

Stream Team Minutes  
January 30, 2007

Attendance:

Mary Weidel, US Army Corp of Engineers	Dave Fongers, DEQ
Jim Selegean, US Army Corp of Engineers	Mike Townley, DOT
Chris Freiburger, DNR	Sean Duffy, NRCS
Joe Rathbun, DEQ	Cyndi Rachol, USGS
John Suppnick, DEQ	Kristine Boley-Morse, Calhoun Co.
Ralph Reznick, DEQ	Jessica Mistak, DNR
Bryan Burroughs, MSU	Heather Rawlings, USFWS
Bethany Matousek, DOT	Susan Wells, USFWS
Coreen Strzalka, DOT	Kyle Kruger, DNR

Update on Reference Curve Project

Cyndi and Kristine gave an update on the reference curve project. Seven sites have been fully surveyed. A reconnaissance has been completed at 30 additional sites and 15 of these appear suitable for reference curve study purposes. Forty eight additional sites have passed an office screening for acceptability. Other agency staff wishing to contribute to the project should review the lists of screened sites and tell Cyndi which locations they are interested in surveying. The reconnaissance team for all sites will include Kristine and Cyndi for continuity in the methodology for finding the bankfull. **A revised list of screened sites will be provided to the Stream Team by Cyndi.**

Jessica will be surveying several sites next summer and **will coordinate site selection with Cyndi.** Jessica's tentative list is attached.

The Army Corp of Engineers will be conducting geomorphology studies on the Boardman River next summer and may also include a reference reach in their surveys which could possibly be added to the reference curve database.

Changes to the Protocol

It was decided that the pebble count protocol will not be changed except that pebbles outside of the wetted channel will be tallied separately from pebbles in the wetted channel. A review of selected pebble count data collected so far for the project revealed a small increase in the  $D_{50}$  and  $D_{85}$  when bank pebbles were excluded from the analysis. The increase however did not appear to be of sufficient magnitude to effect stream classifications that would be based, in part, on the pebble count data.

Kristine and Jessica both encountered reaches with islands last summer. Kristine avoided the island when defining the reach boundaries but this shortened the reach. Jessica surveyed through the portion of the reach that contained the island by following the biggest channel while avoiding the island when setting cross sections. It was decided that

the protocol should be modified to address islands in the reach. **John Suppnick will draft a proposed modification to the protocol for these cases (draft attached).**

Jessica also asked what guidance the group could give for sites where the survey reach cannot encompass the gage location and how far downstream would be too far from the gage. The consensus was that as long as the flow did not increase significantly in the surveyed reach compared to the gage location and as long as the downstream reach elevations were tied to the gage datum there would be no problems with the gage being outside of the surveyed reach.

#### Presentation on Dam Removal in Michigan

Bryan Burroughs of Michigan State University, Department of Fish and Wildlife ([burrou15@msu.edu](mailto:burrou15@msu.edu) 517-353-6697) presented his research on dam removals in Michigan. The results will be available on the MSU and DNR websites soon. His research included 10 years of channel morphology and fish monitoring on the Pine River at the former Stronach Dam site and several other locations in Michigan where dams had been removed up to 39 years previously. Some of the major findings were that:

- Channels are reformed in former impoundments relatively quickly (within about 10 years) but the new channel does not necessarily go back to the original channel and does not usually reform meanders through time.
- Some substrate coarsening occurs quickly following dam removal, but full coarsening and diversity of substrate sizes may take decades to recover.
- The upstream extent of channel erosion following dam removal can be predicted by the bed forms present before dam removal. The amount of sediment eroded from former impoundments can also be readily predicted.
- Fish diversity and productivity increase following dam removal.

#### Training Plans

The Channel Morphology II class scheduled for June 2007 in Lansing was discussed. It was decided that only 1 social event would be planned. The prerequisite for attending the class will be that the candidate should be able to answer a series of questions affirmatively. The questions will be designed to determine the candidates experience and knowledge of basic channel morphology science and measurement techniques.

#### Web Page

The question of what to include on the Stream Team web page was discussed. **Cyndi, Ralph and Dave will devise a strategy to address this in a way that is compatible with the Stream Team's mission and does not become too large of a document management burden for the website manager (currently Dave Fongers).**

#### Other Issues

Dave reported that his draft evaluation of flashiness trends in Michigan has been reviewed by several parties and he is in the process of updating this analysis to address comments received.

Kristine reported that a Battle Creek River monitoring summit will occur on March 8, 2007 at a place to be determined.

The next stream team meeting will be March 7, 2007 at the Horatio S. Earle Learning Center, Michigan Department of Transportation, Dimondale, Michigan.

Prepared by: John Suppnick  
Water Bureau  
MDEQ  
2-16-07

Suggested edit for protocol document  
Drafted by John Suppnick

On Page three of the protocol document add a bullet under the existing heading “At the Gage Site – Study Reach”

- Major islands should be avoided in the study reach by moving upstream or downstream as necessary to exclude the island from the reach. Streams that are naturally braided should not be selected for study since this could indicate instability due to recently increased sediment load. Small islands that are usually submerged completely during high flow may be included in the reach if a good alternative reach is not available. In this case cross sections should be selected so as not to include the island. The longitudinal profile should follow the deeper of the two channels. If time permits the longitudinal profile can include both channels. If moving the reach to avoid islands puts the gage outside of the study reach then you should verify that the stream flow in the study reach is the same as at the gage (no significant tributaries enter between the gage and the study reach) and be sure to tie all elevations in the study reach to the gage datum.

