Fish and Wildlife Work Group Meeting Notes **Chair: Steve Clark**

22 October 2015; 9:30 a.m. at USFWS FWCO in Onalaska, WI.

These meeting notes are intended to document notable decisions and tasks of the FWWG. The attached agenda accurately reflects all the items that were covered in the meeting.

Attachment List:

- Agenda
- Attendance list
- Issue brief example
- CMMP Exhibit C (work group resolution)
- Joint river team meeting invite
- Pool Plan Update PowerPoint and Meeting MFR
- HREP project list
- HREP project evaluations PowerPoint
- Reno Bottom PowerPoint
- Reno Bottoms Stage Discharge
- Floodplain Mgt Requirements
- Resilience PowerPoint

Meeting Discussion Summary:

1) Various house-keeping items and decisions by the FWWG:
   a) It was decided that a charter would be developed for the FWWG that would also include a process for conflict resolution and a method for sharing issues between the RRF and the FWWG. A process for charter development is yet to be determined.
   b) It was suggested that FWWG meeting notes, etc. be made available on the web similar to how those of the RRF are. In the near future they will be posted on the Corps website under "Resources" here: http://www.mvp.usace.army.mil/Missions/Navigation/RiverResourcesForum.aspx
   c) NGO attendance at FWWG meetings is acceptable; however, NGO's would not be directly involved in any conflict resolution process (i.e., vote).
   d) A separate forestry technical committee will not be established, but foresters will continue to participate in meetings and an extra effort will be made to reach out to them when forestry-specific items are anticipated.
   e) The issue paper brief format was discussed (attached) and will likely be referenced in the future charter.
   f) A combined river team teleconference to discuss mussel issues has been scheduled for 20 November 2015 from 8:30 – 11:00. See attached email from Chuck Theiling.
2) Environmental Pool Plan Update: Dave Potter presented the work by the team. Pool 8 is being used as a template for updating Pool Plan maps with existing data. Shapefiles of agency restoration projects were requested to be sent to Dave. Additional notes can be found in attached PowerPoint and MFR.
3) HREP Prioritization: Tom Novak led a discussion of HREP prioritization and presented the current list (attached).
   a) It was noted that the first 4 projects listed are in order of priority and are in various stages of construction or planning. It was agreed by the FWWG that at this time there is no need to prioritize the remaining projects, but that when the time comes to move the next

one into planning, the FWWG would work to provide a recommendation for which project that would be.

b) It was suggested that an inventory of all existing fact sheets would be helpful for future project prioritization.

c) The FWWG was in agreement that NGO's could present projects for inclusion on the list, and that such projects would have to stand on their merits as good projects just as any other project would.

d) Rylee Main of the Lake Pepin Legacy Alliance (LPLA) was present and some discussion around the Upper Pool 4 project commenced. A major conclusion of that discussion was that the LPLA would need to work with WDNR to garner their support/approval of a concept as the next critical step in the planning process. Following that, the next step may be investigating the best program under which such a project could be built (e.g., UMRR, 206, 204).

4) Reno Bottoms: Randy Urich led a discussion of the potential to begin/resume planning for a restoration project in the Reno Bottoms. Jon Hendrickson provided some insight into the hydraulic dynamics of the area and provided a figure of the stage-discharge relationship (attached).

a) The FWWG agreed to the development of a fact sheet for a future restoration project.

b) Team members were identified for a group that includes: Ken Lubinski (lead); Dan Dieterman; Mike Griffin; Brenda Kelly; Rich King; Tim Schlagenhaft; Stephen Winter; Wendy Woyczik; Nate De Jager; Randy Urich; Jon Hendrickson; and Andy Meier.

5) HREP Performance Evaluation and Monitoring: Dave Potter presented PER status and requested project monitoring data/reports be sent to him. PowerPoint attached.

6) Jeff Hauser gave a presentation on ecological resilience.

7) Mike Griffin handed out guidance on floodplain impacts that outlines the potential for FEMA to approve increases in flood elevation (attached) for projects in the public interest. Not discussed during the meeting but of note is a requirement to certify that no structures would be affected by the flood stage raise, or that affected structures be purchased. The document can also be found here: http://www.fema.gov/floodplain-management-requirements

Action Items:

1) Steve Clark: begin working to develop a charter for eventual review and acceptance by FWWG; identify a website and begin posting meeting minutes, etc., there;

2) Agencies should send shapefiles of completed projects to Dave Potter for inclusion in the Pool Plan update. Contact Dave with questions.

3) Not covered during the meeting, but Rich King and Steve Clark will develop a list of potential locations (5 or so) where floodplain forest restoration and channel maintenance objectives can coincide. The list would be presented to the FWWG and ultimately to the RRF for endorsement.

4) Next meeting date was not selected, but would likely occur in early spring 2016.

Agenda
Fish and Wildlife Work Group Meeting

October 22, 2015 (9:30 – 1:00)
USFWS FWCO – La Crosse, WI
*Underlined items are related to tasks from last RRF meeting

Call-in Info: 888-273-3658; passcode: 3592917; security code: 1234

9:30 – 9:45 Introductions/Agenda Overview & Revisions/Housekeeping

9:45 – 10:15 Various items for brief discussions (Clark, USACE/All).
- FWWG Charter? Process for conflict resolution? (attached resolution from CMMP)
- Clarification of FWWG meeting attendance by NGO's.
- Potential joint meeting of the FWWG, FWIC, RRAT to discuss mussel issues
- Increased focus on forest management; should there be a Forestry Workgroup?
- Issue paper brief format to forward significant work items to the FWWG from RRF or from FWWG to RRF (attached).

10:15 – 10:45 Update of the Environmental Pool Plans (Potter and team).
- Recap plan
- Progress to date
- Next steps

10:45 – 11:00 Break?

11:00 – 11:30 HREP prioritization (Novak, USACE/All)
- Is there a need to reprioritize "the list" (current list is attached)?
- Inclusion of NGO proposals within the list, specifically Upper Pepin?

