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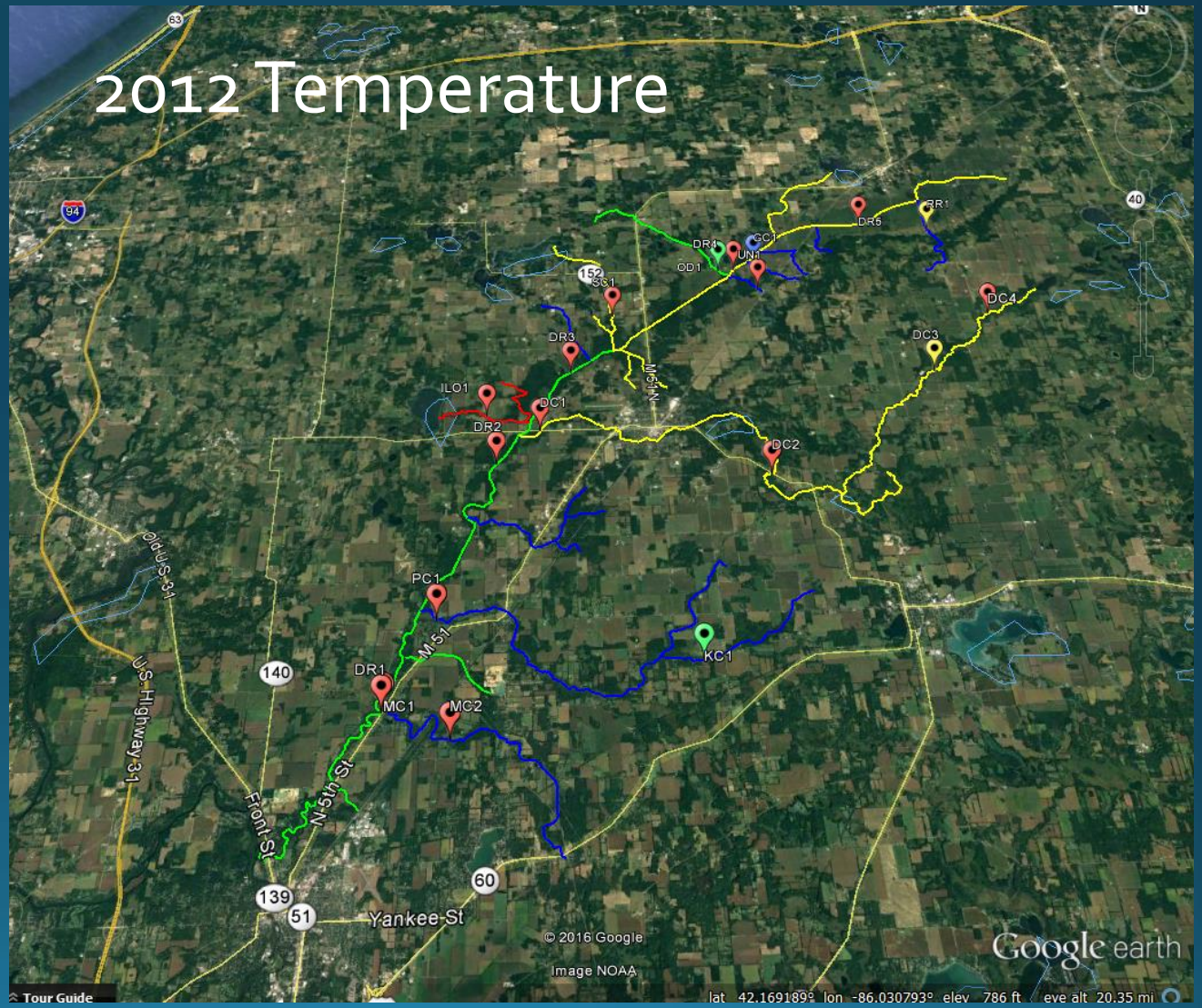
Monitoring the Dowagiac

