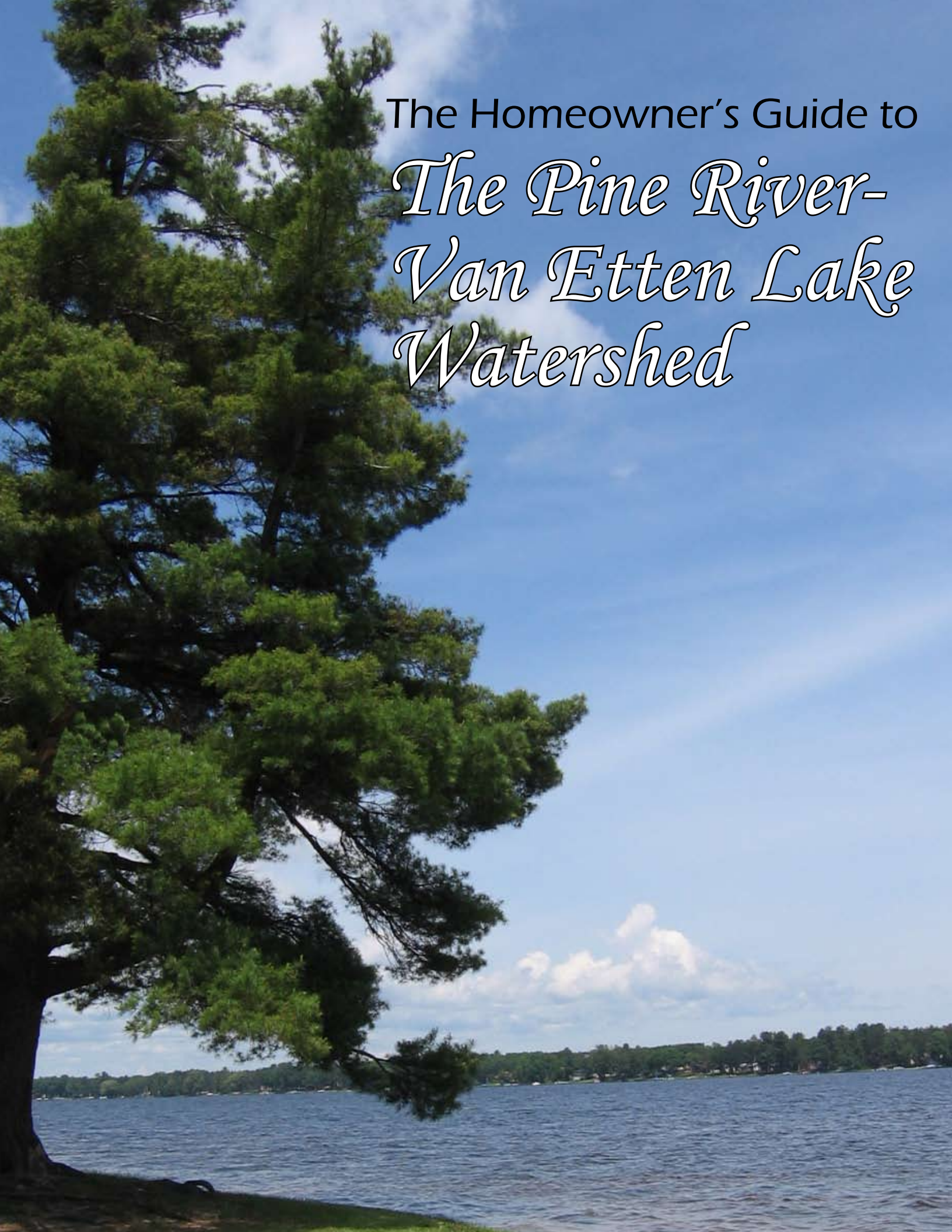




The Homeowner's Guide to

*The Pine River-
Van Etten Lake
Watershed*

Partnering for Water Quality

Watershed management is a process used to allow partnerships to prioritize actions and concerns for a watershed. It often lasts years and is organized through a watershed management plan. The Pine River/Van Etten Lake Watershed Coalition was formed in 1999 to address water quality concerns like sediment, temperature, algae, invasive species, and unrestricted livestock access to streams.

In 2001 Huron Pines was awarded a Section 319 Nonpoint Source Watershed Planning Grant by the Michigan Department of Environmental Quality (DEQ) to work with the Watershed Coalition to develop this watershed management plan. In 2006, Huron Pines was again awarded a Section 319 grant to revise the plan to meet the Environmental Protection Agency's standards for watershed management plans.

The watershed management plan and planning process brings together a variety of local partners to identify, prioritize and then implement the plan to remediate nonpoint source pollution problems in the watershed. Read on to learn more about the Pine River-Van Etten Lake (PRVEL) watershed and the Coalition's goals to protect it.

