

# Missouri River Basin Interagency Roundtable

Omaha, Nebraska January 28, 2015

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## **Western Area Power Administration's Pallid Sturgeon Recovery Efforts in the Upper Basin**

**Lou Hanebury**  
**Environmental Protection Specialist**  
**Upper Great Plains Region**  
**Western Area Power Administration**  
**Billings, Montana**



# Our power comes from

## POWERPLANTS



- **Hydroelectric energy produced at Federal generating agencies**
- **Multi-purpose projects**
- **Variable water availability**

**Pallid sturgeon listed as Endangered in 1990**

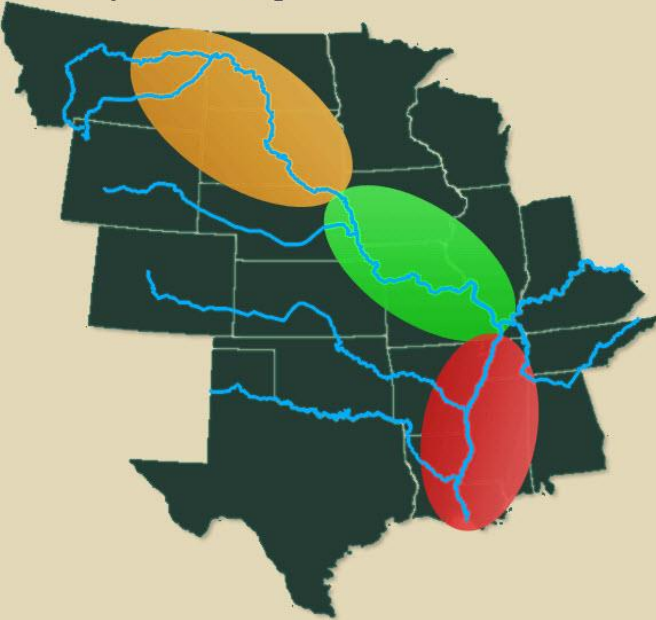
**Pallid Sturgeon Recovery Plan completed in 1993**



## Basin Recovery Teams

There are three Pallid Sturgeon Basin Recovery Teams – the Upper, Middle and Lower. They are comprised of representatives from Federal Agencies, State Agencies, Non-Government Organizations, Universities, Private Companies and General Public. These Teams coordinate and implement recovery actions for pallid sturgeon in Recovery Priority Management Areas encompassing the waters of the Missouri and lower Mississippi River basins of the United States. Recovery efforts consist of monitoring wild and hatchery reared sturgeon, management of the hatchery propagation program, research into pallid sturgeon life history and habitat requirements, habitat protection and restoration and river management recommendations.

## Recovery Basins Map



Search for:

## Pages

<http://www.pallidsturgeon.org/wp-content/uploads/2012/11/Pallid-Sturgeon-Recovery-Plan-First-Revisio...>

# Basin Recovery Teams

Upper Basin

Middle Basin

Lower Basin



# Upper Basin Recovery Workgroup

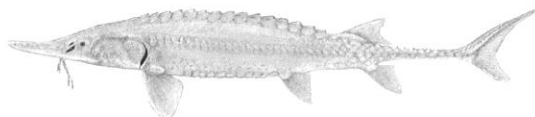
The Upper Basin Workgroup implements, coordinates, and provides funding recommendations on recovery actions in the Upper Basin.



**MEMORANDUM OF UNDERSTANDING**

**FOR**

**UPPER BASIN PALLID STURGEON RECOVERY  
IMPLEMENTATION**



**U.S. DEPARTMENT OF ARMY  
CORPS OF ENGINEERS  
OMAHA DISTRICT**

**U.S. DEPARTMENT OF INTERIOR  
BUREAU OF RECLAMATION  
GREAT PLAINS REGION  
MONTANA AREA OFFICE**

**U.S. DEPARTMENT OF INTERIOR  
FISH AND WILDLIFE SERVICE  
MOUNTAIN-PRAIRIE REGION**

**U.S. DEPARTMENT OF INTERIOR  
GEOLOGICAL SURVEY  
NORTH CENTRAL STATES REGION**

**STATE OF MONTANA  
DEPARTMENT OF FISH WILDLIFE AND PARKS**

**STATE OF NORTH DAKOTA  
GAME AND FISH DEPARTMENT**

**STATE OF SOUTH DAKOTA  
DEPARTMENT OF GAME FISH AND PARKS**

**WESTERN AREA POWER ADMINISTRATION  
UPPER GREAT PLAINS REGION**

**PPL MONTANA**

This Memorandum of Understanding (MOU) dated April 17, 2008, is among the various centers, regions and sub-offices of the following entities: United States Department of Army Corps of Engineers; United States Department of Interior, Bureau of Reclamation, Fish and Wildlife Service, and Geological Survey; Montana Fish, Wildlife & Parks; North Dakota Game and Fish Department; South Dakota Department of Game Fish and Parks; Western Area Power Administration; and PPL Montana. This MOU identifies the roles and responsibilities of these parties as it pertains to implementation of pallid sturgeon recovery through the Upper Basin Pallid Sturgeon Workgroup (UB Workgroup). The parties will abide by the terms and provisions expressed or referenced herein.