River Stewards Program Background

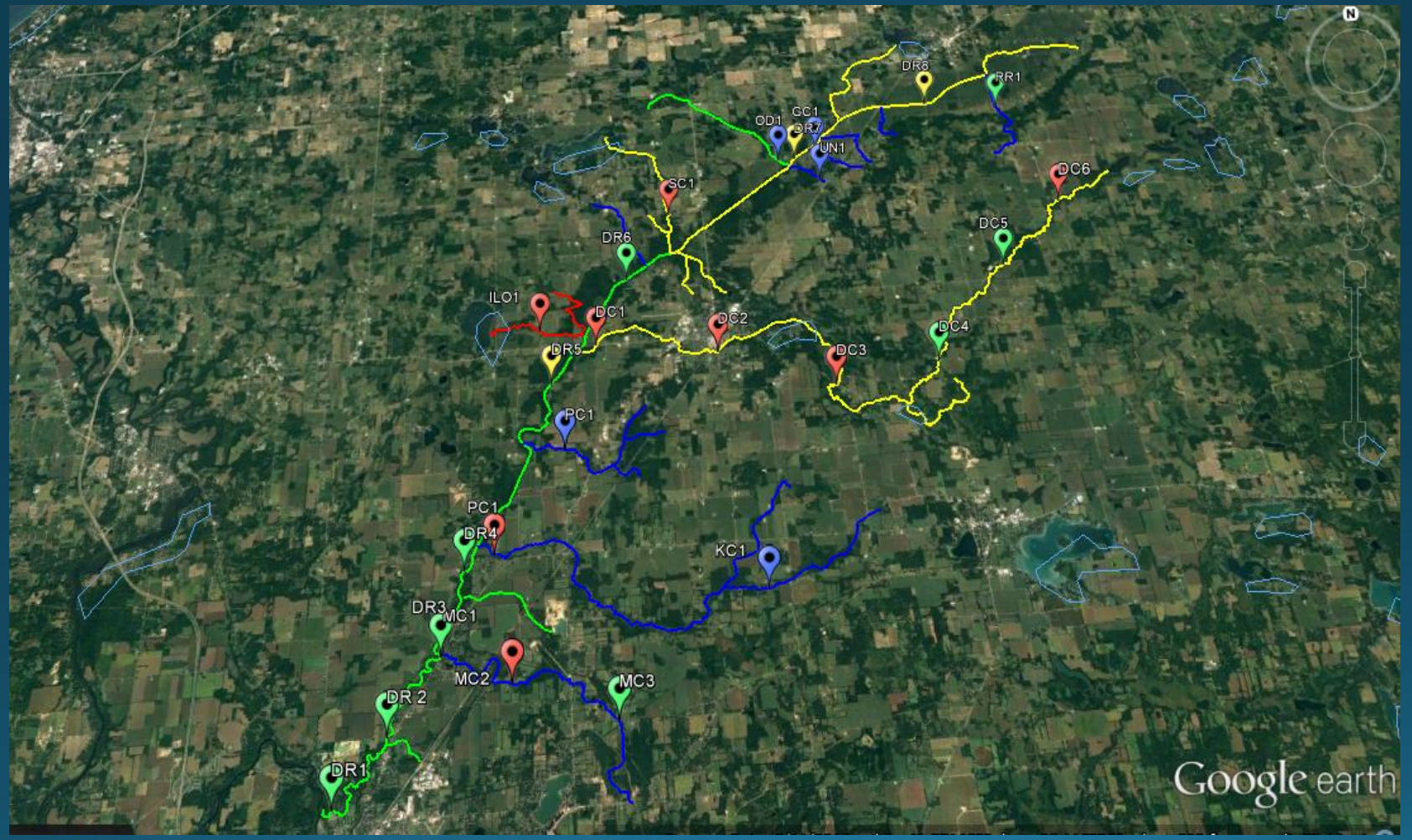
- Volunteer driven stream monitoring program
- Identify key factors limiting coldwater fisheries
  - Temperature
  - Flow
  - Habitat
  - Macroinvertebrates
  - Fish
  - Road stream crossing inventory
- Focus project work in most needed areas to maximize impact

