Paint Creek Habitat Restoration Project

2016 - 2022

"Take care of the fish and the fishing will take care of itself." – Art Newman

Vanguard Trout Unlimited
Oakland County, Michigan

2019 Michigan TU Chapter of the Year

Key Project Partners

Vanguard Chapter Conservation Committee

Eli Stanesa, Scott Hummon, Jeff Gerwitz, Paul Paske, Joe Bruce

Michigan Trout Unlimited Professional Staff

Kristin Thomas – Aquatic Ecologist

Michigan Based Outside Consultant

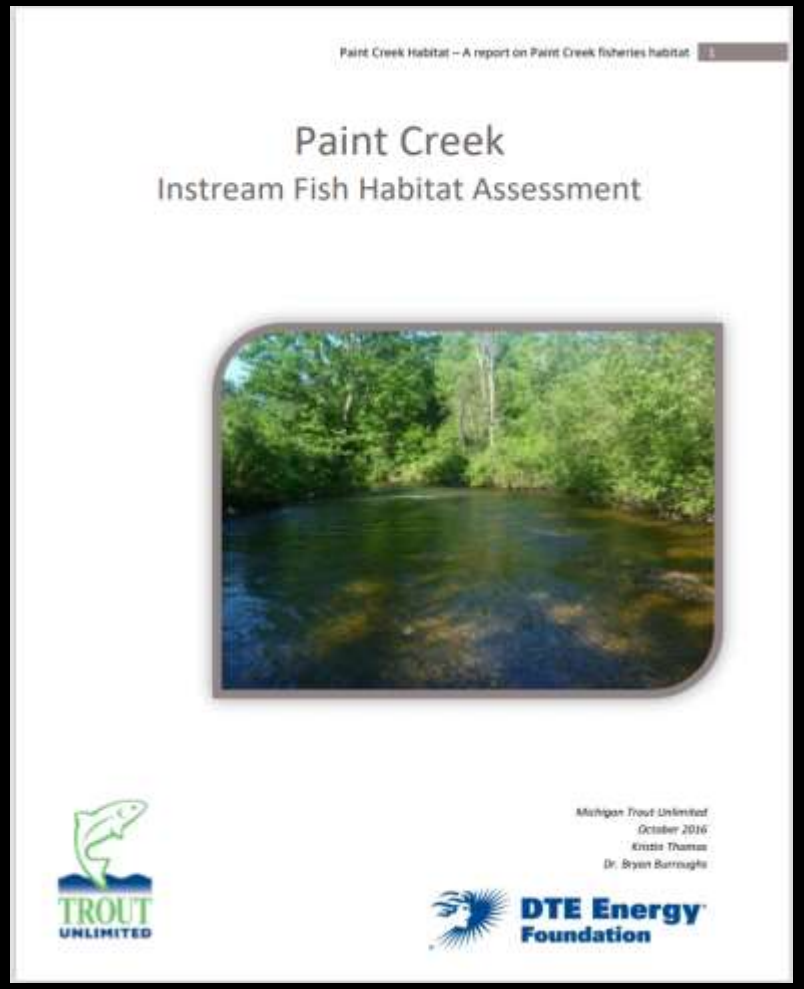
Aaron Snell – Streamside Ecological Services

Paint Creek

- A high-quality “Cold-Transitional” stream in southeastern lower Michigan
- It is unique because its headwater is a dam that has a “bottom draw tube” so that cooler water from the bottom of the dam’s lake is released into the creek
- Michigan DNR annually stocks it in five locations with a total of 5,000 brown trout.