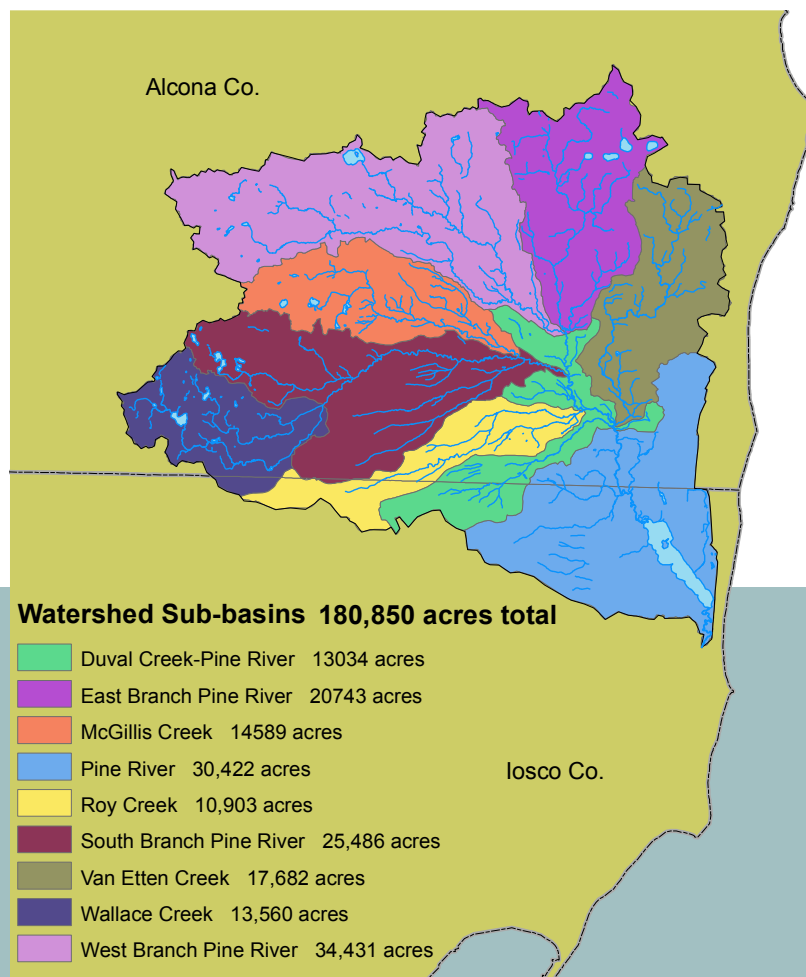
The PRVEL Watershed Coalition Partners recognize the need to work both together and independently on the objectives within this plan in order to reach a vision that they all share, an improved quality of water resources and thus an improved quality of life.

What Is A Watershed?

A watershed is an area of land in which all water drains to a common point. The PRVEL watershed is all the land where rainfall flows into the many local streams (also called sub-basins or subwatersheds) highlighted on the map to the right), which flow into the larger rivers and then Van Etten Lake. To learn more about watersheds and watershed protection, visit www.huronpines.org.

0 1.5 3 6 Miles

Pine River - Van Etten Lake
Watershed Sub-basins





The Watershed

0 2 4 8 Miles



Pine River - Van Etten Lake Watershed



Watershed size: 187,000 acres
(292 square miles)

River miles: 372

Number of subwatersheds: 9

Number of lakes: 10

Average discharge from Pine River to Van Etten Lake: 237 feet/second

Van Etten Lake surface area: 1,409 acres

Van Etten Lake shoreline length: 53,346 feet

Mean depth: 14 feet

Maximum depth: 25 feet

Water transparency depth: 4.2 feet

Water residence time (the amount of time a drop of water takes to pass through the watershed): 45 days

Public land (county, federal, and state) acreage: 75,882 acres





History

In 1840 the Michigan Legislature created the Alcona District. Alcona is a Chippewa word that means “a fine plain.” Commercial fishing in the Great Lakes was the industry that helped establish Alcona County’s first settlement of Springport in 1846. As the fishing fleet grew larger, other ports were built at Harrisville, Alcona, and Black River. In 1857, rye was successfully raised near Springport as the county’s first crop. The site of a grist and saw mill owned by Benjamin Harris, became the county seat known as Harrisville, when in 1869, Alcona County was established. The availability of good ports and ships accommodated an expanding lumber industry within the county. Logging operations as far west as Curran cut through the county’s forests and opened up the area for farming.

Within Iosco County, Louis Chevalier was one of the first French fur traders to explore the region, when just prior to 1800, he entered the mouth of the Au Sable River. Ottawa and Algonquin Indians were the native tribes inhabiting the area at that time. In 1857, the Michigan Legislature created Kahnotin County. It was named after an Indian word meaning “in the path of the big wind”. However Henry Schoolcraft renamed it “Iosco” to mean “Water of Light”. The first settlement in Iosco County was AuSable, established in 1848. Tawas City followed in 1855. In 1840 gypsum was discovered along the shores of Lake Huron in the southern part of the county. In 1862 quarries began to be mined and by 1891, the progenitor of the present United States Gypsum Company began operations. As in most Northern Michigan communities, the lumbering era, which started in the mid 1860’s, contributed to the development of Iosco County. The era effectively ended in 1911 when much of AuSable and Oscoda burned to the ground.

An Army Air Field, Camp Skeel, was constructed in 1925 outside of Oscoda. The base was used during World War II and in 1953 became the Strategic Air Command’s, Wurtsmith Air Force Base. The Department of Defense closed the base in 1992, which resulted in a significant loss of population and economic infrastructure to the area. Today, Alcona and Iosco Counties attract many tourists to their beautiful woods and beaches. Harrisville State Park, located on the shores of Lake Huron, hosts over 170,000 visitors a year.