Dowagiac River Existing Data

- Temperature
  - DNR data
    - 2012
    - 2013
    - 2014



Temperature Data 2012-2014

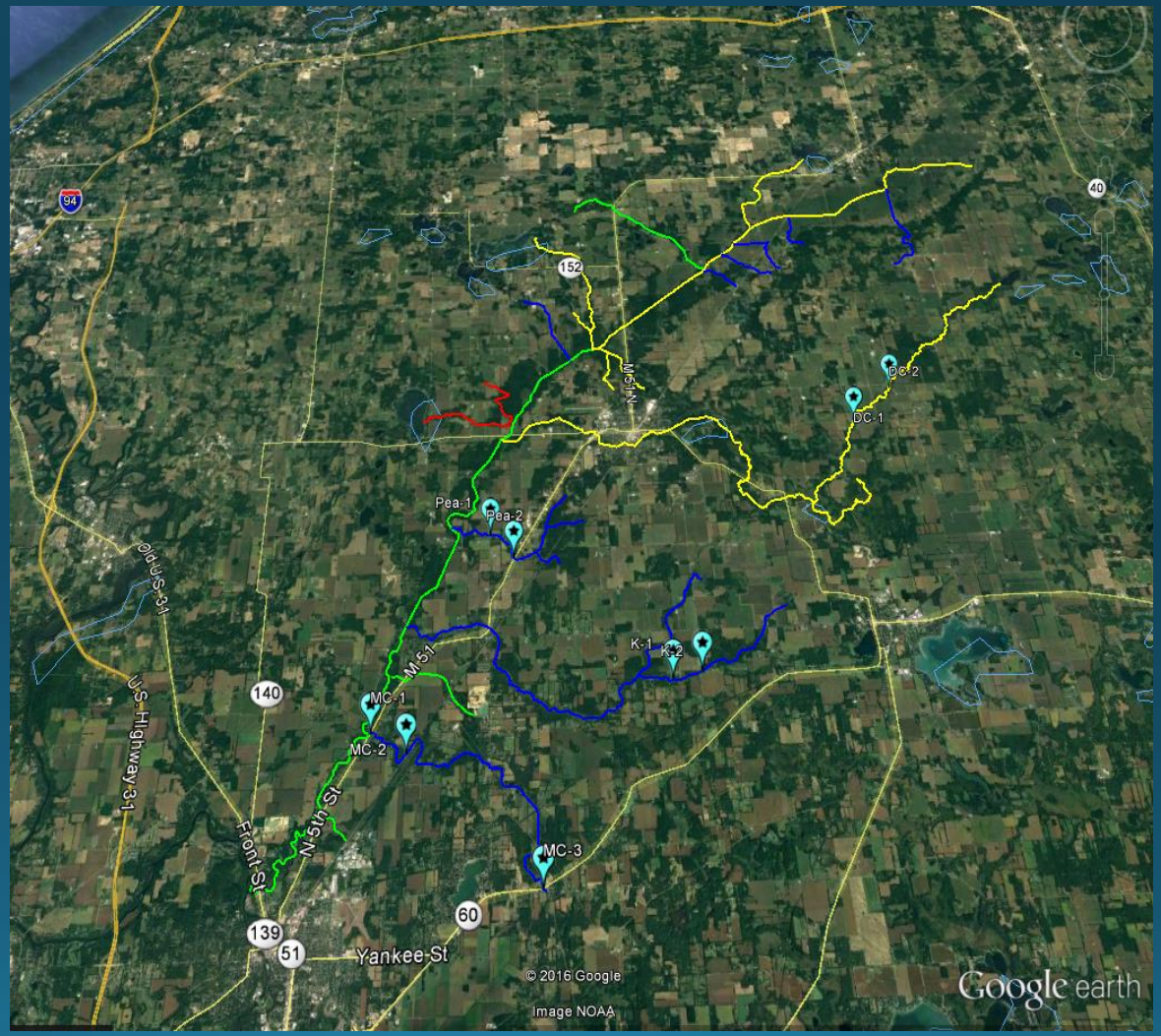


Site	Waterbody	Temp Class	July Mean 12-14	2012 July Mean	2013 July Mean	2014 July Mean
46th St.	Dowagiac	Cool	68.3	74.1	66.6	64.3
Dewey Lake	Dowagiac	Cool	67.6	72.1	66.6	64.2
Middle Crossing	Dowagiac	Cold-transitional	66.5	70.2	65.9	63.5
Frost Rd.	Dowagiac	Cold-transitional	69.2	72.7	68.8	66.2
Dodd Park	Dowagiac	Cold-transitional	66.3	-----	67.1	65.5
Kinzie Rd.	Dowagiac	Cold-transitional	66.9	69.9	65.8	65.1
Losensky Park	Dowagiac	Cold-transitional	66.4	-----	67.4	65.4
M-139 Canoe Launch	Dowagiac	Cold-transitional	66.4	-----	67.5	65.3
Valley Rd.	Red Run	Cold	64.3	68.4	63.2	61.3
92nd Ave.	Lake of Woods		65.8	-----	-----	65.8
Twin Lakes Rd.	Glenwood	Cold	60.6	63.0	59.4	59.3
Twin Lakes Rd.	Unnamed Trib.	Cold	62.4	72.5	52.2	-----
Downey St.	Silver Creek	Cool	69.9	73.1	68.9	67.8