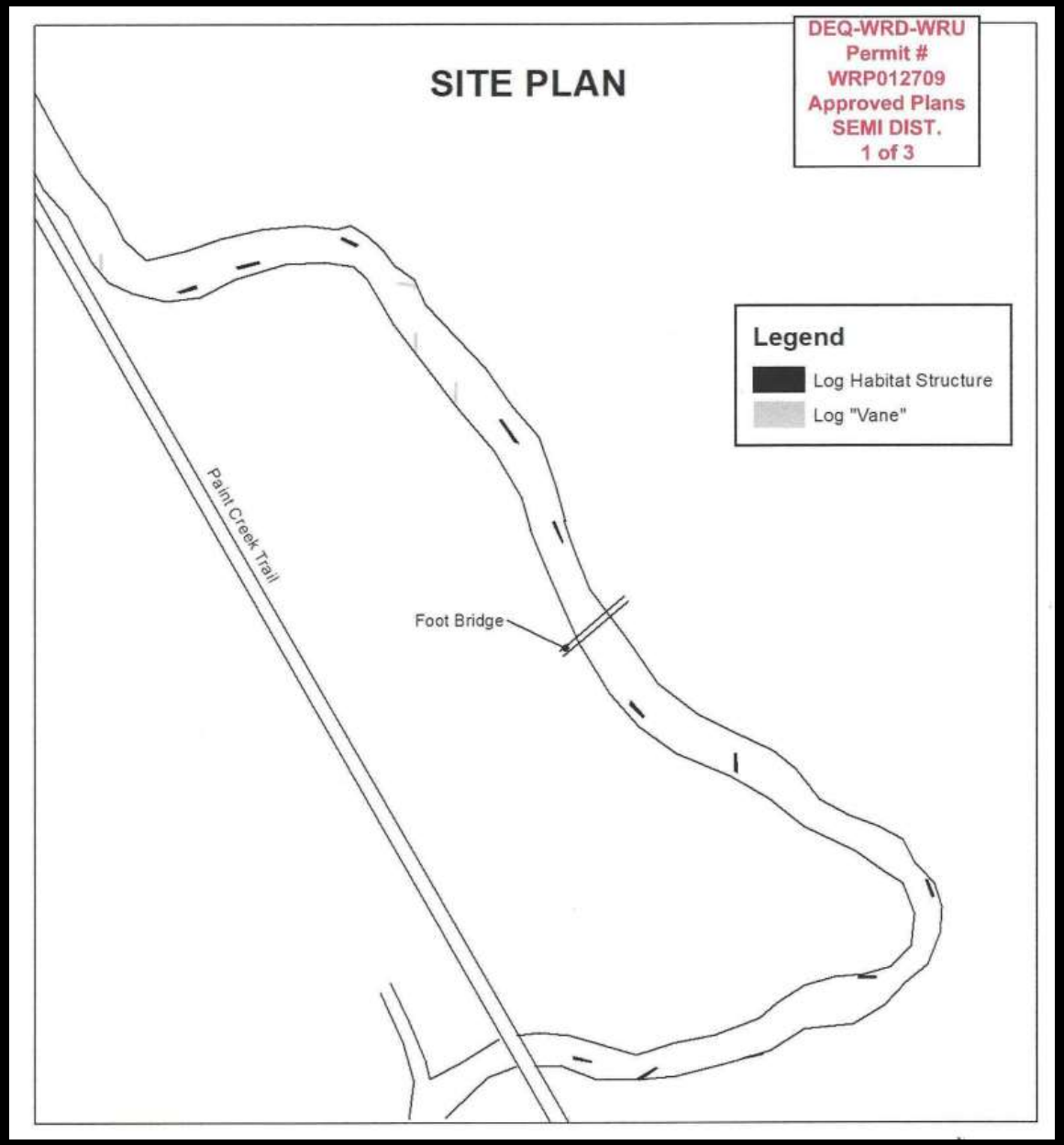
The Paint Creek Headwater Dam at Lake Orion