April 2008

**MOU formalizes  
the relationship  
among participants  
in the Upper Basin  
Workgroup**



**Authenticated**  
 Exhibit A, Revision 16  
 Interagency Agreement  
 Contract No. 00-UGPR-34  
 U.S. Fish and Wildlife Service

EXHIBIT A

(Annual Projects, Responsibilities and Payment Procedures)

**Western revises our  
 long-term contract  
 each year extending  
 funding for  
 continuing projects  
 and funds new  
 projects**

1. This Exhibit A made this 28th day of June, 2011, under and as a part of Contract No. 00-UGPR-34, dated June 28, 2000, hereinafter called the Agreement, shall become effective on the date of its execution. Upon such effective date, this Exhibit A shall terminate and supersede Exhibit A dated August 3, 2010, and shall remain in effect until superseded by another Exhibit A or termination of the Agreement.

2. SUMMARY OF ANNUAL PROJECTS: In this Exhibit, USFWS shall mean the U.S. Fish and Wildlife Service and MTFWP shall mean Montana Fish, Wildlife and Parks. Western, pursuant to this Agreement, has agreed to provide funding to the Principal Investigator/ Responsible Agency for specific projects and activities identified and funded in Fiscal Year 2011, as described below:

	<u>Project Title</u>	<u>Principal Investigator / Responsible Agency</u>	<u>Amount Funded</u>	<u>Funded By</u>
1	Yellowstone River Pallid Sturgeon Recovery	Jason Rhoten – MTFWP	\$	Western
2	Development of a Population Genetics Management Plan for Pallid Sturgeon in the Upper Missouri River Basin	Edward J. Heist – Southern Illinois University Carbondale (SIU) Meredith L. Barton – USFWS, Northeast Fishery Center (NFC)	\$ \$	Western
3	Produce a Pallid Sturgeon Documentary for Upper Basin Pallid Sturgeon Recovery	Terry Lonner – Media Works	\$	Western
4	Effects of the Reservoir headwater Environment on Survival and Behavior Larval Sturgeon Year 4 of 4	Chris Guy – MTFWP, Montana State University (MSU)	\$	Western
5	Determination of Reproductive Indices in Wild Hatchery-Reared Pallid Sturgeon in the Missouri and Yellowstone Rivers	Molly Webb – USFWS, Bozeman Fish Technology Center (BFTC)	\$	Western
6	Experimental Susceptibility of Pallid Sturgeon To Viral Hemorrhagic Septicemia Virus (VHSV)	Lacey Hooper – USFWS, Bozeman Fish Health Center (BFHC) Dr. Jim Winton – U.S. Geological Survey (USGS) Western Fisheries Research Center (WFRC)	\$ \$	Western





**Western has been a major funding partner for the Upper Basin Workgroup for 22 years. Western has funded:**

- **138 Recovery and Research Projects**
- **As of 2015 Western has expended \$6,726,928 dollars**
- **Funds generate significant returns due to matching funds and in-kind work.**



