

Baldwin River Dam Removal, River Restoration, Sea Lamprey Barrier & Trail Crossing Project



Conservation
Resource Alliance

Road Stream Crossings



Tree Planting

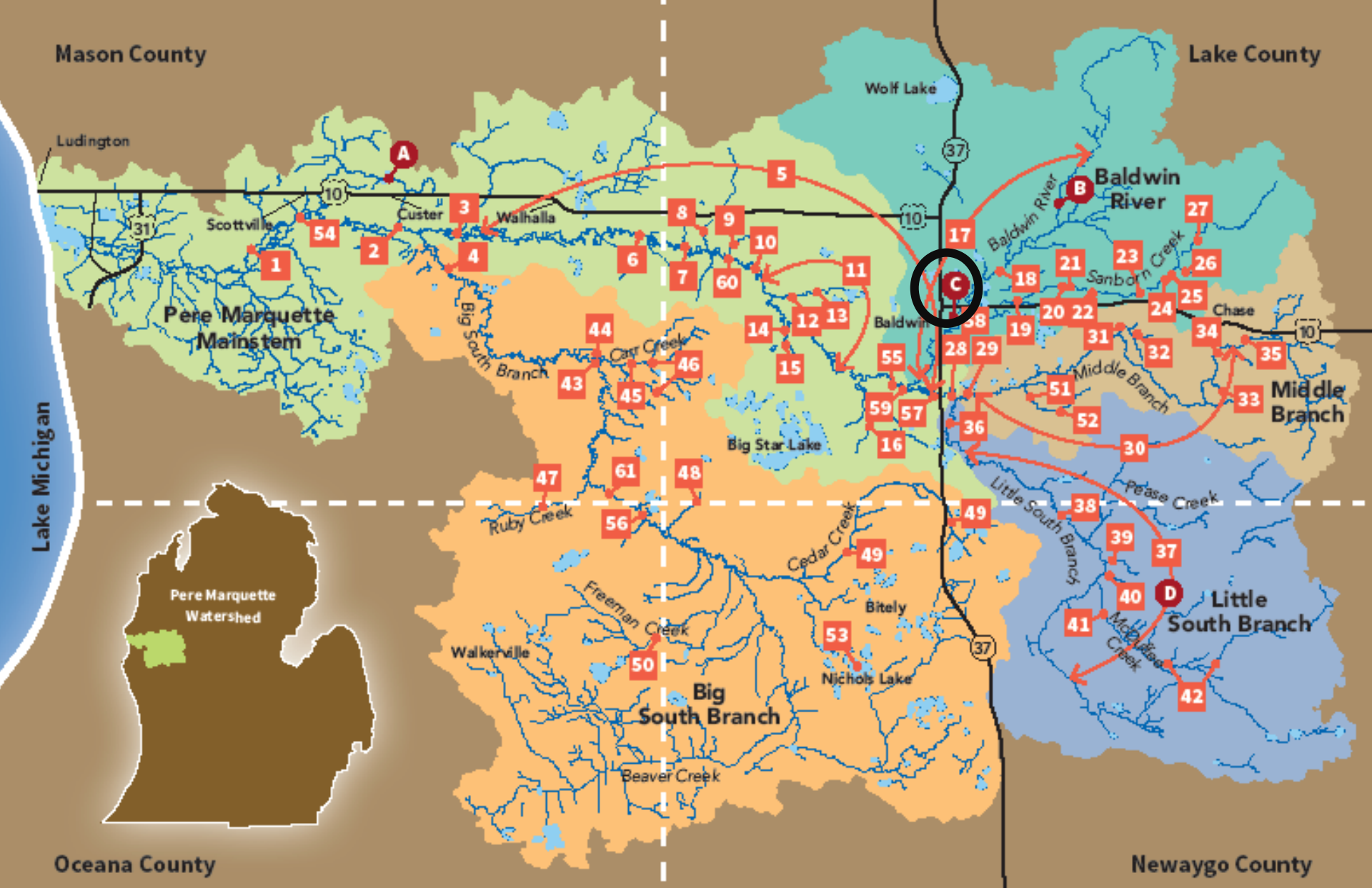


Reconnecting Streams



Streambank Stabilization & Habitat





Pere Marquette River Care™

33. Middle Branch Tributary & Bonney Rd - Culvert Replacement

Pere Marquette River Care™

COMPLETED PROJECTS

1. Chinnery Logslide - Streambank Stabilization (MLCD)
2. Custer Weir - Access Site Restoration
3. Pere Marquette River & Reek Rd - Indian Bridge (MDOT)
4. Big South Branch & Wilson Rd - Bridge Improvements
5. Mainstream - Streambank Stabilization Projects (115)
6. Pere Marquette River & Landon Rd - Bridge (MDOT)
7. Upper Branch - Streambank Stabilization
8. Tank Creek & Wingleton Rd - Culvert Replacements & Tank Creek Dam Removal
9. Sweetwater Creek & Wingleton Rd - Timber Bridge
10. Streambank Stabilization & Instream Habitat
11. Gleason's Landing to Rainbow Rapids - Instream Habitat
12. PM Tributary & Mac Rd - Road/Stream Crossing Replacement
13. Kinney Creek & Wingleton Rd - Timber Bridge
14. Freeman Creek & Maple Island Rd - Bridge Improvements
15. Pere Marquette Tributary & Mac Rd - Culvert Replacement
16. Jenks Creek & Jenks Rd - Culvert Replacement
17. Baldwin River - Streambank Stabilization Projects (21)
18. Baldwin River & 40th St - Streambank Stabilization
19. Sanborn Creek & Foreman Rd - Culvert Replacement
20. Sanborn Creek & Broadway St - Culvert Replacement
21. Sanborn Creek & Nelson Rd - Culvert Replacement
22. Sanborn Creek & Spruce Rd - Culvert Replacement
23. Sanborn Creek & Kings Hwy - Culvert Replacement
24. Sanborn Creek & Queens Hwy - Culvert Replacement
25. Sanborn Creek & 40th St - Culvert Replacement
26. Sanborn Creek Tributary & 40th St - Culvert Replacement
27. Sanborn Creek & State Rd - Culvert Replacement
28. Jarvis - Island & Instream Habitat
