

Wisconsin Department of Natural Resources SWIMS Project Summary

General Project Information

Project ID: MISSISSIPPI
Name: Mississippi River
Type: Baseline Monitoring
Subtype: Analysis of Baseline Data
Status: ACTIVE
Start Date: 1/1/1960
End Date: 12/31/2099
Purpose:
Objective:
Comments:
Outcome:
Study Design:
QA Measures:

People

Name	Role	Status	Start Date	End Date	Organization	Comments
GIBLIN, SHAWN M	COORDINATOR	ACTIVE	9/8/2014		Wisconsin DNR	
Kale, Nat	TEAM_MEMBER	ACTIVE	8/25/2010		Upper Mississippi River Basin Association	
STRASSMAN, SARA L	COORDINATOR	COMPLETE	4/4/2014	7/16/2022	Wisconsin DNR	
SULLIVAN, JOHN F	COORDINATOR	INACTIVE	1/1/1990	7/1/2014	Wisconsin DNR	

Project Statuses

Date	Reported By	Status	Comments
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Actions

Action	Detailed Description	Start Date	End Date	Status
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Monitoring Stations

Station ID	Name	Comments
10044841	LD8-Site3	
10044842	LD8-Site4	
10044840	LD8-Sites1-2	
10037733	La Crosse Marsh East Site	
10037734	La Crosse Marsh North Site	
10037735	La Crosse Marsh West Site	
10022814	Lizzy Pauls Pond - Site C	
10022812	Lizzy Pauls Pond Site A	

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10022813	Lizzy Pauls Pond Site B	
483092	Mississippi River - Below Ld 2 in Minnesota	
483093	Mississippi River - Below Ld 3	
063077	Mississippi River - Below Ld 4 (Pool 5)	
063078	Mississippi River - Below Ld 5	
063065	Mississippi River - Below Ld 5a	
623263	Mississippi River - Below Ld 6 - Trempealeau	
323131	Mississippi River - Below Ld 7	
633147	Mississippi River - Below Ld 8 - Genoa	
123073	Mississippi River - Below Ld 9 - Lynxville	
483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)	
104458	Mississippi River Pool 8	
123016	Mississippi River at Lock And Dam 9 Lynxville	
063029	Mississippi River-Pool 4 - Lock+Dam # 4 At Alma	
483001	St. Croix River at Prescott	
10022816	Stoddard Wetland - Site B	
10022815	Stoddard Wetland North End Site A	
10022817	Stoddard Wetland South End - Site C	

Assessment Units

WBIC	Segment	Local Name	Official Name
721000	1	Mississippi (Reach 1) Rush-Vermillion - St. Croix R to Chippewa R(Pools 3- lower Pool 4, Lake Pepin)	Mississippi River
721000	2	Mississippi (Reach 2) Buffalo-Whitewater - Chippewa River to LD 6 (lower Pool 4 to Pool 6)	Mississippi River
721000	3	Mississippi (Reach 3) LaCrosse-Pine - LD 6 to Root River (Pool 7 to upper Pool 8)	Mississippi River
721000	4	Mississippi (Reach 4) Coon-Yellow - Pool 8 portion - LD 8 to Root R.)	Mississippi River
721000	5	Mississippi (Reach 4) Coon-Yellow - Pool 9 portion - LD 9 to LD 8)	Mississippi River
721000	6	Mississippi (Reach 4) Coon-Yellow - Root R to Wis R (Pools 8 to 10)	Mississippi River
1813500	1	Mississippi backwater (Lizzie Pauls Pond)	Lizzie Pauls Pond
2601500	1	St. Croix Lake	Lake Saint Croix
5029791	1	Unnamed	Unnamed
5561990	1	La Crosse River Marsh	Unnamed
5561990	2		Unnamed
5562016	1	La Crosse River Marsh	Unnamed