# Upper Basin Working Group Strategic Goals

Reference	Item	ACTIVITY	WHO (lead)	STATUS
	I.	<b>FLOW AND HABITAT MANAGEMENT</b>		
MA		I.A.2.	Implement strategies based on Habitat (physical) Plan	Workgroup
AD		I.A.2.a.	Develop administrative and technical process to allow for sediment restoration, sloughing easements, bank stabilization guidelines, cumulative effects analysis, and other habitat protection measures as determined necessary for recovery and based on Habitat Plan	MT, ND, SD, NE, FWS.
		I.A.3.	Evaluate effects of dams	
		I.A.3.a	Determine effects of dams on limiting recruitment and survival of pallid sturgeon	
RE		I.A.3.a.i	Evaluate Spillway releases from Fort Peck to improve flow, turbidity and temperature conditions below Fort Peck Dam	COE, MT
CO/MO		I.A.3.a.ii	Collect information to inform future Ft. Peck flow modifications (Biological Opinion)	COE, MT
RE		I.A.3.a.iii	Evaluate Selective Withdrawal systems on Fort Peck dam to improve temperature conditions below Fort Peck Dam	COE, MT
		I.A.3.b.	Determine effects of dams on fish movement (upstream/downstream).	
MA		I.A.3.b.i	Restore passage at Intake Diversion, Yellowstone River	COE, BR, FWS, MT, TNC
		I.A.4.	Physical Habitat creation and function	
MO		I.A.4.a	Develop and maintain standardized monitoring programs to evaluate effect of changes of habitat manipulation and annual variations to determine degrees of response in pallid sturgeon and co-existing fish communities.	COE, MT, SD, NE
RE		I.A.4.b.	Assess relationship of discharge to physical habitat creation and movement (shallow water habitat, sand bars) in river reaches important for recovery	COE, FWS, USGS
		I.B	<b>PROVIDE AND PROTECT INSTREAM FLOWS</b>	
PL		I.B.1	Develop an instream flow plan for geographic reaches important to pallid recovery	RFP
RE		I.B.1.a.	Determine what flows are necessary to provide pallid sturgeon life history requirements	
MA/CO		I.B.3.a.	Evaluate biological data in reaches below Ft. Peck Dam and pursue flow management options for Fort Peck Dam	COE, FWS, MT
		I.C	<b>MINIMIZE/PREVENT ENTRAINMENT AT WATER STRUCTURES</b>	
RE		I.C.1.b.	Evaluate Conservation District Dredge projects to determine implications of increased work	FWS, MT, COE
MA		I.C.2.	Implement strategies to prevent/minimize entrainment	
MO		I.D.	<b>MEASURE AND DOCUMENT POPULATION AND HABITAT PARAMETERS TO DETERMINE STATUS AND BIOLOGICAL RESPONSE TO RECOVERY ACTIONS. (STOCKING AND POPULATION MONITORING)</b>	
MO/CO		I.D.1.	Participate in Population Assessment monitoring of the Missouri River	COE, FWS, MT, ND, SD
MO/CO		I.D.1.a.	Collect and submit data according to standard protocol (e.g., location, PIT tag #, length, weight, etc.) on every endangered fish encountered in all field activities in order to provide annual information on population status outside of formal population estimates.	MT, FWS, COE, BR, ND, SD
MO/CO		I.D.1.b.	Conduct interagency data management program to compile, manage, and maintain all research and monitoring data collected by the Recovery Program.	MT, FWS, COE, BR, ND, SD
	II.	<b>LIFE HISTORY AND ECOLOGY</b>		Who



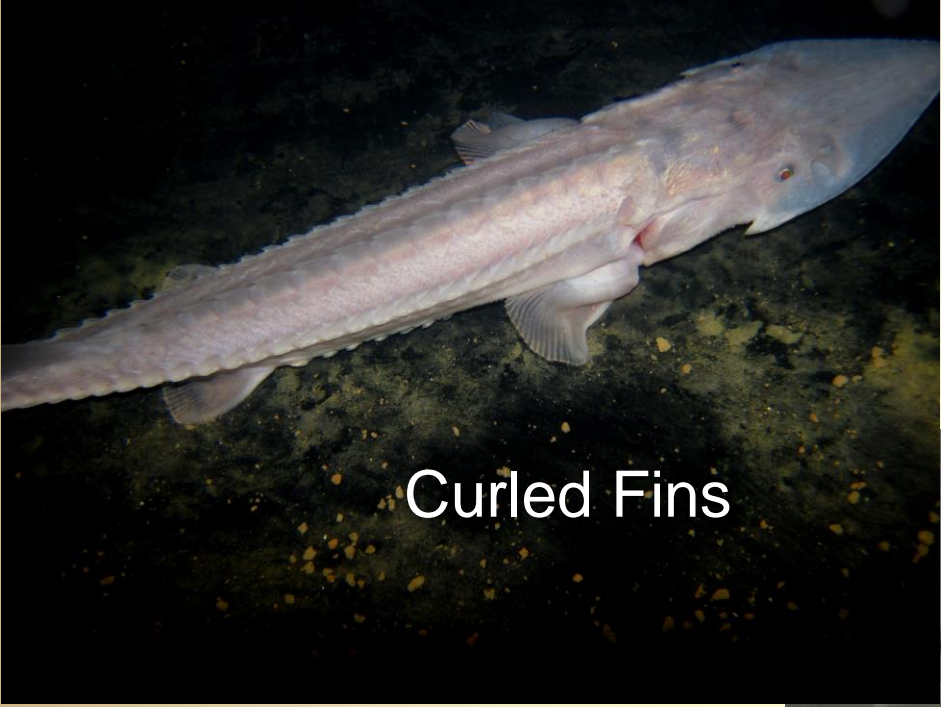
MO/CO		III.A.2.b.i.	Implement Population Assessment Monitoring in RPMA 2 and 3 of the Missouri River	COE, FWS, MT
PL/DA		III.A.2.b.ii.	Use population assessment (stocking) data to determine the most effective stocking strategy	Stocking Committee
PL		III.A.2.c	Assess the monitoring needed to evaluate the contribution to recovery of pallid sturgeon stocked over relevant reaches, life stages, and generations	All
DA		III.A.2.e	Determine seasonal catchability of monitoring gears to best capture sturgeon for population trend analysis	COE, FWS, MT, ND, SD
		III.A.3.	Genetics Management	
PL/AD		III.A.3.a.(1)	Work with Recovery Team to develop Gavins Point/Upper Basin Genetics Management Plan	Heist/Hedrick
		III.B.	SECURE AND MANAGE PALLID STURGEON FUTURE BROODSTOCK IN CAPTIVITY AND REFUGIA (ACCORDING TO THE GENETICS MANAGEMENT PLAN)	
MA/CO		III.B.1.	Cryopreservation	Propagation Committee
MA/CO		III.B.2.	Living Gene Bank - Future Broodstock program - Coordinate broodstock collection, spawning, stocking of pallid sturgeon	FWS, COE, Workgroup
		III.C.	MANAGE PRODUCTION FACILITIES TO MEET STOCKING TARGETS ANNUALLY ACCORDING TO STOCKING PLAN AND GENETICS MANAGEMENT PLAN	
MA/CO		III.C.1.	Gavins Point NFH production and future broodstock facility	FWS, COE
MA/CO		III.C.2.	Garrison Dam NFH production facility	FWS, COE
MA/CO		III.C.3.	Miles City SFH production facility	MT, COE
MA/CO		III.C.4.	Bozeman FTC production and research facility	FWS, COE
MA/CO		III.C.7.	Provide necessary equipment to implement Tagging Plan	FWS, COE
		III.D.	PALLID STURGEON SPAWNING AND LARVAL QUALITY RESEARCH	
		III.E.	PALLID STURGEON IRIDOVIRUS/FISH HEALTH RESEARCH AND MANAGEMENT	
RE		III.E.1.	Determine long term effects of the iridovirus	UCD, FWS
MA/AD		III.E.3.	Develop best management practices to mitigate viral expression at hatchery facilities	FWS, MT
		IV.	INCREASE PUBLIC AWARENESS AND SUPPORT FOR PALLID STURGEON AND THE WORKGROUP. (OUTREACH AND EDUCATION)	
AD		IV.C.	Promote technical publication of study results and communication among basins.	All
		V.	PROVIDE PROGRAM PLANNING AND SUPPORT (PROGRAM MANAGEMENT)	
		V.A.	DETERMINE ACTIONS REQUIRED LOCALLY FOR RECOVERY OF PALLID STURGEON	
AD		V.A.1	Update, refine, and prioritize local recovery actions annually.	workgroup
AD		V.A.2.	Workgroup review and approval of prioritized recovery actions.	workgroup
AD		V.A.3.	Public and external peer review of prioritized recovery actions.	all
AD		V.A.4.	Work with Recovery Team to insure local actions are incorporated into approved recovery plans.	FWS
AD		V.A.4.a.	Participate in USFWS species status review and update recovery goals at least every 5 years.	FWS
AD		V.A.5.a.	Monitor and assess Workgroup accomplishments annually.	Workgroup



