wisconsin Rivers* (Vol. 9, No. 4, Winter 2003), a statewide publication of The River Alliance of Wisconsin.

## GOALS AND OBJECTIVES

### Friends of the White River Goals and Objectives

Goal: To protect and preserve the White River between Hwy 63 (Bayfield County) and Hwy 13 (Ashland County) as a natural corridor for future generations to enjoy.

Objectives:

1. Research and maintain or improve water quality
2. Research and maintain or improve fishery
3. Provide walk-in public access to the river
4. Encourage ecological preservation/restoration in order to protect the scenic beauty and ecological health of the river corridor

## Objective 1: Research and maintain or improve water quality

### Current Situation:

The White River forms at the confluence of the East, West and South Forks of the White River. For its first two miles down to Pike's Branch at the Section 21/22 line (T46N-R7W: Town of Delta) the river is considered an outstanding water resource by the WDNR. From the Section 21/22 line (T46N-R7W: Town of Delta) to the boundary of the Bad River Indian Reservation, the stream is considered an exceptional resource water.

As the river passes through the Bibon marsh and down to the White River Flowage, it collects the waters of the Long Lake Branch and its tributaries and Schramm Creek. The river picks up discoloration here from the underlying red clay soils and while still a cold-water stream is less productive for trout. Bottom types are mostly clay, with areas of sand, gravel, silt and rubble.

A variety of water-quality problems are present in the middle section of the river, including a hydroelectric dam, large areas of agricultural land, and bank erosion. Specific "use problems" identified by the WDNR include: forestry activities, hydrological modification, unspecified nonpoint source pollution, low flow, and pollution from septic systems. These pollution sources have the following impacts: sedimentation, habitat loss, turbidity, and unnatural stream flow fluctuations caused by unnatural conditions.

### Proposed actions:

1. Establish baseline water quality using the existing Bad River Watershed Association water chemistry and macroinvertebrate monitoring system. Establish monitoring sites for both tests in the middle stretch of the White River, and start collecting data (phosphate, nitrate, dissolved oxygen, pH, chloride, turbidity, macroinvertebrate sampling).

*Current status: Water chemistry testing:* In late 2002, The Bad River Watershed Association began a water-quality testing program throughout the Bad River watershed. This program includes monthly water-chemistry testing and biannually macroinvertebrate testing at various sites. Volunteers who conduct testing are given continual training and their work is subject to periodic quality-control checks. The program goal is to establish a baseline of water quality characteristics after gathering four years' of data at established sites throughout the watershed.

Throughout 2003, BRWA conducted water chemistry testing on two sites on the White River, both of which were upstream of the "middle segment" which begins at Hwy 63. These two sites were at Long Branch and at Bibon Road.

Early in 2004, BRWA received gifts and grants enabling the purchase of several additional water chemistry testing kits which will enable additional testing sites, including White River sites at Maple Ridge Road and at Hwy 13—essentially at the beginning and end of the targeted "middle segment." By the end of 2004, water chemistry testing will begin at these two sites.

*Current status: Macroinvertebrate testing:* The Bad River Watershed Association initiated a macroinvertebrate testing program in 2003; target sites are tested twice per year. Two of the three White River sites for macroinvertebrate testing are upstream of the “middle segment” at Pike’s Creek and Long Branch.

The third site, at Maple Ridge Road just east of Hwy. 63, is in the target area. As the BRWA macroinvertebrate testing program continues to grow, priority will be given to establishing an additional testing site in the middle segment of the White River.

The only prior testing documented in this middle segment was a single instance on the White River Flowage that took place as part of the 1989-1990 study of the flowage fishery. On August 24, 1989, macroinvertebrate taxa were sampled in the flowage, in the bypassed channel, and in the tailwater below the dam powerhouse. Results of that testing are included in the appendix.

2. After baseline water quality characteristics have been established, examine continuing test results for evidence of degraded water quality. From these data, attempt to determine underlying causes.
3. Conduct visual inspection of the river with a conservation professional, looking in particular for bank erosion and other visible sources of pollution; along these areas, contact landowners and educate/provide resources about buffer programs (see objective #4).
4. Gather information from longtime landowners and river users about the state of the river corridor and the water quality in the watershed. This information may take the form of oral history interviews, news clippings, photographs, personal records, etc.

## Objective 2: Research and maintain or improve fishery

### Current Situation:

The White River is considered a Class I trout stream for brook and brown trout for its first two miles down to Pike's Branch at the Section 21/22 line (T46N-R7W: Town of Delta). From this point to the White River Flowage in Ashland County, and then from the outlet of the flowage to the river mouth, is considered Class II trout water, with the reach up to the dam supporting migratory species from Lake Superior. The river is identified in the Lake Superior Coastal Wetland Evaluation as an aquatic priority site.

Several of the White River's feeder streams are considered trout waters. Most of the feeders to the river in this downstream portion are either intermittent or considered warm-water forage fishery waters. As the river passes through the Bibon Swamp and down to the White River Flowage, it collects the waters of the Long Lake Branch and its tributaries and Schramm Creek. The river picks up discoloration here from the underlying red clay soils and while still a cold water stream is less productive for trout.

A great deal of fishery work has been done on the White River in the Bibon Swamp area and farther upstream at the White River Fishery Area. By contrast, the fishery in the targeted middle segment of the White River, from Hwy 63 in Bayfield County to Hwy 13 in Ashland County, has received little scrutiny. The U.S. Fish and Wildlife Service office in Ashland, Wis. reports that their office has no fisheries data on this section of the White River. Likewise, an examination of the Wisconsin DNR's historic files of fisheries research on the White River, kept at the DNR office in Brule, revealed no information from the middle stretch of the White River, with the exception of a 1989-1990 fishery survey of the White River flowage at Hwy 112.

This survey showed that northern pike were the most abundant gamefish species in the flowage. Of the other sport or non-game species in the flowage, all except black bullhead, white sucker, and shorthead redhorse were present in very low numbers. Largemouth bass, black crappie, bluegill, pumpkinseed, and yellow perch were among the rarer species. Brown trout were found in the narrow, upper end of the flowage where conditions more resemble the river.

WDNR Fisheries Biologist Scott Toshner noted that the little is known about the fishery in the riverine portion of the middle segment of the White River, and that this system has long been in need of fisheries research.

### Proposed actions:

1. Seek funding to support basic research on the status and health of the fishery in the middle section of the White River. Collaborate with the Wisconsin DNR, Trout Unlimited, and other partners to seek resources and design studies.
2. Gather information from longtime landowners and river users about the state of the fishery in this segment of the river corridor. This information may take the form of oral history interviews, news clippings, photographs, personal records, etc.



### Objective 3: Provide walk-in public access to river

#### Current Situation:

Along its entire length, the White River provides exceptional opportunities for anglers and paddlers. Along its “middle segment,” however, there is limited access to the White River because of very few road crossings and an absence of public waterfront land. Currently, anglers and paddlers wishing to enjoy the middle segment of the White River must put in at the Maple Ridge Road crossing, just east of Hwy 63 in Bayfield County, and cannot legally step on shore again until they reach the boat landing at the White River Flowage on the west side of Hwy 112 in Ashland County. This stretch represents a length of about 20 river miles.

River users in the middle segment also can put in below the dam on the east side of Hwy 112 and take out at the Hwy 13 crossing, a more manageable stretch of about 8 river miles.

#### Proposed actions:

1. Establish one walk-in public access trail to the White River through land or easement donation or purchase in the river segment between the Maple Ridge Road crossing and the White River Flowage boat landing.

*Current status:* A White River landowner in the Town of Kelly has expressed interest in donating an easement across a portion of his land to enable walk-in public access to the White River (See Maps 9 and 10).

The Bayfield Regional Conservancy, a regional land trust based in Bayfield, Wis., has been involved in discussion about the White River since the formation of the Friends of the White River group. At its March 2004 meeting, the board of directors of the Bayfield Regional Conservancy approved a motion to serve as managers of this public-access easement should the opportunity arise.

2. Create one primitive campsite accessible by river users along the river between Maple Ridge Road crossing and the White River Flowage boat landing

*Current status:* Yet to be determined.

**Objective 4: Encourage ecological preservation/restoration in order to protect the scenic beauty and ecological health of the river corridor.**

**Current Situation:**

Land along the “middle segment” of the White River corridor between Hwy 63 and Hwy 13 is almost entirely privately owned. By contrast, the upper and lower segments of the White River watershed comprise a patchwork of federal, state and tribal land, and as such enjoy a level of study, scrutiny and ecological protection not available to private land.

Ecological health and protection of this privately owned middle stretch of the watershed depends on county and township land-use plans, zoning ordinances, and the awareness and good will of private landowners. A concerted effort to protect and restore this middle segment of the White River could, in effect, provide the final piece to a patchwork of conservation that when viewed as a whole, would offer protection to the *entire White River watershed*.

**Proposed actions:**

1. Pursue an existing opportunity to purchase land and easements along the White River in the Town of Kelly, Bayfield County.