Recreation and Wildlife



The PRVEL watershed provides a variety of excellent opportunities for outdoor recreation. Fishing, ice fishing, water-skiing, swimming, boating, sailing and canoeing are a few of the water related activities enjoyed by local and visiting recreationists on the watershed's numerous rivers, creeks and lakes. With vast areas of federal and state forested land and miles of trails, avid outdoor enthusiasts find plenty of space in the PRVEL watershed for large and small game hunting, camping, snowmobile and horseback riding, as well as cross-country skiing, snowshoeing, picnicking and even morel hunting.

Extensive wildlife populations exist in the many different ecosystem types within the PRVEL watershed. The sandhill crane, great blue heron, red-winged blackbird and wood duck utilize wetlands, including lakes and streams. The state threatened common loon (*Gavia immer*) also finds refuge in this habitat. The inland water environment is host to beaver, muskrat, raccoon, otter and mink. Blanding's turtle (*Emydoidea blandingii*, pictured above), a Michigan special concern species (due to its declining population in the state), is found in the watershed as well. The upland forest habitat of the PRVEL watershed provides food and shelter for ruffed grouse, woodcock, white-tailed deer, snowshoe hare, flying squirrel, porcupine, and black bear. The upland conifer forest provides excellent nesting habitat for the state threatened bald eagle (*Haliaeetus leucocephalus*). The federally and state endangered Kirtland's warbler (*Dendroica kirtlandii*) requires as breeding habitat the large stands of jack pine that are found in the southern range of the PRVEL watershed. Lowland forest areas within the watershed are home to inhabitants like the bobcat, wild turkey and pileated woodpecker.

The PRVEL watershed ecosystem provides critical habitat to numerous species of fish. In particular, the West and South Branches of the Pine River and their tributaries, are quality coldwater fish habitat for brook, brown and rainbow trout as well as the incidental steelhead, seasonal salmon and the unusual northern hogsucker. The state-threatened channel darter (*Percina copelandi*) is also thought to exist in the South Branch, as it has been noted in the eastern portion of the river. The East Branch of the Pine River, which flows through large sections of former and current agricultural land, has a brook and rainbow trout population and also hosts creek chub and sucker. This stream is considered mostly warm water habitat except for the headwaters area. A 1990 MDNR survey indicates that mottled sculpin, brook sticklebacks and central mudminnows were found in Van Etten Creek. However, no brook trout were observed during the inventory. The MDEQ has rated the Main Branch habitat quality as only "fair" due to lack of bottom cover, and excessive sediment deposition. Brook, brown and rainbow trout and yellow perch have all been observed in the river. The presence of non-game species such as: creek chub, hogsucker and rock bass have also been recorded.

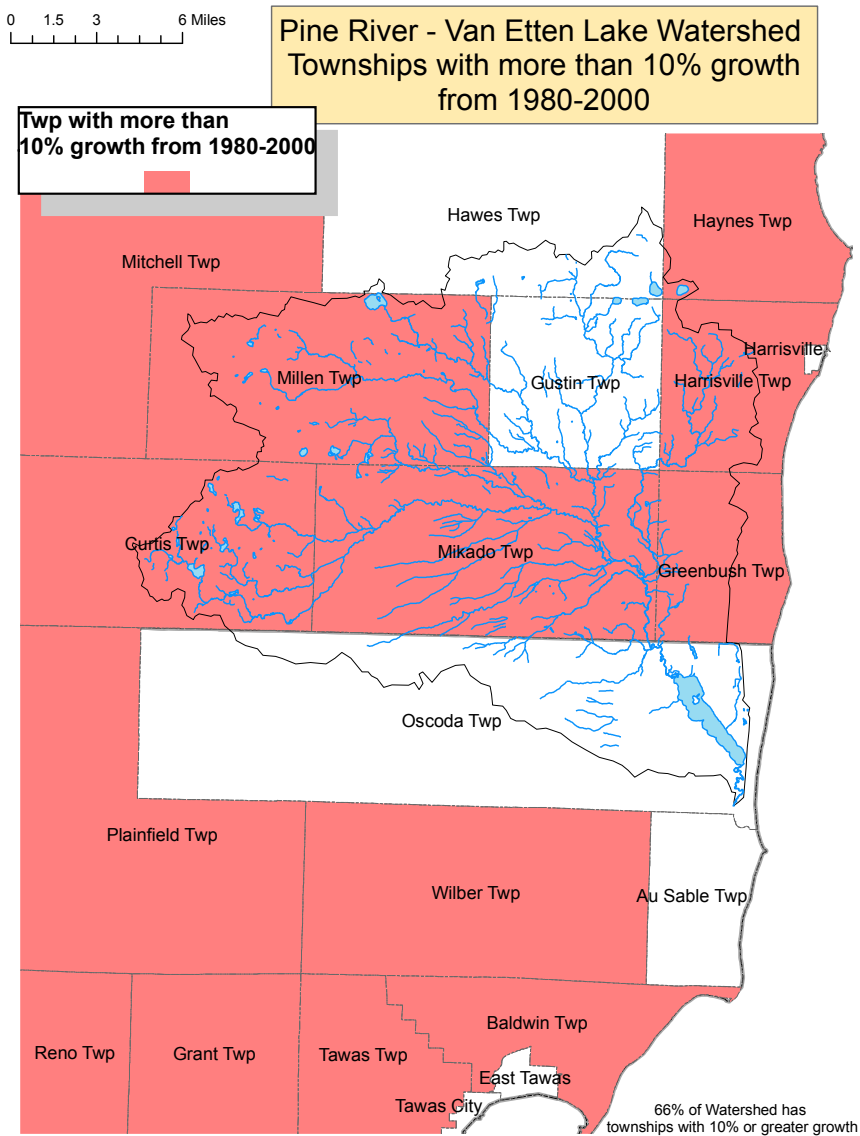
Van Etten Lake is a warm water aquatic habitat that contains a diverse community of fish species. Small mouth bass, largemouth bass, yellow perch, northern pike and rainbow trout have been observed in the reservoir. Some steelhead and salmon seasonally make their way through Van Etten Dam and enter the lake. Additionally, the MDNR Fisheries Division with assistance from Walleyes for Iosco County has stocked over 100,000 walleye in Van Etten Lake. Many non-game species have been documented in the lake as well, including carp, redhorse sucker, and freshwater drum.