		II.A.	<b>CONDUCT RESEARCH TO ACQUIRE CRITICAL LIFE HISTORY INFORMATION FOR LIFE STAGES</b>	
		II.A.1.	<b>Sexual maturity and spawning</b>	
RE		II.A.1.a	Evaluate if spawning occurs in the Missouri and Yellowstone rivers, ID spawning areas, and characterize spawning habitat	MT, FWS
RE		II.A.1.c	Estimate sex ratios, spawning periodicity, and reproductive structure of adult population	FWS, UBWG
RE		II.A.1.d	Determine age at sexual maturity of hatchery-raised and stocked fish in RPMA 1.2.3	UPWG, RFP
RE		II.A.1.e	Determine survival and growth, rates fecundity	FWS, MT, SD, USGS
		II.A.2	<b>Age-0 to age-1</b>	
RE		II.A.2.b	Quantify spawning success/failure in the Missouri and Yellowstone rivers based on collections of eggs, larvae and YOY	MT, USGS
RE		II.A.2.e	Test the hypothesis that larvae and YOY cannot survive in reservoirs	MSU
RE		II.A.2.g	Determine growth and survival rates	MT, USGS
RE		II.A.2.i	Describe habitat and food requirements for YOY	MT, USGS, FWS
		II.A.3.	<b>Age-1 to sexual maturity</b>	
RE		II.A.3.a.i.	Evaluate habitat requirements for age-1 + pallid sturgeon	RFP
RE		II.A.3.b.	Evaluate monitoring techniques for age-1 + pallid sturgeon and refine as necessary	UBWG, COE
RE		II.A.3.c.i.	Quantify growth rates, survival rates, and year-class strength of hatchery-raised and released juvenile pallid sturgeon at large in the Missouri and Yellowstone Rivers	MT, FWS, RFP
RE		II.A.3.c.ii.	Quantify growth rates, survival rates, and year-class density of hatchery-raised juvenile pallid sturgeon released into RPMA 3	RFP, MSU, MT
RE/DA		II.A.3.d.	Determine age-at-maturity of hatchery reared pallid sturgeon in the Missouri and Yellowstone Rivers (using known aged juvenile pallid sturgeon at large for several years)	RFP
RE/DA		II.A.3.e.	Estimate the relative abundance of hatchery-raised juvenile pallid sturgeon in reservoirs and deltas	MT, FWS, COE
RE		II.A.3.g.	Describe combinations of abiotic and biotic habitat characteristics behind aggregations of juvenile PDSG	FWS, SDSU
RE		II.A.3.k.	Quantify potential losses of pallid sturgeon prey - fish and invertebrate production	MT, SD, NE, FWS
MA		II.A.3.l.	Restore native Macrhybopsis sp. Sturgeon, sicklefin and speckled chubs in RPMA 3 (food source for PDSG)	FWS, SD
		II.A.4.	<b>Population viability analysis</b>	
DA		II.A.4.b.	Determine and collect data necessary for PVA development	MT, SD, FWS, COE
		III.	<b>PROPAGATION, STOCKING, AND GENETICS</b>	
		III.A.	<b>STOCKING PROGRAM</b>	
		III.A.1.	<b>IMPLEMENT SOUND ARTIFICIAL PROPAGATION AND STOCKING PROGRAM</b>	
PL/AD		III.A.1.	Revise Upper Basin Propagation Plan to be range-wide and implement the Plan	Propagation Committee
MA		III.A.1.a	Establish standardize data collection for all hatcheries during broodstock collection, hatching and growth to assess rearing practices on survival and growth	Propagation Committee
		III.A.2.	<b>CONDUCT MONITORING TO EVALUATE EFFECTIVENESS OF PALLID STURGEON STOCKING</b>	
AD		III.A.2.a	Update and implement Stocking and Augmentation Plan	Stocking Committee