*Current status:* Two White River landowners in the Town of Kelly have expressed interest in selling riverfront land and easements totaling 121 acres to an entity that would protect and preserve that land. The Friends of the White River currently is investigating funding sources to enable that purchase (See Maps 11 and 12).

If a land sale proceeds, the ultimate owner of these 121 acres will be the Bayfield Regional Conservancy, Inc., a regional land trust based in Bayfield, Wis. that has agreed to hold title to and write conservation easements for the land. At its March 2004 meeting, the board of directors of the Bayfield Regional Conservancy approved a motion to serve as owners of this White River land parcel should the opportunity arise.

A grant request made in May 2004 by BRC to the Wisconsin DNR currently under review would, if received, provide funding for BRC to purchase a 27-acre parcel (part of the 121 total acres). This parcel is labeled “f” on Map 12.

2. Work with public and private conservation organizations to educate White River watershed landowners about their options to put land into trust or to attach conservation easements to their land.

*Current status:* The director and board of the Bayfield Regional Conservancy are aware of and support the activities of the Friends of the White River. The BRC director presented a program on conservation options through private land trusts

to a group of White River landowners on January 29, 2004, and has maintained contact with the group.

3. Contact White River landowners willing to consider and discuss the sale or donation of land or conservation easements along the White River in the middle segment of the watershed.
4. As title or easements are purchased or donated in this stretch of the river corridor, encourage management of the protected land for low-impact, non-motorized public recreational value, and discourage or prohibit if possible the development of any high-impact or commercial enterprise.
5. Work to educate White River landowners about best management practices and county and federal conservation programs that provide funding for conservation and restoration practices.

*Current status:* Both Diane Daulton, director of the Ashland-Bayfield-Douglas-Iron Counties Land Conservation Department, and Gary Haughn, an ecologist from the Natural Resources Conservation Service, presented programs on cost-share conservation options available to private landowners to a group of White River landowners on January 29, 2004. Diane and Gary both serve on the Bad River Watershed Association's technical advisory committee.

## EVALUATION AND REVISION

### Evaluation and Revision

The goals and objectives of this plan will be reviewed, evaluated, and if necessary, amended annually by the Friends of the White River committee of the Bad River Watershed Association, Inc. Annual input will be requested from the BRWA technical committee and invited from all members of BRWA.

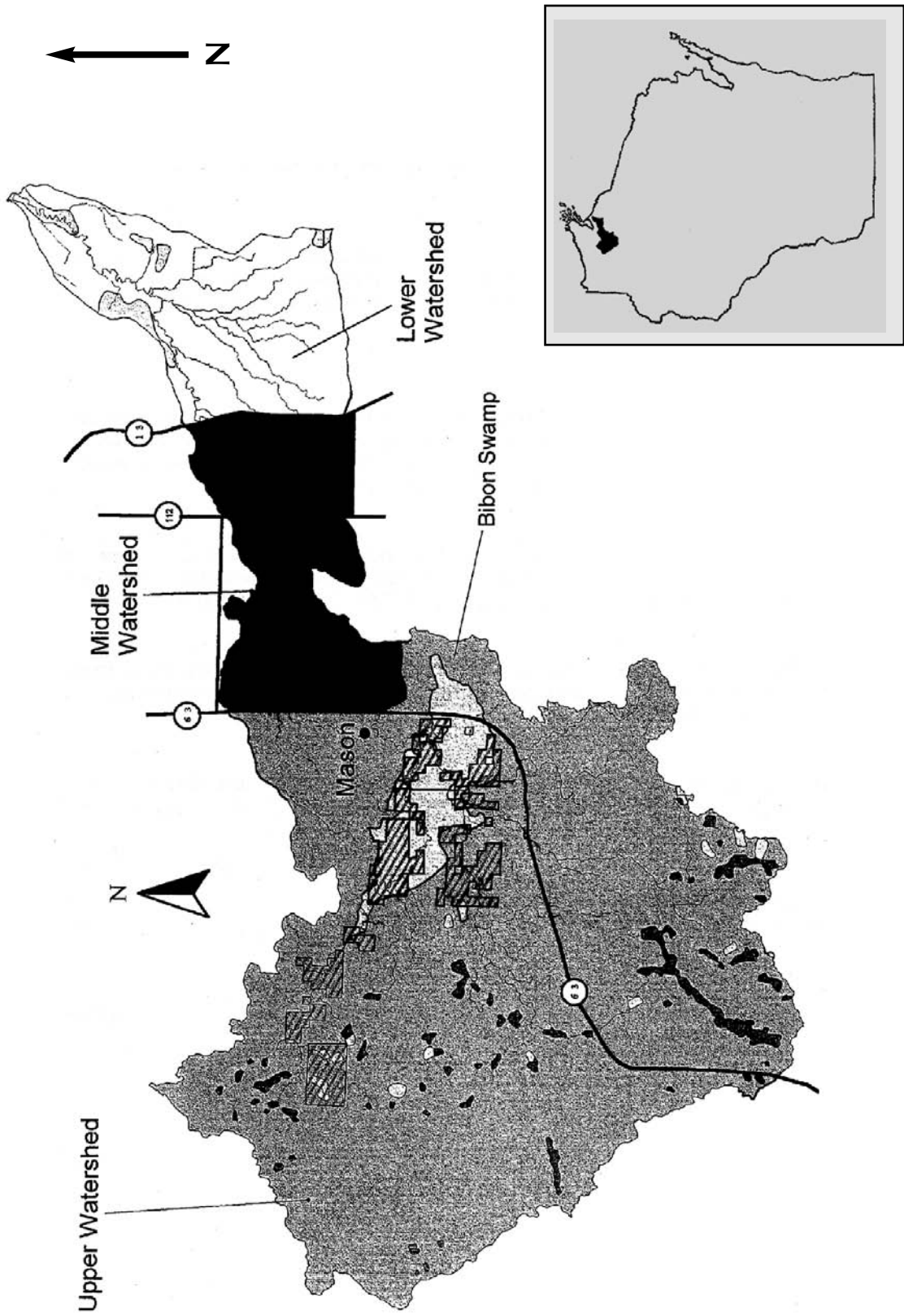
## MAPS

- MAP 1: The White River Watershed: full watershed boundaries
- MAP 2: The White River Watershed: upper, middle and lower segments
- MAP 3: The White River Watershed: land tenure
- MAP 4: The White River Watershed: middle segment
- MAP 5: The White River Watershed: middle segment ecological landscapes
- MAP 6: The White River Watershed: middle segment original land cover
- MAP 7: The White River Watershed: middle segment landtype
- MAP 8: The White River Watershed: middle segment current land cover
- MAP 9: Proposed Walk-In Easement: plat book
- MAP 10: Proposed Walk-In Easement: aerial photo
- MAP 11: Proposed 121-acre Land Sale: plat book
- MAP 12: Proposed 121-acre Land Sale: aerial photo