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Lab Account Codes

Account Code	Description	Start Date	End Date
MR001	ZEBRA MUSSEL MONITORING	7/1/2002	6/30/2003
MR002	MISSISSIPPI MONITORING STATION	7/1/2002	6/30/2003
MR003	MISSISSIPPI AMBIENT MONITORING	7/1/2003	6/30/2004
MR004	MISSISSIPPI VEGETATION STUDY	7/1/2003	6/30/2004
MR005	MISSISSIPPI RIVER SEDIMENT TRA	7/1/2003	6/30/2004
MR006	MISS RIVER NUTRIENT IMPAIRMENT	7/1/2003	6/30/2004
MR007	MISSISSIPPI AMBIENT MONITORING	7/1/2004	6/30/2005
MR008	VALLISNERIA STUDY	7/1/2004	6/30/2005
MR009	MISSISSIPPI RIV SEDIMENT TRAP	7/1/2004	6/30/2005
MR010	MISS RIVER NUTRIENT IMPAIRMENT	7/1/2004	6/30/2005
MR011	MISSISSIPPI RIV SYNOPTIC SURVE	7/1/2004	6/30/2005
MR012	MISSISSIPPI RIVER VELIGER SUR	7/1/2005	6/30/2006
MR013	NUTRIENT IMPAIRMENT STUDY	7/1/2005	6/30/2006
MR014	MISSISSIPPI AMBIENT MONITORING	7/1/2005	6/30/2006
MR015	VALLISNERIA STUDY	7/1/2005	6/30/2006
MR016	MISSISSIPPI RIVR SEDIMENT TRAP	7/1/2005	6/30/2006
WT080	SEDIMENT PROJECTS	6/1/2006	12/31/2099

Forms

Form Code	Form Name
INORGANIC	Inorganic Lab - Field Data

Methods

Method Code	Method Description
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Fieldwork Events

Start Date	Status	Field ID	Station ID	Station Name
9/7/2005 11:00	COMPLETE	001	483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)
9/7/2005 11:00	COMPLETE	001	483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)
6/1/2006 10:10	COMPLETE	10595966	123016	Mississippi River at Lock And Dam 9 Lynxville
7/5/2006 10:40	COMPLETE	11561284	123016	Mississippi River at Lock And Dam 9 Lynxville
1/17/2007 11:30	COMPLETE	001	483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)
2/6/2007 11:45	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
3/5/2007 11:00	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
3/5/2007 11:00	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville

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4/3/2007	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
4/3/2007 11:30	COMPLETE	001	483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)
4/3/2007 13:40	COMPLETE	002	063029	Mississippi River-Pool 4 - Lock+Dam # 4 At Alma
5/1/2007 10:30	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
6/4/2007 10:45	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
7/2/2007 10:30	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
11/5/2007 10:46	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
11/6/2007	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
1/8/2008 10:00	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
2/4/2008 9:55	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
3/11/2008 11:50	COMPLETE	001	10022812	Lizzy Pauls Pond Site A
3/11/2008 12:30	COMPLETE	002	10022813	Lizzy Pauls Pond Site B
3/11/2008 13:00	COMPLETE	003	10022814	Lizzy Pauls Pond - Site C
3/13/2008 10:10	COMPLETE	004	10022815	Stoddard Wetland North End Site A
3/13/2008 10:35	COMPLETE	005	10022816	Stoddard Wetland - Site B
3/13/2008 11:00	COMPLETE	006	10022817	Stoddard Wetland South End - Site C
4/1/2008 10:10	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
4/2/2008 10:00	COMPLETE	001	483027	Mississippi River - Pool 3 at Lock & Dam 3 (L/D3)
4/2/2008 13:00	COMPLETE	002	063029	Mississippi River-Pool 4 - Lock+Dam # 4 At Alma
6/2/2008 10:40	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
7/9/2008 6:19	COMPLETE	055	063065	Mississippi River - Below Ld 5a
7/9/2008 7:05	COMPLETE	005	063078	Mississippi River - Below Ld 5
7/9/2008 8:50	COMPLETE	004	063077	Mississippi River - Below Ld 4 (Pool 5)
7/9/2008 10:30	COMPLETE	001	483001	St. Croix River at Prescott
7/9/2008 11:20	COMPLETE	002	483092	Mississippi River - Below Ld 2 in Minnesota
7/9/2008 11:21	COMPLETE	009	123073	Mississippi River - Below Ld 9 - Lynxville
7/9/2008 11:32	COMPLETE	006	623263	Mississippi River - Below Ld 6 - Trempealeau
7/9/2008 12:35	COMPLETE	008	633147	Mississippi River - Below Ld 8 - Genoa
7/9/2008 12:54	COMPLETE	007	323131	Mississippi River - Below Ld 7
7/9/2008 13:45	COMPLETE	003	483093	Mississippi River - Below Ld 3
4/2/2009 13:00	COMPLETE	002	063029	Mississippi River-Pool 4 - Lock+Dam # 4 At Alma
2/1/2010 10:50	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
3/1/2010 10:30	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
6/2/2010 11:00	COMPLETE	001	123016	Mississippi River at Lock And Dam 9 Lynxville
8/14/2012 10:00	COMPLETE	001	10037735	La Crosse Marsh West Site