## Jessica Mistak's Proposed Regional Curve Measurement Sites- 2007

Final selection will be after coordinating with Cyndi Rachol and Kristine Boley-Morse

Date	Gage #	Gage Description	Staff	Notes
May 1-4	04159492	Black River near Jeddo	J. Mistak K. Kruger	Discharge may be high at this time. Average monthly discharge for May = 318cfs
May 1-4	04159900	Mill Creek near Avoca	J. Mistak K. Kruger	Average monthly discharge for May = 114 cfs
July 16-20	0406000	Black River near Garnet	J. Mistak D. Kramer	
July 16-20	04049500	Manistique River at Germfask	J. Mistak D. Kramer	Question on recoverable datum and wadeability
July 16-20	04059400	Ten Mile Creek at Perronville	J. Mistak D. Kramer	Need to make sure channel is not armored or bedrock
July 16-20	04057510	Sturgeon River near Nahma Junction	J. Mistak D. Kramer	

**Michigan Stream Team Meeting Minutes  
April 11, 2007**

Attendees:

Ralph Reznick  
Joe Haas  
Joe Rathbun  
Coreen Strzalka  
Mary Weidel  
John Suppnick  
Jim Selegan  
Chris Freiburger  
Kyle Kruger  
Julia Kirkwood  
Ian Chisholm  
Karl Koller

Dave Fongers  
Cyndi Rachol  
Steve Rheaume  
Mike Townley  
John Suppnick  
Susan Wells  
David Bidelspach  
Michael Geenen  
Sarah McIlroy  
Kristine Boley-Morse  
Sharon Hanshue  
Laura Wildman

**Commitments/Action Items:**

**Joe R.** will be writing the first draft of a quality assurance plan for the regional reference project, with assistance from **Kristine** and **Cyndi**. This will be completed by the end of May.

**Next meeting:**

**To be announced: late May or early June**

**Meeting Minutes**

The meeting was held at the MDEQ Office in Lansing. Introductions were made, and the meeting proceeded through the agenda.

Item 1 – June Morphology Training Update

**Ralph** and **Chris** talked about the State's budget situation, and noted that DEQ, DNR, and MDOT staff won't be allowed to attend the course. US Fish and Wildlife staff won't be able to attend, either. It was decided to postpone the training, and hope to offer it at a later date, presumably in the next fiscal year. **Chris** sent an email to all those who signed up for the training, notifying them of the postponement.

**Kristine** noted that there may be some grant money from Consumer's Energy available to fund training at some point (up to \$6,000).

#### Item 2 – Web Page Recommendations

**Dave F.** lead a discussion about the content of the Team web page, and the following was decided:

- Some items under “Related Links” will be moved to “Resources”
- We won't post things that are readily available elsewhere (e.g., via a Google search)
- He'll add other training options under “Resources”, and note that the training we were sponsoring in June has been postponed

#### Item 3 – Protocol Document Change – Measurements Around Islands

**John** wrote a paragraph for the field protocol describing how to conduct measurements around islands and in braided channels. Minor changes were suggested, and the paragraph was accepted.

**Chris** asked that identification of valley type be added to the protocol. It was agreed that this is a good idea but will require further discussion, and will be discussed at the next Team meeting.

**Jim** noted that the Army Corps can support the reference curve project, either financially or by assisting with the field work. This will be discussed further at the next Team meeting, as 2007 field plans develop.

#### Item 4 – Database for the Regional Reference Curve Project

After some discussion lead by **Cyndi, Chris, Ralph** and **Dave B.** of Stantec, it was decided that RiverMorph will be used to store the data from the reference curve project.

Prior to the next item, about 20 MDEQ-LWMD floodplain engineers, transportation engineers, and MDOT engineers, joined the meeting.

#### Item 5 – Presentation on 3-D Stream Modeling

**David Bidelspach** of Stantec (Raleigh, NC) gave a presentation on 3-D stream modeling for river restoration projects, followed by a shorter presentation on HEC-RAS. **Dave F.** added Mr. Bidelspach's presentation to the Team website, and sent the following message to the Team:

“This morning's 3D modeling presentation has been added to the Internet at [http://www.michigan.gov/documents/deg/mist-meeting-042007-3d-design\\_193004\\_7.ppt](http://www.michigan.gov/documents/deg/mist-meeting-042007-3d-design_193004_7.ppt). It is linked from the Meetings page of the Stream Team website,

[www.michigan.gov/streamteam](http://www.michigan.gov/streamteam). Per Dave's request, one name has been removed from the presentation. It has also been run through software that reduces the file size from 24 MB to 5 MB, although the changes should not be noticeable.”

**David B.** also briefly discussed North Carolina’s stream mitigation program, the North Carolina Ecosystem Enhancement Program. Details are available at:

<http://www.nceep.net/>

The stream restoration monitoring guidance he mentioned is at:

[http://www.nceep.net/business/monitoring/Monitoring\\_report\\_web/Projects\\_in\\_Monitoring.htm](http://www.nceep.net/business/monitoring/Monitoring_report_web/Projects_in_Monitoring.htm)

David B.’s contact information is:

919-218-0864

[david.bidelspach@stantec.com](mailto:david.bidelspach@stantec.com)

#### Item 6 – Items of Importance from Those in Attendance

This was not addressed during the meeting, but **Joe R.** has the following items:

- MDEQ is requiring a quality assurance project plan (QAPP) for the regional reference curve project. **Joe R.** proposes to write a first draft, drawing heavily from our field protocol document, and asking interested members of the Team to review it (**Kristine** and **Cyndi**, minimum). A first draft must be completed by the middle of May.
- The University of Wisconsin’s 2 ½ day dam removal short course will be held at the Kellogg Center in E. Lansing, November 5-7.

#### **Next Meeting:**

The next Stream Team meeting will probably be in late May or early June, though a specific date was not selected due to the State’s continuing budget situation.