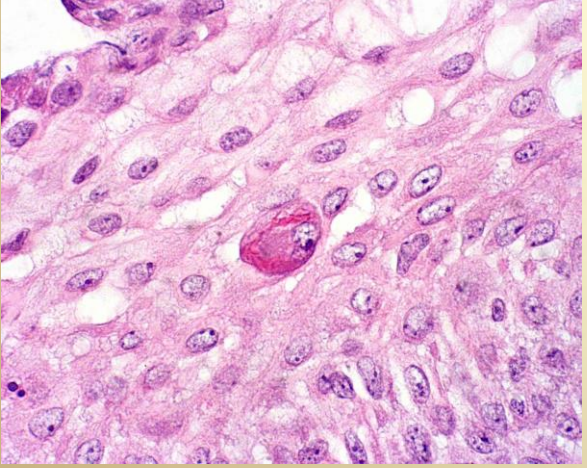
# Disease Management



**Curled Fins**



**Iridovirus**



# Missouri River Use (or lack thereof) by Pallid Sturgeon

*Dave B. Fuller and Tyler M. Haddix  
Montana Fish, Wildlife and Parks  
Fort Peck, MT*



# Pallid Sturgeon Migrations and Reproductive Success in the Yellowstone River, 2012

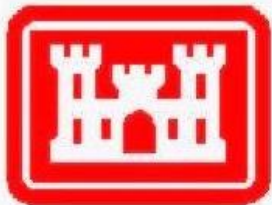
**Jason Rhoten, Dave Fuller**  
*(Montana Fish, Wildlife and Parks)*

**Pat Braaten, Carrie Elliott, Kim Chojnaki, Aaron DeLonay**  
*(U. S. Geological Survey, Columbia Environmental Research Center)*



# Pallid Sturgeon Monitoring in Segment 4 of the Missouri River 2012

USFWS Missouri River  
Fish and Wildlife  
Conservation Office  
Bismarck, North Dakota