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8/14/2012 10:20	COMPLETE	002	10037733	La Crosse Marsh East Site
8/14/2012 11:45	COMPLETE	003	10037734	La Crosse Marsh North Site
8/17/2015 12:00	COMPLETE	PET 5	104458	Mississippi River Pool 8
8/17/2015 13:20	COMPLETE	PET 7	104458	Mississippi River Pool 8
8/17/2015 13:41	COMPLETE	PET 99	104458	Mississippi River Pool 8
4/15/2016 10:00	COMPLETE	SITE 1-2	10044840	LD8-Sites1-2
4/15/2016 10:00	COMPLETE	SITE 1-2	10044840	LD8-Sites1-2
4/15/2016 10:30	COMPLETE	SITE 3	10044841	LD8-Site3
4/15/2016 10:50	COMPLETE	SITE 4	10044842	LD8-Site4
8/1/2017 12:15	COMPLETE	LD7	323131	Mississippi River - Below Ld 7
9/1/2017 12:29	COMPLETE	LD7	323131	Mississippi River - Below Ld 7
7/12/2018 10:40	COMPLETE	LD7	323131	Mississippi River - Below Ld 7

Documents

Title	Description	Author	Published	Comments
2011 Pool 8 State of the Ecosystem Report	Long Term Resource Monitoring Program Mississippi River Monitoring Field Station	Wisconsin Department of Natural Resources	5/28/2013	
2021 Nearshore Monitoring in Wisconsin's Lake Superior coast for nutrient conditions leading to Harmful Algal blooms	Nearshore Monitoring in Wisconsin's Lake Superior coast for nutrient conditions leading to Harmful Algal blooms	Ellen Coffman	4/1/2023	

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A Review of the PCB Contaminant Problem of the Upper Mississippi River System	PCBs have been monitored in the Upper Mississippi River environment over the last 17 years by Federal and State agencies, public and private institutions and by point source dischargers to the river. A majority of this monitoring has involved the analysis of fish and sediment samples. This report reviews the PCB data since the problem was identified in 1970. Additional PCB data have been collected on other important river ecosystem compartments including: mayflies, turtles, waterfowl, heron and egret eggs, aquatic macrophytes, bottom and suspended sediments and water. Report topics include: PCB Measurements and Analysis; Background on Upper Mississippi River PCB Problem; Upper Mississippi River PCB Data; Wisconsin Fish PDB Data; Invertebrates; Birds; Water; Suspended Sediments; Sediments; Backwater Sediments Lake Onalaska; Tentative Sediment Criterion for the UMR ; PCB Sources; Municipal Effluents Twin Cities Area; Atmospheric Contribution Twin Cities Area; Runoff From Contaminated Land Surfaces; and Contaminated Sediments.	Sullivan, John	2/1/1988	
Contaminants in Mississippi River Bed Sediments Collected Before and After the 1993 Summer Flood in Navigation Pools 1 to 11	Prepared for the USEPA Flood Assessment Grant (WQ) No. 1995495-01 Sediment Monitoring Project.	Sullivan, John	7/1/1995	
Continuous Dissolved Oxygen and Water Temperature Monitoring in Pool 8 Backwaters of the Upper Mississippi River May-September, 2010	Continuous Dissolved Oxygen and Water Temperature Monitoring in Pool 8 Backwaters of the Upper Mississippi River May-September, 2010	Sullivan, John and Giblin, Shawn	6/1/2011	
Continuous Dissolved Oxygen and Water Temperature Monitoring in Pool 8 of the Upper Mississippi River during January and February 2004	Continuous Dissolved Oxygen and Water Temperature Monitoring in Pool 8 of the Upper Mississippi River during January and February 2004	Sullivan, John	4/1/2005	
Continuous Water Quality Monitoring Survey in Halfway Creek Upstream and Downstream of Metallics Incorporated's Outfall	Metallics Inc. has been discharging process	Sullivan, John	3/1/1993	

