

Pentwater River Watershed Road Stream Crossing Inventory

Summary Report

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Committee

Pentwater Lake Association

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1.0 Summary

The road stream crossings in the Pentwater River Watershed were surveyed by the Friends of the Pentwater River Watershed in May 2023. The purpose was to generate an inventory of the crossings and an understanding of the watershed in general. The purpose was not to define the details of the road crossings.

Thanks to Dave Peterson, Pat Hooyman, Dan Selahowski, Ted Erhan, Suzie Knoll, Sky Harsh, and Jean Pugsley for their help in completing the survey.

In all 289 crossings were surveyed. Some were on public roads, some were private. The results at a high level show the following.

- 1) 157 crossings had no concerns. (54%)
- 2) Perched, clogged, or failed culverts were observed at 62 sites. (21%)
- 3) 36 culvert sites were deleted due to water no longer flowing through them. (12%)
- 4) 16 dams were recorded, 4 public and 12 private. (6%)
- 5) 9 sites had road sediment or salt runoff. (3%)
- 6) Significant erosion was observed in 7 crossings. (2%)
- 7) Cattle or horses were observed in the stream in 4 locations. (1%)
- 8) 1 waterfall was observed. (<1%)

Looking at these results at the sub-watershed level provides better insight into their effects on the watershed. See the sub-watershed summaries below. The results by specific Site ID are shown in Appendix C.

Actions items from these results will be determined after the results are reviewed with multiple sources.

The results at specific road crossings can be seen online. Click on a dot to see the data for the site. Colored dots have disturbances. Grey dots have no disturbances. Open this viewer and search on Pentwater Lake to zoom in.

<https://trout.maps.arcgis.com/apps/webappviewer/index.html?id=cf6ee6cb21bb4ede8fb0da746db2d0e1&extent=-15215009.2001%2C2449683.4771%2C-6996499.9189%2C6886700.095%2C102100>

2.0 Data Collection

There were 3 main elements to the data collection.

2.1 Great Lakes Stream Crossing Inventory

The Great Lakes Stream Crossing Inventory Viewer was used to identify the road stream crossings and create digital maps that the Site IDs were recorded on. See Appendix A for the maps. The Viewer shows the United States Geological Survey HUC waterways based on early 1990s data on an ArcGIS database. The viewer can be found here. <https://great-lakes-stream-crossing-inventory-michigan.hub.arcgis.co/>

2.2 Trout Unlimited “RIVERS” Phone App

The Trout Unlimited “RIVERS” phone App was used to record the data. It is based on Survey123 and directly uploads data to an ArcGIS database. The RIVERS app was chosen over the Great Lakes app for the following reasons.

- 1) Does not require extensive training or a sign-on ID.
- 2) Enables 3 photos to be taken at each site.
- 3) Enables disturbances to be identified and color-coded on the ArcGIS map.

More information on the RIVERS app can be found here. <https://www.tu.org/science/science-engagement/community-science/rivers/>

2.3 Custom Data Sheet

A simplified custom data sheet was created to capture both crossing information and stream information. The intent was to capture high level information. If a disturbance was identified that requires follow-up, then additional information will need to be collected. The data sheet is shown in Appendix B. In the RIVERS app 3 pictures were captured at each site: both sides of the crossing and the data sheet. This way the data sheets can be seen online. The Site ID was added to the Participant names field in the app to enable the ID to be seen when viewing the list of sent files.

The ratings of Good, Poor or Bad were based primarily on restrictions of fish passage.

3.0 Pentwater Lake

Pentwater Lake has two tributaries that flow into it in addition to the river, Village Creek and Lost Canyon Creek.