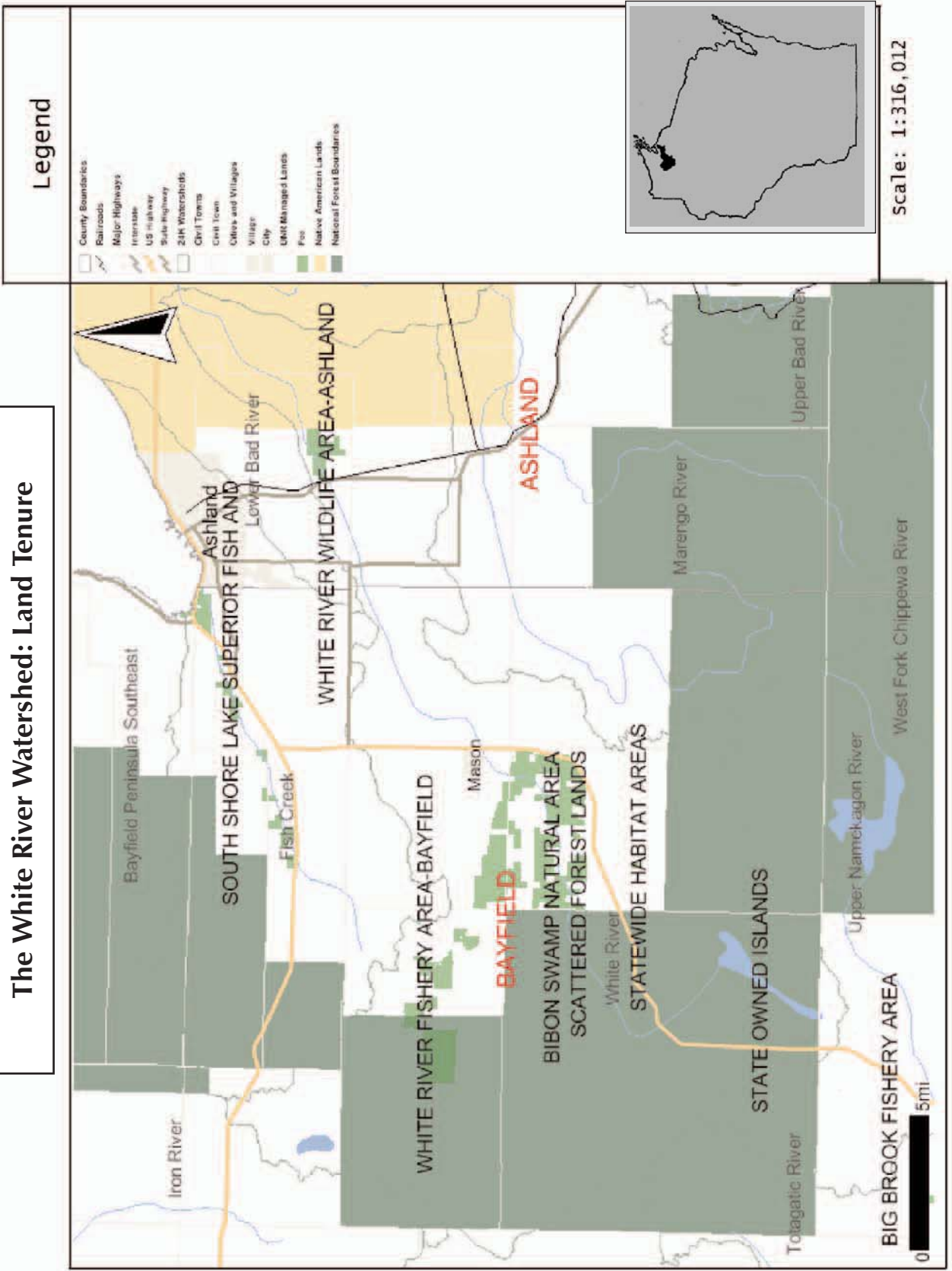


**The White River Watershed: Upper, Middle and Lower Segments**



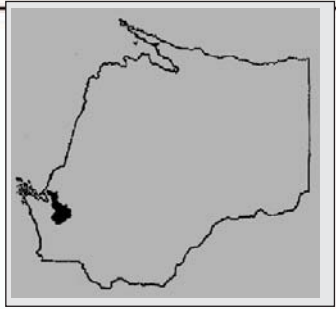
**MAP 2**

# The White River Watershed: Land Tenure



## Legend

- Country Boundaries
- Railroads
- Major Highways
- Interstate
- US Highway
- State Highway
- 24K Watersheds
- Charl Towns
- Chert Town
- Other and Villages
- Village
- City
- Unit Managed Lands
- Fee
- Native American Lands
- National Forest Boundaries