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Continuous Water Quality Monitoring Survey in Halfway Creek Upstream and Downstream of Metallica Incorporated's Outfall March 1997	Metallica Inc. has been discharging process wastewater to Halfway Creek in 1988. This survey is to evaluate water quality impacts associated with the discharge using automated monitoring equipment.	Sullivan, John; Kampa, Erik, Fischer, Jim	3/1/1997	
Continuous Water Quality Monitoring of Dissolved Oxygen, Temperature, and Light Penetration at Weaver Bottoms, Pool 5, Mississippi River, during July and August, 1986-95	Short term continuous WQ monitoring surveys were conducted to define diurnal changes in response to a major habitat rehabilitation project at Weaver Bottoms in late 1986. Continuous measurements were collected in the northern and southern portion of Weaver Bottoms during July and August from 1986-1995 except for 1987.	Sullivan, John	10/1/1996	
Diatoms Assemblages in the Sediments of the Big Eau Pleine Reservoir Marathon, County, Wisconsin	Stratigraphic analysis of a sediment core obtained from a deep depression in the Eau Pleine Reservoir, Wisconsin was made in 1976.	Sullivan, John	12/1/1976	
Evaluation of Sediment Remediation Conducted at the U. S. Corps of Engineers Marine Maintenance Facility on the Mississippi River at Fountain City, Wisconsin	Evaluation of Sediment Remediation Conducted at the U. S. Corps of Engineers Marine Maintenance Facility on the Mississippi River at Fountain City, Wisconsin	Sullivan, John	4/1/2001	
Long Term Water Quality Trends Observed at Wisconsin's Water Quality Monitoring Sites on the Upper Mississippi River	Trend analysis of water quality measurements at four sites on the Mississippi River	Sullivan, John F	3/1/2000	
Mississippi River Phosphorus Study Section 2 Quality Assurance-Quality Control Report with Metropolitan Waste Control Agency, Minnesota Pollution Control Agency, U.S. Corps of Engineers, Wisconsin Department of Natural Resources	Mississippi River Phosphorus Study Section 2 Quality Assurance-Quality Control Report with Metropolitan Waste Control Agency, Minnesota Pollution Control Agency, U.S. Corps of Engineers, Wisconsin Department of Natural Resources. This is a 1991 River Phosphorus Study to evaluate the impact of phosphorus loads to Spring Lake (Pool 2) and Lake Peppin (Pool 4) in the Upper Mississippi using samples at Lock and Dam 3 between June and August of 1992.	Sullivan, John	6/1/1993	
Mississippi River Water Quality Surveys and Reports 1986-1997	Mississippi River Water Quality Surveys and Reports 1986-1997 Summary of 10 years of main monitoring purposes including Condition, Dredging Evaluation, HREP, Point Source Evaluation, Resource Analysis Program, Stream Classification, and Trend.	Sullivan, John and Mississippi/Lower St. Croix Team	6/1/1997	