Village Creek flows from above the Pentwater sewage treatment ponds along Second Ave. through town and enters Pentwater Lake at Charlie’s Marina. The creek is 2-4 feet wide and 3 to 12 inches deep with a sand bottom. Temperatures were 45 to 58 °F getting warmer the closer you get to the holding ponds. A road crossing at the end of Second Ave is perched. This restricts fish access to the upper 30% of the creek. A property owner comment also indicated that there may be a private dam somewhere along Second Ave. Also, the culvert on the private road owned by the Village to the treatment ponds has a failed culvert with water running under the culvert and starting to erode the road.

Lost Canyon Creek, unofficial name, drains the area above Lakeview Drive and Treasure Island Road. Three streams feed into a single stream that flows into the lake in front of the Boathouse Restaurant. The creek is 1 to 2 feet wide and 4 to 6 inches deep with a sand bottom. Temperatures were 51 to 53 °F. Combined the streams have 5 private culverts of which 2 are perched and 3 have become clogged and failed. The failed culverts have the water running over the private road with significant sediment erosion that is flowing into the lake.

The other crossing is Longbridge Rd bridge where the Pentwater River flows into the lake.

4.0 North Branch

The North Branch of the Pentwater River starts near Woodruff Lake in Mason County and flows south connecting with the South Branch in the Pentwater River marsh just before entering Pentwater Lake.

The river at Sippy Road is 12 feet wide and 12 inches deep. The temperature was 49°F. At Monroe Road the river is 30 feet wide and 5 feet deep. The temperature was 48°F. The stream bottom is sand with some locations of gravel. The main river has no restrictions for its entire length.

Three road crossings no longer had water at the culverts.

Three bridges are designed to feed road runoff directly into the river.

Allen Drain, Big Spring Creek, Whiskey Creek, and several other tributaries are unrestricted and add excellent water to the river.

5.0 Dumaw Creek

Dumaw Creek feeds into the North Branch just above the Hammett Road bridge. It starts as drainage ditches with outflows from South Oxbow Lake and St. Marys Lake. The ditches are 4 feet wide and 12 inches deep with a sand bottom. The temperature was 50°F. At West Hogan Road it is 10 feet wide and 12 inches deep with a sand bottom. The temperature was 46°F. The creek has a natural flow below Washington Road. Two steelhead were seen spawning at the Washington Road crossing. Above this there is a small beaver dam that restricts passage to the upper 50% of the creek. Above Washington Road the creek is mainly drainage ditches through farmland.

The creek had 25 road stream crossings based on the 1990 data. In the 2023 survey 11 (44%) were dry.

This is another major contributor to the North Branch water flow.

6.0 Cedar Creek

Cedar Creek flows into the North Branch below Hammett Road. It originates south of Monroe Road east of 112th Ave. At Monroe Road the width is 7 feet with a depth of 6 inches with a sand bottom. The temperature was 44°F. At Oceana Dr. the width is 11 feet with a depth of 10 inches with a sand/gravel bottom. The temperature was 44 °F. From Monroe Road until it flows into the North Branch the creek flows through forest. It has several feeder tributaries with only one having a perched culvert that impacts less than 5% of the overall creek access.

The Monroe Road stream crossing has a cattle farm lot with cattle allowed to roam freely in the creek.

This is one of the nicest creeks in the watershed.

7.0 Crystal Creek

Chrystal Creek begins above Crystal Valley Dam and flows into Cedar Creek. At 120th Ave. the creek is 8 feet wide and 10 inches deep with a sand bottom. The temperature was 51°F. The Crystal Valley Dam restricts fish access to the upper 50% of the creek. The creek temperature above the pond was 50°F. The temperature at the dam was 56°F.

One tributary has a perched culvert that restricts access to 10% of the creek watershed.

There were two culverts that were deleted because they were dry.

This creek adds high quality water to Cedar Creek.

8.0 Mud Creek

Mud Creek is a small creek that flows into the North Branch below Cedar Creek. It is 6 feet wide and 6 inches deep with a sand bottom. The temperature was 51°F.

There is a perched culvert that restricts fish access to the upper 30% of the watershed.