11:30 – 12:00 Reno Bottoms (a potential bottomland forest project) (Urich, USACE)
- Background
- Fact Sheet Decision?
- ID Team

12:00 – 12:20 HREP Performance Evaluations and Monitoring (Potter, USACE/All; 20 min)

12:20 – 12:50 Ecological Resilience of the UMR (Jeff Hauser, UMESC; 30 min)

1:00 Adjourn

Meeting Sign-In Sheet

Meeting: FWWG

Date: 22 October 2015, FWS FWCO

Name	Agency	Email
JON HENDRICKSON	CORPS, ST PAUL	jon.s.hendrickson@usace.army.mil
David Potter	" "	david.f.potter@usace.army.mil
JIM FISCHER	WDNR	JamesR.Fischer@wi.gov
Jeff Janvrin	WDNR	jeff.janvrin@wi.gov
Stephen Winter	USFWS	stephen_winter@fws.gov
Brenda Kelly	WDNR	Brenda.Kelly@wisconsin.gov
Teresa Newton	USGS	tnewton@usgs.gov
Andy Meier	CORPS ST PAUL	andrew.r.meier@usace.army.mil
Wendy Woyczik	USFWS	wendy_woyczik@fws.gov
Kendra Niemec	USFWS-LAX	Kendra_Niemec@fws.gov
DAN DIETERMAN	MN DNR	
Tim Miller	USFWS LAX	Tim_a_Miller@fws.gov
Randy Urich	Corps, La Crescent	randall.r.urich@usace.army.mil
PAUL MACHAJEWSKI	COE CH, MAINT	paul.r.machajewski@usace.army.mil
Rylee Main	Lake Pepin Legacy Alliance - NGO	rylee.main@lakepepinlegacyalliance.org
Jeff Houser	USGS-UMESC	jhouser@usgs.gov
Michelle Barrett	USFWS	michelle_barrett@fws.gov
Mike Griffin	IA DNR	Michael.Griffin@dnr.iowa.gov
Steve Clark	USACE	steven.j.clark@usace.army.mil

ISSUE BRIEF
River Resource Forum
Technical Work Group

DATE:
ISSUE BRIEF NUMBER: RRF#-IB# (e.g. 104-01)
PREPARED BY:
PRESENTED TO OR ASSIGNED TO: RRF or Specific Technical Work Group

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SUBJECT:

TYPE OF ISSUE: (decision, information, discussion, etc.)

ISSUE STATEMENT:

BACKGROUND:

ALTERNATIVES:

RECOMMENDATION:

APPROVED:

_____ _____
River Resource Forum/Technical Work Group Chair/Co-Chair — Date

Attachments:

RESOLUTION FOR ESTABLISHMENT OF RIVER RESOURCE FORUM TECHNICAL WORK GROUPS

Endorsed at RRF Meeting 3-4 December 1991

Be it resolved that the River Resource Forum (RRF) supports and endorses the development of technical work groups to enhance the exchange of technical information and to provide for early coordination by field level personnel in matters relating to river resources. The following guidelines are provided:

1. Coordination groups will be established for Fish and Wildlife, Recreation, Navigation, Public Education and Information, and other areas as needed.

2. Each Federal agency and State should designate a single point of contact to serve as the lead representative for each of the above areas of interest. However, each Federal agency or State may have several individuals participate if they choose to do so. The lead representative will be responsible for internal coordination within the Federal agency or State. This individual will also cast the vote of the Federal agency or State if so required to conduct work group business.

3. The purpose of the technical work groups is for field level resource managers and technical experts to meet as needed for review of various activities. These individuals would provide technical comments and information into such matters as the design and priority of studies and projects, alternatives being considered, methods, data needs and related items. The technical work groups may advise the RRF on policy related issues if requested to do so.

4. The RRF will assign topics for the technical work groups to consider. Following their deliberations, the technical work groups will report their findings back to the RRF. The RRF will consider this input in their planning but are not necessarily bound to follow it.

5. The technical work groups will be responsible for deciding their own method of leadership and procedures for general operation and conflict resolution with approval of the RRF if required (i.e. additional agency funding or staff support is needed).

6. A technical work group may be terminated at the discretion of the RRF.

Exhibit C

From: Clark, Steven J MVP

To: Asche, Dave [DNR]; "bickes@usgs.gov"; Birkenstock, Terry MVP (Terry.Birkenstock@usace.army.mil); "Brenda Kelly (Brenda.Kelly@Wisconsin.gov)"; "brent_knights@usgs.gov"; Brian J. Brecka (Brian.Brecka@Wisconsin.gov); Brian Stemper (USFWS); "curt_mcmurl@fws.gov"; Dan Helsel (daniel.helsel@wisconsin.gov); "david.heath@wisconsin.gov"; Delphey, Phil; Dieterman, Dan (MDNR); Emily Schnick (Emily.Schnick@state.mn.us); "gbenjamin@tnc.org"; "Heidi_Keuler@fws.gov"; Hendrickson, Jon S MVP; Ingvalson, Derek MVP (Derek.S.Ingvalson@usace.army.mil); Jeff Janvrin (jeff.janvrin@wisconsin.gov); "jhouser@usgs.gov"; Jim Fischer (jamesr.fischer@wisconsin.gov); "jrogala@usgs.gov"; "jsauer@usgs.gov"; "Karen Osterkamp (karen.osterkamp@dnr.iowa.gov)"; Kelner, Daniel E MVP (Daniel.E.Kelner@usace.army.mil); Ken Lubinski; "kendra_niemec@fws.gov"; Kevin Stauffer (kevin.stauffer@state.mn.us); "kevin_kenow@usgs.gov"; "laurel_kullerud@fws.gov"; Machajewski, Paul R MVP; "Mark_Steingraeber@fws.gov"; Mary Stefanski (Mary_Stefanski@fws.gov); McFarlane, Aaron M MVP (Aaron.M.McFarlane@usace.army.mil); McGuire, Megan (Megan.K.McGuire@usace.army.mil); Meier, Andrew R MVP; "michelle.marron@wisconsin.gov"; Mike Davis (Mike.Davis@state.mn.us); Mike Giffin; "ndejager@usgs.gov"; Novak, Thomas (Tom) MVP (tom.novak@usace.army.mil); "patrick.short@wisconsin.gov"; Potter, David F MVP (David.F.Potter@usace.army.mil); "rbiske@tnc.org"; "Richard King"; "Robert_Clevenstine@fws.gov"; "Rylee Main"; Scott Gritters (scott.gritters@dnr.iowa.gov); Scott_Yess@fws.gov; sharonne_baylor@fws.gov; Sobiech, Jonathan J MVP; Stefanik, Elliott L MVP; "stephen_winter@fws.gov"; Strassman, Sara L - DNR; "szigler@usgs.gov"; Tapp, Steve D MVP; Theiling, Charles H MVR; Tim Miller; Tim Yager (timothy_yager@fws.gov); "tnewton@usgs.gov"; "tschlagenhaft@audubon.org"; Urich, Randall R MVP; "Vickie_Hirschboeck@fws.gov"; "Wendy Woyczik"; "yyin@usgs.gov"