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National Coastal Condition Assessment: Additional Water Quality Measurements Report 2021	National Coastal Condition Assessment Additional Water Quality Measurements 2021	Coffman, Ellen	1/1/2023	
Polychlorinated Biphenyl Concentrations in the Mississippi River near Red Wing, Minnesota in the Spring of 1996	Total PCB concentrations in the Mississippi River near Lock and Dam 3 exceeded Wisconsin's water criteria for the river. Methods used were Particulate and Dissolved PCBs; and Sediment Traps. Sediment Traps versus Particulate-Phase Water Samples are discussed.	Sullivan, John and Steuer, Jeffrey	4/1/1999	
Pre- and Post- Water Quality Evaluation of the Lake Onalaska Dredge Cut, Pool 7, Mississippi River A Habitat Rehabilitation and Enhancement Project Under the Federal Environment Management Program Prepared for the St. Paul District U.S. Corps of Engineers Contract No. LN 1343-007	Construction of the Lake Onalaska HREP project, constructed by the Wisconsin Department of Transportation under a Section 215 agreement with the Corps of Engineers, began in May of 1989 and was completed in July of 1990. The dredging portion of the project was finished by November 1989. A detailed description of the project can be found in the U.S. Corps of Engineers 1971 documentation. This report evaluates the water quality monitoring and hydraulic studies associated with the dredge cut near Rosebud Island with an emphasis on the resulting water quality and hydraulic changes.	Sullivan, John	9/1/1992	
Pre-1900 Water Quality Observations of the Mississippi River from the Minnesota River to Lake Pepin.	A compilation of quotes about the Mississippi River at various locations by Zebulon Pike, Henry Schoolcraft, William Keating, George Featherstonhaugh, Charles Lanman, and Gouverneur Warren from the 1800s.	Sullivan, John	6/1/2010	
Proposed Light-Related Water Quality Criteria Necessary to Sustain Submersed Aquatic Vegetation in the Upper Mississippi River by the Upper Mississippi River Conservation Committee Water Quality Technical Section October 2003	Proposed Light-Related Water Quality Criteria Necessary to Sustain Submersed Aquatic Vegetation in the Upper Mississippi River by the Upper Mississippi River Conservation Committee Water Quality Technical Section October 2003. Includes Onalaska Lake, Weaver Bottoms, Lock and Dams 8 and 9 within Pool 9.	Upper Mississippi River Conservation Committee	10/1/2003	
State of the Mississippi River Basin Ecosystem Report Pool 8 (2012)	Long Term Resource Monitoring Program. An element of the Upper Mississippi River Restoration Environmental Management Program. Wisconsin Department of Natural Resources.	WDNR Mississippi River Monitoring Field Station	11/14/2012	

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Submersed Aquatic Vegetation Target for the Turbidity-Impaired Reach of the Upper Mississippi River Pool 2 to Upper Lake Pepin	Site Specific TSS Standard Development for Lake Pepin Sediment TMDL	Sullivan, John	11/1/2008	
Temporal Changes in Contaminant Levels in Suspended Sediment at Locks and Dams 3 and 4 on the Mississippi River	Temporal Changes in Contaminant Levels in Suspended Sediment at Locks and Dams 3 and 4 on the Mississippi River		1/1/2007	
Temporal Changes in Contaminant Levels in Suspended Sediment at Locks and Dams 3 and 4 on the Mississippi River - TABLES	Temporal Changes in Contaminant Levels in Suspended Sediment at Locks and Dams 3 and 4 on the Mississippi River - TABLES	Sullivan, John	5/1/2007	
The use of Metaphyton to Evaluate Nutrient Impairment and Proposed Nutrient Criteria for Wetlands and Backwaters in the Upper Mississippi River	Anthropogenic enrichment of freshwater systems have largely focused on impacts of excessive nutrients, primarily nitrogen and phosphorus, in lakes. Targets for improvements in lakes have centered on the control of nuisance sestonic algae, that contribute to algal blooms. Algal toxicity problems, fountasting drinking water, unsightly conditions and other use impairments. Mid-summer water chemistry and metaphyton biomass measurements were collected in eleven backwater areas from Wisconsin's Mississippi River floodplain during 2003 to 2007. The sampling sites extended from Pool 5 below Ama, WI to Pool 9 near Desoto, WI. This report covers: Water Quality and Metaphyton Cover and Cover type; Metaphyton and Chlorophyll Correlations; Metaphyton Tissue Analysis; and Proposed Nitrogen and Phosphorus Criteria.	Sullivan, John	10/1/2008	