9.0 Watson Creek

Watson Creek is a tributary that flows into the North Branch below Monroe Road. It is 4 feet wide and 6 inches deep with a sand bottom. The temperature was 47°F. A perched culvert on the DNR road at the Pentwater Transfer Station restricts fish passage to 50% of the creek. Since 1990 60% of the creek has become dry and is being converted to irrigated farmland. Two culverts were dry.

10.0 Pentwater River to Hart Dam

The section that is known as Pentwater River starts below Huftile Creek and runs to the Longbridge Road bridge. The river at Longbridge Road is 130 feet wide and 8 feet deep with a sandy bottom. The temperature was 51°F. The main feature in this stretch is the Hart Dam which stops all fish migration to the other 90% of the South Branch watersheds including Russell Creek, Chippewa Creek, Huftile Creek and Donaldson Creek.

There are 4 crossing culverts on tributaries that have dried up.

There is one tributary that has 2 perched culverts. They have minimal impact.

The two bridges over Hart Lake feed road runoff directly into the lake.

One culvert under US-31 has significant erosion near the expressway, but not associated with the culvert. Site ID – PR-8.

11.0 Lambricks Creek

Lambricks Creek flows into the Pentwater River just west of US-31. At Wayne Road the width is 4 feet and the depth is 1 foot with a sand bottom. The temperature was 45°F. This is an excellent creek that runs west of US-31. The road crossing at Harrison Road creates both a dam and a perched culvert. This separates the upper 40% of the creek from the lower half. This limits what would otherwise be an excellent creek.

12.0 Russell Creek

Russell Creek flows from Fox Road on the west side of US-31, through Hart, and into Hart Lake. At 72nd Ave, where it is still a nice creek, it is 6 feet wide and 10 inches deep with a sand/gravel bottom. The temperature was 52°F. Shortly after this crossing it empties into ponds created by road crossings at Main St. and Johnson St. in Hart. The road crossing on Mechanic St. in Hart has a perched culvert that restricts any fish from Hart Lake moving into the ponds or up the stream. The creek has a good water flow, but 4 other perched culverts, a clogged culvert, and a concrete spillway with a 12-inch drop makes this system limited for any fish movement.

13.0 Chippewa Creek

Chippewa Creek starts just south of Polk Road and west of State St. It flows under the fruit canning factories and joins a tributary coming from the Hart water treatment ponds before emptying into a pond and then into Hart Lake. At Griswold St in Hart the creek is 8 feet wide and 10 inches deep with a sand bottom. The temperature was 56°F. The culvert at Main St. in Hart is perched and does not allow any fish movement from the lake into the system.

Two small tributaries have perched culverts with a small impact on the system.

14.0 South Branch

The South Branch starts at Mud (Leavitt) Lake and flows into Hart Lake. At Polk Road east of 144th Ave. the river is 3 feet wide and 12 inches deep with a sand bottom. The temperature was 60°F. At 96th Ave the river is 35 feet wide and 2 feet deep with a sand bottom. The temperature was 58°F. The river above Hart Dam has an open flow until it reaches a perched culvert at 144th Ave.

Waldron Drain is a key feeder stream into the system that joins just above 96th Ave. Unfortunately, a perched culvert where it crosses the old 96th Ave on private property restricts fish movement to the upper 60% of the system. The stream at this point is 10 feet wide and 10 inches deep with a sand bottom. The temperature was 55°F. The drain also has three perched culverts and one dry culvert, all of little impact.

Cleveland Creek is another key feeder stream into the system that joins just east of 128th Ave. At Jackson Road the creek is 8 feet wide and 6 inches deep with a sand bottom. The temperature was 52°F. Three perched culverts and one dry culvert have little impact on the system.

Four perched culverts on tributaries have little impact.