(Recorded by Joe Rathbun, MDEQ)

**Michigan Stream Team Meeting Minutes  
July 18, 2007**

Attendees:

Ralph Reznick  
Joe Haas  
Joe Rathbun  
Coreen Strzalka  
John Suppnick  
Jim Selegan  
Chris Freiburger  
Kyle Kruger  
Rick Westerhof

Dave Fongers  
Cyndi Rachol  
Steve Rheaume  
John Suppnick  
Susan Wells  
Kathy Ryan  
Kristine Boley-Morse  
Sharon Hanshue

**Commitments/Action Items:**

- **Cyndi** and **Kristine** will calculate coefficients of variation for data collected at the 3 transects surveyed at each location, to assess if we can cut back to 1 transect. (Accomplished)
- **Susan** will send out a draft RFP for the Open Rivers Initiative, and **Sharon** will organize a meeting to brainstorm potential projects. (Both of these have been accomplished.)
- **Coreen** will identify a new contact person for the drain commissioners.
- **Joe R.** will compile suggestions for choosing ungedged survey locations, and summarize them at the next meeting. Team members should send suggestions to rathbunj@michigan.gov.

**Next meeting:**

**Wednesday August 22, 9:00-12:00, US FWS offices, Lansing**

**Meeting Minutes**

The meeting was held at the US FWS Office in Lansing. Introductions were made, and the meeting proceeded through the agenda.

Item 1 – Regional Reference Curve Project Update

**Cyndi** and **Kristine** passed around a handout summarizing their progress as of July 2007. Two sites had been surveyed (Black River near Garnet and Looking Glass River near Eagle), and another 11 locations had been reconned. Three of the recon sites were eliminated as entrenched or not wadeable. They noted it was a wet spring, but rivers in much of the state are low now.

Several issues about stations were discussed:

- It was decided to survey the upper Clinton River even though there may not be many other nearby stable sites; these data might be combined with Annable's 1996 data for southern Ontario.
- Data from Augusta Creek, gathered during the Stream Team's initial training a couple of years ago, will be included in the curve database.
- Other surveying teams will survey stations this field season
  - **Chris & Jessica & Kyle**
  - **Heather** and colleagues
  - **Jim** will survey 7 sites on the Boardman River, only one of which is gaged.
- **Ralph** asked how to handle new sites that haven't yet been reconned. It was agreed that **Kristine** will recon these sites prior to them being surveyed – except for UP streams that **Jessica** can recon and survey at her discretion.
- **Jessica** is surveying the Black River near Garnet in the UP; a repeat of an earlier survey by Cyndi and Kristine.

**Dave** will update the list of surveyed and reconned stations and put it on the Stream Team website.

#### Item 2 – Quality Control for Regional Reference Curve Project

The discussion swung to survey QC and resurveyed sites. The QAPP calls for 10% of the sites to be surveyed a second time by a different crew, which equates to around 5 sites total. It was decided that a full second survey will be performed, starting with the second survey crew selecting the reach to be surveyed without knowing what reach the first crew surveyed. Everything will be new – bankfull indicators, transects, etc. **John** commented that documenting the two independent identifications of bankfull indicators will be very important since so many of the other measurements follow from that.

**Joe H.** noted that benchmarks made with magnetized survey nails are easier to find with a metal detector than ordinary nails or benchties. They're available from Forestry Suppliers ([www.forestry-suppliers.com](http://www.forestry-suppliers.com)) in lengths ranging from 1" to 6". The 4" and 6" nails are \$55 for 30-pound boxes containing around 885 and 362 nails, respectively.

The issue of surveying 3 transects per station vs. 1 transect was revisited. **Cyndi** and **Kristine** will calculate coefficients of variation (CVs) for the measurements made on the transects (width, depth, cross-sectional area, pebble count data), and we may cut back to 1 transect per station if the CVs are low enough. An alternative to making all the measurements at 1 vs. 3 transects would be to shoot width and thalweg depths at 3 transects but not measure area or do pebble counts; this would save a lot of time while still providing data on the variability of two important measurements.

**Kristine** noted that the status of MSU buying a total station is still uncertain. Obtaining a total station is not a requirement of the grant.

### Item 3 – US FWS Money for Indiana and Ohio Sites

**Heather** stated that money (\$10,000) is in place to survey 4 locations on the St. Joseph River in the southeastern part of the state, and that we have a couple of years to use it.

### Item 4 – US FWS Open Rivers Initiative (ORI)

**Susan** discussed the ORI. In outline:

- Over the last 8 years US FWS funded a National Fish Passage Program, to the tune of \$2M in 1999 and \$5M in 2006. This program provided some money plus technical assistance and partnering opportunities to fish passage projects. Much of the money has been spent on Great Lakes tributaries, and the local FWS region (Region 3) has partnered on 56 projects since 1999 (\$1.9M). Most of the project funding has come from partner organizations (76% overall, to date).
- Current budget proposals will add an extra \$6M in FY 2008 to the ORI. The focus will be on small dams, though culverts, fishways, and temperature and velocity barrier projects will also be eligible for funding. Money can be used for monitoring; pre & post, ongoing, barrier inventories, etc. The money will also fund 1 or 2 “national engineer” positions.
- US FWS contacts for the ORI = **Susan** for tributaries to Lakes Huron and Erie; **Rick Westerhof** for Lake Michigan, and **Glen Miller** for Lake Superior.
- **Susan** also mentioned the Fish Passage Decision Support System (<http://fpdss.fws.gov/>).
- If these extra funds are provided, US FWS will be looking for assistance in identifying priority projects or geographic areas, and with reviewing proposed projects. To that end, **Susan** has sent out the Fish Passage Program RFP, and **Sharon** has scheduled a meeting of interested Team members to discuss potential projects (*Thursday August 16 at the MDNR's Mason Building in Lansing, from 10-12 AM*).