M-51	Cooks Lake		70.9	76.2	69.2	67.2
Dewey Lake St.	Osborn Drain	Cold-transitional	63.3	66.6	62.3	61.1

Site	Waterbody	Temp Class	Mean July temp 12-14	2012 Mean July	2013 Mean July	2014 Mean July
Garret Rd.	Indian Lake Outlet	Warm	71.8	71.8	-----	-----
Frost Rd.	Unnamed Trib		64.8	73.4	61.3	59.8
Champlain Rd.	Peavine Creek	Cold	60.4	-----	61.1	59.7
Wood Rd.	Pokagon Creek	Cold	70.2	73.0	67.3	-----
Old Mill Rd.	Kimmerlee Creek	Cold	62.9	65.2	60.5	-----
M-51	McKinzie Creek	Cold	69.1	72.4	69.1	65.8
Thompson Rd.	McKinzie Creek	Cold	77.1	77.1	-----	-----
Hoyt Street	McKinzie Creek	Cold	66.0	-----	66.0	-----
M-62 (West)	Dowagiac Creek	Cool	73.9	76.6	73.6	71.4
Cass Ave.	Dowagiac Creek	Cool	73.7	-----	72.8	74.5
M-62 (East)	Dowagiac Creek	Cool	70.6	74.7	69.8	67.4
Kelsey Lake Street	Dowagiac Creek	Cool	63.9	-----	63.9	-----
Decatur Rd.	Dowagiac Creek	Cool	65.2	67.9	61.1	66.5
Goodenough Rd.	Dowagiac Creek	Cool	71.4	71.2	73.2	69.7