15.0 Huftile Creek

Huftile Creek originates at Baseline Road and flows into the South Branch just below 96th Ave. This watershed is characterized by wide, shallow, spring fed sandy creeks. It is also characterized by perched culverts and dams, both county and private. The main branch of the creek from Gales Pond dam to when it enters the South Branch is the gem. At Gales Pond the creek is 30 feet wide and 2 feet deep with a sand bottom. The temperature was 64°F. The temperature of the water coming into the pond was 58°F. At Tyler Road just before it enters the South Branch the creek is 20 feet wide and 3 feet deep with a sand bottom. The temperature was 53°F. Gales Pond dam restricts fish access to the upper 30% of the system.

Gales Pond had four tributaries that flow into it. One tributary is now dry. The main tributary is Reunion Creek which is joined by Knox Creek. At 116th Ave. Reunion Creek is 10 feet wide and 10 inches deep with a sand bottom. The temperature was 58°F. At this location a private dam with a very large pond is located 100 yards upstream. This dam restricts fish access to the upper 50% of the creek. Knox Creek at Baseline Road is 8 feet wide and 8 inches deep with a sand bottom. The temperature was 56°F. This crossing is where Knox Swamp turns into a creek. Knox Creek has a free flow to Gales Pond.

The system also has a very large number of tributaries. 7 of the tributary road crossings are now dry. 13 have perched or clogged culverts, but with their locations have little impact. There are 5 perched

culverts that restrict access to the upper levels of the tributary by 80%, 50%, 50%, 40% and 20%. There are 7 private dams that have little impact. One tributary dam restricts access to 20% of the upper system. A dam on Hodges Creek restricts access to the upper 10% of that system. There are also two sites with cattle in the creeks. One site with erosion and one site with road runoff.

16.0 Donaldson Creek

Donaldson Creek is a major tributary of Huftile creek entering just south of Tyler Road. Unfortunately, there is a private dam at 84th Ave. that restricts fish access to the upper 50% of the system. At 84th Ave. the creek is 3 feet wide and 12 inches deep with a sand/gravel bottom. The temperature was 56°F even though it was flowing out of a large pond.

Appendix

A. Site ID Maps

These are the maps for Pentwater Lake, Mud Creek, Dumaw Creek, North Branch, Cedar Creek, and Crystal Creek.



PL_M_D_NB_C_CC.pdf

These are the maps for Pentwater River and South Branch



PR_SB.pdf

These are the maps for Huftile Creek



H.pdf

B. Data Collection Form

Rating: Good ___ Poor ___ Bad ___

Friends of the Pentwater River Watershed Road/Stream Crossing Inventory Form

Date: _____ Site ID: _____
Stream Name: _____ Road Name: _____
USGS Reach Code: _____ GPS: _____

Road Characteristics:

Road Surface: paved ___ gravel ___ sand ___
Road Maintenance: year-round ___ seasonal ___ closed ___
Road Opening: span bridge ___ culvert ___ ford ___ dam ___
Crossing Use: road ___ other _____
Road Condition: good ___ poor ___ bad ___

Stream Characteristics:

Average Width (ft): _____
Average Depth (ft): _____
Average Current: slow ___ medium ___ fast ___ intermittent ___
Substrate type: sand ___ sand/gravel ___ gravel ___ muck ___ other _____
Temperature (F): _____
Fish Passage: yes ___ no ___

Observed Problems:

Perched Culvert: _____
Road Runoff: _____
Erosion: _____
Other: _____
Comments: _____

Observer(s): _____

C. Results by Site ID

Pentwater River Watershed - Road Stream Crossing Summary

<u>Site ID</u>	<u>Rating</u>	<u>Issue</u>	<u>Public/Private</u>	<u>Survey Date</u>	<u>Comments</u>
PL-1	G			4/25/2023	
PL-2	G			4/25/2023	
PL-3	G			4/25/2023	
PL-4	G	Erosion	Private	4/25/2023	Soil erosion due to property owner clearing riverbank. Culvert of unknown origin dumps in west side.
PL-5	B	Perched culvert	Private	4/25/2023	Perched culvert on private driveway
PL-5A	G			4/25/2023	
PL-5B	B	Failed Culvert	Village of Pentwater	4/25/2023	Undermined Culvert with Road being washed out. Township road

