

Lake Mallalieu TMDL – Status: In Development

WDNR 2/1/2018

Lake Mallalieu put on "on hold". Will now be incorporated into a Lake Mallalieu/Willow River TMDL Farm planning

Project Name	Project ID	Project Type	Project Subtype	Project Status	Start Date	End Date	Project Description
Water Quality Monitoring - Lake Mallalieu and Willow River - 2015	Lakes-Mallalieu2015	CITIZEN_LAKE_MON	Water Quality Monitoring	ACTIVE	06/15/2015	12/31/2099	Citizen Lake volunteers are monitoring the turbidity of the Willow River and Lake Mallalieu since the drawdown of Little Falls Lake began (6/15/2015).
Lake Mallalieu, Willow River and Lake St. Croix TMDL Phosphorus Load Implementation Evaluation	Lake Mallalieu USGS TP Eval	TMDL_PROJECT	Monitor Listed Waters	COMPLETE	07/01/2011	06/30/2012	The purpose of the project is to measure total phosphorus loading to Lake Mallalieu and Lake St. Croix from the Willow River Watershed as the TMDL Implementation Plans for Lake Mallalieu and Lake St. Croix are being implemented. Both Implementation will be completed in 2011 with implementation of ag bmps already initiated. The Willow River Watershed has been identified as one of the 3 highest loading tributaries to Lake St. Croix.
ST. CROIX COUNTY: Mallalieu Lake Plan 2	LPL-1374-10	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	04/01/2010	12/31/2011	The St. Croix Co. Land and Water Conservation Department proposes to develop a storm water action plan for Lake Mallalieu in St. Croix County. Major project elements to include: 1) Stakeholders group, 2) Surveys, 3) Monitoring, 4) Outreach/Plan Implementation
ST. CROIX COUNTY: Mallalieu Lake Plan 1	LPL-1373-10	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	04/01/2010	12/31/2011	The St. Croix Co. Land and Water Conservation Department proposes to develop a lake management plan for Lake Mallalieu in St. Croix County. Major project elements to include: 1) Stakeholder group, 2) Surveys, 3) Soil sampling, 4) Land use inventory, 5) Plan development, 6) Ordinance development and enactment.
ARRA 16 Lake Mallalieu/Willow River TMDL Grant 2P-00E73201	ARRA_Project16 WTDP	TMDL_PROJECT	Monitor Listed Waters	COMPLETE	01/21/2010	06/30/2011	Develop a TMDL implementation plan for Lake Mallalieu/Willow River.
Lake Mallalieu TMDL	Lake Mallalieu TMDL	TMDL_PROJECT	TMDL Development	ACTIVE	07/01/2009	06/30/2010	<p>Lake Mallalieu is a manmade riverine lake located within the channel of the Willow River. Since 2004, Lake Mallalieu and an upstream reach of the Willow River have been included on the Environmental Protection Agency's (EPA) 303(d) impaired waters list. The lake is designated as high priority for eutrophication and ph impairments due to excess phosphorus, while the upstream reach of the river is a low priority for dissolved oxygen impairments. The river's designation is due to excess phosphorus and biological oxygen demand (BOD).</p> <p>The Willow River has become degraded by excess nutrients, specifically phosphorus. Phosphorus is an essential nutrient required by all organisms. During 2008, the WDNR worked cooperatively with the St. Croix Watershed Research Station to develop a TMDL planning initiative in the Willow River Watershed. This plan is near completion. In order to achieve a 20% reduction of phosphorus to the St. Croix River, phosphorus reduction in the uplands is needed to meet the goal reduction.</p>
CITY OF HUDSON: Mallalieu Stormwater Assessment	LPL-1143-07	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	10/01/2006	12/31/2007	The City of Hudson proposes to delineate the storm sewershed for Lake Mallalieu in St. Croix County and to study the feasibility of stormwater treatment alternatives. Major project elements to include: 1) Storm sewer inventory and mapping, 2) Modeling, assessment and treatment selection, 3) reports and meetings to share information.
Mallalieu Lake tmdl development monitoring	Mallalieu Lake Monitoring	TMDL_PROJECT	Refine Load Estimates	COMPLETE	07/04/2006	06/30/2007	The purpose of this project is to collect in-lake water quality samples to be used in the development of a TMDL for Lake Mallalieu, which is on the 303d list. The lake is listed for pH exceedances and poor water quality due to phosphorus. Water quality is currently being collected by DNR staff as part of the Tier 1 non LTT monitoring program from the Willow