### Item 5 – Issues of Importance from Those in Attendance

**Dave** has made modifications to the Stream Team website:

- Make the minutes a single document, divided by year
- Provide just a pdf version of the minutes, and drop the Word version

**Ralph** noted that another consultant has asked to join the Team. An option for dealing with consultants would be to let them attend but not allow them to be members of the Team. **Dave** noted that, currently, only members get the Team

emails. **Dave** also suggested we could start a blog for geomorphology issues in Michigan on the Stream Team website similar to the hydrology blog [http://www.michigan.gov/deq/0,1607,7-135-3313\\_3684\\_3724-132242--,00.html](http://www.michigan.gov/deq/0,1607,7-135-3313_3684_3724-132242--,00.html).

It was noted that **Abby Eaton** is no longer available to the Team as a contact to the drain commissioners. **Coreen** volunteered to identify a new contact person. It was also noted that the drain commissioners are sponsoring a 2-day stream geomorphology course at the end of July, taught by 2 consultants; the Spicer Group and Wetland Coastal Resources.

**Kathy** mentioned that NRCS is hiring an engineer to assist Northern Lower Michigan RC&Ds with various projects, including rapid watershed assessments now required by MDEQ's NPS program. Geomorphology training of conservation district staff in her area (northern Lower Peninsula) would be very useful, and that may be conducted in Michigan by NRCS's national training staff.

**Kathy** also noted that NRCS is coming out with a new edition of the stream restoration manual, and she'll let us know when it's on-line.

**Jim** brought up surveying in deep streams and pools, and it was agreed that belly boats/float tubes are the way to access those sites.

**Chris** and **Ralph** noted that the "meanders project" on the Dowagiac River is complete. This project reconnected a formerly dredged channel to its original meandering channel. A similar project is scheduled for the Battle Creek River near Charlotte, later this year.

**Steve** and **Chris** mentioned that the dam on the Grand River in downtown Lansing is drawn down from late July to late August, for repairs. Reactions to the lower water levels (exacerbated by the recent draught) by local citizens is said to be mixed. There is some discussion of leaving the water levels down into September for a river cleanup.

**Joe R.** asked for input on deciding how to select ungaged streams for reference curve surveying. He will collect all suggestions and present them at the next Team meeting. Send suggestions to [rathbunj@michigan.gov](mailto:rathbunj@michigan.gov).

**Joe R.** also reminded everyone that the University of Wisconsin's 2½ day dam removal short course will be held at the Kellogg Center in E. Lansing, November 5-7. **Ralph** and **Sharon** are among the speakers. UW has offered a discount on registration if MDNR + MDEQ send 8 people. Further information on the course is available at the UW website: <http://epdwww.enr.wisc.edu/courses/course.lasso?myCourseChoice=J460>

**Next Meeting:**

The next Stream Team meeting will be on August 22, from 9:00 to 12:00 at the US FWS offices in Lansing.

(Recorded by Joe Rathbun, MDEQ)

**Michigan Stream Team Meeting Minutes  
August 22, 2007**

Attendees:

Ralph Reznick  
Joe Rathbun  
Coreen Strzalka  
John Suppnick  
Chris Freiburger  
Kyle Kruger  
Rick Westerhof  
Mary Widell

Cyndi Rachol  
Susan Wells  
Kristine Boley-Morse  
Andrea Ania  
Dan Rockafellow  
Bethany Matousek  
Sean Duffy  
Heather Rawlings

**Commitments/Action Items:**

- **Joe R.** will produce a list of locations where DEQ has recently found the macroinvertebrate communities to be in “excellent” condition, for possible use in the regional reference curve project. This will be completed by Thanksgiving.
- **Cyndi** will try to get Ohio USGS’s regional reference curve data to assess the variability of their cross-channel transect data.
- **Kristine** will look over the Geomorph 101 course materials and work to reduce them to a 1 to 2-day course for Team members to teach.

**Next meeting:**

**Tuesday October 16, 9:00-12:00, NRCS offices, Lansing**

**Meeting Minutes**

The meeting was held at the US FWS Office in Lansing. Introductions were made, and the meeting proceeded through the (rearranged) agenda.

Item 1 – Open Rivers Initiative

**Susan** led a discussion of the US FWS’s Open Rivers Initiative. Pertinent points:

- The President has not yet signed the funding bill.
- Project submittals are due by September 1.
- **Chris** asked that US FWS get him a list of proposed projects.
- Historically funds have been available around January 1, but lately it’s been closer to mid-summer.

- Grants are usually for 2 years (from the date of award), though extensions are possible. Projects that can be completed in 2 years are therefore a priority.
- **Ralph** reported that he got 4 or 5 proposals from the DEQ district staff, and had passed them on to **Susan**.
- In the last week of August staff from MDOT, DNR and DEQ will talk about dams and other fish passage issues.

**Coreen** noted that MDOT has been inventorying culvert condition on state roads. They've started in the Saginaw Bay area and will expand the program statewide.

**Joe R.** noted that DEQ's road/stream crossing inventory might contain useful information; stream conditions at thousands of culverts and bridges across the state have inventoried over the last decade, and in recent years an effort was made to document details of the culvert or bridge.

**Dan** discussed the proposed Dexter dam removal project, and got feedback from **Susan** on who can submit the proposal.

**Coreen** started a discussion on velocity barriers to fish passage. Pertinent points:

- The velocity that creates a barrier to fish passage depends on the species, though typically it's around 3 to 4 cfs, which often approximately matches the 2-year event.
- MDOT culverts are usually sized to pass the 50 or 100-year event.
- This may create overwide channels, however, in which case the baseflow channels are too shallow.