Community Growth

Predominantly rural, Alcona County has a total population of 11,719, and a median household income of \$31,362 per year. Alcona County's population has grown by 15.5% over the last 10 years. Approximately 48% of the housing units in Alcona County are for seasonal use. Approximately 85% of the PRVEL watershed is within Alcona County, covering about 36% of the county.

Iosco County has 27,339 residents and a median household income of \$31,321. Basically rural as well, there are however, two major urban centers within Iosco County: the Tawas area and Oscoda. Thirty-three percent of the housing units in the county are seasonal, and six of the townships that form the watershed have experienced more than 10% growth since 1980. Oscoda is the location of the former Wurtsmith Air Force Base, which borders the western shore of Van Etten Lake. The 9.5% reduction in population for Iosco County over the last 10 years is attributable to the Base's closure in 1992.





Inventories and Studies

Nonpoint source pollution is the primary pollution threat facing the water resources of the PRVEL watershed. Sediment from erosion and nutrients from fertilizers, septic systems and animal wastes all contribute to the degradation of water quality within the PRVEL watershed. A series of four natural resource inventories to document and assess the extent and contribution of nonpoint source pollutants within the critical area of the watershed were conducted from July 2001 to November 2002 and updated in 2007 and 2008. These inventories were used to specifically look at road/stream crossings, streambank erosion, agricultural practices and shoreline development issues.

Road/stream crossings can become a conduit for pollution when soil, road salt and deicing agents, oils, soaps and other potential pollutants from roads and/or eroding banks at the culvert placement, flow into the water during rain events. Of the 189 road/stream crossing sites that were identified in 2007 within the PRVEL watershed, 6 sites ranked as severe, 128 sites ranked as moderate, and 55 sites ranked as minor.

Moderately to severely eroding streambanks are sources of unwanted soil deposition to river systems. The erosive action of flowing water can cause untold cubic yards of soil to fall into a stream, becoming suspended and clouding water clarity, disturbing aquatic life, hindering navigation, and contributing excessive nutrients. There were a total of 36 streambank erosion sites identified in the inventory, six of which are listed as severe.

Agricultural practices on the land near riparian corridors may negatively influence water quality. The over-application of fertilizers or manure to the water's edge can introduce an excessive amount of nutrients such as nitrogen and phosphorus into the river system. Livestock that have unrestricted access to streams destroy banks and substrate, causing erosion along the streambank and deposition of sediment in the water. Furthermore, animal waste from livestock in stream or feedlots located close to waterways can add nutrients and pathogens to the river system. There are 14 agriculture inventory sites that may be providing pollutants to the watershed from feedlots and cattle access to the stream. The total length of stream running through agricultural lands within the Van Etten Creek subwatershed is 19.24 miles, representing 43% of all streams in the subwatershed.

Van Etten Lake's annual blue-green algae bloom indicates that high levels of nutrients are entering the watershed. A component of the PRVEL Watershed Project was conducting a comprehensive water quality study in order to identify these nutrients, their sources and their respective contributions to the Pine River system and ultimately Van Etten Lake. Central Michigan University's Michigan Water Research Center conducted the eight-month study from April to November 2002. Surface water samples were taken at seven stations within the Pine River system throughout the eight-month period. Additionally, water quality data and samples were also taken at three sites on Van Etten Lake. Lake and stream temperature, conductivity, dissolved oxygen and pH levels were taken. Surface water was analyzed for nitrogen, phosphorus, ammonium and dissolved boron.

Water Quality

Water quality is a general term covering many aspects of lake chemistry and biology. The water quality of a lake is influenced by many factors, including the amount of recreational use it receives, increased development and shoreline practices. The health of a lake is determined by its water quality.