Subject: FW: Call for Combined UMRS River Teams Meeting - Nov 20, 2015 (UNCLASSIFIED)

Date: Tuesday, October 20, 2015 3:02:00 PM

Classification: UNCLASSIFIED
Caveats: NONE

FWWG members - please see message from Chuck below.

-----Original Message-----
From: Theiling, Charles H MVP @ MVR
Sent: Monday, October 19, 2015 1:29 PM
To: Herzog, Kathryn MVP @ MVR; Mccain, Kathryn MVP @ MVS; Clark, Steven J MVP; Plumley, Marshall B MVP @ MVR
Cc: Kelner, Daniel E MVP
Subject: Call for Combined UMRS River Teams Meeting - Nov 20, 2015 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Hello UMRS River Managers,

The Chairs of the UMRS River Manger's Teams (i.e., FWWG, FWIC, RRAT, and IRWG) were asked to coordinate a webinar for all River Teams to hear about issues common to all parts of the Upper Mississippi and Illinois Rivers. We have several topics related to freshwater mussels and a separate conversation on the UMRR Resiliency Strategy headed by USGS-UMESC. We may continue this format depending on need and response to this webinar.

The date for this webinar will be November 20, 2015 (8:30 - 11:00).

Phone 877-336-1828
Access code: 8388958
Security code; 1111

Webinar https://www.webmeeting.att.com
Meeting number 8773361828
Access code 8388958

The agenda for this webinar is as follows:

Mussel topics (8:30 - 10:00):

1. ERDC model - Dan Kelner (8:40 - 9:00)
2. Update of hydrophysical model for mussels - Steve Zigler (9:00 - 9:20)
3. Potential application of model to HREPS @ Beaver Island and St. Louis District - Steve Zigler, Nate Richards, Kat McCain (9:20 - 9:40)
4. Update on mussel community assessment model - Teresa Newton 9:40 - 10:00)

UMRS Resiliency Strategy - Jeff Houser (10:00 - 10:45)

Please contact Chuck Theiling or Dan Kelner with questions or comments. We hope you can make it for these important regional updates that we can all anticipate working on in the near future.

Thanks to Steve and Teresa for their help, and to Jeff for inviting comments on a developing UMRR topic.

Chuck

Chuck Theiling PhD
Large River Ecologist
U.S. Army Corps of Engineers
Rock Island District
Rock Island, IL 61204

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There are two fish in the river and one says to the other, "Man I am really worried about current events."

Classification: UNCLASSIFIED
Caveats: NONE

FISH AND WILDLIFE WORK GROUP MEETING

22 October 2015

Environmental Pool Plans Update

US Army Corps of Engineers
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- Desired future habitat condition.
- Conceptual
- Guide for individual agencies.
- Serve as a reference when considering future projects.

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FWWG Meeting on 2 March 2015

Ideas that were discussed:

- Small group workshop:
  - a. ID what aspects should be updated
  - b. Identify who may be able to perform this & when
- Implement recommended features that are data-related (imagery, bathymetry, etc)- developing a geo-database
- Discuss updated objectives, problem statements, habitat or process needs, etc.
- Public Input within EPP update???

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EPP Update Team

Kickoff Meeting - 22 June in Lansing, IA

Name	Lead
Dan Dieterman	MNDNR
Jeff Janvrin	WIDNR
Mike Griffin	IADNR
Steve Winter	USFWS
David Potter	USACE
Other contributors:	Randy Urich Jack Westman Sharonne Baylor

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Kickoff Meeting

Updated Info

Item	Source
Forest Management	COE
Bank stabilization under all authorities	COE
Control structures (O&M)	COE
Pool-wide drawdowns (P5, P6, and P8)	COE
Refuge activities	FWS
HREP as-builts[a]	COE
NGO work	NGOs
Channels Maintenance activities	COE
Land acquisitions	All
Terrestrial vegetation management	All
Exotic / Invasive species	All

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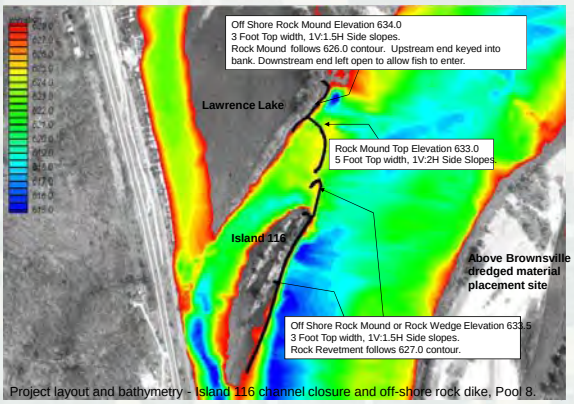
Pool 8 Historic Projects



Project layout and bathymetry - Island 116 channel closure and off-shore rock dike, Pool 8.