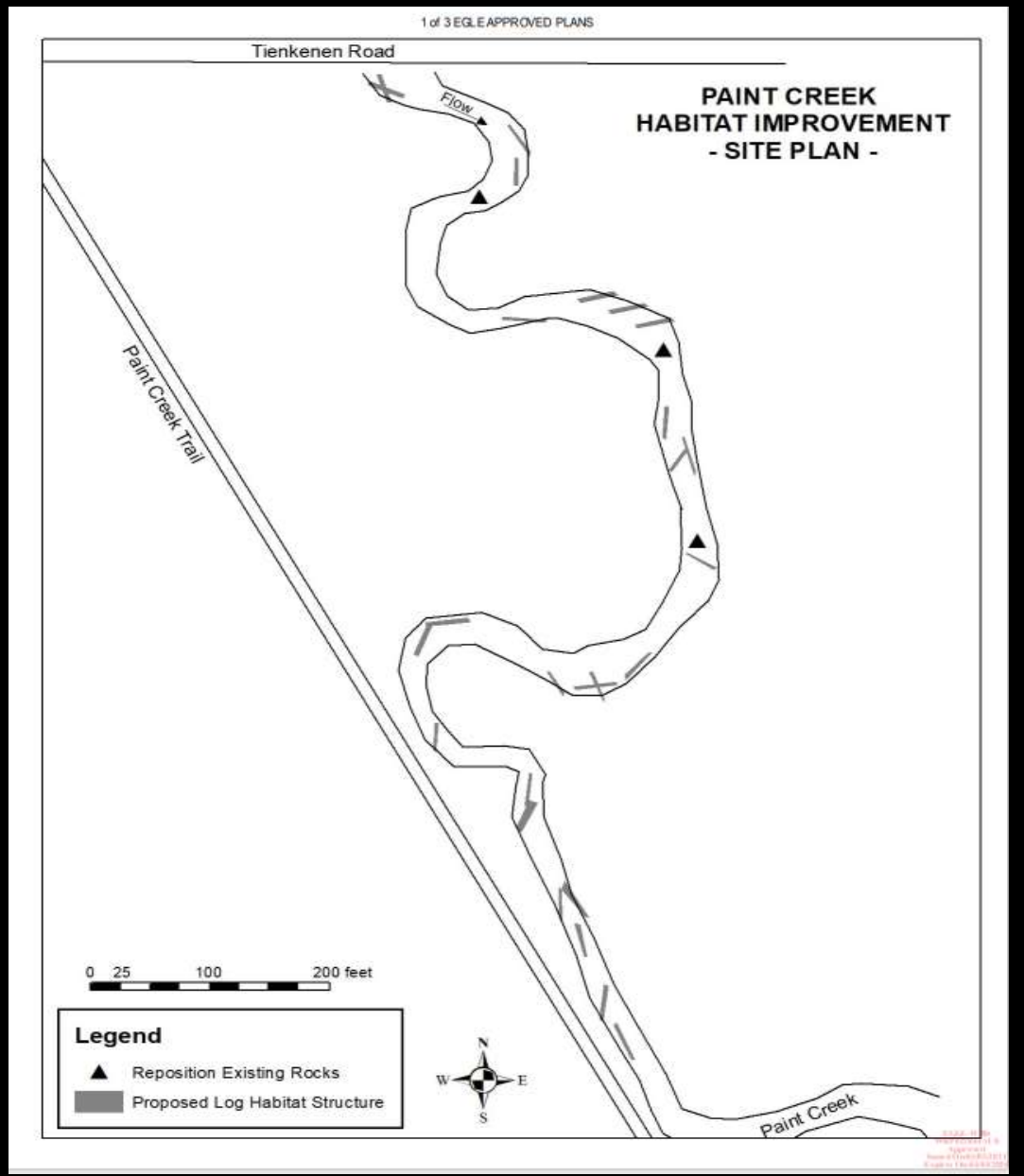
Professional Habitat Assessment



- In 2016, Michigan TU's Kristin Thomas and Dr. Bryan Burroughs authored a report that assessed Paint Creek's 17 miles of fishery habitat as a guide for future creek restoration and protection initiatives to sustain the brown trout population
- In 2017, Vanguard's Conservation Committee reviewed the report and determined that this analysis should be the Chapter's roadmap for its future conservation work.
- With Chapter Board approval, a multi-year action plan was put together.