Productivity refers to the amount of plant and animal life that can be produced within the lake. Increased productivity results in problems such as excessive weed growth, algal blooms and mucky bottom sediments. In most Michigan lakes, phosphorus is the nutrient most responsible for increasing lake productivity. Phosphorus has been banned as an additive to laundry detergent, but it is still allowed in dishwasher detergent and many lawn fertilizers contain phosphorus. Those sources, along with poorly maintained septic systems, have increased the amount of nutrients in the groundwater. Van Etten Lake is considered borderline eutrophic (high-productivity) because it has high levels of nutrients evidenced by algae blooms in the summer. The CMU study revealed an extreme ratio of high levels of phosphorus to low levels of nitrogen within the lake. It is this nutrient condition that provides excellent growing conditions for blue-green algae. The study also indicates that the output levels of dissolved phosphorus are higher in the lake system than the inputs at the mouth of the Pine River. This means that pollutant sources are being added from around the lake. Suggested sources are groundwater seepage (from septic systems), overland runoff and or sediment from the bottom of the lake. Tributaries found to be contributing the most dissolved (usable to blue-green algae) phosphorus within the watershed are Van Etten Creek in Alcona County and the East Branch of the Pine River. Dissolved phosphorus is generated in animal waste, sewage, and fertilizer.



Volunteers conduct a stream macroinvertebrate study on the Pine River.

The optimal water temperature for rainbow trout is 54–64°F, while it is 52–61°F for brook trout and 54–66°F for brown trout. In the Pine River, water temperatures have historically fallen within or below these ranges, meaning that the water temperature is sufficient for good trout habitat. Water that maintains higher temperatures is suited for fish like bass, walleye, pike, and panfish. Van Etten Creek, the East Branch of the Pine River, and Van Etten Lake are considered warm water fisheries because of slower flow rates allowing for water to stand and be heated by the sun.

While dissolved oxygen is difficult to measure in streams because it fluctuates daily and with temperature, it is important because it also affects the suitability of trout habitat. For rainbow, brook, and brown trout, the optimal level of dissolved oxygen is above 7 mg/L. Turbulence in the up-



per reaches of the streams and good habitat indicates adequate oxygen levels in most of the watershed, except for Van Etten Creek where water is warm and more slow moving. Historical data indicate an average of 91.1% saturation of dissolved oxygen in the downstream portion of the Pine River, which is adequate for trout.

Conductivity measures how well a solution can carry electrical current, but it also indicates the amount of dissolved solids (including nutrients like nitrogen and phosphorus) in the water. A constant conductivity indicates a constant amount of dissolved solids, which determines the amount of water that flows in and out of organisms through osmosis. In the Pine River watershed, the specific conductance was an average of 400, which indicates that there are more nutrients and other dissolved solids in the Pine River than other streams.

In the Pine River watershed, the pH levels fluctuate around 8.2 in general, which is at the upper range of the levels needed by aquatic organisms. It is also below the state-mandated maximum of 9.0 and can therefore be considered appropriate for the quality of the stream given all the other parameters.

The DEQ performed a Biological Survey of the Pine River watershed in 1997 and 1998 and again in 2002 and 2007 (as part of a larger Au Sable River watershed biological assessment). The surveys were conducted according to Great Lakes and Environmental Assessment Section Procedure 51 and overall results indicate that the Pine River and its tributaries are high quality waters and are meeting water quality standards, with the exception of Van Etten Creek. The following are conclusions from the 2007 survey that indicate some threats to the water bodies:

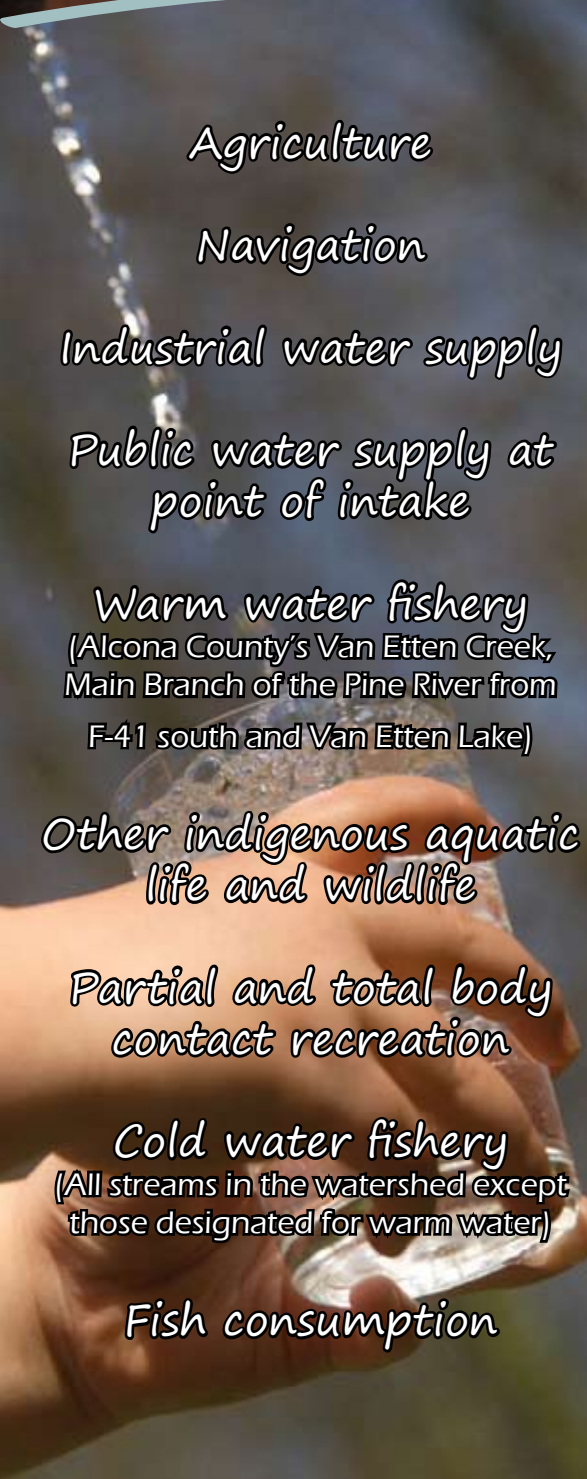
- Overall, macroinvertebrate community and instream habitat ratings are “good” or “excellent” for most of the watershed, with only Van Etten Creek being rated as “acceptable” for macroinvertebrates and “the lower range of good” for habitat.
- Excessive quantities of sand sediment are affecting the otherwise excellent fish habitats in Kurtz Creek and the main stem of the Pine River.
- Lack of Large Woody Debris and riparian buffers are impacting habitat especially in the highly agricultural Van Etten Creek subwatershed.
- Future improvement in habitat in Van Etten Creek may be limited due to agricultural practices and a lack of riparian buffers.
- Stream flashiness is an issue in Van Etten Creek.