### Item 2 – Measurements at Ungaged Stream Locations

At the last meeting **Joe R.** asked for suggestions on how to select regional reference curve locations that aren't at USGS gages. He summarized two possible approaches:

- Locations where the biota (probably macroinvertebrates, since there is more data for them than for fish in most watersheds) have recently been surveyed and found to be "excellent".
- Locations between two gages where the hydrology is known to be stable.

After some discussion of the biota idea and a review of the current list of surveyed and upcoming regional reference curve (RRC) project stations, **Joe R.** agreed to produce a list of appropriate locations from the DEQ biosurvey database, by Thanksgiving.

### Item 3 – Drain Commission Participation on Stream Team

**Coreen** reported that Steve May, the Lenawee County Drain Commissioner and chair of the state drain commissioner organization, is interested in having a drain commissioner (not a consultant) attend our meetings.

#### Item 4 – Surveying 3 Transects or 1 in Each Survey Reach

Our RRC survey protocol calls for surveying 3 cross-channel transects at riffles, and the question was whether to reduce that to 1. Pertinent discussion points:

- Most RRC projects in other states survey 1 transect per station.
- Ohio did up to 4 transects per station, and **Cyndi** said she'd try to get their data and summarize it for us.
  - Data from our early RRC stations showed moderate variability in depths and widths, and sometimes higher variability in the pebble count data.
  - **Chris** noted that Tamara McCandless in Maryland surveys a single transect at the narrowest riffle, reasoning that it's better to design a channel that's a little too narrow than too wide, since aggradation is a bigger problem than a little degradation.

After some discussion and an informal vote, it was decided to include a discussion of the multiple transect data in the final report, and cut back to a single cross-channel transect at a riffle (plus others as time allows) at all future RRC stations.

#### Item 4 – Winter Activities for the Stream Team

**Ralph** led a discussion of activities and objectives for this winter. Major activities include:

- **Kristine** and **Cyndi** will be processing the 2007 RRC data.
- Other staff should get survey data to them as soon as possible after it's collected.
  - Training: we hope to conduct the Geomorph #2 class in 2008, budgets allowing. We should also get serious about organizing a 1 to 2-day course that would be taught by Team members. **Kristine** said she'd look over Sandy and Luther's 101 course materials and get back to the Team with a reduced course outline.

#### Item 5 – Issues of Importance from Those in Attendance

- **John** passed around some materials on the Stream Stability Index and asked if anyone had ever used it. No one had.
- **Joe** noted some recent work on using tractive force calculations to assess stream stability, and will talk about that more at the next meeting.

**Next Meeting:**

The next Stream Team meeting will be on Tuesday October 16, from 9:00 to 12:00 at the NRCS offices in Lansing.

(Recorded by Joe Rathbun, MDEQ)

**Michigan Stream Team Meeting Minutes  
October 16, 2007**

Attendees:

Ralph Reznick  
Joe Rathbun  
John Suppnick  
Frank Cousin  
Kathleen Ryan  
Kyle Kruger  
Andrea Paladino  
Mary Widell  
Pat Fowler

Bethany Matousek  
Cyndi Rachol  
Susan Wells  
Kristine Boley-Morse  
Andrea Ania  
Jim Selegean  
Dave Fongers  
Jessica Mistak  
Heather Rawlings

**Commitments/Action Items:**

- **Joe R.** will produce a list of locations where DEQ has recently found the macroinvertebrate communities to be in “excellent” condition, for possible use in the regional reference curve project. This will be completed by Thanksgiving. **[See note, below]** Joe will also make a short presentation on some channel stability assessment tools at the next meeting.
- **Kristine** will compare their data to Jessica’s for the UP river they both surveyed, and present the results at the December meeting.
- **Kristine** will summarize some training options and present them at a future meeting.

**Next meeting:**

**Wednesday, December 5, 9:00-12:00, US FWS offices, Lansing**

**Meeting Minutes**

The meeting was held at the US NRCS Office in Lansing. Introductions were made, and the meeting proceeded through the (rearranged) agenda.

Item 1 – Regional Reference Curve Update

**Cyndi** and **Kristine** discussed the status of the regional reference curve project. They have completed the 2 more stations since the last update, and are targeting one additional station per week until it gets too cold to continue. Including the UP sites surveyed by **Jessica**, a total of 27 sites have been surveyed. One of these locations will be surveyed with **Heather**. In general they’re targeting the Clinton River, and the Sturgeon River near Wolverine. This winter they’ll create curves for the UP and for southwest part of the lower peninsula.

**Ralph** confirmed that MDEQ will survey 5 stations before the end of the project. (Ralph and Matt Staron of MDEQ later joined Cyndi and Kristine to survey the Rabbit River.)

It was noted that the largest watershed area surveyed so far is 400 square miles.

### Item 2 – Measurements at Ungaged Stream Locations

The discussion focused on surveying ungaged locations with high-quality biological communities, and possibly other ungaged locations that appear to be hydrologically and geomorphically stable. **Joe R.** confirmed that he'd produce a list of locations with "excellent" macroinvertebrate communities from the DEQ biosurvey database, by the next meeting. ***[Note from Joe – I've discovered that the MDEQ biosurvey survey database does not contain the "score" for the macroinvertebrate sample data. To identify the "excellent" sites will require examining the individual data reports – and that will take into January.]***

**Joe R.** also briefly described some channel stability assessment tools developed for MDEQ grantees that might identify locations for our surveys. He will make a short presentation on these tools at the next meeting.

It was agreed that the hierarchy will be:

1. gaged stations
2. stations with high-quality biological communities
3. stations that appear to be hydrologically and geomorphologically stable.