U.S. Army Corps  
of Engineers



Montana Fish,  
Wildlife & Parks



North Dakota Game and  
Fish Department



# Pallid Sturgeon Efforts in RPMA-1 Missouri River above Fort Peck

**Anne Tews**  
**Montana FWP**

**2012**

**Randy Rodencal**  
**Casey Jensen**  
**Mike Wente**  
**Eli McCord**  
**Derrick Miller**  
**Steve Leathe**



# GARRISON DAM NFH

Upper Basin Pallid Sturgeon  
Coordination Meeting  
March 5, 2013



# Determination of Reproductive Indices in Captive and Wild Hatchery-Reared Pallid Sturgeon

Molly Webb and Mariah Talbott

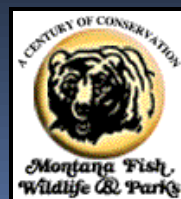


Photo credit Joel Satore



# YELLOWSTONE RIVER PALLID STURGEON RECOVERY

A summary of management and  
research activities



# MISSOURI RIVER STURGEON IRIDOVIRUS SAMPLING

Marc Terrazas  
Ken Staigmiller



**Montana Fish,  
Wildlife & Parks**



# MARS

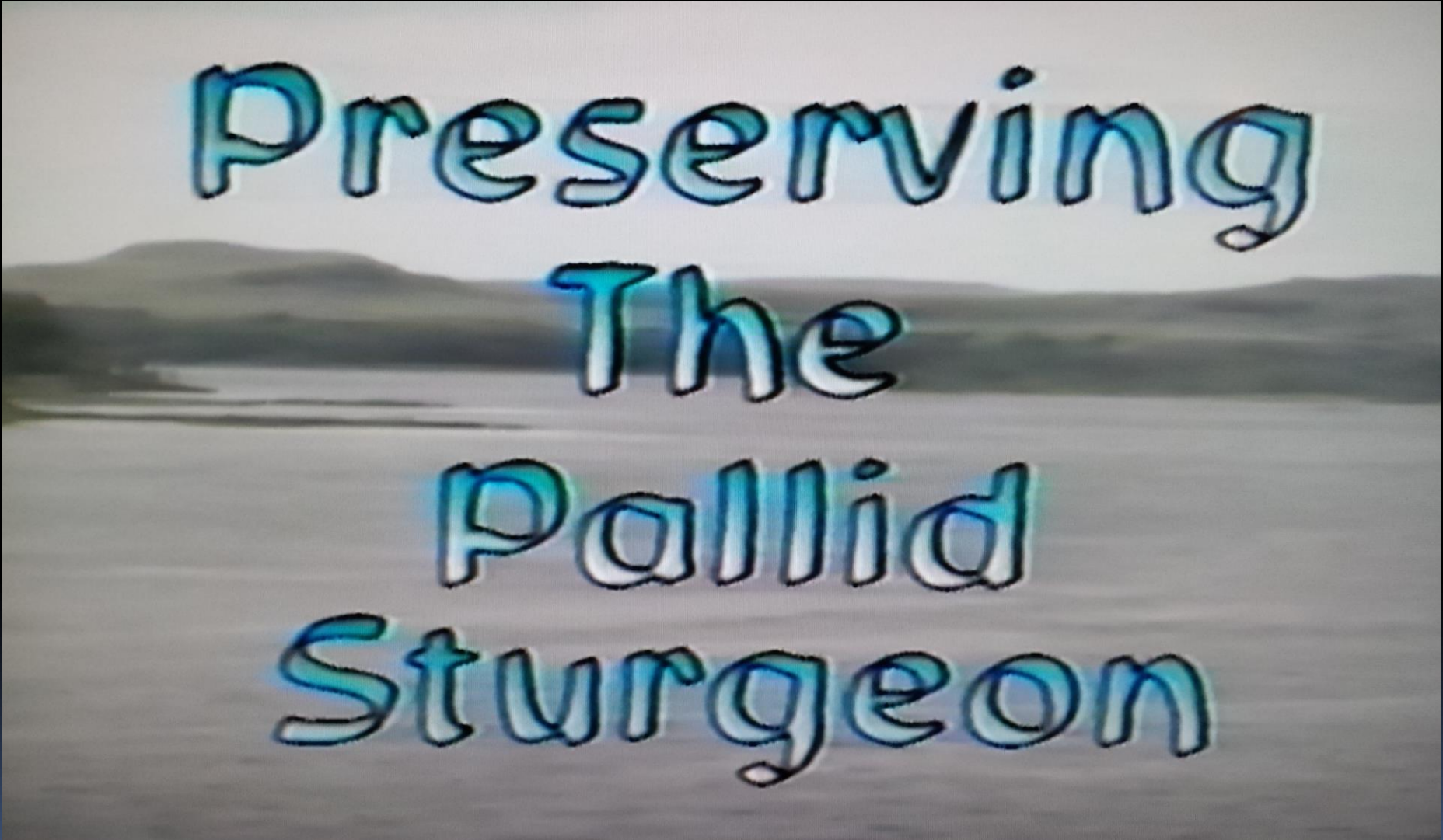
MONTANA AQUATIC  
RESOURCES SERVICES

**BRIDGING THE RESTORATION GAP**

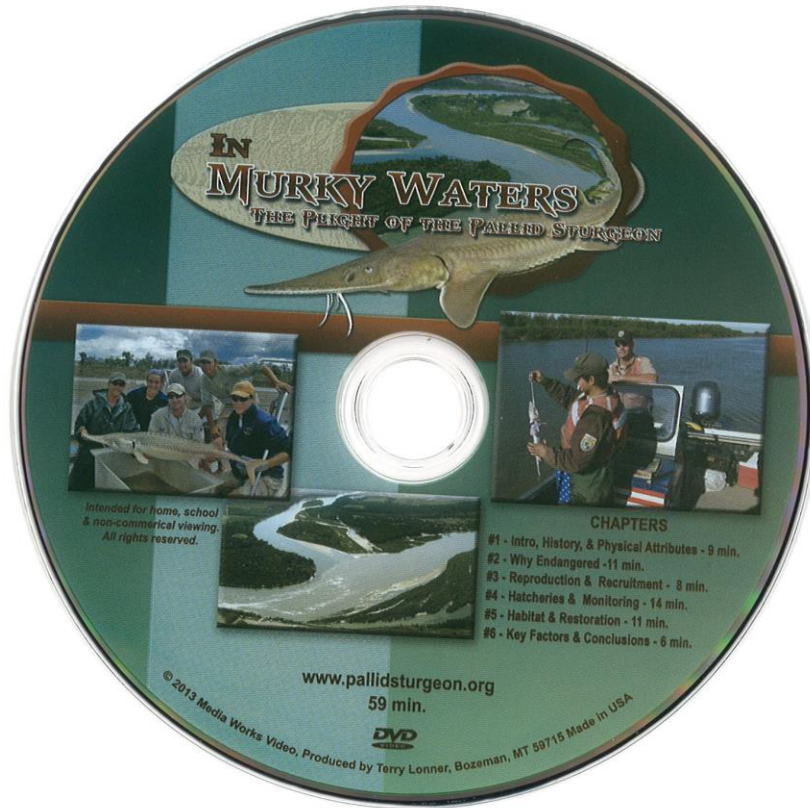
**PROVIDING IN-LIEU FEE MITIGATION  
AND AQUATIC RESOURCE RESTORATION  
AND PROTECTION SERVICES**

Pat Byorth and Tom Hinz, MARS Board of Directors

First Documentary on Pallid Sturgeon Recovery Efforts In  
the Upper Basin - 1996



Preserving  
The  
Pallid  
Sturgeon



**2013 – New Updated Documentary on Recovery Efforts**





In the dim waters of the Missouri River lives a ghost fish . . . mysterious . . . prehistoric . . . a living relic of the distant past, the rarely seen pallid sturgeon. Sturgeon as a family are very old with an ancestry dating back 200 million years. The pallid Sturgeon is a fish descended from sturgeon that lived nearly 80 million years ago. When its ancestors were swimming through the waters of the ancient Missouri River, Tyrannosaurus Rex was walking along its shore. After millions of years of ancestral survival through environmental disruptions, mass extinctions and multiple glaciations of North America, this fish is in murky water both literally and figuratively and may be on the brink of disappearing forever. The upper basin of the Missouri River has seen rapid & tremendous change that started during the first half of the twentieth century with the construction of six large main-stem dams. Today, wild pallid sturgeon living in the waters of the upper Missouri River in Montana and the Dakotas are one of the rarer fish species in North America.