Dowagiac River Existing Data

- Fish



Fish Data Summary

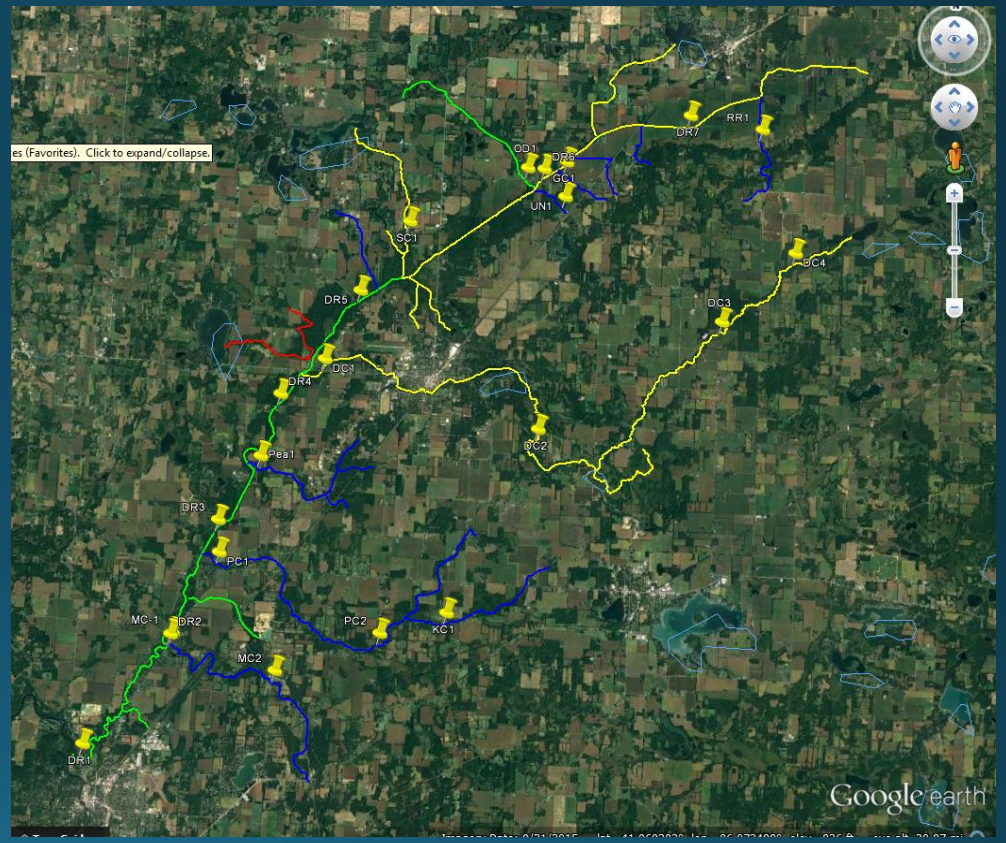
Site	Year	Brown Trout Captured	Brown Trout per Mile
McKinzie Creek 51	1996	71 pass 1 59 pass 2	1,320
McKinzie Creek Burton Rd.	1996	0	0
McKinzie Creek 60	1997	19 pass 1, 1 pass 2	127
Kimerlee Creek Old Dam	1994	133 pass 1, 153 pass 2	2,172
Kimerlee Creek Dailey Rd.	1994	112 pass 1, 137 pass 2	1,868
Peavine Creek Champlain Rd.	1996	52 pass 1, 10 pass 2	388
Peavine Creek 51	1996	18 pass 1, 1 pass 2	156
Dowagiac Creek Dutch Settlement	2006	207 pass 1, 215 pass 2	1,944