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<p>Thresholds in the Response of Free-Floating Plant Abundance to Variation in Hydraulic Connectivity, Nutrients, and Macrophyte Abundance in a Large Floodplain River</p>	<p>Duckweed and other free-floating plants (FFP) can form dense surface mats that affect ecosystem condition and processes, and can impair public use of aquatic resources. FFP obtain their nutrients from the water column, and the formation of dense FFP mats can be a consequence and indicator of river eutrophication. We conducted two complementary surveys of diverse aquatic areas of the Upper Mississippi River as an in situ approach for estimating thresholds in the response of FFP abundance to nutrient concentration and physical conditions in a large, floodplain river. Local regression analysis was used to estimate thresholds in the relations between FFP abundance and phosphorus (P) concentration (0.167 mg l⁻¹), nitrogen (N) concentration (0.808 mg l⁻¹), water velocity (0.095 m s⁻¹), and aquatic macrophyte abundance (65 % cover). FFP tissue concentrations suggested P limitation was more likely in spring, N limitation was more likely in late summer, and N limitation was most likely in backwaters with minimal hydraulic connection to the channel. The thresholds estimated here, along with observed patterns in nutrient limitation, provide river scientists and managers with criteria to consider when attempting to modify FFP abundance in offchannel areas of large river systems.</p>	<p>Shawn Giblin, John Sullivan, Heidi Langrehr, and Ben Campbell (formerly DNR), and USGS</p>	<p>3/31/2013</p>	
<p>Tri-Matrix PCB Study Pool 5A, Upper Mississippi River includes Bioavailable, Adsorbed and Dissolved Phases of polychlorinated biphenyls.</p>	<p>Tri-Matrix PCB Study Pool 5A, Upper Mississippi River includes Bioavailable, Adsorbed and Dissolved Phases of polychlorinated biphenyls. To evaluate and compare the effectiveness of each monitoring technique at sensing the distribution of PCBs that may have emanated from this site.</p>	<p>Sullivan, John</p>	<p>2/1/1995</p>	

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Upper Mississippi River Pool 8 2019 Status Report - Long Term Resource Monitoring	A summary of 2019 discharge conditions, water quality, aquatic vegetation and fish monitoring in the Upper Mississippi River Pool 8, near La Crosse, WI within the historical perspective of long-term monitoring from 1993-2018. Authors: Andrew Bartels - Wisconsin DNR Fisheries Specialist, Deanne Drake - Wisconsin DNR Vegetation Specialist, and John Kalas - Wisconsin DNR Water Quality Specialist. Topic Experts: Andrew Bartels (fisheries and hydrology), Deanne Drake (aquatic vegetation), and John Kalas (water quality).	Barlets, Andrew, Drake, Deanne, Kalas, John	10/1/2020	
Water Quality Summary Report of General Trends - Monitoring of Dissolved Oxygen Levels in Selected Backwater Areas of the Upper Mississippi during the winter of 1988-1989	Water Quality Summary Report of General Trends - Monitoring of Dissolved Oxygen Levels in Selected Backwater Areas of the Upper Mississippi during the winter of 1988-1989 at Big Lake-Pool 4, Long Lake and Belle Island areas of Pool 7, French Lake and I-90 in Pool 8, Gremore Lake, Pool 10 and McCartney Lake, Pool 11	Bartsch, Lynn and Sullivan, John	7/15/2011	
Water Quality and Meteorological Monitoring Used in the Assessment of Water Level Drawdown of Navigation Pool 8 of Upper Mississippi River in 2001	Water Quality and Meteorological Monitoring Used in the Assessment of Water Level Drawdown of Navigation Pool 8 of Upper Mississippi River in 2001	Sullivan, John	6/1/2003	
Zebra Mussel-Induced Water Quality Impacts in the Mississippi River Observed during the Summer of 1997	Zebra Mussel-Induced Water Quality Impacts in the Mississippi River Observed during the Summer of 1997	Sullivan, John and Endris, Mark	1/1/1998	

Budget

Combined Budgets:

Combined WSLH:

Combined Total: \$0.00

Funding

Organization	Source	Type	Amount	Start Date	End Date
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