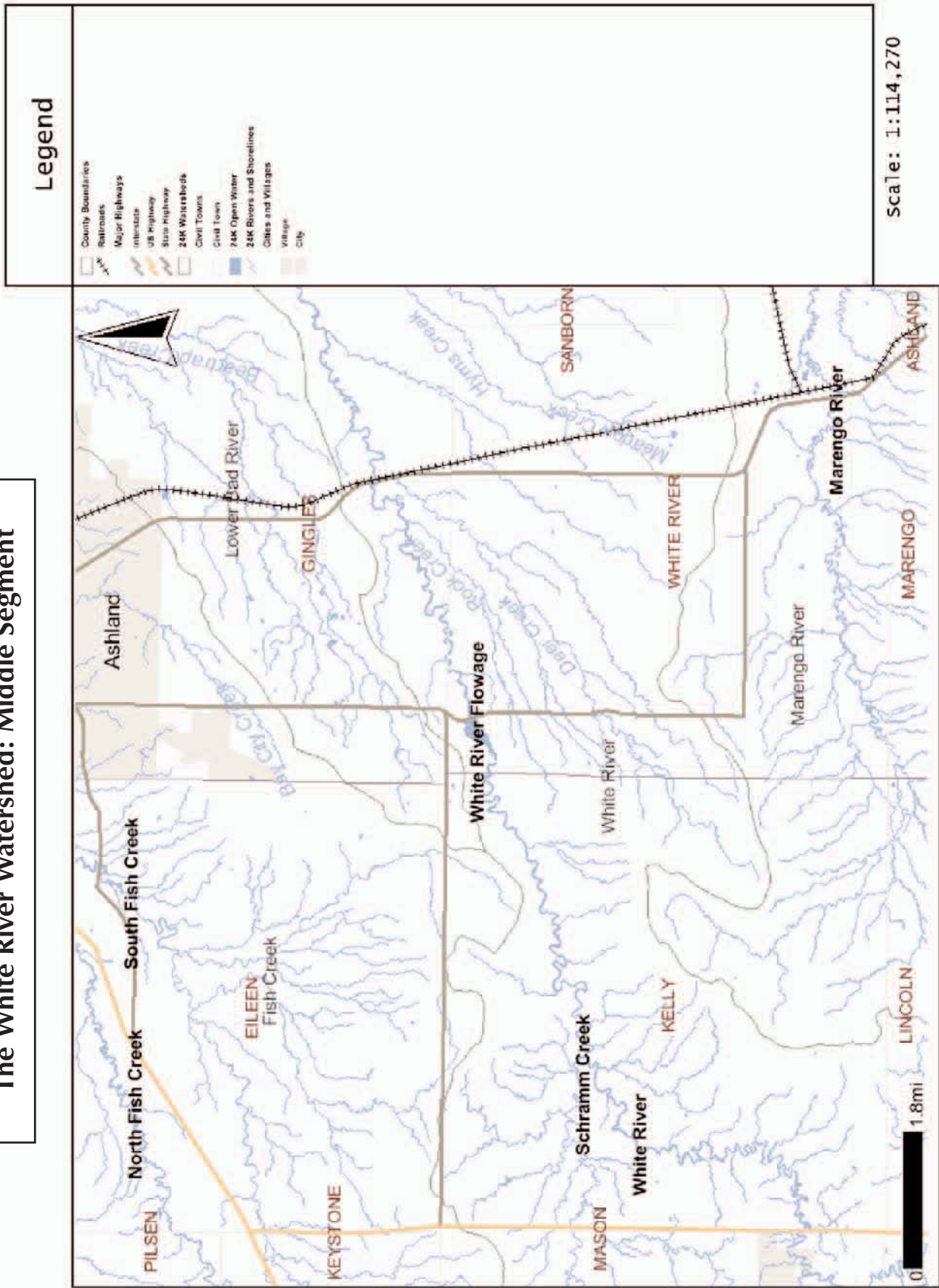


Scale: 1:316,012

MAP 3

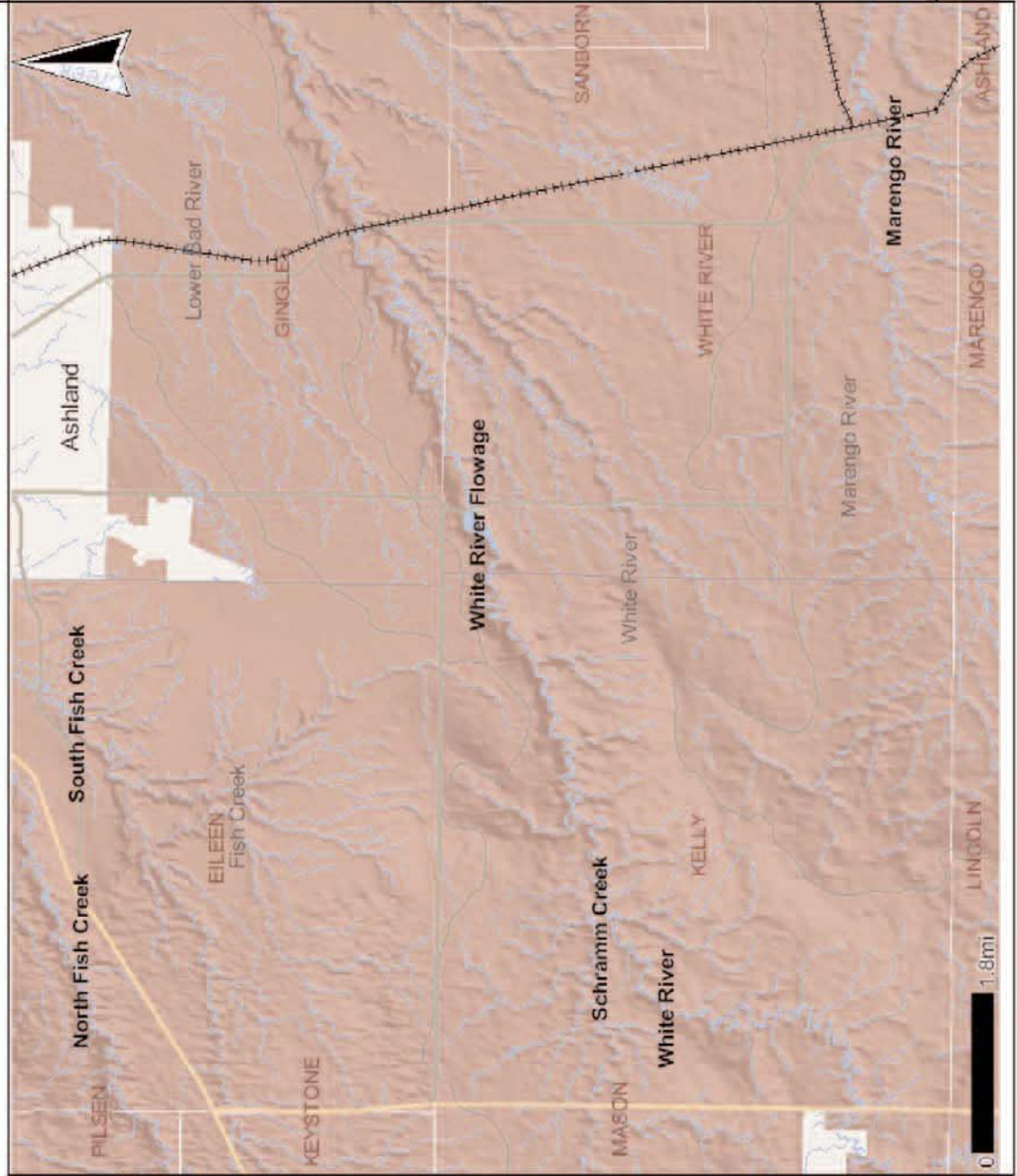


# The White River Watershed: Middle Segment



MAP 4

# The White River Watershed: Middle Segment Ecological Landscapes



## Legend

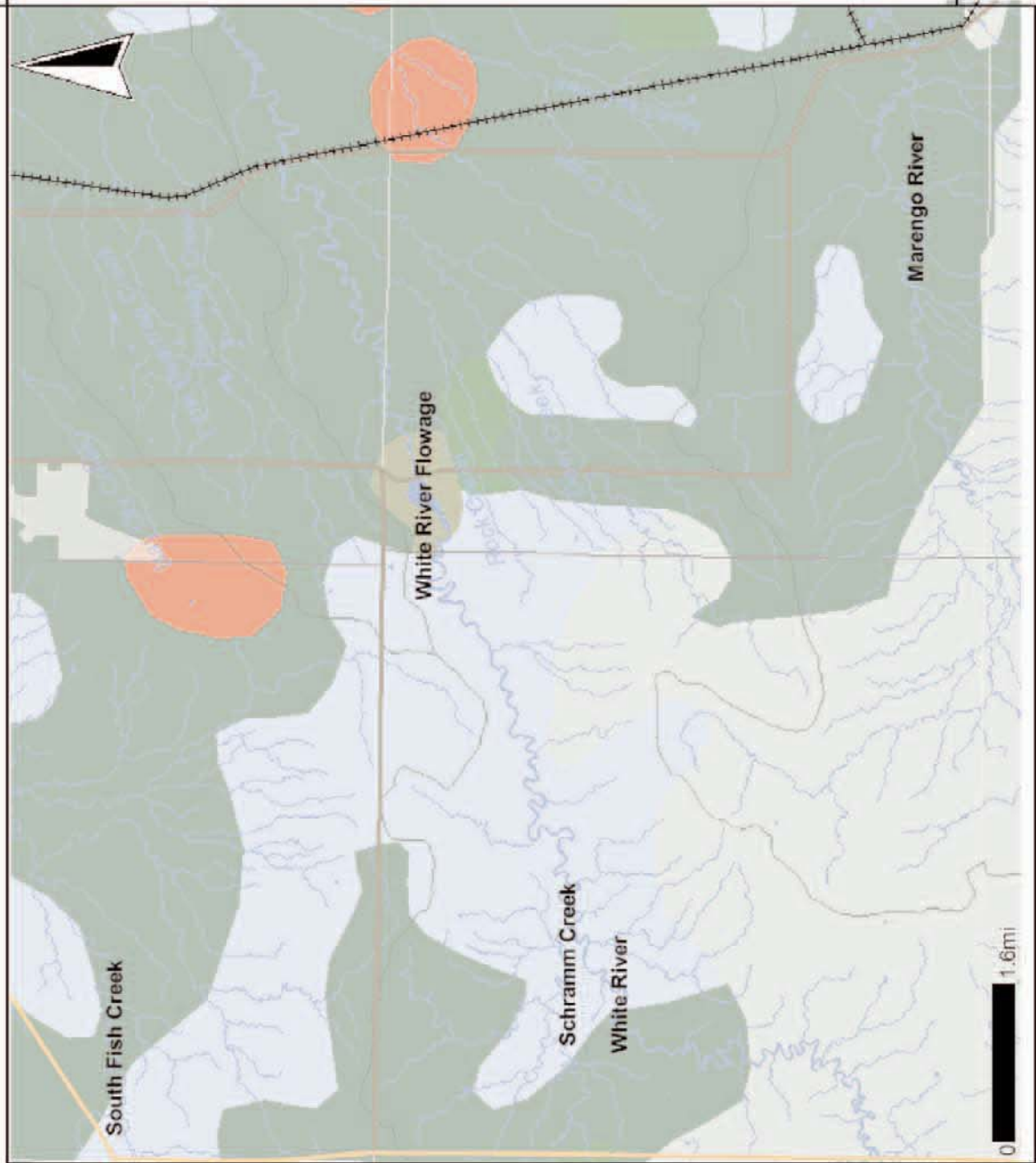
- County Boundaries
- Railroads
- Major Highways
- Interstate
- US Highway
- State Highway
- 24K Watersheds
- City/Town
- City
- 24K Open Water
- 24K Rivers and Shorelines
- Cities and Villages
- Village
- City
- Ecological Landscapes
- Central Lake Michigan Coastal
- Central Sand Hills
- Central Sand Plains
- Forest Transition
- North Central Forest
- Northwest Sands
- Northwest Highlands
- Northwest Lake Michigan Coastal
- Northwest Lowlands
- Northwest Sands
- Southwest Coastal Plains
- Southwest Lake Michigan Coastal
- Southwest Sandhills
- Western Coastal Plains
- Western Coastal and Bluffs
- Western Plains