Excessive nutrients lead to the growth of weeds like the invasive Eurasian water milfoil.



Designated and Desired Uses



Agriculture

Navigation

Industrial water supply

*Public water supply at
point of intake*

Warm water fishery
(Alcona County's Van Etten Creek,
Main Branch of the Pine River from
F-41 south and Van Etten Lake)

*Other indigenous aquatic
life and wildlife*

*Partial and total body
contact recreation*

Cold water fishery
(All streams in the watershed except
those designated for warm water)

Fish consumption

Designated Uses

The Water Resources Commission Act (P.A. 451 of 1994, Part 31, Chapter 1) requires all waters within the State of Michigan to be of the quality that will meet the designated uses at the left. Currently, all the designated uses mandated by the State of Michigan are being met within the PRVEL watershed except for the areas listed below.

Impaired Waterbodies

In addition to the watershed-wide listing for fish consumption (because of PCBs in state waters), two sites within the watershed have been listed by the state for not attaining water quality standards. A Total Maximum Daily Load (TMDL) was created in 2004 for a tributary to Hunters Lake (in the Pine River subwatershed in the southwest portion of the watershed) for total body contact recreation due to *E. coli*. There was a sewage issue with a local school that has now been addressed by an updated septic system. Multiple TMDLs are scheduled for 2009 for the Van Etten Creek subwatershed to address the other indigenous aquatic life and wildlife designated use, which is not supported because of excessive ammonia, algal growth, flow regime alterations, phosphorus, and sedimentation/siltation.

Desired Uses

Desired uses are those that are important to the watershed community. They help guide watershed restoration and protection efforts that go beyond the state list of designated uses. The desired uses listed below have been identified by the watershed partnership as applicable for this watershed based upon the unique circumstances and conditions within the watershed.

- 1) More areas of natural shoreline to protect habitat and water quality
- 2) Protection of environmentally sensitive and undeveloped areas
- 3) Protection of high-quality recreation opportunities



Known and Suspected Pollutants

Nutrients, sediments, invasive exotic species, pathogens, oils & greases, salts, pesticides, metals, and debris are the main pollutants of concern that threaten the designated and desired uses of the PRVEL watershed. The pollutants and their sources help determine and prioritize goals for protecting the lake's water quality. Below is a list of known and suspected pollutants.

Known and Suspected Pollutants to Designated Uses	
Threatened Use	Pollutants
Navigation	Invasive exotic species (K) Sediment (S)
Other indigenous aquatic life and wildlife	Nutrients (S) Sediment (S) Invasive exotic species (K) Pathogens (S) Oils & Greases (S) Salts (S) Pesticides (S) Metals (S) Debris (S)
Fisheries	Sediment (S) Invasive exotic species (S) Pathogens (S) Oils & Greases (S) Salts (S) Pesticides (S) Metals (S) Debris (S)
Partial and total body contact recreation	Invasive exotic species (K) Pathogens (S) Debris (S)

Known (K) and Suspected (S)

Known and Suspected Pollutants to Desired Uses	
Threatened Use	Pollutants
More areas of natural shoreline to protect habitat and water quality	Sediment (S) Pesticides (S) Metals (S)
Protection of environmentally sensitive and undeveloped areas	Nutrients (S) Sediment (S) Invasive exotic species (S) Pathogens (S) Oils & Greases (S) Salts (S) Pesticides (S) Metals (S) Debris (S)
Protection of high quality recreation opportunities	Nutrients (S) Invasive exotic species (K) Pathogens (S) Debris (S)



Excessive nutrients cause algae to grow, threatening aquatic life.



Goals for Watershed Action

The goals for the PRVEL watershed were developed by the Steering Committee to protect the designated and desired uses of the watershed. The goals are recommendations for implementation efforts within the watershed. Each goal has multiple objectives that outline how the goal can be reached. Tasks were identified for each objective indicating steps needed to reach the objective.

Implementing most objectives requires a combination of four types of activities, each with associated tasks. These include: 1. Implementing best management practices, 2. Reviewing and modifying existing projects, programs and ordinances, 3. Designing and implementing education and information activities and 4. Evaluating the effectiveness of planned activities.

