**Michigan Stream Team**

Notes from December 4, 2019 Meeting

Notes taken by: Megan Royal

1. **Attendees**:
	1. Ralph Reznick – MI EGLE Nonpoint Source
	2. Chad Kotke – Trout Unlimited
	3. Mike Rubley – DNR Resource Analyst Division
	4. Bethany Matousek – EGLE Inland Lakes and Streams
	5. John Skubinna – EGLE Transportation
	6. Dan DeVaun – EGLE Dam Safety
	7. Cyndi Rachel – USGS Upper Midwest Water Science Center
	8. Kesiree Thiamkeelakul – DNR Fisheries Division
	9. Jared Ross – MSU Fish & Wildlife
	10. Mathew Herman – EGLE Nonpoint Source
	11. Alyssa Riley – EGLE Nonpoint Source
	12. Leah Clark – EGLE Nonpoint Source
	13. Jim Selegean – USACE Hydraulics & Hydrology
	14. Megan Royal – USACE Hydraulics & Hydrology
	15. Patrick Ertel – MI DNR Fisheries Division (phone)
	16. Luke Trumble – MI EGLE Dam Safety (phone)
	17. Elle Gulotty – DNR Habitat Management (phone)
	18. Neil Godby – DNR Fisheries (phone)
	19. Mark Fedora – Ottawa National Forest Service (phone)
	20. Andria Ania – Huron-Manistee National Forest Service (phone)
	21. Brad Potter – Fish and Wildlife Service (phone)
2. **Agency Updates**
	1. Database of MI dams can be provided to other agencies upon request by Dan DeVaun.
	2. Look to get someone from MDOT (Jim Davis or geomorphologist Kurt Densmore?) and someone from NRCS (Dan Vasher?) involved in stream team.
	3. Potential collaborative stream team project to make USACE and other agencies’ sediment sampling data publically available.
3. **Regional Reference Curves – EGLE (Ralph/Bethany)**
	1. Reference curve developed for the lower part of the state, although points were collected for the upper lower and UP.
	2. Stantec was hired to amend the curve and fix some clerical errors existed.
	3. New funding to further update regional curves to include additional sites and datasets by Mike and Greg (formerly Stantec).
		1. Add watersheds at lower size range (less than 10 square miles) to fill gaps.
		2. Call to group for applicable datasets to add.
		3. Draft for comments will be circulated to stream team (~1.5 years)
	4. Recommend evaluating cfs/sq-mile and parceled by glacial geology.
	5. Try to gather datasets from restoration projects not in the designed channel, but if reference reach data was collected (Boardman).
	6. Sediment rating curves
		1. Previous meeting had a presentation from Chris Ellison USGS MN.
		2. EGLE evaluated available data and 26 USGS sites for suspended sediment data, however lacking bedload samples.
		3. USACE dredging records could potentially be used as a surrogate for bedload; ISDOT bedload mobility based on bedforms not applicable.
		4. EGLE pitched as a long-term study for annual funding to collect data partnered with USGS; initial phase to develop plan to include costs (~$310,000 for 10 sites, or ~$30,000 per site).
		5. Nature of sampling is challenging, must measure during bankfull events over a period of years at each site.
		6. John Barkach (jbarkach@glec.com) WSU PhD developing empirical sediment yield equation for Michigan and has used USACE dredge records for validation data, so he has already evauluated which tributaries have useful data.
			1. Initial paper under review for publication in Journal of Hydraulics.
			2. Future publication will include comparison of datasets (Sparrow/SWAT models).
4. **Au Sable River Sediment Tracer Study – USACE (Jim)**
	1. Study sediment delivery rate to navigation channels to understand the lag time associated with the implementation of agricultural (and other) BMPs.
	2. Collected cores in reservoirs to analyze for sable and radio isotopes.
	3. Sampled the active bed in the Au Sable River for a recent forest fire leaving sediment with enhanced magnetic susceptibility and coarse grained black carbon content.
		1. Preliminary results suggest sediment transport rate of approximately 0.7 mile / year; funding secured to resample this field season to further evaluate.
5. **Stream Crossing Inventory Tool – DNR (Mike)**
	1. ArcGIS Survey 123 tool for field survey as “Rivers” App setup by Trout Unlimited
	2. LiDAR datasets used to generate updated stream lengths (~10% longer) compared to streams on national map.
	3. DNR developed Great Lakes Stream Crossing Protocol and Stream Crossing Survey also using Survey 123
		1. Has users take a GPS point at upstream end of the culvert in addition to bearing so that a line can be created.
		2. Calculates a rough estimate for sediment transport (tons/year) using the RUSLE 2 equation for culvert approaches and bank erosion (319 watershed management program derivation).
			1. Consider adding a time estimation component for erosion calculator.
		3. Intent of the tool is to identify which stream crossings require further evaluation or corrective action.
		4. Collected data available to view through DNR ArcGIS online dashboard; plan is to eventually have a public interface and allow for other groups to download the datasets.
			1. Michigan Tech will be processing the data and annually providing summaries to county road commissioners.
			2. Datasets can be filtered to target particular sites, ex: high estimated rates of erosion.
			3. Targeting Jan-Feb 2020 for public release.
		5. Inbox function to view previously collected survey points geographically on mobile device.
		6. Send stream crossing datasets (old or partial) to Mike Rubley and he will input into the DNR database.
6. **Webpage**
	1. http://michiganstreamteam.org/
	2. Ralph will check on status; Megan needs to upload notes.

1. **Upcoming events**
	1. EGLE looking for large woody debris survey data (specific protocol exists).
	2. Michigan Stormwater Floodplain Association – March 4-6 2020, Ann Arbor.
	3. USGS Sediment Sampling Course March 30 – April 3 2020, Mt St Helens WA.
2. **Next Meeting – 18 March 2020; location USGS Lansing Office (backup EGLE)**
	1. Agenda topics
		1. Discussion on stream team goals and organization
			1. Patrick Ertel volunteered to serve as Vice Chair
		2. Michigan Aquatic Restoration Conference