Updated EPPs should:

1. Maintain semblance of the original EPPs;
2. Ability to dim out background;
3. Updated portions included as an appendix;
4. Use call-outs instead of icons in the display;
5. Use 2010 LULC & latest aerial imagery as the base maps;
6. Have clean metadata;
7. Narratives should discuss what has/hasn't been done;
8. Have an updated electronic report by 2016.

FWWG Meeting on 2 March 2015

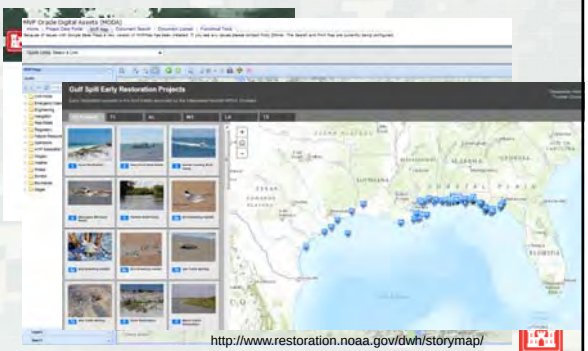
Ideas that were discussed:

- Small group workshop:
  - a. ID what aspects should be updated
  - b. Identify who may be able to perform this & when
- Implement recommended features that are data-related (imagery, bathymetry, etc)- developing a geo-database
- Discuss updated objectives, problem statements, habitat or process needs, etc.
- Public Input within EPP update??? NO.

Next Steps

- Agencies to provide updated shapefiles.
- Corps to update GIS.
- Bring updated shapefiles into a user-friendly interface.
- Print out maps
- Update with narratives.

Examples of how to share the information



http://www.restoration.noaa.gov/dwh/storymap/

Questions?

CEMVP-PD-C 10 July 2015

MEMORANDUM FOR THE RECORD

SUBJECT: EPP Update – kickoff meeting

ATTENDANCE: David Potter, Randy Urich – COE-MVP
Jeff Janvrin – WIDNR
Dan Dieterman – MNDNR
Mike Griffin - IDNR
Steve Winter - USFWS

1. The subject meeting was held on 22 June 2015, from 1100 – 1500 hours. The main objective of the meeting was to initiate an update to the Environmental Pool Plans.

2. Primary discussion points from the meeting are summarized below:
   a. **EPP History**
   Randy Urich provided background information on the initial efforts on the EPPs from 2004. This was initiated by the RRF and was intended to give a top-down view of the river system. It identified constraints and desired future goals for the next 50 years. Jeff was the lead for developing the GIS shapefiles used for the maps. Three teams were identified to address Pools 2 and above, Pools 3 through 8, and Pools 9 and 10. The product was a document that has narratives and a series of maps. However, habitat objectives were not identified. Manager observations/experience was used to predict how things would look in the future.

   After the EPPs were developed, an implementation strategy was begun targeting Pools 3 and 9 as straw dogs. However, a comprehensive implementation strategy has not yet been developed.

   b. **Updated EPP** – Phase 1

   Use Pool 8 as a straw dog for what will be done on the remaining pools. The narratives here should be updated for each subarea. Pool 8 had detailed LULC (2005). Should contact Kevin Kenow on Pool 8. Sharonne and Jeff can do write-ups for Pool 8; Dan can do drawdown write-up.

   Questions remain about what the minimum mapping unit would be, if we used the 2010 LULC shapefiles. 1989 had the highest resolution for this, so the cross-walk may be difficult.

   The updated EPPs should shapefiles for the information in Table 1

Table 1.

Item	Source
Forest Management	COE
Bank stabilization under all authorities	COE
Control structures (O&M)	COE
Pool-wide drawdowns (P5, P6, and P8)	COE
Refuge activities	FWS
HREP as-builts[a]	COE
NGO work	NGOs
Channels Maintenance activities	COE
Land acquisitions	All
Terrestrial vegetation management	All
Exotic / Invasive species	All

[a] With goals and objectives after Value Engineering.

It is recommended that the update should:

- maintain some semblance of the original EPPs;
- ability to dim out background, with full color to what projects have been completed;
- Updated portions could be included as an appendix after each pool;
- use call-outs instead of icons in the display;
- use 2010 LULC and the latest aerial imagery as the base maps in the display;
- have clean metadata;
- narratives should discuss what has been done as well as what hasn't; and,
- have an updated report finalized as a electronic deliverable by 2016.

David Potter
Fishery Biologist

	Approved emp fact sheets	Pool	State	Habitat	Phase	feature	CMS	Unload Site	Draw Down	Budget		Notes
1	**Harpers Slough**	9	IA/WI	EPP	Constr	islands	draft dpr	no	no	12M		
2	**North/Sturgeon lake**	3	MN	EPP	Feasibility	islands	P3/U4	Corps Island	2016/17	$8M		Cost shared/integrate DD
3	**Conway Lake**	9	IA	EPP	Feasibility	dredg/Forest	draft dpr	no	no			
4	**McGregor Lake**	10	WI	EPP	Feasibility	island/drdg	no	no	no			
5	**Pool 10 Islands**	10	IA	EPP	fact Sheet	islands	no	McMillan 2015/16	no			O&M pay for granular 200k yds
6	**Lake Winneshiek**	9	WI	EPP	fact sheet	islands	draft dpr	no	no			
4	**Weaver Bottoms**	5	MN	EPP/Reach	fact sheet	islands	P5	Lost Island 2016	2005			O&M pay for granular 1.5m yds
7	**Clear Lake**	5	MN	EPP	fact sheet	dredge	P5	no	2005			
8	**Bass Lake Ponds**	MN	MN		fact sheet	protect	no	no	no			
10	**LD 3 Fish Passage**	3	MN	NESP	Prelim DPR	fish pass	no	no	2016	$15M	ARRA	Authorities/funding

FISH AND WILDLIFE WORK GROUP MEETING

22 October 2015

HREP Project Evaluations

US Army Corps of Engineers
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Status of HREP Project Evaluations

2015 Monitoring Activities: Pre-Construction

Pool	Name	Type	Lead
3	North & Sturgeon	AHQI, fish, winter wq Cultural, bathymetry Waterfowl	MNDNR MVP FWS
9	Upper Iowa River	Electrofish Bald eagle	WIDNR FWS
9	Harpers	Electrofish Bald eagle, waterfowl	WIDNR FWS
9	Conway /Phillipi	Mussels, cultural, bathymetric, velocity, Electrofish, discharge, floodplain forest	MVP IDNR

XX = Completed in 2015.
XX = Plan to be completed this fall/winter
XX = Unknown when will be completed.