PL-6	G			4/25/2023	
PL-7	B	Clogged Culverts	Private	4/25/2023	Clogged culverts causing water to overtop the road and cause erosion. Private driveway
PL-7		Erosion		4/25/2023	
PL-8	B	Clogged Culverts	Private	4/25/2023	Clogged culverts causing water to overtop the road and cause erosion. Private driveway
PL-8		Erosion		4/25/2023	
PL-9	B	Clogged Culverts	Private	4/25/2023	Clogged culverts causing water to overtop the road and cause erosion. Private driveway
PL-9		Erosion		4/25/2023	
PL-10	B	Perched culvert	Private	4/25/2023	Perched culverts one 5 ft one 3 ft. One Culvert is partially clogged
PL-11	B	Perched culvert	Private	4/25/2023	Perched culverts one 5 ft one 3 ft. One Culvert is partially clogged
PL-12	G			4/25/2023	
M-1	P	Erosion	County	4/25/2023	Ditch erosion along road feeding sediment into stream
M-2	G			4/25/2023	Side ditch culvert undermined and failed NW corner
M-3	B	Perched culvert	County	4/25/2023	Perched culvert 2 ", nearby ditch culvert clogged and water running over sand road adding sediment to stream
M-4	G			4/25/2023	
M-4A	G			4/25/2023	
D-1	G			4/28/2023	
D-2	G			4/28/2023	
D-3	G			4/28/2023	
D-10	G			4/28/2023	
D-11		Deleted		4/28/2023	
D-12	G			4/28/2023	
D-13		Deleted		4/28/2023	
D-14	G			4/28/2023	
D-15		Deleted		4/28/2023	
D-16		Deleted		4/28/2023	
D-17		Deleted		4/28/2023	
D-18	G			4/28/2023	
D-19	G			4/28/2023	
D-20		Deleted		4/28/2023	
D-21		Deleted		4/28/2023	
D-22		Deleted		4/28/2023	
D-23		Deleted		4/28/2023	
D-24		Deleted		4/28/2023	
D-25		Deleted		4/28/2023	
NB-1	P	Run-off Salt	County	4/30/2023	

NB-2	G			4/30/2023	
NB-4	G			4/30/2023	
NB-5	G			4/30/2023	
NB-6		Deleted		4/30/2023	
NB-7	G			4/30/2023	
NB-8	G			4/30/2023	
NB-9	G			4/25/2023	
NB-10	P	Run-off Salt	County	4/30/2023	
NB-11		Deleted		4/30/2023	
NB-12	G			4/30/2023	
NB-13	G			4/30/2023	
NB-14	G			4/30/2023	
NB-15	G			4/30/2023	
NB 16	P	Run-off Sediment	County	5/3/2023	
NB 17		Deleted		5/3/2023	Dry
NB 18	G			5/3/2023	
NB-19	P	Rock Dam	Drain	4/30/2023	
NB-20	G			4/30/2023	
NB-21		Deleted		4/30/2023	Dry
NB-22	G			4/30/2023	
NB-23		Deleted		4/30/2023	
NB-24	G			4/30/2023	
NB-25	P	Run-off Salt	County	4/30/2023	
NB-26		Deleted		4/30/2023	
NB-27	G			4/30/2023	
NB-28	G			4/30/2023	
NB-29	G			4/30/2023	
NB-30	G			4/30/2023	
NB-31	G			4/30/2023	
NB-32	G			4/30/2023	
NB-33	G			4/30/2023	
NB-34	G			4/30/2023	
NB-35	G			4/28/2023	
NB-36	G			4/28/2023	
NB-37	G			4/28/2023	
NB-38	G			4/28/2023	
NB-39	G			4/28/2023	
NB-40	G			4/30/2023	
NB-41	G			4/30/2023	
NB-42	B	Perched culvert	DNR	4/30/2023	
NB-43	G			4/30/2023	
NB-45	G			4/30/2023	
NB-46	G			4/30/2023	