Scale: 1:114,270

MAP 5



# The White River Watershed: Middle Segment Original Land Cover



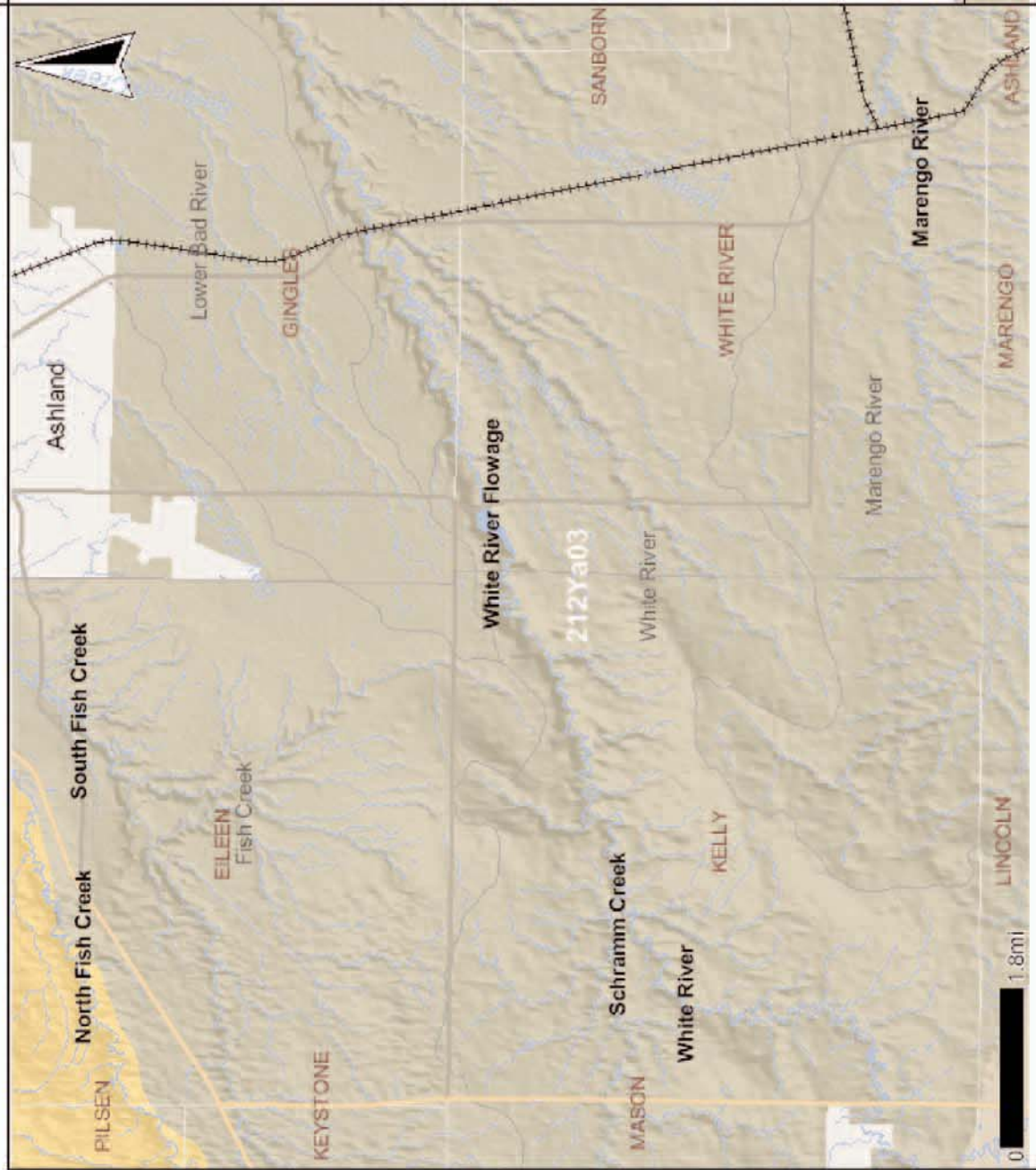
## Legend

	County Boundaries
	Railroads
	Major Highways
	Interstate
	US Highway
	State Highway
	24K Waterbodies
	Civil Towns
	Civil Towns
	24K Open Water
	24K Rivers and Shorelines
	Cities and Villages
	Village
	City
	Original Vegetation Cover
	0 - Water
	1 - White spruce, balsam fir, tamarack, white cedar, white pine, white pine, yellow pine, yellow spruce, white pine, red pine, red pine
	2 - Beech, hemlock, sugar maple, yellow birch, white pine, red pine
	3 - Hemlock, sugar maple, yellow birch, white pine, red pine
	4 - Sugar maple, yellow birch, white pine, red pine
	5 - White pine, red pine
	6 - Jack pine, scrub (HbV), oak forest and barrens
	7 - Aspen, white birch, pine
	8 - Sugar maple, yellow birch, white pine, red pine, black oak, sugar maple, sassafras, red oak, white oak, black oak
	9 - Sugar maple, sassafras, red oak, white oak, black oak
	10 - White oak, black oak, bur oak
	11 - Oak openings bar oak, white oak, black oak
	12 - Prairie
	13 - B marsh
	14 - Swamp Conifers
	15 - Lowland Hardwoods
	16 - Marsh and sedge meadow, wet prairie, loading sheds
	Area with vegetation cover type not interpreted on the source map

Scale: 1:99,438

MAP 6

# The White River Watershed: Middle Segment Landtype



## Legend

- County Boundaries
- Railroads
- Major Highways
- Interstate
- US Highway
- State Highway
- 24K Watersheds
- City Towns
- City Town
- 24K Open Water
- 24K Rivers and Streamlines
- Cities and Villages
- Village
- City

### ITA 212Ya03: Ashland Lake-Modified Till Plain

**Description:** The characteristic landform pattern is undulating modified lacustrine moraine with deep v-shaped ravines. Soils are predominantly somewhat poorly drained clay loam over calcareous clay till or loamy lacustrine.

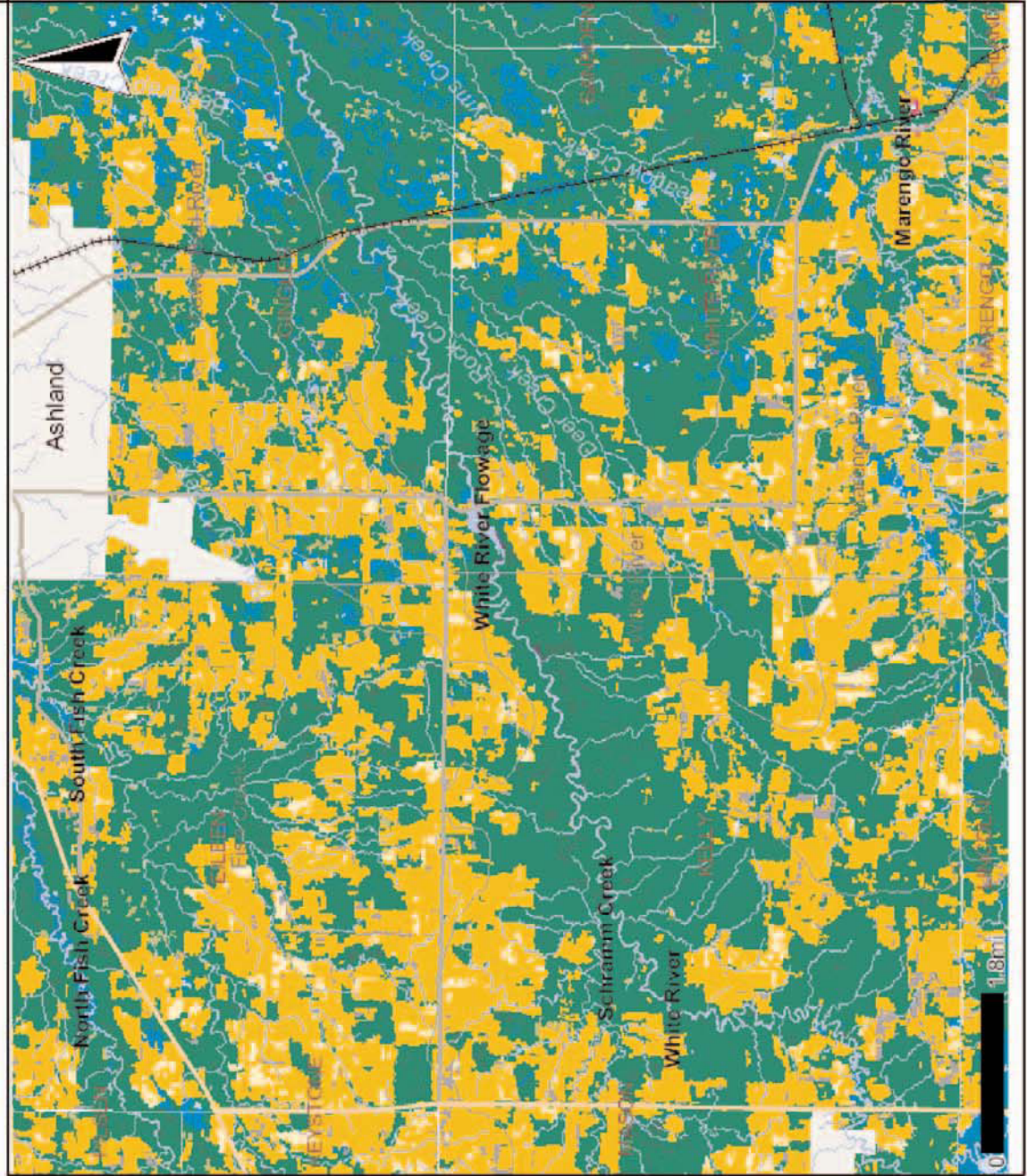
**Soil Associations:** Badriver-Odanah-Sanborg-Portwing-Herbster, Rubicon-Sulz

**Soil Description:** Somewhat poorly drained, well drained and moderately well drained clayey soils with a clay loam or silt loam over calcareous clay till or loamy/sandy lacustrine.