Dowagiac Creek McKinzie St.	2006	195 pass 1, 155 pass 2	1,451

Pokagon Creek Wood Rd. Fish Data

Year	Total Biomass (pounds/acre)	Total Abundance (fish/acre)
2002	37	525
2003	32	485
2004	38	584
2008	61	312
2009	97	486
2010	82	619
2014	22	98

Proposed Monitoring - Temperature

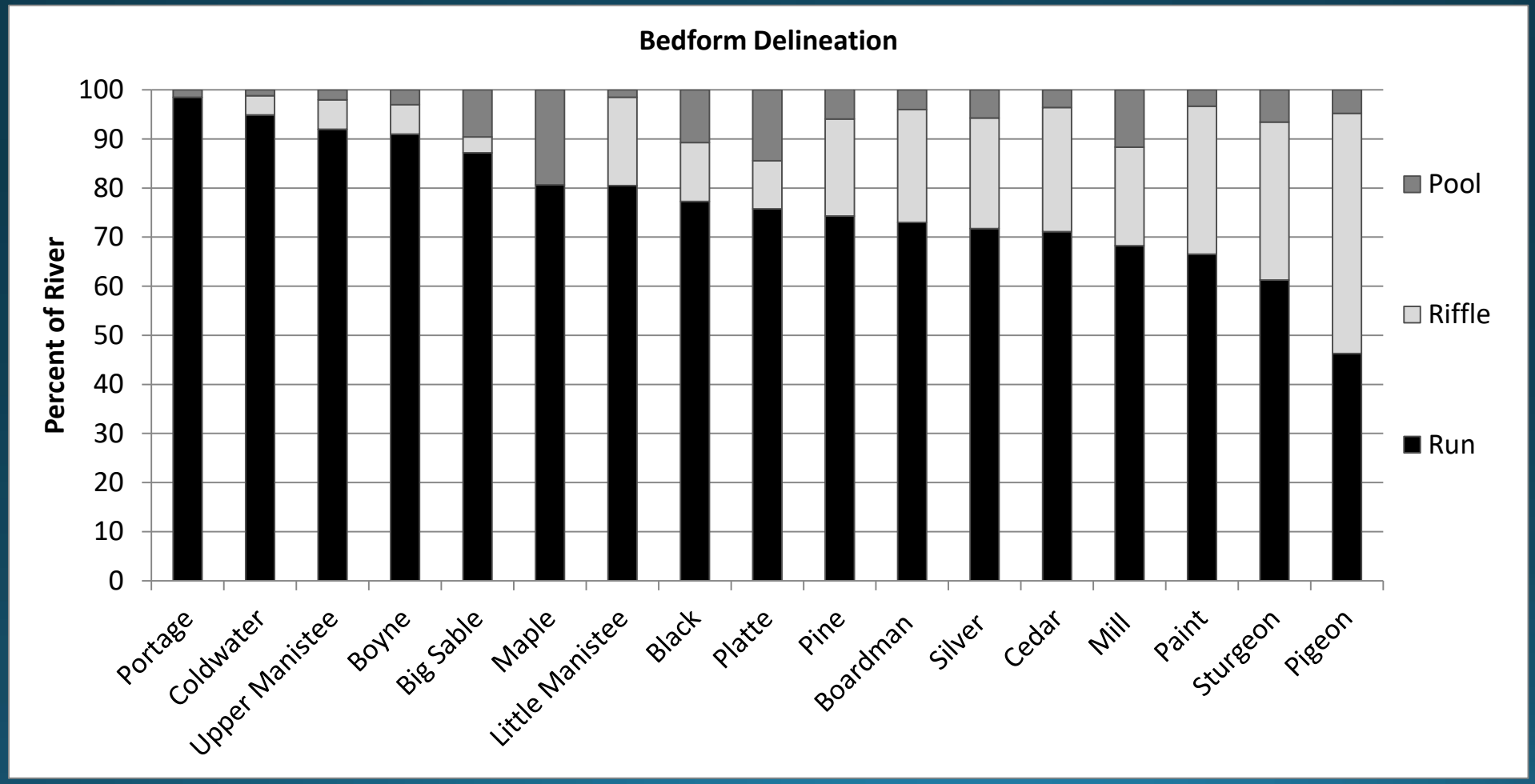
- Temperature
  - Mix of sites from 2012 and new sites.
  - Continuous HOBO loggers.
  - 22 sites throughout watershed.
    - $3,200 of equipment
    - $2,900 with use of some MITU equipment
  - Volunteer commitment
    - 2-6 volunteers
    - 2-4 days