Status of HREP Project Evaluations

2015 Monitoring Activities: Pre-Construction

Pool	Name	Type	Lead
9	Winnishiek	Electrofish Bald eagle, waterfowl	WIDNR FWS
10	McGregor	Electrofish Velocity/Discharge, floodplain forest, cultural	WIDNR MVP
10	Lower Pool 10 Islands	Velocity/Discharge	MVP

XX = Completed in 2015.
XX = Plan to be completed this fall/winter
XX = Unknown when will be completed.

Status of HREP Project Evaluations

2015 Monitoring Activities: Post-Construction

Pool	Name	Type	Lead
5	Finger Lakes	AHQI, electrofish, winter wq Bald eagle	MNDNR FWS
5	Spring Lake	AHQI Electrofish Bald eagle, waterfowl	MNDNR WIDNR FWS
5	Island 42	AHQI, electrofish, winter wq Bald eagle	MNDNR FWS
5A	Polander	AHQI, electrofish, winter wq Waterfowl, bald eagle	MNDNR FWS
7	Long Lake	Electrofish? Bald eagle	WIDNR FWS
7	Lake Onalaska	Electrofish? Bald eagle, waterfowl	WIDNR FWS

Status of HREP Project Evaluations

2015 Monitoring Activities: Post-Construction

Pool	Name	Type	Lead
8	Pool 8 Islands	LTRM Electrofish Winter/Summer wq, temp **Bald eagle, waterfowl**	Field Stations WIDNR WIDNR FWS
9	Capoli	Electrofish **Velocity/Discharge** **Bald eagle, waterfowl**	WIDNR MVP FWS
9	Lansing Big Lake	Electrofish **Bald eagle, waterfowl**	WIDNR FWS

XX = Completed in 2015.
XX = Plan to be completed this fall/winter
XX = Unknown when will be completed.

Status of HREP Project Evaluations

2015 Monitoring Activities: Post-Construction

Pool	Name	Type	Lead
9	Cold Springs	Electrofish **Bald eagle**	WIDNR FWS
9	Pool 9 Islands	Electrofish **Bald eagle, waterfowl**	WIDNR FWS
10	Ambrough	Electrofish **Velocity/Discharge** **Bathymetry** **Bald eagle**	WIDNR MVP MVP FWS

XX = Completed in 2015.
XX = Plan to be completed this fall/winter
XX = Unknown when will be completed.

Status of HREP Project Evaluations

2015 Monitoring Activities – Pre and Post

Pool	Name	Type	Lead
8	All	Waterfowl Use Bald eagle nesting	USFWS
9	All	Waterfowl Use Bald eagle nesting	USFWS

XX = Completed in 2015.
XX = Plan to be completed this fall/winter
XX = Unknown when will be completed.

PERs Completed

- Rice Lake (MN River)
- Indian Slough (Pool 4)
- Finger Lakes (Pool 5)
- Small Scale Drawdown (Pools 5, 9)
- Lake Onalaska (Pool 7)
- Blackhawk Park (Pool 9)
- Pool 9 Islands (Pool 9)
- Bussey Lake (Pool 10)
- Guttenberg Ponds (Pool 11)

Upcoming PERs

- Ambrough Slough
- Island 42 (addendum)
- Polander
- Trempealeau NWR
- Pool 8 Phase II

Questions?

Fish and Wildlife Work Group

Reno Bottoms

A potential bottomland forest project

22 Oct 2015

US Army Corps of Engineers
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Background

- NESP LD8 Embankment Modifications Project, FY05-11
- NESP Reno Floodplain Forest Restoration, FY07-11
- HGM Workshop for the Reno Bottoms, Sep 2009
- Floodplain Forest Workshop – Dubuque, Sep 2015

NESP LD8 Embankment Modifications Project – FY05-11

The following project features will be considered as a part of this project:

• Restoring/improving seasonal flow conveyance through the embankment.

• Improving floodplain forest and vegetation impacted by altered hydraulics.

• Improving downstream habitat in secondary and tertiary channels.

• Protecting backwater habitat from future degredation.

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NESP Reno Floodplain Forest Restoration Project – FY07-11

PROJECT FEATURES:

• backwater dredging and placement of fine material over 100 acres of low lying area at 1-2' additional elevation to improve site conditions for tree planting; plant and protect mast and other native tree species

• remove herbaceous biomass from 50 additional acres of planting area; collect, plant and protect propagules of early successional tree species on 25 acres; plant and protect other native tree seedlings on remaining 25 acres

• control undesirable vegetation around seedlings for 3-5 growing seasons

• monitor tree survival and growth for 3-5 years

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NESP Reno Floodplain Forest Restoration Project – FY07-11

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HGM Workshop for the Reno Bottoms – Sep 2009

Contract Work Item:

- Conduct the 2-day HGM workshop in the La Crosse, WI area on or before 30 September 2009. Ensure that the workshop HGM evaluation of ecosystem restoration and management options for the NESP Reno Bottoms Forest Restoration and LD8 Embankment Modifications Projects includes discussion and conclusions regarding various hydrological alternatives and their potential effect on vegetation types and ecosystem function.