2019 / 2020 Approved Habitat Plans





Approvals and Consents Required

- Local Consents
  - Dinosaur Hill Nature Preserve / City of Rochester
  - Paint Creek Trailways Commission
  - Landowners
- EGLE / DNR Permit (6-month approval process)
  - Application Prepared by Streamside Ecological Services (SES)
    - Description of Work
    - Drawings of Structures and Placement
  - Site Visit with SES and Michigan DNR
  - Work Limited by Spring Runoff and Fall Spawning
- After completion, EGLE requires follow-up reports for 3 years

Funding

- TU Embrace A Stream Grant with an Orvis Match
- Vanguard Chapter Fund Raising
- Michigan Fly Fishing Club Grants (2)
- Clinton Valley Chapter Grant

Total Cost for Phase 1 and 2

Approximately $7,000 for each phase, $14,000 total

What habitat structures were installed?

- Vanes
- In-Stream logs

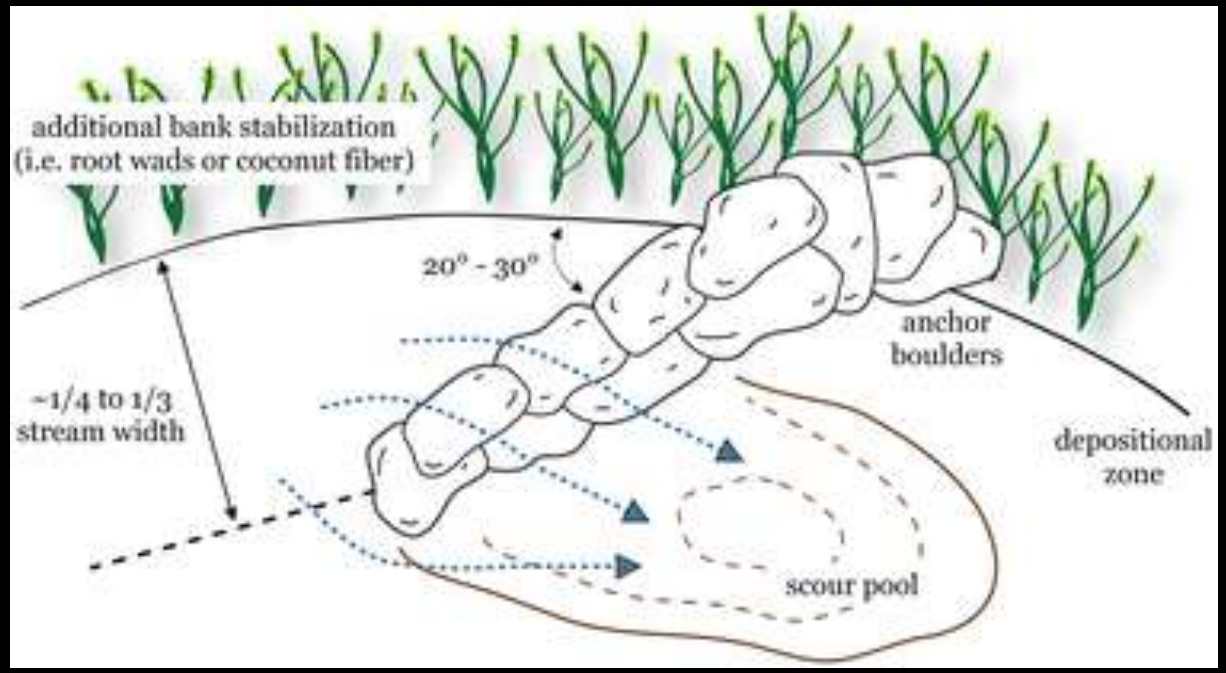
What are Vanes?