During field surveys conducted by federal and state fisheries biologists from the 1960s through the 1980s only big, apparently old pallids were observed in the upper Missouri River from Fort Benton, Montana to Gavins Point Dam in South Dakota suggesting pallids were not reproducing. This resulted in a petition filed under the 1973 Endangered Species Act to list the pallid as endangered and on September 6, 1990 the U. S. Fish and Wildlife Service placed the pallid sturgeon on the endangered species list. Because of this a major recovery effort was initiated to try and keep the pallid from going extinct. With continued recovery efforts to include research, planning, habitat improvement, regulations and river management compatible with the life history needs of the pallid sturgeon, this "senior citizen" of murky waters may survive and once again naturally thrive in the wild — so that future generations of people can experience the intrigue of this pale survivor whose ancestors were of the dinosaur era and 80 million years of evolution.

IN MURKY WATERS THE PLIGHT OF THE PALLID STURGEON

**CHAPTERS**

#1 - Intro, History, & Physical Attributes	9 min.
#2 - Why Endangered	11 min.
#3 - Reproduction & Recruitment	8 min.
#4 - Hatcheries & Monitoring	14 min.
#5 - Habitat & Restoration	11 min.
#6 - Key Factors & Conclusions	6 min.



**IN MURKY WATERS**  
THE PLIGHT OF THE PALLID STURGEON



Produced by  
media Works  
Terry N. Lonner,  
Media Works Video

Major funding and support provided by:



59 min  
Additional Information:  
[www.pallidsturgeon.org](http://www.pallidsturgeon.org)



# 2013 – Upper Basin Web Page



The screenshot shows the homepage of the Pallid Sturgeon Recovery Program website. At the top right, there are links for "Team Members" and "Login". The main title "THE PALLID STURGEON RECOVERY PROGRAM" is prominently displayed in a stylized font. Below the title is a navigation bar with links for "Home", "What's a Pallid Sturgeon?", "Endangered Species Act", "Recovery", "What's New", "Participants", and "Library". On the left side, there is a search bar and a "Basin Recovery Areas" section featuring a map of the upper basin with three colored regions (orange, green, and red). Below the map is a "What's New" section with two recent news items. The main content area features a large photo of two men in waders holding a large pallid sturgeon in a river, with a caption: "An adult pallid sturgeon awaiting release back into the river." Below the photo is a pagination bar with numbers 1 through 13. At the bottom of the page, the title "The Pallid Sturgeon Recovery Program" is repeated, followed by a partially visible introductory sentence.