29. Middle Branch/Little S Branch & James Rd - Forks Timber Bridge
30. Middle Branch - Streambank Stabilization Projects
31. Baker Creek & 56th St - Culvert Replacement
32. Baker Creek & Kings Hwy - Culvert Replacements (4)

MDOT = Michigan Department of Transportation
MLCD = Mason Lake Conservation District

33. Middle Branch Tributary & Bonney Rd - Culvert Replacement
34. Middle Branch & Depot St - Timber Bridge Replacement
35. Middle Branch & Baker Rd - Timber Bridge
36. Little South Branch & 76th St - Kennedy Timber Bridge (MDOT)
37. Little South Branch - Streambank Stabilization Projects (18)
38. Little South Branch & 17 Mile Rd - Bridge Improvements
39. Little South Branch Tributary & Spruce Ave - Culvert Replacement
40. Little South Branch Tributary & Spruce Ave - Culvert Replacement
41. McDuffee Creek & 14 Mile Rd - Bridge Improvements
42. McDuffee Creek & 12 Mile Rd - Culvert Replacements (2)
43. Big South Branch & Hawley Rd - Bridge Improvements
44. Carr Creek & Hawley Rd - Streambank Stabilization
45. Carr Creek Tributary & Hawley Rd - Culvert Replacement
46. Carr Creek Tributary & Tyndall Rd - Culvert Replacements (2)
47. Ruby Creek & 176th St - Culvert Replacement
48. Woody Creek & 18 Mile Rd - Culvert Replacement
49. Cedar Creek incl. tributaries & 16 Mile Rd - Culvert Replacements (4)
50. Cedar Creek & Beaver Rd - Culvert Replacement
51. Blood Creek & 72nd St - Culvert Replacement
52. Blood Creek & Broadway Ave - Culvert Replacement
53. Nichols Lake - Wildlife Habitat
54. Scottville Riverside Park - Streambank Stabilization
55. Large Wood Instream Habitat & Streambank Stabilization
56. Large Wood Instream Habitat & Streambank Stabilization
57. Pere Marquette River Railroad - Streambank Stabilization
58. Village of Baldwin 8th Street Bridge Project
59. Large Wood Instream Habitat & Streambank Stabilization
60. Large Wood Instream Habitat & Streambank Stabilization
61. Streambank Stabilization