- Vanes are structures constructed in a stream to redirect flow to the center of the stream.

- They are used as part of natural stream restoration efforts to improve instream habitat and prevent bank erosion.

How Do Vanes Impact the Stream?

- Modify flow direction away from streambanks
  - The upstream angle of the structure is critical (20 – 30 degrees)
  - For the structure to work properly it needs to be built into the bank in the downstream direction.
  - The resultant stream flow will be at a 90 ° angle perpendicular to the vane.
- Create a sand/soil depositional zone near banks to reduce streambank erosion
- Create a local scour pool near center of stream



2019 In-Stream Habitat Restoration Work - Dinosaur Hill Nature Area

Phase 1

2021 In-Stream Habitat Restoration Work - Tienken Road to Dinosaur Hill Nature Area

Phase 2


HONDA

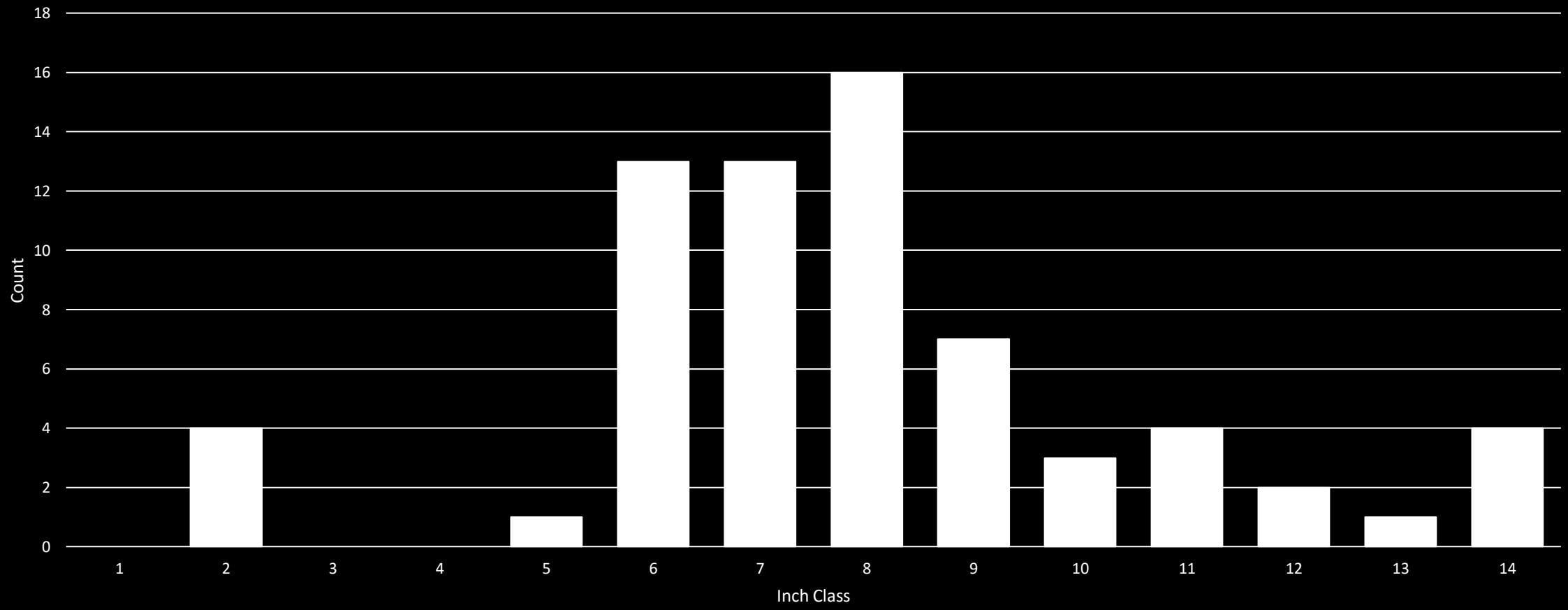
Before and after pictures