							River above Lake Mallalieu. Continuous flow is also being monitored in the Willow River by USGS. The combination of load monitoring from the river site and in-lake monitoring will be used to develop a phosphorus TMDL. This TMDL monitoring project was one of four conducted in WCR during 2006-07. Lake and stream sampling was conducted bi-weekly and begin in June 2006 and continue until September 2006.
LAKE MALLALIEU ASSOCIATION: Lake Mallalieu Water Quality Plan	LPL-617	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	04/01/1999	06/30/2002	The Lake Mallalieu Association proposes to develop water quality goals and strategies for Lake Mallalieu. Major project elements to include: 1) water quality sampling and analysis, 2) sediment core sampling and analysis, 3) development of nutrient loading/water quality model for the impoundment, 4) establishment of goals and strategies, and 5) integration of report into overall lake management plan. The Department of Natural Resources will be provided both paper and electronic copies of the report. Project results will be shared with the public through newsletter mailings, public meetings and local press articles. Copies of the report will also be made available at local government offices and libraries.
LAKE MALLALIEU ASSOCIATION: Lake Mallalieu Lake Management Plan	LPL-551	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	04/01/1998	06/30/2001	The Lake Mallalieu Association proposes to develop a comprehensive lake management plan for Lake Mallalieu in St. Croix County. The project activities include; 1) Develop lake management plan, 2) Conduct in-lake water quality assessments, and 3) Begin to develop watershed management strategies. The Department of Natural Resources will be provided with both a paper copy and an electronic copy of the final report. The project results will be disseminated to the public by public meetings, news letters, fact sheets, public display of final report. A comprehensive management plan will be completed and available to the public for review.
CITY OF HUDSON: Lake Mallalieu Water Quality Data Collection & Analysis	LPL-017 (3002-01)	LAKE_GRANT	Large Scale Lake Planning	COMPLETE	12/20/1990	12/31/1997	1) Comprehensive mapping of Lake Mallalieu drainage basin topography (including slopes analysis), soils, and land uses, (as described on pgs. 2-3 of 'professional services description' in application). 2) Update bathymetric map of lake, (map will be used as base for aquatic plant survey). 3) Research existing law and enforcement alternatives related to septic systems. 4) Pursue existing research into groundwater pollution. 5) Water quality monitoring to be conducted at one site during spring turnover and five times during the summer (June - Sept.). Sampling parameters and protocol as described on pgs. 1-3 of Barr Engineering proposal in application. In addition fecal coliform sampling is to be conducted with each monitoring session (total of 6 times). 6) Detailed macrophyte survey will be done according to DNR protocols and shall include mapping of the distribution of purple loosestrife within the lake and its riparian borders. 7) Maintain public awareness through Lakes Association newsletter, periodic attendance at public meetings, and newspaper and TV an/or radio press releases. 8) Prepare and distribute interim general report to include all data collected during project. Data reporting format to be worked out in consultation

Related Links

Impaired Water - Mallalieu Lake (Mallalieu Lake)

Lake Mallalieu is a 270 acre flowage near the mouth of the Willow River. The Willow River is the only inlet stream to Lake Mallalieu. The first dam was constructed in forming the lake in 1848. The present dam was constructed in 1934 after the former had washed out in April of that year. Lake Mallalieu has a maximum water depth of 17 feet with a mean depth of 5 feet. The watershed's primary land use is urban/residential, agriculture and woodlands.

Lake Mallalieu is considered to be a hypereutrophic lake with poor water quality due to high nutrient levels, high algal concentrations, and poor water clarity. There were a total of 24 species of aquatic plants found in Lake Mallalieu during the 1998 survey (Konkel 1999). Included were three non-native species: *Lythrum salicaria* (purple loosestrife), *Myriophyllum spicatum* (Eurasian water milfoil), and *Potamogeton crispus* (curly-leaf pondweed). Nonpoint source pollution from agricultural operations throughout the watershed has been contributing phosphorous and nitrogen loading, adding to subsequent water quality deterioration.

Lake Mallalieu has an abundant source of large woody debris along certain parts of the flowage. Residential and shoreline development has eliminated large woody debris and natural vegetative buffers in numerous locations throughout the lake. Many shoreline lots have been converted to limestone rip-rap, which has been proven to benefit young smallmouth bass, but may also fail to provide both juvenile and adult fish cover for most other fish species. Preservation of large woody debris and natural shoreline buffers consisting of emergent and submergent plant beds, trees, shrubs, grasses and forbs will assure survival of healthy fish and aquatic life resources. Despite these impacts, Lake Mallalieu currently provides an abundant and diverse sportfish community. Both largemouth and smallmouth bass fishing is excellent with many trophy bass present. Northern pike densities are low; however, the size distribution is well above average. Panfish populations are good but growth rates and large adult densities are lower than expected for small fertile flowages Saint Croix County, Wisconsin

[View Water Details](#)

SC02,Waterbody ID Code 2607100

Lake Acres 289.08

Water is impaired due to one or more pollutants and associated quality impacts.