Scale: 1:114,270



# The White River Watershed: Middle Segment Current Land Cover



## Legend

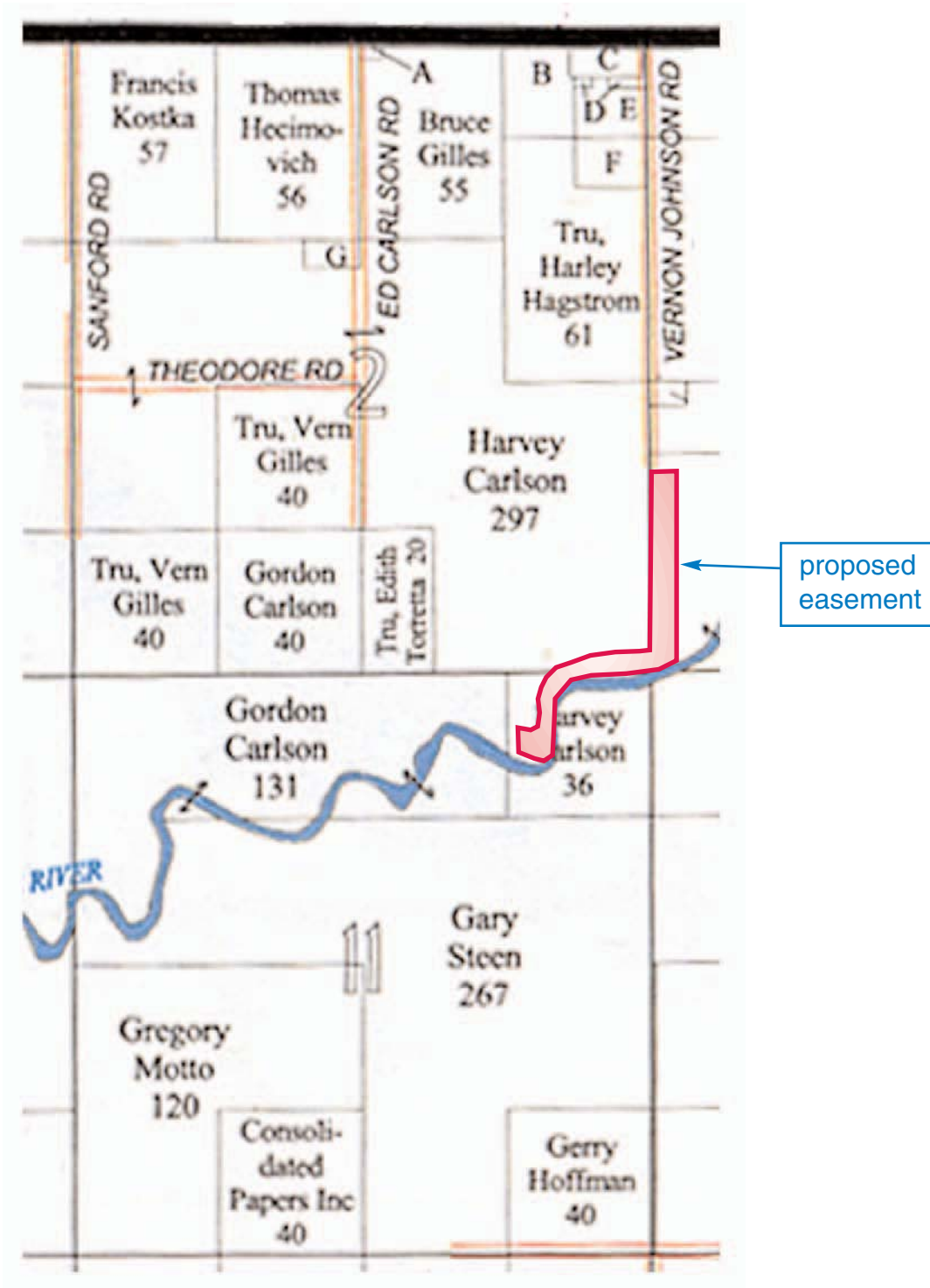
- County Boundaries
- Railroads
- Major Highways
- Interstate
- US Highway
- State Highway
- 24K Watersheds
- Civil Towns
- 24K Open Water
- 24K Rivers and Shorelines
- Cities and Villages
- Village
- City
- WISCLAND Landcover
- High Intensity Urban
- Low Intensity Urban
- Golf Course
- General Agriculture
- Cranberry Bog
- Grassland
- Cynobious Forest
- Scrubland Deciduous Forest
- Mixed Deciduous-Coniferous Forest
- Open Water
- Emergent Wet Meadow Wetland
- Lowland Scrub Wetland
- Nonstem Wetland
- Savann
- Shrubland
- Cloud Cover
- Other

Scale: 1:114,270

MAP 8

Proposed Walk-In Easement

Sec2 & 11, T46N R5W, Bayfield County

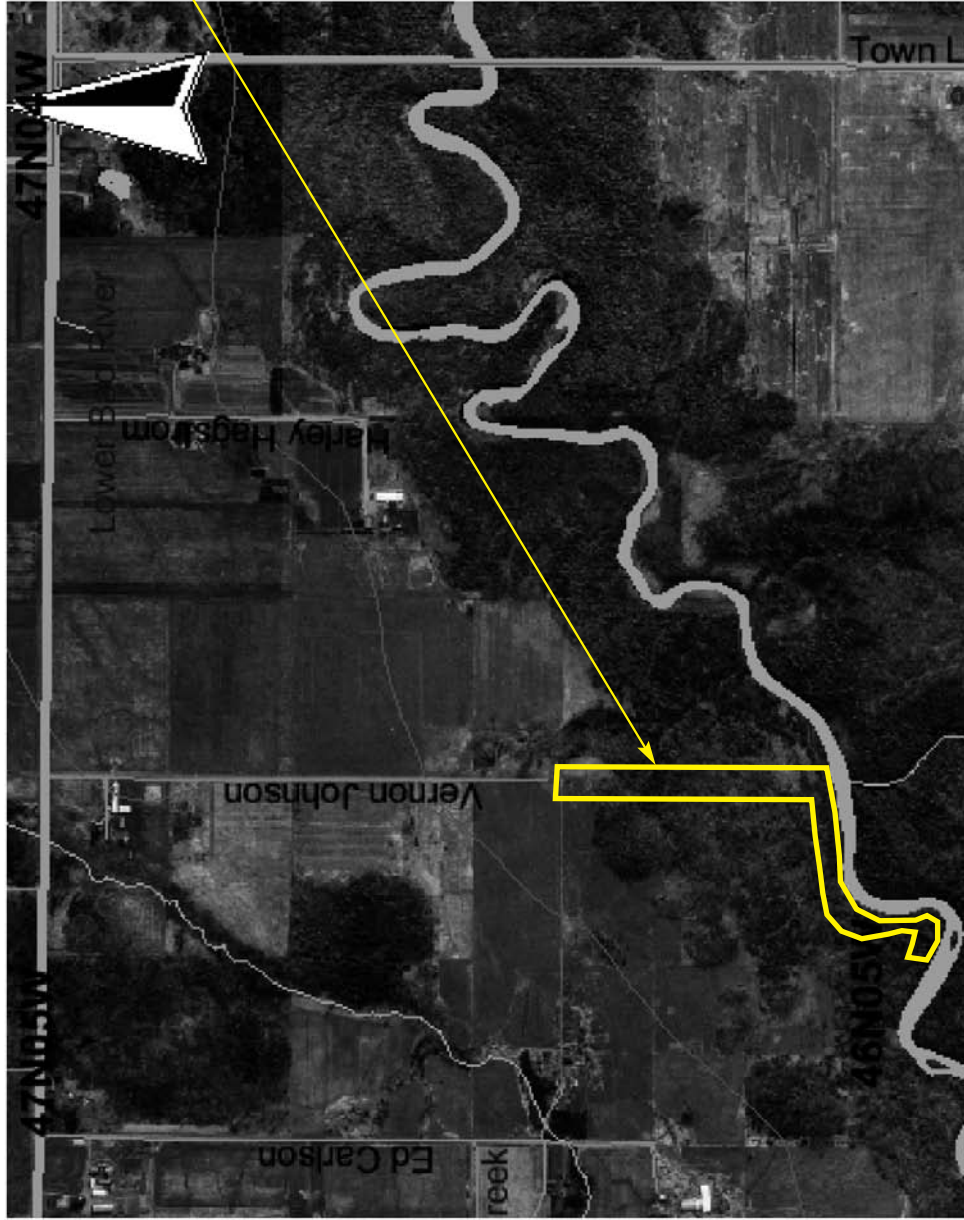


MAP 9



# Proposed walk-in easement

Sec 2 & 11, T46N R5W, Bayfield County



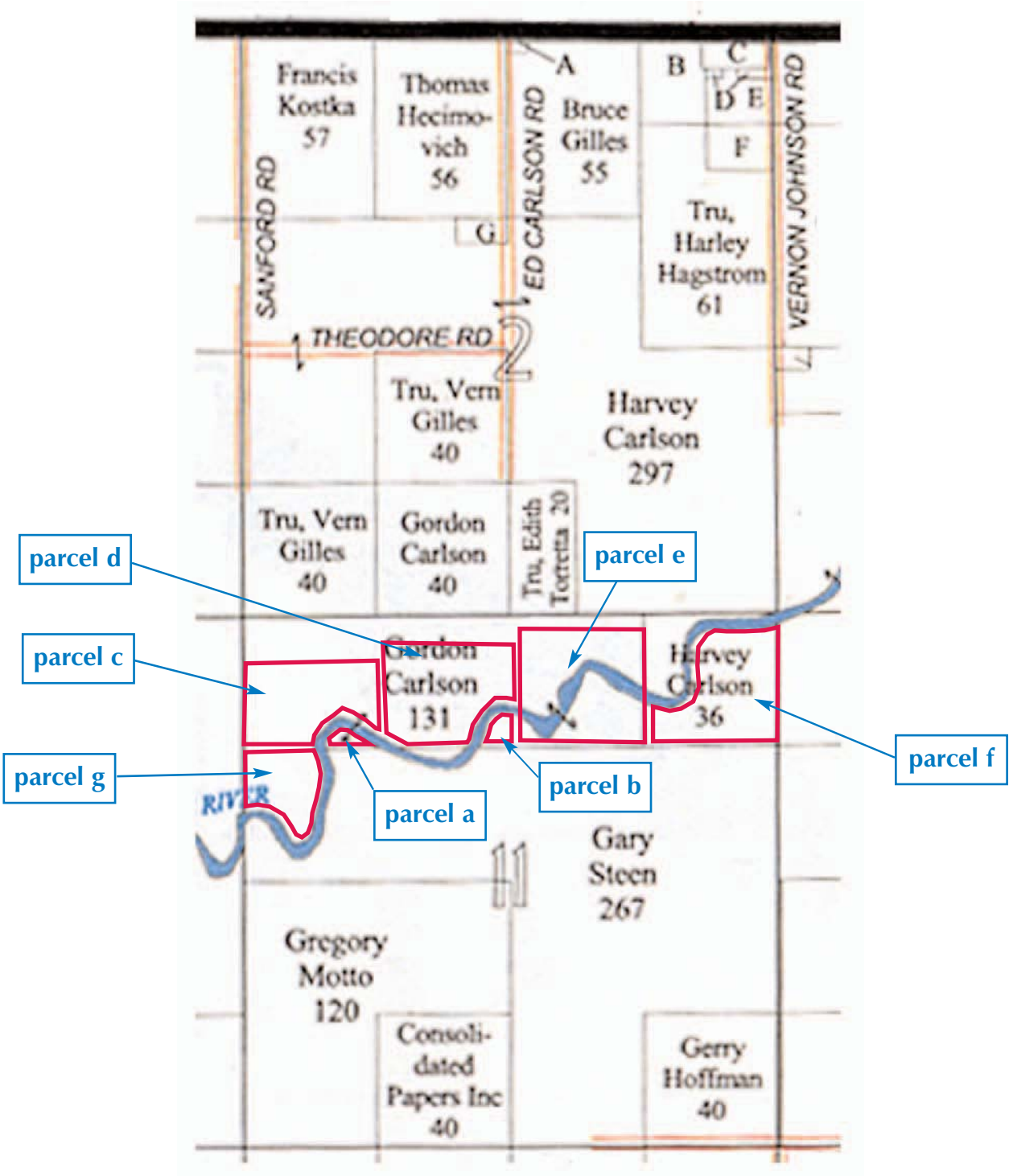
## Property Description:

A 10-foot wide perpetual easement across certain lands in the Town of Kelly, County of Bayfield, more particularly described as: The easterly ten (10) feet of the SE quarter of Section 2, Town 46N, Range 5W, commencing at the southernmost end of Vernon Johnson Road and proceeding south to the White River in Section 11 of said township, thence westerly along the north side of the White River to the NW quarter of the NE quarter of Section 11.

MAP 10

**Proposed 121-Acre Land Sale**

Sec 2 & 11, T46N R5W, Bayfield County



**MAP 11**



# Proposed 121-Acre Land Sale



## PARCEL INFORMATION

- a.** Lands lying in Section 11, Town of Kelly of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NW quarter of the NW quarter lying south of the White River, approximately 6 acres.
- b.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NE quarter of the NW quarter lying south of the White River, approximately 5 acres.
- c.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NW quarter of the NW quarter lying north of the White River, less the northerly 55 feet thereof, 18 acres.

- d.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NE quarter of the NW quarter lying north of the White River, less the northerly 450 feet thereof, 22 acres.
- e.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NW quarter of the NE quarter, less the northerly 350 feet thereof, lying north and south of the White River, 30 acres.
- f.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the NE quarter of the NE quarter lying south of the White River, 27 acres.
- g.** Lands lying in Section 11, Town of Kelly (T46N, R5W), Bayfield County, more particularly described as: That portion of the SW quarter of the NW quarter lying north of the White River, 16.2 acres.

## APPENDIX

1. White River watershed Land Type Association information (212Ya03: Ashland Lake-Modified Till Plain)
2. White River Flowage lake survey map
3. White River Flowage macroinvertebrate sampling results
4. White River Flowage fish species abundance sampling results
5. Friends of the White River SWOT results from Jan. 8, 2004 meeting

## Appendix 1: White River watershed Landtype Association information

NAME:  
Ashland Lake-Modified Till Plain

ACRES:  
254331.71

SQUARE MILES:  
397.393

### DESCRIPTION:

The characteristic landform pattern is undulating modified lacustrine moraine with deep v-shaped ravines. Soils are predominantly somewhat poorly drained clay loam over calcareous clay till or loamy lacustrine. Common habitat types include AbArSn, AbAS

### CLvATE

CODE	PERCENT
19	1
23	2
25	13
28	73
30	10

### GEOLOGY

BEDROCK TYPE DESCRIPTION  
Carbonates

AVERAGE DEPTH  
TO BEDROCK  
10000

BEDROCK DEPTH  
DESCRIPTION  
Bedrock is between 100 feet and 50 feet of the land surface

### GEOMORPHOLOGY

GEOMORPHOLOGY PROCESS  
Lake/Till Deposition

TOPOGRAPHY  
Undulating

SURFACE  
Modified Lacustrine Moraine

### SOIL INFORMATION

#### SOIL ASSOCIATIONS

Badriver-Odanah-Sanborg-Portwing-Herbster, Rubicon-Sultz

#### SOIL DESCRIPTION

Somewhat poorly drained, well drained, and moderately well drained clayey soils with a clay loam or silt loam surface over calcareous clay till or loamy/sandy lacustrine.

SURFACE TEXTURES  
CL-SIL

GENERAL TEXTURES  
Clayey

FAMILY TEXTURES  
FI

DRAINAGE CLASSES  
SPD-WD-MWD

PARENT MATERIAL  
Till-Lacustrine

### KOTAR'S HABITAT

HABITAT 1	HABITAT 2	HABITAT 3	HABITAT 4	HABITAT 5	HABITAT 6
AbArSn	AbASnMi	Hydromesi	Lowland		

\*Listed in order of probability occurrence, with each having an occurrence of 10% or greater

### WISCLAND LAND COVER

COVER TYPE CLASS	ACRES	PERCENT
Agricultural Land	4436	2
Bare Land	3076	1
Forested Wetland	8699	3
Grassland	58926	23
High Intensity Urban Area	1167	0
Low Intensity Urban Area	611	0
Nonforested Wetland	14268	6
Open Water	796	0
Shrubland	4087	2
Upland Broad-leaved Deciduous	117569	46
Upland Coniferous Forest	5464	2
Upland Mixed Deciduous/Conifer	35238	14

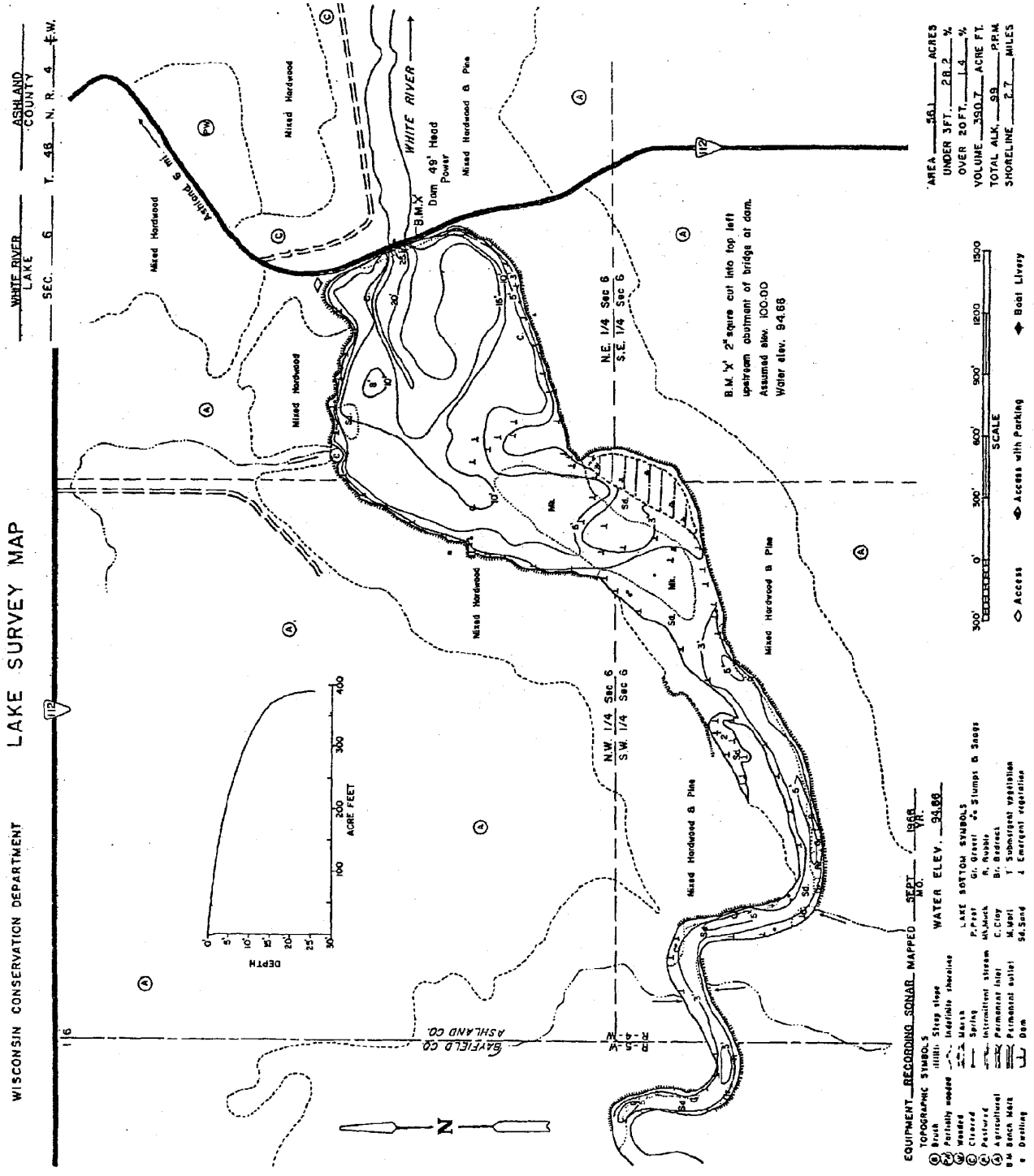
### FINLEY'S PRESETTLEMENT VEGETATION INFORMATION