**Dave** said he'd perform bankfull discharge calculations for ungaged stations that will be surveyed, to check bankfull field indicators.

### Item 3 – Quality Control

This discussion centered on how to handle differences in the data at re-surveyed QC stations. **John** recommended setting criteria ahead of time, and using "perfect" surveys as criteria. **Joe R.** suggested using the QC summary he prepared earlier as a guide to expected, but acceptable, differences in the data. **Kristine** will compare their data to **Jessica's** for the UP river they both surveyed and summarize it at the next meeting.

It was agreed that QC re-surveys should "start from scratch," and not intentionally repeat transects, etc.

#### Item 4 – Training

It is expected that the state agencies will be subject to the same limitations on training during FY 2008. **Jim** reported that Dave Derrick of ACOE-Vicksburg gives free workshops, and might be persuaded to give one in Michigan next summer. One possibility would be a 3-day course, with 2 days in the classroom and 1 day in the field. We would provide logistics; arrange for a room, handle registration, etc. **Cyndi** suggested we might use the auditorium at the State of Michigan Library. **Jim** will try to get an agenda from Dave D.

It was decided (again) that we'd work to create training materials, similar to Sandy and Luther's Geomorph 101 course. There will probably be options for 1 and 2-day courses. One audience is agency staff, to assist with permit decisions, providing support to grantees, etc. **Kristine** will summarize some options and present them at a future meeting.

**Jim** also noted that he's teaching a class in geomorphology at Wayne State in the spring. It's an 8-week, 4-credit course, rolling Rosgen's 4 classes into one. He said it will be light on design and heavier on sediment transport, compared to Rosgen's classes. The likely schedule is class from 5-9 PM on Tuesdays, and field exercises for 8 hours on Saturdays.

#### Item 5 – Other Regional Reference Curve Projects in Michigan

**Ralph** led a discussion of expected 319 grant proposals (nonpoint pollution projects) that will propose to create local or regional reference curves, especially for ag drains. It was agreed that if such a project is funded the data generated needs to be of sufficient quality to include in our curve database. It was also agreed that we'll have to be careful that we don't end up with two sets of "dueling curves" – one for ag drains and one for natural streams. It's not clear whether stable ditches would be expected to have the same dimensions, etc., of natural streams with similar drainage areas. They may (the physics of sediment transport are ignorant of historic drain maintenance practices), or they may not (linear drains may constrain channel sinuosity, which will affect all the other dimensions).

#### Item 6 – Issues of Importance from Those in Attendance

**Dave** expressed concern about the amount of trash emails getting through the Stream Team filters. He also reminded us that automatic "out of office" messages are screened out if they contain "office" in the subject line.

**Jessica** wondered if the Dead River curve data will be added to our database. **Ralph** will look into that.

**Frank** noted that the new edition of the NRCS stream restoration design manual is available on CD, and he will get the link for ordering it to **Ralph**.

**Next Meeting:**

The next Stream Team meeting will be on Wednesday December 5, from 9:00 to 12:00 at the US FWS offices in Lansing.

(Recorded by Joe Rathbun, MDEQ)

**Michigan Stream Team Meeting Minutes  
December 5, 2007**

Attendees:

Ralph Reznick  
Joe Rathbun  
John Suppnick  
Kathleen Ryan  
Andrea Paladino  
Mary Widell  
Pat Fowler  
Sean Duffy  
Joe Haas  
Coreen Strzalka

Bethany Matousek  
Cyndi Rachol  
Kristine Boley-Morse  
Andrea Ania  
Jim Selegian  
Jessica Mistak  
Heather Rawlings  
Sharon Hanshue  
Jessica Mistak  
Chris Frieberger

**Commitments/Action Items:**

- **Joe R. will report on the pebble count recommendations in Bunte & Abt (2001).**
- **Joe R. will make a brief presentation on stream stability assessment techniques at the February meeting.**
- **Chris will talk to Dave Rosgen about bringing one of his courses to Michigan in 2009.**

**Next meeting:**

**Wednesday January 16, at the US FWS office in Lansing**

**Meeting Minutes**

The meeting was held at the US FWS Office in Lansing. Introductions were made, and the meeting proceeded through the (rearranged) agenda.

Item 1 – Regional Reference Curve Update

**Cyndi** and **Kristine** made a presentation updating the reference curve project. A map of the stations surveyed to date (Appendix 1) and a list stations surveyed by USGS and the CCD in 2007 (Appendix 2) are attached at the end of these minutes. Some summary points were:

- There was considerable variation in bankfull dimensions when the data were stratified using EPA's Level 3 ecoregions.
- Stratifying using Level 4 ecoregions reduced the variability.

- The locations that least resembled other locations within an ecoregion were often located near the boundary of two ecoregions.
- Other options for stratifying the data discussed by the group were by flow characteristics, or by Rosgen stream type.

This winter's work will include:

- Completing analysis of the field data
- Refining the curves
- Calculating bankfull discharge and comparing it to gage data
- Updating MDEQ's Peak Flow Analysis document (**Ralph** will talk to **Dave** about this)

Field quality assurance was also discussed. It was noted that while channel dimension data from the Black River gage location in the Upper Peninsula, which was surveyed by teams from both USGS/CCD and the MDNR, were generally quite comparable, the pebble count data were more variable. Possible sources of variation in pebble count data at this location include:

- Inclusion of bottom substrate from a "sluice way", or cutoff channel, that was off-channel from one of the riffles but within the bankfull channel.
- Whether to characterize a thin veneer of sand over larger substrate as sand in the pebble count (which MDNR did), or ignore it and measure the larger substrate beneath the sand (which USGS/CCD may have done more often than not).