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HGM Workshop for the Reno Bottoms – Sep 2009

Generally, workshop participants identified the following items as desirable goals for the Reno Bottoms area:

- Restore hydrology to more closely emulate pre-lock and dam seasonal and long-term dynamics
- Maintain and restore healthy and diverse floodplain forest communities in appropriate high elevation locations
- Sustain productive herbaceous marsh, wet meadow, S/S, and aquatic communities in appropriate HGM-defined locations
- Evaluate the potential to restore some limited prairie on the highest elevations on the Upper Iowa River tributary fan
- Improve slough systems to restore topographic and flow integrity under more natural hydrographs including provision of deeper water overwintering fish habitat
- Restore topographic integrity of Miss River channel borders and primary tributary channels and borders
- Ultimately develop a water/habitat mgmt plan for the site to operate redesigned water-control structures
- Conduct all project developments in a carefully engineered, and temporarily staged, pattern with accompanying "adaptive management" monitoring and evaluation

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Floodplain Forest Workshop – Dubuque, Sep 2015

Day 1 - 15 September 2015

8:00 – 12:00 Landscape Level Considerations

8:00	Historical back drop of the UMR floodplain and current effect of climate change (Mickey Heitmeyer)
9:00	Upper Mississippi River Systemic Forest Stewardship Plan (Lyle Guyon)
9:30	Habitat goals and objectives (Stephen Winter)
10:00	Break
10:15	Biodiversity patterns at landscape scales: implications for floodplain vegetation management (Nathan De Jager)
11:15	Native plant communities of floodplain forests (Hannah Texler)

16 Sep – Breakfast Meeting; Informal review of recent work at Reno Bottoms and discussion of future mgmt and research opportunities

- Form Reno Team?
- Product Project Fact Sheet?

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- ADDITIONAL BACKGROUND
- GROUP DISCUSSION

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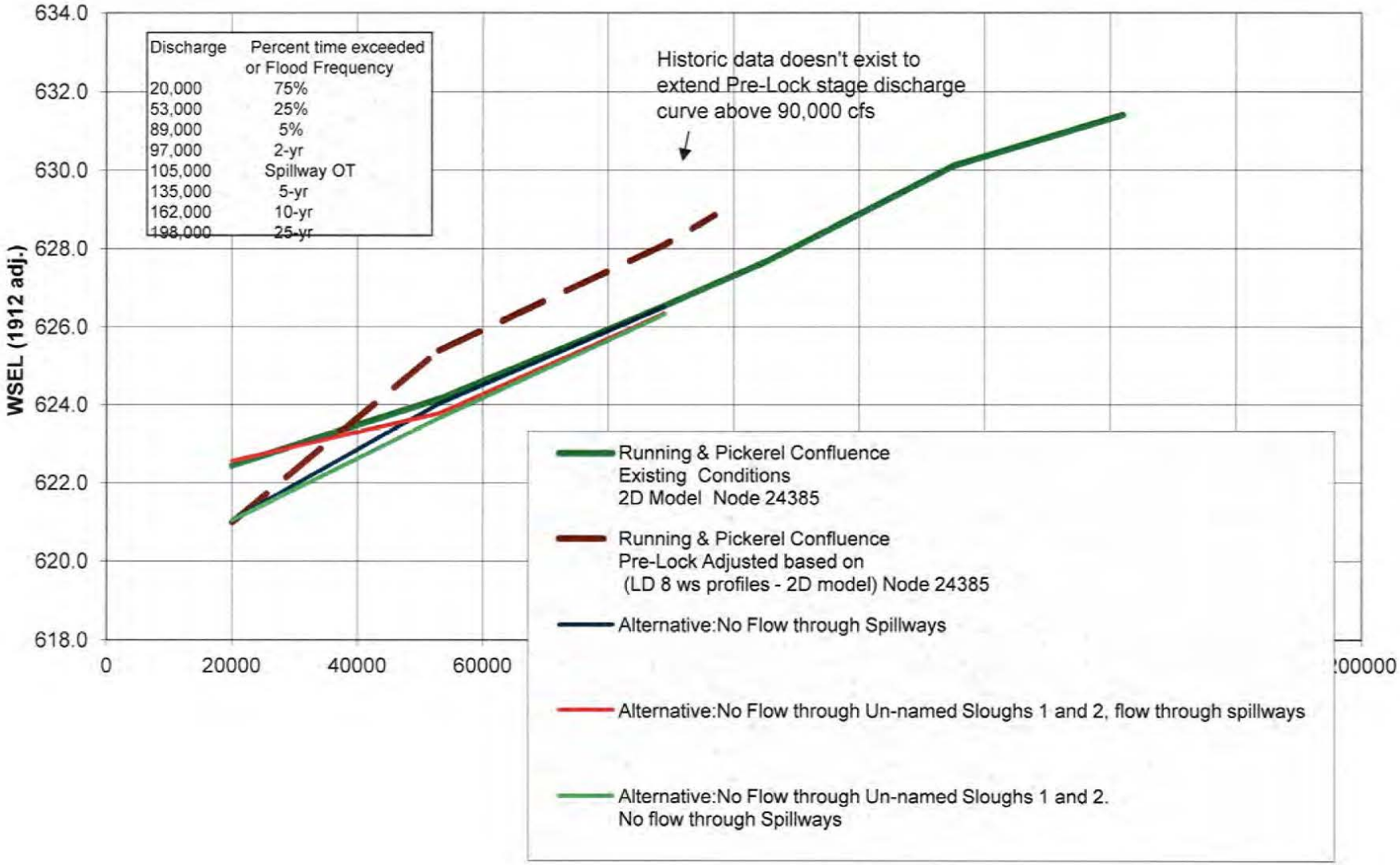
Stage Discharge Relationships, Reno Bottoms (Running & Pickerel Slough Confluence)



UNIT 5:
THE NFIP FLOODPLAIN MANAGEMENT REQUIREMENTS

In this unit

This unit reviews the NFIP standards for floodplain development, including:

- What maps, base flood elevations and other flood data must be used,
- When permits are required,
- Ensuring that new development does not cause increased flooding elsewhere,
- Standards to ensure that new buildings will be protected from the base flood, and
- Additional requirements for certain types of development.