NB 47	P	Clogged Culverts	County	5/3/2023	culvert clogged
C 1	G			5/3/2023	
C 2	G			5/3/2023	
C 3	G			5/3/2023	
C 4	G			5/3/2023	
C 5	P	Perched culvert		5/3/2023	4 inches
C 6	G			5/3/2023	
C 7		Deleted		5/3/2023	Dry
C 8		Deleted		5/3/2023	Dry
C 9		Deleted		5/3/2023	Dry
C 10	B	Cattle		5/3/2023	Cattle Feed lot with cattle in stream
C 11	G			5/3/2023	
C 12	G			5/3/2023	
CC 1	B	Perched culvert	County	5/5/2023	perched 8"
CC 2	G			5/5/2023	
CC 3	G			5/5/2023	
CC 4	G			5/5/2023	
CC 5	G			5/5/2023	
CC 6	B	Dam		5/5/2023	
CC 7	B	Perched culvert		5/5/2023	perched 12"
CC 8		Deleted		5/5/2023	Dry
CC 9		Deleted		5/5/2023	Dry
CC 10	G			5/5/2023	
CC 11	G			5/5/2023	
CC 12	G			5/5/2023	
CC 13	B	Perched culvert		5/5/2023	perched 12"
CC 14	G			5/5/2023	
PR 2	G			5/2/2023	
PR 3		Deleted		5/2/2023	
PR 4		Deleted		5/2/2023	
PR 5		Deleted		5/2/2023	
PR 6		Deleted		5/2/2023	
PR 7	G			5/2/2023	
PR 8	B	Erosion		5/2/2023	Erosion on East side,
PR 8	B	Waterfall		5/2/2023	Waterfall on west side is fish barrier
PR 9	G			5/2/2023	Add gravel up-stream for spawning
PR 10	G			5/2/2023	
PR 11	B	Perched culvert		5/2/2023	Perch by 2 feet on north side, south side has created a pond
PR -12	G			5/2/2023	
PR 13	B	Dam		5/2/2023	Hart Dam
PR 14	G			5/2/2023	
PR 15	B	Perched culvert		5/6/2023	Perch by 12" on lake side

PR 16	G			5/6/2023	
PR 17	B	Perched culvert		5/6/2023	Perched by 2 ft
PR 18	B	Perched culvert		5/6/2023	Perched by 6"
PR 19	B	Perched culvert		5/6/2023	Perched by 3 ft on downstream side, waterfall on upstream side
PR 20	G	Other		5/6/2023	sludge in river
PR 21	G			5/6/2023	
PR 22	B	Clogged Culverts		5/6/2023	both sides of the road
PR 23	G			5/2/2023	
PR 24	G			5/2/2023	
PR 25	B	Other		5/6/2023	structure in front of culvert raises water by 12" and creates a barrier
PR 26	G			5/6/2023	Culvert on west side water at top of culvert
PR 27	B	Perched culvert		5/6/2023	Perched by 12"
PR 28	G			5/2/2023	
PR 29	P	Other		5/6/2023	sludge in river, water in culvert appears to come from sewer drain on south side of road as only visible source
PR 30	G			5/2/2023	
PR 31	G			5/6/2023	spring fed
PR 32	G			5/2/2023	
PR 33	B	Other		5/6/2023	Spillway creates a 12" barrier on the upstream side.
PR 34	B	Perched culvert		5/7/2023	Perched by 12"
PR 35	P	Run-off		5/6/2023	Run-off from concrete run-off and drain lines directly from street to the river
PR 36	P	Run-off		5/6/2023	Run-off from drains directly from the bridge
PR 75	G			5/6/2023	
PR 76	G			5/6/2023	
PR 77	B	Perched culvert		5/6/2023	Perched by 12"
PR 78	B	Perched culvert		5/6/2023	Perched by 12"
PR 79	G			5/6/2023	
PR 80	B	Perched culvert		5/6/2023	Perched by 15"
PR 81	B	Perched culvert		5/7/2023	Perched by 15"
SB 1	G			5/7/2023	
SB 2	G			5/7/2023	
SB 3		Deleted		5/7/2023	dry
SB 4	B	Perched culvert		5/7/2023	Perched by 3"
SB 5	G			5/7/2023	
SB 6	G			5/7/2023	
SB 7	G			5/7/2023	
SB 8	G			5/7/2023	
SB 9	G			5/7/2023	
SB 10	G			5/7/2023	