CODE	PERCENT	DEFINITION
Hydrographic	0	Water
BF	48	White Spruce, Balasam Fir, Tamarack, White Cedar, White Birch, Aspen
HH/P	25	Hemlock, Sugar Maple, Yellow Birch, White Pine, Red Pine
NH/P	0	Sugar Maple, Yellow Birch, White Pine, Red Pine
PW/PR	18	White Pine, Red Pine
ABW/P	0	Aspen, White Birch, Pine
SC	3	Swamp Conifers - White Cedar, Black Spruce, Tamarack, Hemlock
GLS	0	Marsh and Sedge Meadow, Wet Prairie, lowland shrubs

### HYDROLOGY

PERENNIAL STREAMS	INTERMITTENT STREAMS	OPEN WATER	MARSH ACRES	DEPTH TO AQUIFER	SURFACE DRAINAGE
280 Miles	406 Miles	287 Acres	3040 Acres	0'-20'	pinnate

# Appendix 2: White River Flowage lake survey map



### Appendix 3: White River Flowage macroinvertebrate sampling results

Macroinvertebrate taxa sampled and relative abundance in the White River Flowage (Station 1), bypassed channel (Station 2), and tailwater below powerhouse (Station 3) on August 24, 1989. A=Abundant, C=Common, P=Present.

Taxa	Sta. 1	Sta. 2	Sta. 3
Amphipoda (scuds, sideswimmers)			
Gammaridae, <i>Gammarus sp.</i>	C	P	P
Decapoda (crayfish)			
Cambaridae, <i>Orconectes virilis</i>		C	C
Plecoptera (stoneflies)		C	P
Ephemeroptera (mayflies)			
Heptageniidae		C	C
Ephemeridae	C	P	
Baetidae	P	A	A
Odonata			
Anisoptera (dragonflies)			
Gomphidae	C		C
Zygoptera (damselflies)			
Coenagriidae	C		
Hemiptera (bugs)			
Gerridae (water strider)		P	
Trichoptera (caddis flies)			
Hydropsychidae		C	
Coleoptera (beetles)			
Elmidae (riffle beetles)			C
Diptera (flies, midges)			
Rhagionidae (snipe flies)		P	P
Tipulidae (crane flies)		P	C
Tabanidae (horse flies)			P
Chironomidae (midges)	P		P
Gastropoda (snails)			
Planorbidae	A		
Lymnaeidae	A	P	
TOTAL NUMBER OF TAXA	8	11	11

Source: "A Biological Survey of the White River Flowage and Tailwater; Ashland County, WI 1989-1990," Dennis K. Scholl, Fisheries Biologist, Wisconsin DNR, Brule, Wis.

#### Appendix 4: White River Flowage fish species abundance sampling results

Fish species sampled and relative abundance in the White River Flowage (Station 1), bypassed channel (Station 2), and tailwater below powerhouse (Station 3) during the 1989-1990 survey. A=Abundant, C=Common, P=Present.

Species	Sta. 1	Sta. 2	Sta. 3
Brown trout ( <i>Salmo trutta</i> )	P	P	P
Rainbow trout ( <i>Oncorhynchus mykiss</i> )		P	
Northern pike ( <i>Esox lucius</i> )	A	P	P
Creek chub ( <i>Semotilus atromaculatus</i> )	P	C	P
Common shiner ( <i>Notropis cornutus</i> )	A	A	A
Bluntnose minnow ( <i>Pimephales notatus</i> )	P	P	P
Longnose dace ( <i>Rhinichthys cataractae</i> )		A	A
Blacknose dace ( <i>Rhinichthys atratulus</i> )		P	C
Fathead minnow ( <i>Pimephales promelas</i> )		C	
Sand shiner ( <i>Notropis stramineus</i> )		P	P
Hornyhead chub ( <i>Nocomis biguttatus</i> )		C	P
White sucker ( <i>Catostomus commersoni</i> )	A	A	A
Shorthead redhorse ( <i>Moxostoma macrolepidotum</i> )	C	C	A
Black bullhead ( <i>Ictalurus melas</i> )	A	P	P
Burbot ( <i>Lota lota</i> )		P	P
Trout perch ( <i>Percopsis omiscomaycus</i> )		P	C
Largemouth bass ( <i>Micropterus salmoides</i> )	P	P	
Smallmouth bass ( <i>Micropterus dolomieu</i> )			P
Black crappie ( <i>Pomoxis nigromaculatus</i> )	P		
Rock bass ( <i>Ambloplites rupestris</i> )			P
Warmouth ( <i>Lepomis gulosus</i> )	P		
Bluegill ( <i>Lepomis macrochirus</i> )	P		
Pumpkinseed ( <i>Lepomis gibbosus</i> )	P	P	P
Walleye ( <i>Stizostedion vitreum</i> )			P
Yellow perch ( <i>Perca flavescens</i> )	P	P	
Logperch ( <i>Percina caprodes</i> )		P	C
Johnny darter ( <i>Etheostoma nigrum</i> )		P	

Source: "A Biological Survey of the White River Flowage and Tailwater; Ashland County, WI 1989-1990," Dennis K. Scholl, Fisheries Biologist, Wisconsin DNR, Brule, Wis.

## Appendix 5: Strengths/Weaknesses/Opportunities/Threats (SWOT)

Discussion at the Jan. 8, 2004, meeting centered around the goal, suggested by Myron Anderson, of protecting and preserving the White River as a natural corridor for future generations to enjoy. Discussion of strengths, weaknesses, opportunities and threats to that goal produced the following ideas:

Strengths/Opportunities	Weaknesses/Threats
<ul style="list-style-type: none"> <li>• Higher quality fishery on the White River</li> <li>• Improved fishing</li> <li>• Very little road access—a feeling of remoteness</li> <li>• Open the corridor to public usage</li> <li>• Few access points may promote safety</li> <li>• No motorized access</li> <li>• High water quality</li> <li>• High quality habitat for aquatic insects, macroinvertebrates (natural fish food)</li> <li>• Wilderness experience</li> <li>• Our generation can leave the White River in better shape than it is now</li> <li>• Improve water quality</li> <li>• Control erosion</li> <li>• Consider putting the land in trust; land trusts are becoming a more common tool for protecting resources like this</li> <li>• Bayfield Regional Conservancy is an existing land trust in the area</li> <li>• Bad River Watershed Association could become a land trust</li> <li>• Give people an opportunity to protect a resource they care about</li> <li>• More people will use the White River</li> <li>• Limit commercialization</li> <li>• Contact landowners to see who would like to sell or work on sale of development rights</li> <li>• See if landowners would be interested in cultivating a protective buffer zone along the river</li> </ul>	<ul style="list-style-type: none"> <li>• Increased assess lessens wilderness quality</li> <li>• Because this is an economically depressed area, riverfront landowners may want to or need to sell</li> <li>• There is potential for development that can harm the quality of the river</li> <li>• Parcelization of the land</li> <li>• Lots of retired people live in the watershed; turnover of ownership may be coming</li> <li>• Potential for increased agricultural development</li> <li>• Current agricultural practices include till cropping, which exposes soil and results in increased erosion and sedimentation, harming water quality</li> <li>• More people will use the river</li> <li>• Potential overuse of river, and user conflicts</li> <li>• Poor forestry practices, in particular road construction</li> <li>• Clearings along river banks cause banks to erode more</li> <li>• Trash</li> <li>• Overfishing</li> <li>• Increase in use/boaters</li> <li>• More development</li> </ul>

## BIBLIOGRAPHY

- “1996 National and State Economic Impacts of Wildlife Watching,” U.S. Fish and Wildlife Service, 1998.
- “Ashland County Land, Water and Habitat Issue Identification Workshop: List of Prioritized Natural Resource Issues in Ashland County,” UW-Extension Ashland County, 2004.
- “Bayfield County Land Use Survey,” 2000.
- “A Biological Survey of the White River Flowage and Tailwater; Ashland County, WI 1989-1990,” Dennis K. Scholl, Fisheries Biologist, Wisconsin DNR, Brule, Wis.
- “Forest Owners’ Handbook: Bad River Watershed,” The Nature Conservancy.
- “Lake Superior Water Quality Management Plan,” Wisconsin Department of Natural Resources, 1999.
- “Northern Rivers Initiative: Lake Superior Basin. An Integrated Ecosystem Management Project for Shoreland Habitat Protection,” Wisconsin Department of Natural Resources, 2001.
- “The Rural Rebound: Recent Nonmetropolitan Demographic Trends in the United States,” Kenneth M. Johnson, Loyola University-Chicago, and Calvin L. Beale, U.S. Department of Agriculture, Washington, D.C.
- “Town of Kelly (Bayfield County) Land Use Plan,” 2000.
- “Town of Gingles (Ashland County) Land Use Plan,” 2001.