FUTURE NEEDS & UPCOMING PROJECTS

- A. Black Creek & Custer Rd - Road/Stream Crossing Replacement
- B. N Cole Creek & 24th St - Timber Bridge
- C. Baldwin River Dam Removal, River Restoration, Sea Lamprey Barrier
- D. Little South Branch - Large Wood Instream Habitat & Streambank Stabilization



PLANING MILL AT BALDWIN!

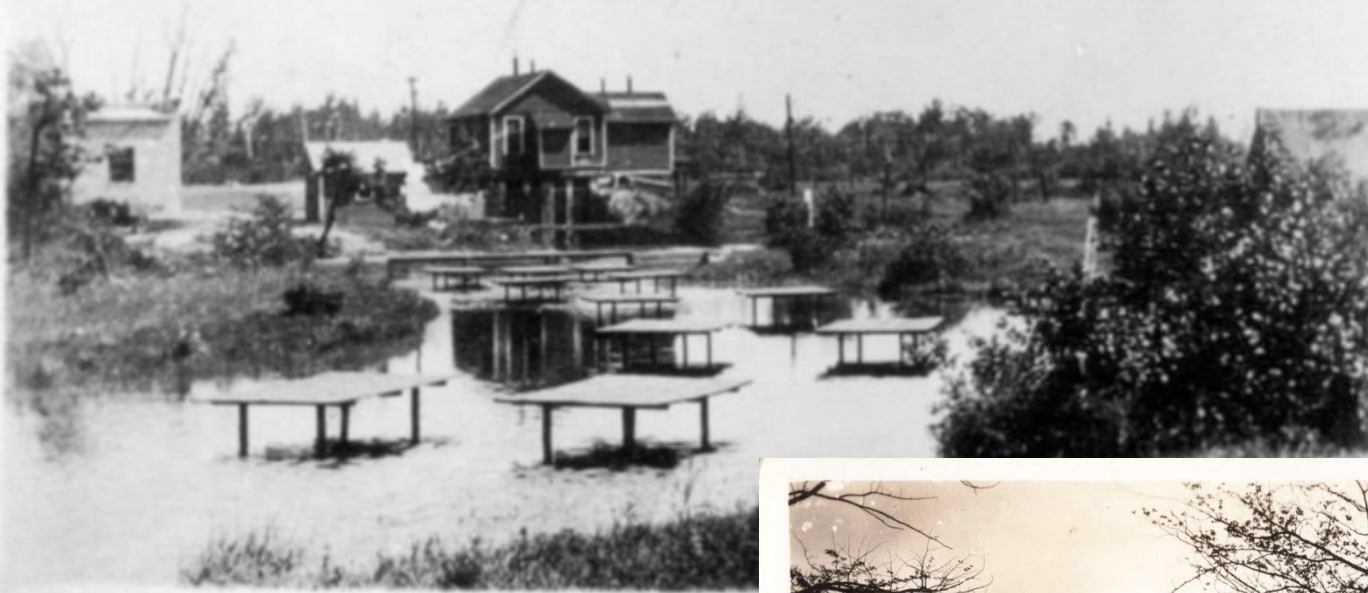
I have added to My GRIST MILL a FIRST-CLASS
PLANER & MATCHER, and am Now prepared to PLANE
LUMBER make FLOORING, CEILING, CALIFORNIA
or BLOCK SIDING, MOULDINGS for building purposes;
WINDOW FRAMES and will soon have a Saw ready to
RESAW SIDING. When you want a Board planed or a
bag of grain ground, or both, hitch up and come to Mill. No
trouble to Start up. Water Power.
FEED, CORN and BUCKWHEAT for Sale. Come on!
Come all! And be Happy.