2019, 2020, & 2022 Fish Population Studies

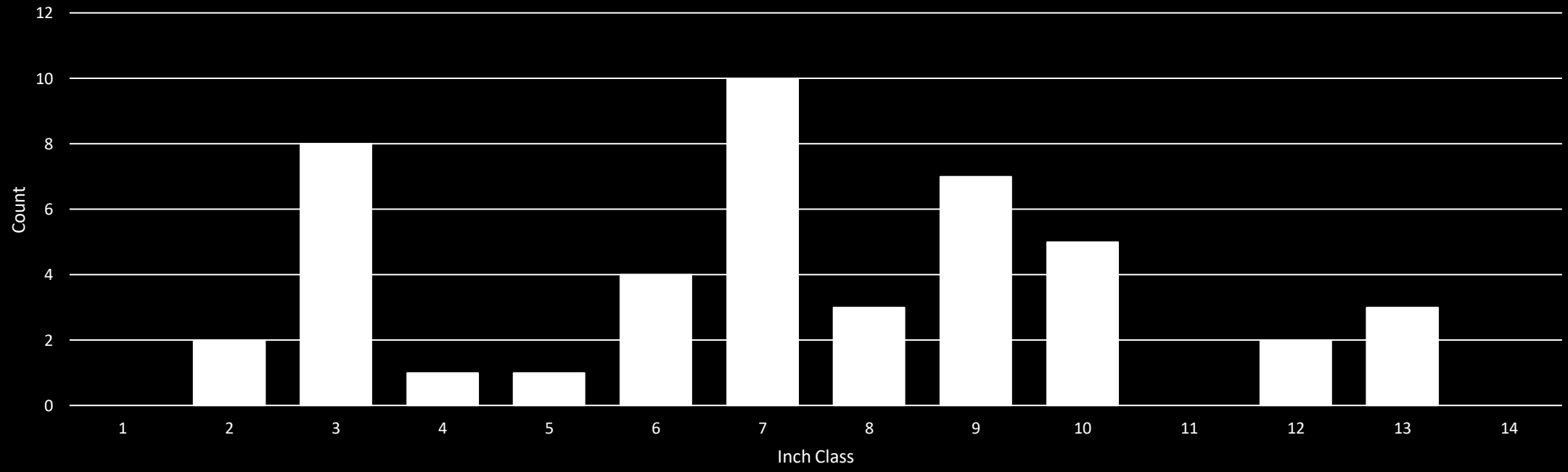
Electroshocking


SIMMS

Dinosaur Hill Brown Trout Length Frequency 2019



Dinosaur Hill Brown Trout Length Frequency
2020



No annual stocking was done in 2020 prior to this survey yet there are 2 to 4-inch fish. Natural reproduction is occurring!

2022 DNR “Raw” Survey Data

Brown Trout	Dinosaur Hill			Condominiums		
		Recapture Run			Recapture Run	
Inch Group	Marking run	Recaptured	Unmarked	Marking run	Recaptured	Unmarked
1						
2				4		5
3	1			5		5
4				1		
5	9	4	3	19	11	5
6	28	12	3	21	10	7
7	7	2	2	8	2	1
8	2	2		4	2	2
9	3		2			
10	1					
11	1	1	1	2	1	
12	2	1	1	3	1	
13	1					
14				1	1	
15						
16				1	1	
17						
Total	55	22	12	69	29	25

Bi-Annual Sediment Monitoring Surveys

- Four sites are surveyed every other year
- A transect line is made across the stream using a tape measure
- 100 samples are taken at specific intervals based on the current stream width