Notes

- 303d impaired waters for eutrophication, pH from phosphorus. The pH shall be within the range of 6.0 to 9.0; the water exceeds the pH criteria.
- TP and/or chlorophyll data from the period 2006-2010 were insufficient to assess per 2012 WisCALM. However, the previous assessment(s) were carried forward, and the lake remains listed as impaired.
- This water was assessed during the 2016 listing cycle; total phosphorus sample data exceed 2016 WisCALM listing thresholds for the Recreation use and Fish and Aquatic Life use.
- This water was assessed during the 2018 listing cycle; new chlorophyll sample data exceeded 2018 WisCALM listing thresholds for the Recreation use.

Reports and Documents

- [Mallalieu Lake 2607100 Chla Package Rpt 2012](#)
- [LAKE MALLALIEU IMPAIRED WATERS LISTING DOCUMENTATION](#)
- [Mallalieu Lake 2607100 TP Package Rpt 2012](#)
- [Comprehensive 2016 Lake Reservoir Assessments](#)

Additional Documents:

Reports

- [LAKE WATER QUALITY REPORT FOR LAKE MALLALIEU - DEEP HOLE](#)
- [Mallalieu Depth Measurements \[2018 WQ Data Submittal\]](#)
- [Comprehensive 2016 Lake Reservoir Assessments](#)
- [Lake Mallalieu Management Plan](#)
- [DRAFT Lake Mallalieu / Willow River TMDL Implementation Plan](#)
- [Mallalieu Lake 2607100 Chla Package Rpt 2012](#)
- [Mallalieu Lake 2607100 TP Package Rpt 2012](#)
- [Willow River Watershed Plan 2010 \(SC02, SC03\)](#)
- [DESIGNATION OF SENSITIVE AREAS, LAKE MALLALIEU, ST. CROIX COUNTY](#)

- [MALLALIEU LAKE SENSITIVE AREA DESIGNATION - WILDLIFE AND FISH USE OF AQUATIC PLANTS](#)
- [Mallalieu Lake Sensitive Area Designation - Final Report - Table Of Contents](#)
- [Changes in Aquatic Plant Community and the Long-term Impact of Winter Drawdown on Eurasian Watermilfoil and the Native Macrophyte Community of Mallalieu Lake \(1991-2005\)](#)
- [LAKE MALLALIEU IMPAIRED WATERS LISTING DOCUMENTATION](#)
- [LAKE MALLALIEU WATER QUALITY PLAN](#)
- [Lake Mallalieu Comprehensive Lake Survey Report \(2001\)](#)
- [LAKE MALLALIEU LAKE MANAGEMENT PLAN](#)
- [Lake Bathymetry Map for Mallalieu Lake](#)

Watershed Projects

Project Name (Click for Details)	Year Started
Lake St. Croix TMDL tributary monitoring (Clam, Yellow, Wood Rivers) - NOR_19_CMP13B	2013
ST. CROIX COUNTY: Mallalieu Lake Plan 2	2010
ST. CROIX COUNTY: Mallalieu Lake Plan 1	2010
Lake Mallalieu TMDL	2009
ST. CROIX COUNTY: St. Croix Conference '08	2007
ST. CROIX COUNTY: St. Croix Conference '07	2007
CITY OF HUDSON: Mallalieu Stormwater Assessment	2006
LAKE MALLALIEU ASSOCIATION: Lake Mallalieu Water Quality Plan	1999
LAKE MALLALIEU ASSOCIATION: Lake Mallalieu Lake Management Plan	1998
CITY OF HUDSON: Lake Mallalieu Water Quality Data Collection & Analysis	1990

WBIC	Official Waterbody Name	Station ID	Station Name	Earliest Fieldwork Date	Latest Fieldwork Date	View Data
2607100	Mallalieu Lake	563146	St. Croix River - Orange St. Ramp			Data
2607100	Mallalieu Lake	564006	Mallalieu Lake - Mallalieu Lake	8/28/1979	9/11/2003	Data
2607100	Mallalieu Lake	563132	Lake Mallalieu - Mid-Lake	5/24/2006	9/13/2006	Data
2607100	Mallalieu Lake	10005432	Lake Mallalieu	8/7/1991	12/6/2017	Data
2607100	Mallalieu Lake	10018188	Lake Mallalieu -- Access	7/21/2006	7/28/2013	Data
2607100	Mallalieu Lake	563121	Lake Mallalieu - Deep Hole	9/12/1973	9/28/2017	Data