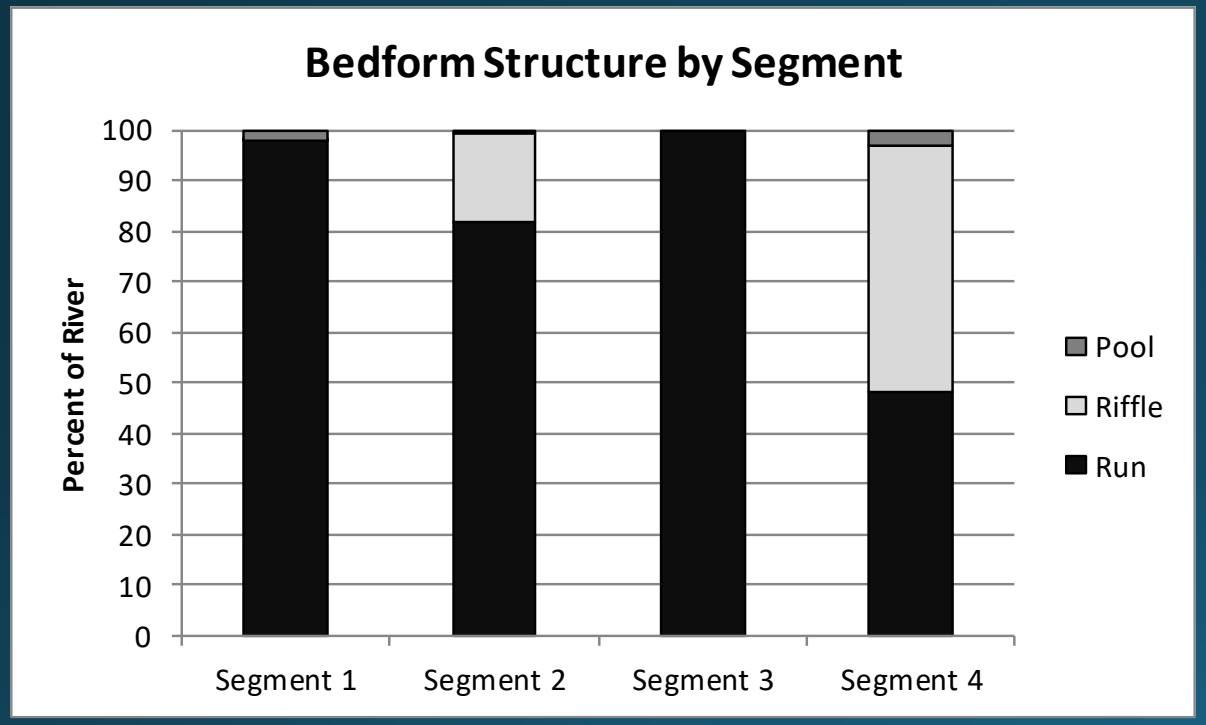
Proposed Monitoring - Habitat

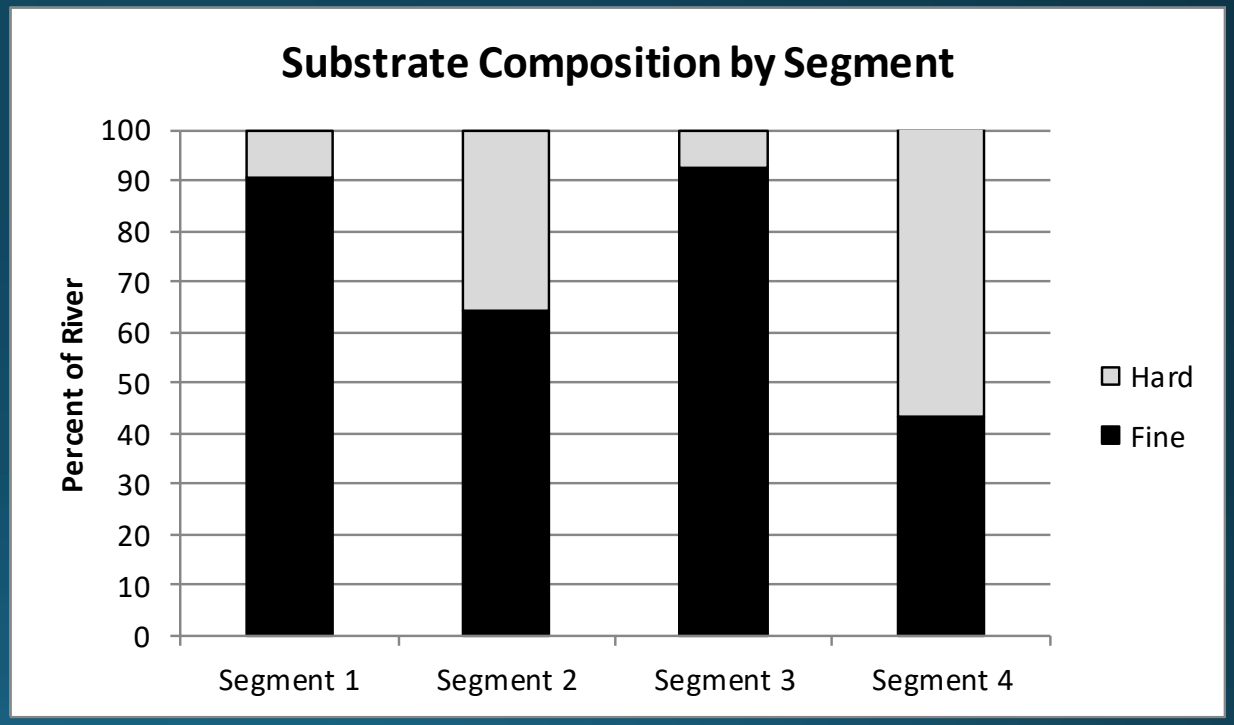
- MITU Habitat monitoring protocols
  - Inventory of bedform (run, riffle, pool), substrate composition (clay, silt, sand, cobble, boulder), and in-stream fish habitat (deep water, wood, aquatic vegetation).
  - Sample continuous stretch of river (entire mainstem, entire tributary)
  - Identify factors limiting the coldwater fishery.
- Start with tributary
  - Dowagiac Creek about 25 miles
  - Pokagon Creek about 15 miles
- Landowner permission?
- Volunteer commitment – 10-15 days 2 volunteers per day