SB 11	G			5/7/2023	
SB 12	P	Run-off		5/7/2023	Salt run-off
SB 13	P	Run-off		5/7/2023	Sediment run-off
SB 14	G			5/7/2023	Culvert in bad shape
SB 15	P	Clogged Culverts		5/7/2023	Clogged culvert and erosion
SB 16	G			5/8/2023	
SB 17	G			5/8/2023	
SB 18	G			5/8/2023	
SB 19	G			5/8/2023	
SB 20	B	Perched culvert		5/8/2023	Perched culvert 12", and debris at culvert
Sb 21	G			5/8/2023	
SB 22	G			5/8/2023	
SB 23	G			5/8/2023	
SB 24	B	Perched culvert		5/8/2023	Perched culvert 18"
SB 25	G			5/8/2023	
SB 26	G			5/8/2023	
SB 27	G			5/8/2023	
SB 28	B	Clogged Culverts		5/8/2023	water flows underground
SB 29		Deleted		5/8/2023	
SB 30	G			5/9/2023	
SB 31	G			5/9/2023	
SB 33	G			5/9/2023	
SB 34	G			5/9/2023	
SB 35	G			5/9/2023	
SB 36	B	Perched culvert		5/9/2023	Perched by 6'
SB 37	G			5/9/2023	
SB 38	G			5/9/2023	
SB 39	G			5/9/2023	
SB 40	G			5/9/2023	
SB 41	G			5/9/2023	
SB 42	B	Perched culvert		5/9/2023	Perched 18"
SB 43	B	Perched culvert		5/9/2023	Perched 6"
SB 44	P	Clogged Culverts		5/9/2023	Rocks block exit from culvert, culvert rust through
SB 45	G			5/9/2023	
SB 46	B	Perched culvert		5/9/2023	Perched 3'
SB 47	G			5/9/2023	
SB 48	G			5/9/2023	
SB 50	G			5/7/2023	
SB 51	G			5/7/2023	
SB 52	B	Perched Culvert		5/7/2023	Perched by 6"
SB 53	B	Perched Culvert		5/7/2023	Perched by 6"