Each project goal addresses an overall improvement in the watershed and contains objectives with specific tasks and details as organized below. The milestones for each objective are set on a 10-year implementation schedule, which will begin once funding to achieve each objective is obtained. The goals for the PRVEL watershed are

Goal 1: Improve & Protect the coldwater fishery of Pine River and its tributaries.

- Objective 1.1: Reduce sediment at the 9 priority road/stream crossings that have been ranked as severe.
- Objective 1.2: Provide one-on-one technical assistance with agriculture producers to utilize exclusion fencing/buffer strips along the entire riparian corridor.
- Objective 1.3: Reduce sediment at the 6 eroding streambank sites ranked as severe and the 17 ranked as moderate.
- Objective 1.4: Provide educational programs to riparian property owners on topics such as erosion control, forest stewardship, wetlands and vegetative buffer strips.
- Objective 1.5: Present local units of government with information on the importance of vegetative buffer strips along streams, including a model ordinance.
- Objective 1.6: Develop and implement a stormwater management ordinance for new developments and adopt stormwater management practices and policies at existing communities.
- Objective 1.7: Create a subcommittee to explore with the MDNR Fisheries Division the issue of adfluvial fish passage above Van Etten Dam and the impacts of impoundments.



Streambank erosion contributes sediment to the river and needs to be repaired if possible.

Goal 2: Ensure that the total/partial body contact designated use for Van Etten Lake is met.

- Objective 2.1: Provide educational programs & materials to property owners on actions they can take to reduce their nutrient contribution.
- Objective 2.2: Continue yearly volunteer Michigan Cooperative Lakes Monitoring Program.

- Objective 2.3: Use a shoreline technician to work one-on-one with property owners to voluntarily re-establish shoreline vegetative buffers.
- Objective 2.4: Educate shoreline landowners about septic system inputs of pollution into Van Etten Lake and reduce the impact of those inputs.
- Objective 2.5: Present local officials with information on the significance of vegetative buffer strips and assist them in adopting effective, consistent standards.

Goal 3: Restore Van Etten Creek of Alcona County to levels that will ensure it is removed from the State's non-attainment list.

- Objective 3.1: Implement exclusion fencing/buffer strips at priority agriculture sites within riparian corridor to improve nutrient management.
- Objective 3.2: Continue to provide one-on-one technical assistance with agricultural producers to encourage the use of Best Management Practices (BMPs).
- Objective 3.3: Highlight local examples of agricultural BMPs.

Goal 4: Improve and protect the aquatic habitat within the watershed.

- Objective 4.1: Support local enforcement officials to ensure that rules pertaining to the watershed are consistently followed.
- Objective 4.2: Develop shoreline erosion control demonstration sites.
- Objective 4.3: Conduct a county-level soil erosion workshop yearly.
- Objective 4.4: Conduct yearly Invasive Exotic Species monitoring program.
- Objective 4.5: Create a watershed-wide monitoring program to observe trends in water quality and provide a baseline of data for directing future efforts.



Though pretty, purple loosestrife is an invasive species that may threaten wildlife habitat.



Goal 5: Protect critical wildlife habitat areas within the watershed.

- Objective 5.1: Coordinate master planning efforts among local units of government.
- Objective 5.2: Promote riparian landscaping for wildlife and water quality through educational presentations to professional landscapers and waterfront owners.
- Objective 5.3: Work to make a voluntary Conservation Easement program more readily available to property owners within the watershed.
- Objective 5.4: Provide training opportunities for planning and zoning commissioners.
- Objective 5.5: Develop and distribute education packets that promote the conservation of aquatic and terrestrial organisms and their habitats to real estate agents, developers and contractors.
- Objective 5.6: Produce and distribute GIS maps to landowners and local units of government.

Goal 6: Sustain the PRVEL Watershed Management Process.

- Objective 6.1: Continually seek funding sources to carry out the objectives.
- Objective 6.2: Revisit Watershed Management Plan yearly and update as needed.
- Objective 6.3: Promote the efforts of the Watershed Coalition through ongoing public relations and marketing campaigns.

What's Going On in the Watershed Right Now?

Find out how you can get involved in current watershed projects by attending quarterly PRVEL Coalition meetings or visiting the watershed page on www.huronpines.org.





Conservation Action in Your Watershed

The Pine River-Van Etten Lake Watershed Coalition is a group of dedicated volunteers, striving to improve the quality of the watershed. The group holds meetings at 10:00 a.m. at the Greenbush Township Hall on the fourth Thursday each January, April, July, and October. In addition to local residents, resource professionals from the USDA Forest Service, Michigan Department of Natural Resources and Department of Environmental Quality, and the Natural Resources Conservation Service also attend and give updates on the status of projects that may affect the watershed.