Habitat Data Examples

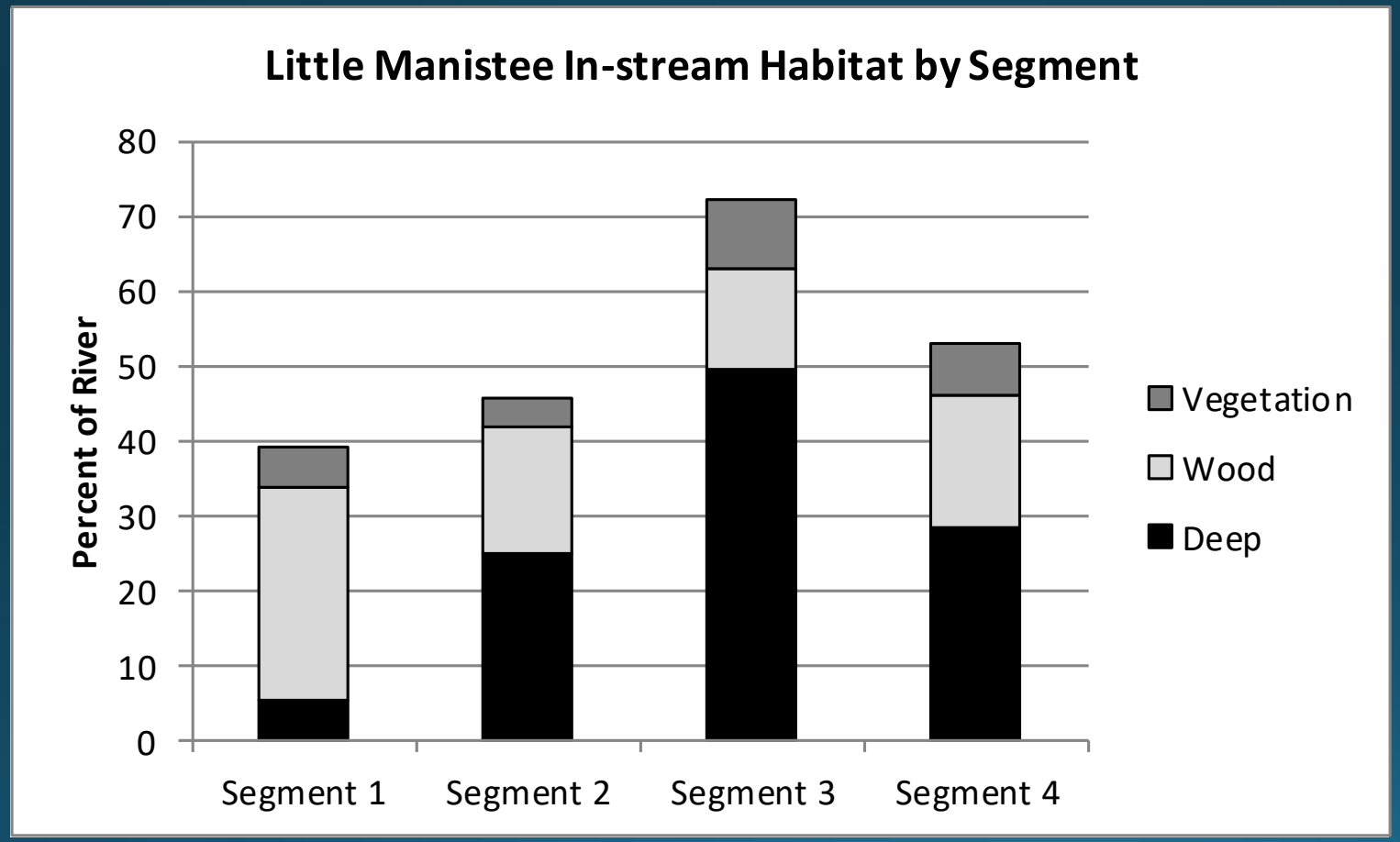


Habitat Data Examples





Habitat Data Examples



Next Steps

- Decide on monitoring plans, if any.
- Begin volunteer recruitment.
- Schedule volunteer training days.
- Volunteer sign-up for sites.
- Collect data.
- Send to MITU.
- Report data and work together to determine priority projects.