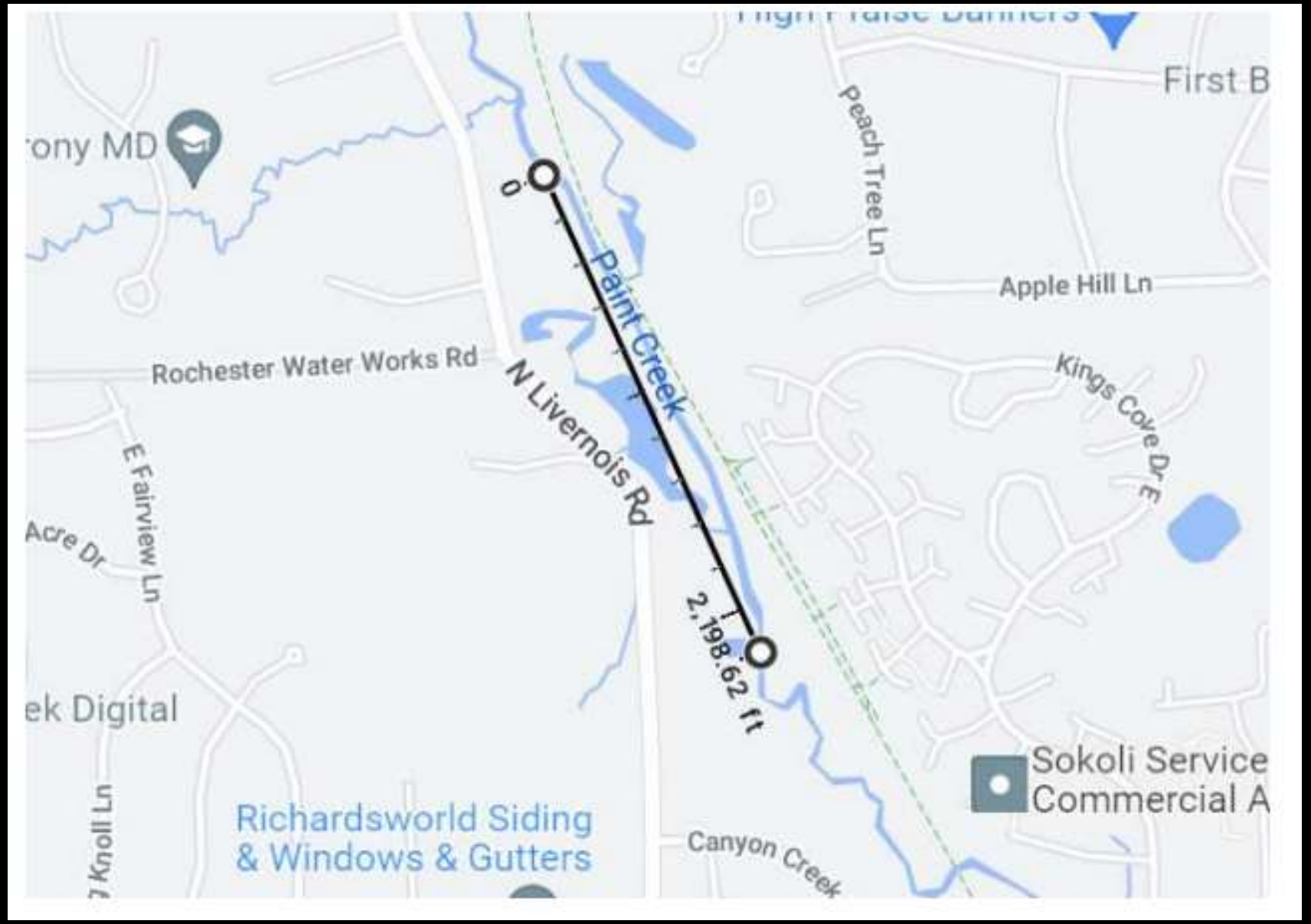
This data is used by Kristin Thomas to monitor if the stream beds are shifting in composition over time

2023 In-Stream Habitat Restoration Work Between Dutton and Tienken Roads

The Permitting and Funding Process Is Underway

Phase 3

2023 Habitat Improvement – Phase 3

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