Team Members  
Login

## THE PALLID STURGEON RECOVERY PROGRAM

Home   What's a Pallid Sturgeon?   Endangered Species Act   Recovery   What's New   Participants   Library

SEARCH

Home

Basin Recovery Areas

Click a colored region of the map to view info for that area.

What's New

- New scientific papers available  
Posted on 14 Aug 2014
- 2014 Governing Board Meeting in Bismarck, ND  
Posted on 12 Aug 2014

An adult pallid sturgeon awaiting release back into the river.

1 2 3 4 5 6 7 8 9 10 11 12 13

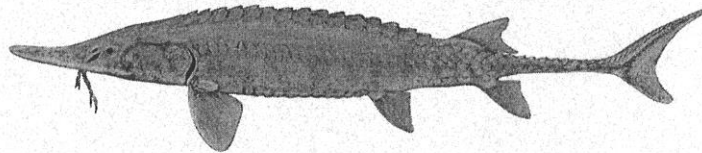
### The Pallid Sturgeon Recovery Program

After a long history of respect and survival through environmental discussions, man...

REPORT A PROBLEM

<http://www.pallidsturgeon.org/>

**UPPER BASIN PALLID STURGEON  
RECOVERY WORKGROUP**



**2002 ANNUAL REPORT**



# THE PALLID STURGEON RECOVERY PROGRAM

Home

What's a Pallid  
Sturgeon?

Endangered  
Species Act

Recovery

What's New

Participants

Library

## Basin Recovery Areas



Click a colored region of the map to  
view info for that area.

## What's New

- ← New scientific papers available  
Posted on 14 Aug 2014
- ← 2014 Governing Board Meeting  
in Bismarck, ND  
Posted on 12 Aug 2014
- ← Update regarding the status of  
adult pallid sturgeon upstream

[Home](#) » [What's New](#) » New scientific papers available

## New scientific papers available

Two papers are now available for reading- please see the "Scientific Publications" section of the Library page or click these links:

[Watson Thesis 2014](#)

[James et al 2014](#)

# PALLID STURGEON RECOVERY PROGRAM

Home » News » Female Pallid Sturgeon Tracked Migrating Upstream

**Female Pallid Sturgeon Tracked Migrating Upstream**  
A new observation regarding the migration of a female pallid sturgeon (code 36) on the Yellowstone River late in the afternoon Wednesday May 28, 2014.

Mat and Chris discovered that an adult female pallid sturgeon (code 36) was logged on a telemetry base station located on the upper end of the Intake side channel. The receiver logged code 36 passing upstream of the base station at approximately 12:00 am on May 28. The provisional flow at the USGS gauging station at Glendive at this time was 52,900cfs.

Mat and Chris followed up this observation by checking two additional base stations, one on the lower end of the side channel and one located on the Yellowstone River approximately 4 miles downstream of Intake dam. Both stations also logged code 36 as the fish migrated upstream. They also checked the base station at the Intake diversion dam and it did not log code 36. The combination of data from these stations demonstrates that code 36 migrated upstream of Intake dam via the side channel.

The two base stations on the Intake side channel were installed this year based on the projections of a high and sustained river flows from substantial mountain snowpack. To my knowledge this is the first time the side channel has been monitored by a base station. We tried to install a base station on the side channel in 2011, another high water year, but did not have enough telemetry receivers programmed to log codes.

On Thursday May 29, Mat & Chris searched via boat for code 36 upstream of Intake. They located the fish and as of 11:00 am it was located near river mile 91 which is approximately 4.5 river miles downstream of Glendive or 15 miles upstream of Intake dam. The fish was actively moving upstream as they tracked her location.

**This is the first adult pallid sturgeon confirmed upstream of Intake dam since 1991. In 1991 one pallid sturgeon was netted in the Yellowstone River at the confluence of the Yellowstone River and O'Fallon Creek (river mile 127).**

**On Friday May 30, at approximately 2:00 pm code 36 was located at river mile 98 (seven miles upstream of Glendive). On average, while actively tracking by boat the last two days, the fish is moving upstream at approximately 0.3-0.4 miles per hour.**

Code 36 was captured on May 15 near the state line to confirm her spawning status, see the following link for her picture: [http://billingsgazette.com/lifestyles/recreation/blood-draw/image\\_12bf07e6-899a-5311-8f7d-8f4796245890.html](http://billingsgazette.com/lifestyles/recreation/blood-draw/image_12bf07e6-899a-5311-8f7d-8f4796245890.html). The assessment determined the presence of eggs, which means spawning is likely to occur this year. Unless river flows become dangerous for boat navigation crews will continue to monitor movements of code 36. We will share additional details as more information is collected.

Mike Backes

R7 Fisheries Manager

Montana, Fish, Wildlife & Parks



Thanks to all those who do  
all of this Work





Questions?