SB 54	B	Perched Culvert		5/7/2023	Perched by 6"
SB 55	B	Perched Culvert		5/7/2023	Perched by 30"
SB 56	B	Perched culvert		5/8/2023	Perched by 2', debris 6"
SB 57	B	Perched Culvert		5/8/2023	Perched by 6"
SB 58	P	Animal Crossing		5/8/2023	Horse trail over stream
SB 59	G			5/8/2023	No visible culvert
SB 81	B	Perched Culvert		5/9/2023	Perched by 5' private drive
H 1	G			5/10/2023	
H 2	B	Perched culvert		5/10/2023	Perched by 10"
H 3		Deleted		5/10/2023	Dry
H 4		Deleted		5/10/2023	Dry
H 5		Deleted		5/10/2023	Dry
H 6	B	Perched culvert		5/10/2023	Perched by 18"
H 7	G			5/10/2023	
H 8	G			5/10/2023	
H 9	B	Perched culvert		5/10/2023	Perched 30"
H 10	B	Perched culvert		5/10/2023	Perched 6"
H 11	G			5/10/2023	
H 12	B	Dam		5/10/2023	Old dam creates a barrier and a pond upstream from road
H 13	B	Perched Culvert		5/10/2023	Perched 2'
H 14	G			5/11/2023	
H 15	G			5/11/2023	
H 16	G			5/11/2023	
H 17	B	Dam		5/11/2023	10" private dam
H 18	G			5/11/2023	
H 19	B	Cattle		5/11/2023	Perched culvert drains into a watering tank for cattle in middle of stream
H 20	G			5/11/2023	
H 21	B	Perched span		5/11/2023	Concrete spa bridge floor is perched 6"
H 22	G			5/11/2023	
H 23	G			5/11/2023	
H 24	G			5/11/2023	
H 25	G			5/11/2023	
H 26	B	Dam		5/11/2023	Private pond with dam that creates a 18" perch
H 27	G			5/11/2023	
H 28	G			5/11/2023	
H 29	B	Perched culvert		5/11/2023	Perched 12"
H 30	G			5/11/2023	
H 31	B	Perched culvert		5/16/2023	Perched 6"
H 32	B	Perched culvert		5/16/2023	Perched 30"
H 33	P	Erosion		5/16/2023	
H 34	P	Run-off		5/16/2023	Sediment

H 35	G	Dam		5/10/2023	Private dam above
H 36	G			5/16/2023	
H 37		Deleted		5/16/2023	Dry
H 38		Deleted		5/16/2023	Dry
H 39	B	Dam		5/11/2023	Wood placed in front of culvert creates a 24" dam and perch
H 40	G	Dam		5/17/2023	Private dam upstream perched 12"
H 41	G	Dam		5/17/2023	Private dam downstream
H 42	B	Perched culvert		5/17/2023	Perched 18"
H 43	B	Perched culvert		5/17/2023	Perched 4"
H 44		Deleted		5/17/2023	Dry
H 45	G			5/17/2023	
H 46	G			5/17/2023	
H 47	G			5/16/2023	
H 48	B	Perched culvert		5/16/2023	Perched 30"
H 49	G	Dam		5/16/2023	Private Dam upstream with overflow pipe
H 50	G			5/16/2023	
H 51	G			5/16/2023	
H 52	B	Perched culvert		5/16/2023	Perched 6", cattle in stream
H 53	G			5/16/2023	
H 54	G			5/16/2023	
H 55	G			5/16/2023	
H 56	G			5/16/2023	
H 57	B	Perched culvert		5/16/2023	Perched 10"
H 58	P	Clogged Culverts		5/16/2023	Perched 8"
H 59		Deleted		5/16/2023	Dry
H 60	G			5/16/2023	
H 61	B	Dam		5/16/2023	Gales Pond Dam, County
H 62	G			5/16/2023	
H 63	B	Perched Culvert		5/16/2023	Perched 8"
H 64	B	Dam		5/16/2023	Pond above and below, both create barriers, one a perch outlet pipe, one a vertical pipe in pond.
H 65	B	Perched culvert		5/16/2023	Perched 12"
H 66	G			5/16/2023	
H 67	G			5/16/2023	
H 68	G			5/16/2023	
H 69	G			5/16/2023	
H 70	G			5/11/2023	
H 71	B	Clogged Culvert		5/11/2023	Culvert burred
H 71a	G			5/11/2023	
H 72	G	Dam		5/16/2023	Old private dam just downstream perched 8'

H 73		Deleted		5/16/2023	Dry
H 75	B	Perched Culvert		5/10/2023	Perched 3'
H 76	G			5/16/2023	
H 77	G			5/16/2023	Gales Pond pathway
H 78	G			5/16/2023	Gales Pond pathway
H 79	G			5/16/2023	Gales Pond pathway