Unit 6 reviews more restrictive standards that may be required or recommended for your community. Units 7 through 10 provide guidance on how to administer a program that fulfills the requirements spelled out in this unit.

tification to ensure that a development project will not obstruct flood flows and cause increased flooding on other property. This approach is recommended for all other riverine floodplains without a mapped floodway.

In riverine floodplains where no floodway has been designated, the review must demonstrate that the *cumulative* effect of the proposed development, when combined with all other existing and anticipated development:

- Will not increase the water surface elevation of the base flood more than one foot at any point within the community, and
- Is consistent with the technical criteria contained in Chapter 5 (Hydraulic Analyses) of the Flood Insurance Study: Guidelines and Specifications for Study Contractors, FEMA-37, 1995.

This review must be required for all development projects, although you may make the same judgments on minor projects as for floodways. You should pay particular attention to developments that may create a greater than one-foot increase in flood stages, such as bridges, road embankments, buildings and large fills.

Note: In some states, floodways are mapped based on allowing flood heights to increase by less than one foot. In those states, the encroachment certification must be based on that more restrictive state standard, not the FEMA standard that allows a one-foot rise.

ALLOWABLE INCREASES IN FLOOD HEIGHTS

In some situations, it may be in the public interest to allow increase in flood heights greater than those allowed under the NFIP regulations.

For example, it would be hard to build a flood control reservoir without affecting flood heights. Because a dam would have a major impact on flood heights, there needs to be a way to permit such projects, especially those that are intended to reduce flooding.

However, when the project will change the flood level, maps must be changed to reflect the new hazard.

> ***44 CFR 60.3(d)(4)*** *Notwithstanding any other provisions of § 60.3, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first applies for a conditional FIRM and floodway revision, fulfills the requirements for such revisions as established under the provisions of § 65.12, and receives the approval of the Administrator.*

If your community proposes to permit an encroachment in the floodway or the floodplain that will cause increases in the BFE in excess of the allowable level,

you're required to apply to the FEMA Regional Office for *conditional* approval of such action prior to permitting the project to occur.

As part of your application for conditional approval, you must submit:

- A complete application and letter of request for conditional approval of a change in the FIRM or a Conditional Letter of Map Revision (CLOMR), along with the appropriate fee for the change (contact the FEMA Regional Office for the fee amount).
- An evaluation of alternatives which, if carried out, would not result in an increase in the BFE more than allowed, along with documentation as to why these alternatives are not feasible.
- Documentation of individual legal notice to all affected property owners (anyone affected by the increased flood elevations, within and outside of the community) explaining the impact of the proposed action on their properties.
- Concurrence, in writing, from the chief executive officer of any other communities affected by the proposed actions.
- Certification that no structures are located in areas which would be affected by the increased BFE (unless they have been purchased for relocation or demolition).
- A request for revision of BFE determinations in accordance with the provisions of 44 CFR 65.6 of the FEMA regulations.

Upon receipt of the FEMA conditional approval of the map change and prior to approving the proposed encroachments, you must provide evidence to FEMA that your community's floodplain management ordinance incorporates the post-project condition BFEs.

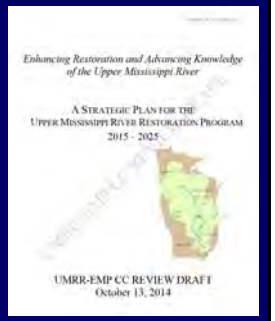
Assessing the Ecological Resilience of the Upper Mississippi River System

Mississippi River Research Consortium
24 April 2015
Jeff Houser USGS
Upper Midwest Environmental Sciences Center

Acknowledgements: Nathan De Jager, Brian Ickes, Ken Lubinski, Barry Johnson, James Rogala, Bill Richardson, Jennie Sauer, and Yao Yin

UMRR Vision Statement

"A healthier and more resilient Upper Mississippi River Ecosystem that sustains the river's multiple uses."



Growing agency interest in resilience

- **"A healthier and more resilient Upper Mississippi River Ecosystem that sustains the river's multiple uses."**– UMRR 2015-2025 Strategic Plan.
- **"Healthy, resilient landscapes…"**-- USDA Forest Service, Interim Directive in Forest Service Manual: Ecological Restoration and Resilience (2009)
- "…**important to support ecological resilience**…"--USFWS, Strategic Plan for Responding to Accelerating Climate Change…(2010)
- "…**develop resilience and adaptive strategies**…"--US Bureau of Reclamation, Landscape conservation cooperatives (2010)

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Ecological resilience

- Concept has been around for 40 years.
  - Holling, C.S. 1973. *Resilience and stability of ecological systems.* Annual Review of Ecology and Systematics 4:1-23.
- Discussion largely academic for much of that time.
- Recent interest in applying concept in natural resource management.
- Applied examples of the use of resilience in natural resource management remain scarce.
- The challenge: Applying resilience concepts to the UMRS…

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Resilience—what does it mean?

Many definitions…

…only a few meanings

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(Brand and Jax. 2007. Ecology and Society.)

Resilience: two prominent meanings*

- Engineering resilience: stability
- Ecological resilience: long-term persistence
  - *"capacity of a system to undergo disturbance and maintain its functions and controls….the magnitude of disturbance the system can tolerate and still persist"* (Gunderson & Holling 2001).