It was agreed that a riffle with an adjacent sluice way may not have been representative of riffles in this reach. As for counting or ignoring the veneer of sand, **Chris** said he'd check with Dave Rosgen for his opinion. **Joe R.** will review the pebble count section in Bunte and Abt, 2001 (see below) and report to the Team on their recommendations. **Jim** reported finding considerable variation in pebble count data in the Boardman River, and has 6-8 pebble counts at some riffles over time. **Chris** suggested running the data through the discharge calculation to see if this variation makes much difference in the calculated bankfull discharge.

(Bunte, Kristin; Abt, Steven R. 2001. *Sampling surface and subsurface particle-size distributions in wadable gravel-and cobble-bed streams for analyses in sediment transport, hydraulics, and streambed monitoring*. Gen. Tech. Rep. RMRS-GTR-74. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 428 p. Available from: [http://www.fs.fed.us/rm/pubs/rmrs\\_gtr74.html](http://www.fs.fed.us/rm/pubs/rmrs_gtr74.html))

## Item 2 – Measurements at Ungaged Stream Locations & Criteria for Other Reference Curve Projects

**Ralph, Cyndi and Kristine** noted that the USGS gage locations surveyed to date by our project have several geographic gaps (see Appendix A):

- Small headwater streams
- Southeast Michigan
- Eastern Upper Peninsula

Some gage locations in these areas were rejected during the field reconnaissance because they lack data of one sort or another, and it was suggested that they could still be used in the project by forgoing the data requirement in our field protocol and surveying them based solely on the bankfull field indicators. **Heather** noted that the coming surveys on the St. Joseph River (Ohio) may provide useful data for SE Michigan, and **Joe R.** noted that Annable's curves for southern Ontario may also be appropriate.

**Ralph** noted that MDEQ has funded several projects that created "local curves", primarily for ditch restoration projects, and that they've also recently received a proposal to fund the creation of broader regional curves for 2-stage ditches hypothetically useful throughout the southern lower peninsula. A decision on whether to fund that project has not been made. This triggered a discussion of reference curves for ditches, and **John** and **Cyndi** pointed out that ditch drainage areas are often uncertain because they can cut across topographic divides in low-gradient areas.

It was noted that we may not need data from ungaged locations given that 13 gaged locations are still to be surveyed, and another 15 gage locations need to be reconned. If we do need to survey ungaged locations, it was agreed that they would probably be selected based on a combination of known healthy macroinvertebrate populations (using MDEQ biosurvey data) and the channel stability assessments being developed by MDEQ. **Sean** encouraged that we develop a protocol for surveying ungaged locations. **Joe R.** will give a brief presentation on MDEQ's stream stability assessment methods at the February meeting.

**Jim** noted that the Corps has \$30,000 to contribute to the project, which could be used by Corps staff or transferred to USGS/CCD.

**John** led a discussion of using consultant's data in the reference curve project, and it was agreed that we need (a) station selection criteria, (b) data verification procedures, and (c) a system of field audits. **Heather** suggested we send consultants to one or more of our previously surveyed locations to confirm they're collecting accurate data. **Sharon** said she's disinclined to use consultants to

generate data for the curves; we'd spend so much time reviewing their data that we might as well do it ourselves.

In summary, it was decided we need a protocol for surveying ungaged locations, and that we would keep the reference curve field work within the Stream Team for at least another year.

### Item 3 – Discussion of the Tittabawassee River

**Joe H.** stated that the Natural Resource Damage Assessment (NRDA) Trustees for the Tittabawassee River have asked the Team to review the construction manual and BMP descriptions being developed by the trustees (a group of State, Federal, and Tribal agencies) for the river restoration work that is part of the dioxin cleanup. That work includes instream dredging and floodplain excavation, currently planned for approximately 55 miles of the Tittabawassee River and Saginaw River. The manual will be developed over this winter.

It was agreed that while the Team would not review the manual as a group, individual team members were free to review it and provide comments for their respective agencies.

### Item 4 – Chesaning Dam

**Andrea** brought up the proposed dam modification project on the Shiawassee River in Chesaning. The city would like to retain the dam and its impoundment to facilitate operation of a showboat, and proposes to construct a rock ramp rather than remove the dam. The city's consultant would like the Team to comment on the rock ramp design. **Chris** stated that MDNR and MDOT are involved in discussions on this project, and also that Sandy Verry designed the rock ramp. It was agreed that **Andrea** will tell the consultant that she can bring technical questions to the Team for input, but that the Team will not evaluate the overall project.

### Item 5 – Issues of Importance from Those in Attendance

**Ralph** stated that The Nature Conservancy has asked to be put on the Team's list-serve. We will look into why they want that, and consider making them Team members.

**Ralph** also passed along a question from **Dave** about whether we have been getting an unacceptable number of duplicate emails. The consensus was that we are not.

**Joe H.** brought up training for 2008. Currently state staff can only attend training if there is no cost; most state agencies will cover travel costs. **Ralph** asked if we could get enough attendees if no state employees could attend. **Joe R.** noted

that the recent dam removal short course in E. Lansing drew 41 attendees despite the lack of training funds for state employees; most of the attendees were consultants. **Chris** noted that if we do the training ourselves there wouldn't be much cost except lunches, and **Coreen** said we might get a consultant to sponsor those. **Chris** also noted that we may be able to host a Rosgen course in Michigan in 2009; we would do the groundwork of finding places for the field exercises, and Wildland Hydrology would do everything else. **Coreen** noted that MDOT could provide a facility for the course. It was decided that the Team supports bringing such a course to Michigan in 2009, and, at his convenience, **Chris** will approach Dave Rosgen about it. After we hear back on that we will further discuss what training, if any, we might try to do in 2008.