Other annual events to add to your calendar include:

- Spring and fall stream macroinvertebrate (insects) sampling through the MiCorps program
- Yearly volunteer *E. coli* monitoring
- Cooperative Lakes Monitoring Program volunteer monitoring on Van Etten Lake
- Volunteer streambank restoration and greenbelt plantings

Contact the PRVEL Coalition through Huron Pines at:

PRVEL Watershed Coalition

c/o Huron Pines
501 Norway St.
Grayling, MI 49738
(989) 344-0753





Watershed Contact Information

Pine River-Van Etten Lake Coalition

Carole Plunkey, Chair
Contact Huron Pines

Huron Pines

501 Norway St.
Grayling, MI 49738
Phone: (989) 344-0753
Fax: (989) 348-7945
www.huronpines.org

MSU Extension—Iosco County

William Carpenter, County Extension Director
P.O. Box 599
Tawas City, MI 48764
Phone: (989) 984-1057
Fax: (989) 984-1109
E-mail: msue35@msu.edu

Alcona Conservation District

P. O. Box 291
320 South State Street
Harrisville, MI 48740
www.alconacd.org
Phone: (989) 724-5272
Fax: (989) 724-6953

USDA-NRCS (Alcona and Iosco Counties) Iosco Conservation District

Ryan Kruse, District Conservationist
190 W. M-55 Tawas City, MI 48763-9251
Phone: (989) 362-2591
Fax: (989) 362-8382
E-mail: ryan.kruse@mi.usda.gov

Michigan Department of Natural Resources

Mio Office
191 S. Mt Tom Rd
Mio, MI 48647
Phone: (989) 826-3211

Michigan Department of Environmental Quality

Gaylord Field Office (Oscoda and Alcona counties)
2100 West M-32
Gaylord, MI 49735-9282
Phone: (989) 731-4920
Fax: (989) 731-6181

Saginaw Bay District Office (Ogemaw and Iosco
Counties)

503 N. Euclid Ave, Ste 1
Bay City, MI 48706-2965
Phone: (989) 686-8025
Fax: (989) 684-9799 or (989) 686-0727

USDA Forest Service

Huron-Manistee National Forests
1755 S. Mitchell St.
Cadillac, MI 49601
Toll Free: (800) 821-6263
Phone: (231) 775-2421
TTY: (231) 775-3183
Fax: (231) 775-5551

Michigan Department of Agriculture

Atlanta Regional Office (Alcona County)
16860 M-32 East
Atlanta, MI 49709-0758
Phone: (989) 785-5616
Fax: (989) 785-5719

Saginaw Regional Office (Iosco County)

1585 Concentric Blvd.
Saginaw, MI 48604
Phone: (989) 757-7501
Fax: (989) 757-7505

Michigan Farm Service Agency- State Office

3001 Coolidge Rd, Suite 350
East Lansing, MI 48823-6321
Phone: (517) 324-5110

Everyday Watershed Protection

All landowners in the PRVEL watershed can take action to improve local water quality. Whether it is changing your lawncare practices or reducing the use of harsh chemicals indoors, you can make a difference. Use the tips below every day to reduce the amount of pollution entering the rivers and lakes and keep them clean and beautiful for years to come.

In Your House

- Use environmentally friendly detergents and cleaning products, and use all chemicals sparingly.
- Unplug electrical devices when they're not being used.
- Have your septic system inspected every 1 to 3 years and pumped as recommended by the inspector.
- Recycle—contact the Alcona and Iosco County Conservation Districts for locations.
- Fix leaks and use low-flow faucets.
- Turn off the water while you brush your teeth and shave, and use your washing machine and dishwasher only when they're full.

On Your Lake or River

- Inspect your boat and trailer for invasive plants and animals.
- Do not transfer bait from one lake to another.
- Dispose of trash properly—don't dump anything overboard.
- Do not dump bundles of wood into the lake. It does not create good fish habitat; in fact, it provides anchor points for invasive mussels and weeds!
- Remove trash and human waste from the lake before the ice melts.
- Dispose of cigarette and cigar butts properly.
- Respect no-wake zones and noise restrictions.
- Do not disturb or aggravate wildlife.

On Your Farm

- Restrict cattle access to lakes and streams. Provide them with a different water source (NRCS has programs to help with funding).
- Do not over-apply pesticides and fertilizers.
- Maintain a buffer strip of vegetation between crops and waterbodies.
- Dispose of animal waste properly, away from water sources.

In Your Yard

- Maintain native trees and vegetation.
- Maintain existing wetlands (do not fill them in).
- Minimize the area of paved surfaces like driveways, sidewalks, and patios.
- Get your soil tested by MSU Extension to see if you need fertilizer.
- If you need it, use only phosphorus-free fertilizer.
- Water your lawn less often.
- Don't dump grass clippings in the lake or on the beach. Instead, use them to mulch your plants or dispose of them on yard waste pickup days.
- Landscape with native plants, which need less maintenance and help prevent erosion and absorb pollution.
- Plant a greenbelt of native plants on your shoreline to prevent erosion and runoff.
- Reduce the size of your lawn area to conserve water and reduce chemicals.
- Set your lawn mower at a higher level—your grass will be greener and will need less water.
- Do not feed ducks and geese (they carry swimmer's itch) but do feed and provide nesting habitat for songbirds and other species.

In Your Community

- Get active in the issues that interest you, whether it's land use, water quality, recycling, or invasive species.
- Join or organize cleanups for your neighborhood, local parks, and state parks.
- Attend workshops and awareness days to learn more about your watershed.
- Encourage your neighborhood association to include native vegetation rules in its bylaws.
- Call for help when you need it. There are many resources available to answer your questions and provide assistance.

This booklet was produced by Huron Pines with funding from the Michigan Department of Environmental Quality as part of a watershed management planning grant. Printing and distribution was made possible by the Community Foundation for Northeast Michigan's Mr. and Mrs. O.B. Eustis Memorial Fund. The full text of the Pine River-Van Etten Lake Watershed Management Plan can be found online at www.huronpines.org.