W. H. DELAMATER.



6-16-1923

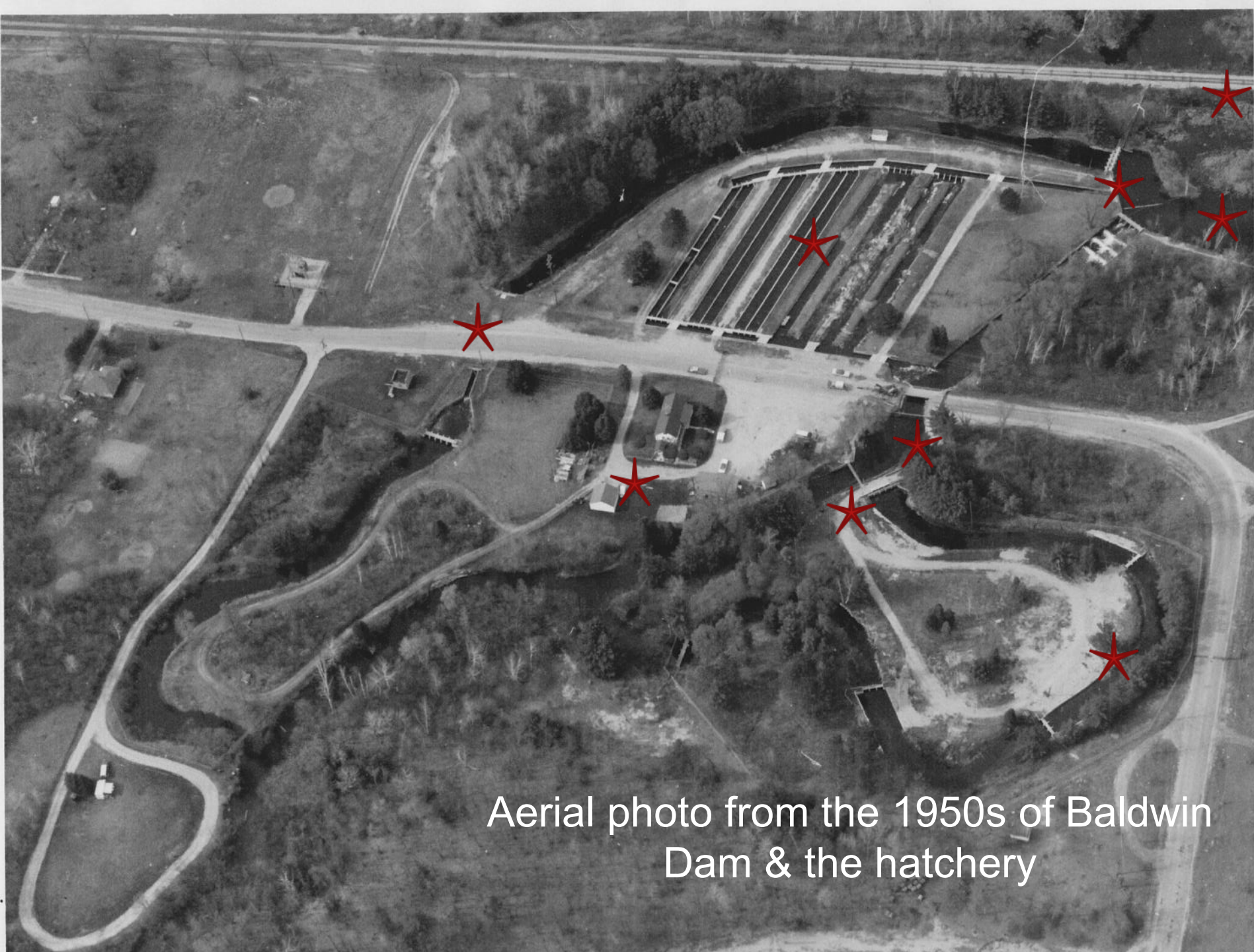
Trout Nursery, Baldwin Creek, Baldwin, Mich.