**Chris** noted that **Jim** and the Corps is working on the Battle Creek River, including doing a sediment budget for the river.

**Joe R.** noted that, in keeping with the Team's desire to interact more with the county drain commissioners, he will be giving a presentation on stream stability assessment tools at the MACDC winter meeting at the Grand Traverse Resort on February 14.

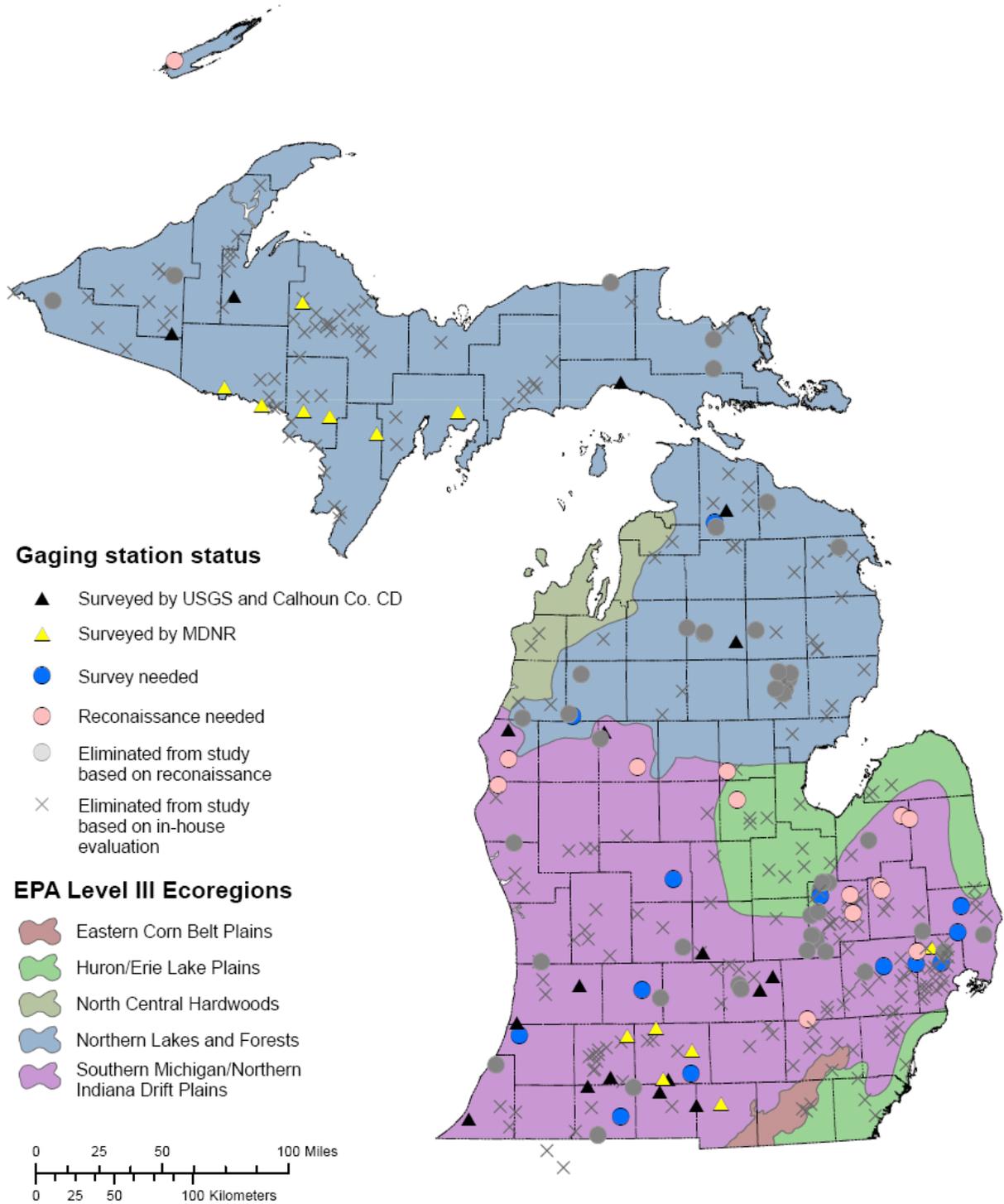
**Next Meeting:**

The next Stream Team meeting will be on Wednesday January 16, from 9:00 to 12:00 at the US FWS offices in Lansing.

(Recorded by Joe Rathbun, MDEQ)

## Appendix 1 – Status of Regional Reference Curve Surveys at the End of the 2007 Field Season (as of 11/28/07)

### Regional Hydraulic Geometry Curves for Physiographic Settings in Michigan



**Appendix 2 – USGS Gages Surveyed During 2007  
(provided by Cyndi Rachol, 1/3/08)**

4111500 Deer Creek near Dansville  
4046000 Black River near Garnet  
4097370 Flowerfield Creek at Flowerfield [D]  
4096515 South Branch Hog Creek near Allen  
4124500 East Branch Pine River near Tustin  
4097170 Portage River at W Avenue near Vicksburg [D]  
4108600 Rabbit River near Hopkins  
4096015 Galien River near Sawyer  
4102776 Middle Branch Black River near South Haven  
4123000 Big Sable River near Freesoil [D]  
4129500 Pigeon River at Afton [D]  
4111379 Red Cedar River near Williamston  
4033000 Middle Branch Ontonagon River near Paulding  
4040500 Sturgeon River near Sidnaw  
4096400 St. Joseph River near Burlington [D]  
4114498 Looking Glass River near Eagle  
4096600 Coldwater River near Hodunk [D]  
4135700 South Branch Au Sable River near Luzerne