Transformed into a
state-owned fish
hatchery.



*A Glimpse of the State Fish
Hatchery Baldwin Mich 62*



Aerial photo from the 1950s of Baldwin
Dam & the hatchery

Bird's eye view today... 3 water control structures



Bird's eye view looking downstream...



Past flooding




Seep areas



Deteriorating concrete

RR Trail Bridge



A photograph of a concrete weir structure in a river. Three people are standing on top of the weir, looking down at the water. The water is flowing over the weir, creating a small waterfall. The background is a dense forest of trees. The text "Some fish can jump the steps but not sea lamprey..." is overlaid on the image.

Some fish can jump the
steps but not sea lamprey...

Goals:

- Removal of deteriorating dam & related infrastructure, protect 69 downstream miles
- Restore a stable river channel with floodplain & reconnect upstream to downstream reaches
- Install seasonally raised sea lamprey barrier, protect 58 upstream miles
- Replace the adjacent upstream RR trail bridge

Primary Steps:

- 1) Options Analysis & Build the Team (done)
- 2) Design (underway)
- 3) Permitting (initiated)
- 4) Construction
- 5) Post-Restoration & Monitoring
- 6) Fund development & communications with every step!

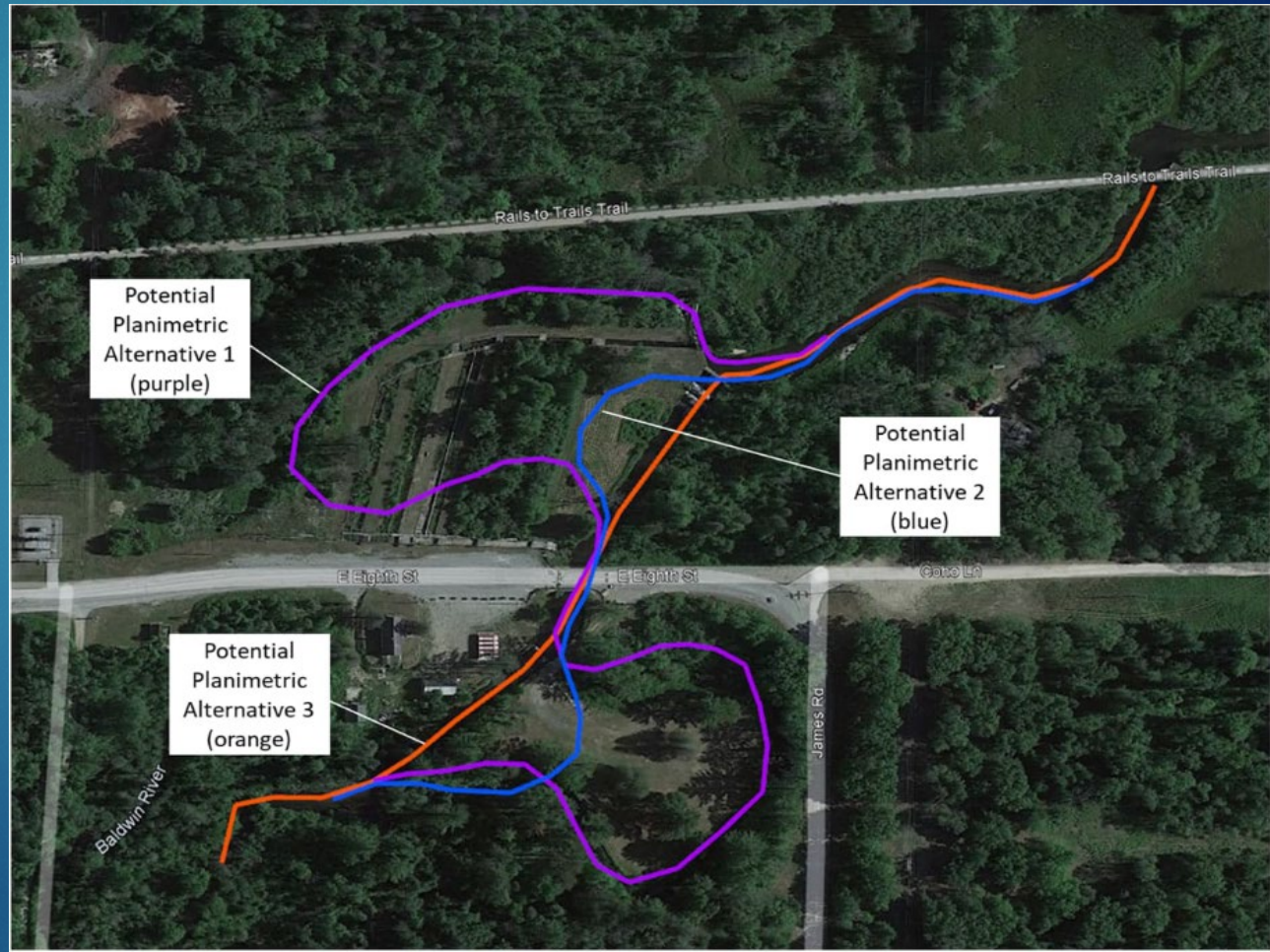
Partners & Funders to date:

- Conservation Resource Alliance
- James Truxton, Owner (Phase I & II ESAs, Soil Investigation)
- Great Lakes Fishery Commission (\$411,469)
- US Fish & Wildlife Service
- Michigan DNR (\$200,000 Fisheries Habitat Program)
- Michigan EGLE (\$115,000 Dam Risk Reduction Grant Program)
- Great Lakes Fishery Trust (\$115,000 Habitat Program)
- Village of Baldwin
- Pere Marquette Watershed Council
- Mason-Lake Conservation District
- Property Owners
- Pere Marquette River Restoration Committee
- West Michigan SRDC
- Engineering Team of AECOM, Fishbeck & InterFluve
- Lake County Community (\$5,000) & The Wege (\$50,000) Foundations

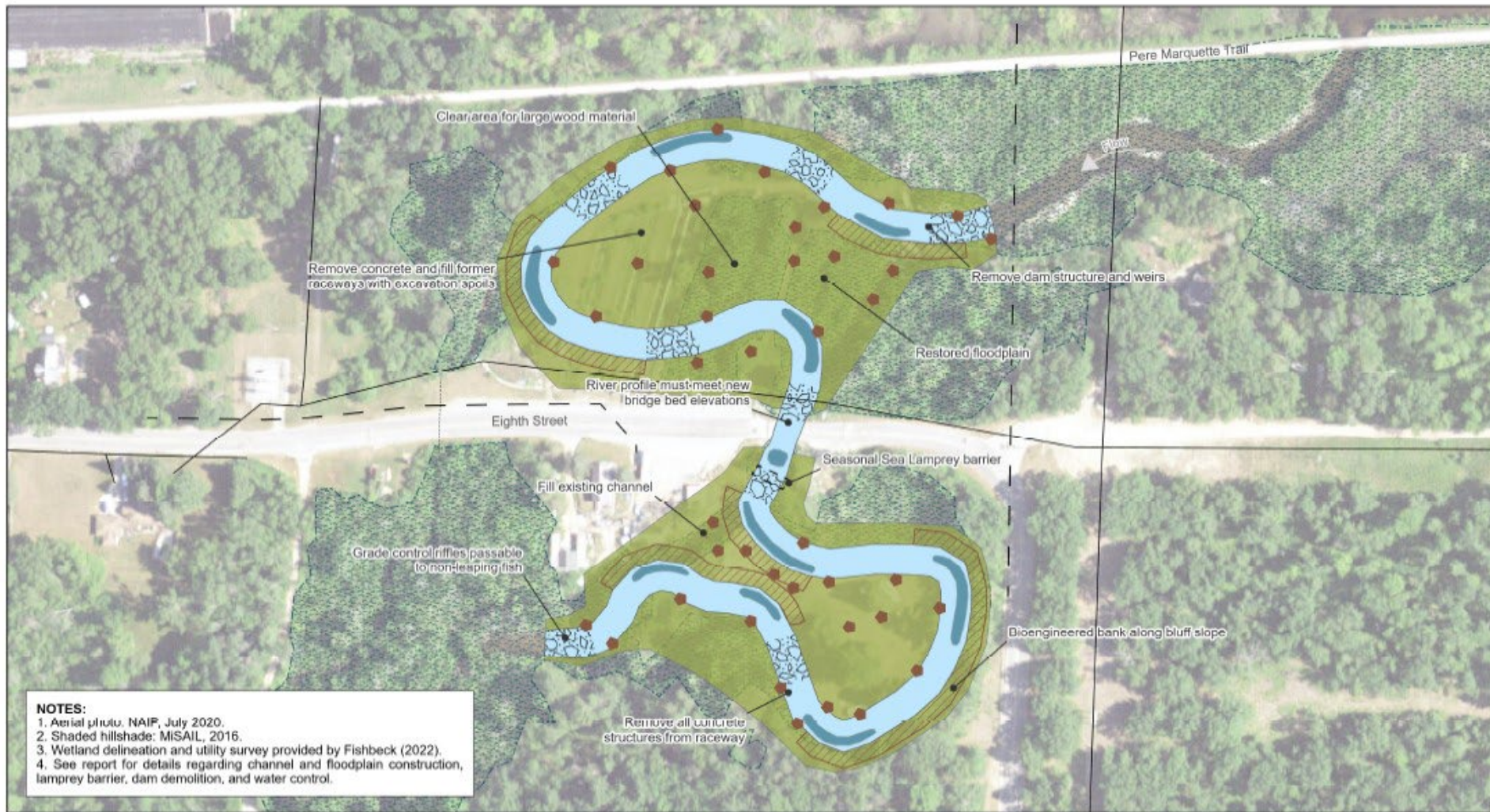
River Alignment Alternatives

Constraints and Considerations:

- Sediment management
- Slope, channel stability, channel, floodplain dimensions
- Grade control (riffles)
- Existing raceways
- 8th Street bridge
- Future recreation
- Wetland impacts



Most sinuous channel chosen - 3,000'



DRAFT



Coordinate System: NAD 1983
State Plane Michigan Central FIPS 4902
Vertical Datum: NAVD83
Scale: 1:1,500



LEGEND

- Restored River Channel
- Restored Floodplain
- Pool
- Riffle
- Bioengineered Bank

- Large Wood Jam
- Delineated Wetland
- Utilities**
- Overhead Electric
- Sanitary Line
- Storm Sewer

Baldwin Dam Removal Alternative 5: Relic Channel

Baldwin River
Baldwin, MI
Conservation Resource Alliance

Sea lamprey barrier alternatives

- 4 initial location alternatives
- Evaluate based on
 - Blockage efficacy
 - Flood Impact
 - Sedimentation
 - Fish bypass
 - Operations & Maintenance
 - Initial Capital Cost
 - Ease of Trapping Facility Incorporation



	Blockage Efficacy ¹	Flood Impacts	Sedimentation ²	Fish Bypass	Operations and Maintenance	Initial Capital Cost	Trapping Facilities
Alternative 1	5.0	low	95	medium	medium	high	medium
Alternative 2	92.4	low	90 ³	high	medium	medium	high
Alternative 3	33.4	low	90	medium	medium	high	medium
Alternative 4	100.0	low	0	low	medium	low	medium

1 - Percent of time barrier is 1.5-ft effective during operational season

2 - Percent reduction from existing condition while operational

3 - Sediment already captured under existing conditions, reduction quantity in tons/day is negligible

Thank you!



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