*Holling, C.S. 1996. Engineering resilience versus ecological resilience. *In Engineering within ecological constraints. Edited by P.C. Schulze. National Academy Press, Washington, DC pp. 31-44.*

Resilience metaphor: engineering resilience

System stable at a single equilbrium

"Disturbance" - shake cup

-Engineering resilience – tendency of a system to return to an equilibrium following a disturbance

Adapted from: Gunderson, L.H. & C.J. Walters. 2002. Resilience of wet landscapes of southern Florida. In: Gunderson, L.H & L. Pritchard, eds. Resilience and the behavior of large-scale systems. Island Press, 2002.

Resilience metaphor: ecological resilience

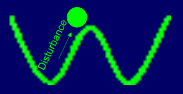
-There are multiple possible equilibria--more than one cup

-Disturbance can move the marble into a different cup representing a different ecosystem state.

-Ecological resilience:
- How likely the marble is to move into a different cup.
-Change in resilience: change in breadth/depth of cup.

Adapted from: Gunderson, L.H. & C.J. Walters. 2002. Resilience of wet landscapes of southern Florida. In: Gunderson, L.H & L. Pritchard, eds. Resilience and the behavior of large-scale systems. Island Press, 2002.

Ecosystem resilience: marble and cup metaphor extended



Ecosystem may respond rapidly and irreversibly if/when these slow variables cross a threshold.

Marble– components that respond quickly to disturbances in the ecosystem.
- Water clarity
- Vegetation abundance

Disturbance (shakes cup):
-Pushes marble around
-E.g., Large flood event

Cup: represents a particular ecosystem "state".
- shape defined by slowly changing variables in the system:
-Bathymetry/floodplain elevation
-Catchment land use
-Abundance/diversity of long-lived organisms

Fundamental questions for applying ecological resilience to the UMRS:

- What are the rapidly responding ecosystem characteristics("marbles") of greatest interest?
- Some *possible* examples:
  - water clarity
  - bluegill abundance
  - SAV abundance and distribution

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Fundamental questions for applying ecological resilience to the UMR:

- What disturbances ("shakes") are of greatest concern?
- Some *possible* examples:
  - Climate change
  - Large floods
  - Multiple years of exceptionally high or low flow
  - Species invasions or extirpations
  - Modifications for navigation
  - Completion of locks & dams, wing dams, closing dams, etc.

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Fundamental questions for applying ecological resilience to the UMR:

- What defines the current "state" of the UMRS ecosystem (depth and breadth of the "cup")
- Answer may differ by geomorphic reach
- Some *possible* examples:
  - Bathymetry and distribution of floodplain elevation
  - Hydrologic regime
  - Fish and vegetation species community composition
  - Basin land use (sediment and nutrient input)
- Is the current "state" of the ecosystem acceptable?

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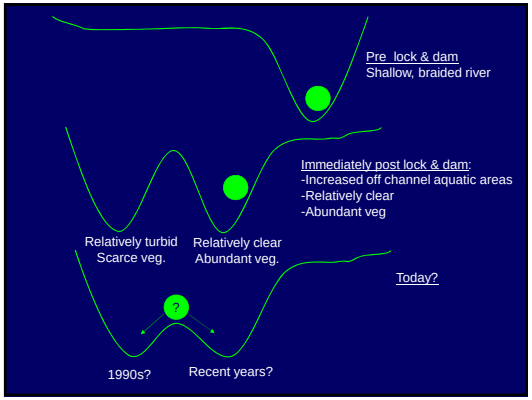

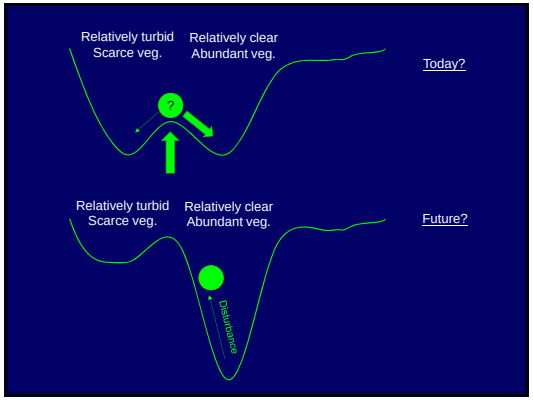

What contributes to ecological resilience in the UMRS
(determines the depth and breadth of the "cup")

- Longitudinal orientation and connectivity
  - Provides access to a wide range of conditions
  - Buffers against long term variation in climate
  - Management: fish passage at locks & dams

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What contributes to ecological resilience in the UMR
(determines the depth and breadth of the "cup")

- Lateral diversity
  - Broad range of flow, depth, clarity conditions in any given year.
  - Mobile species can find "acceptable" habitat despite annual and seasonal variation in local conditions.
  - Provides refugia for vegetation in otherwise inhospitable years.
  - Management:
    - Alteration of lateral diversity (e.g., dredging, island construction)
    - Alteration of connectivity among various aquatic areas (e.g., closing dams)

What contributes to ecological resilience in the UMR
(determines the depth and breadth of the "cup")

- Biodiversity: fish
  - Greater biodiversity may provide enhanced resilience.
  - Management: changes in fish community composition due to invasive species.
  - What changes are occurring? What are the implication for the ecosystem?

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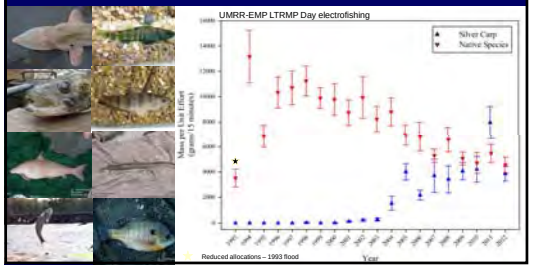
Community level effects, La Grange Reach of the Illinois River
UMRR-EMP LTRMP data sources
Ickes (in review)

http://www.umesc.usgs.gov/data_library/fisheries/fish_page.html

Ickes, B.S. April 21, 2014. The Irony of Carp. Institute of Advanced Studies, River of Life Program, University of Minnesota, Northrup Hall, Minneapolis, MN (http://ias.umn.edu/2014/04/21/irony-of-carp/) Keynote lecture.

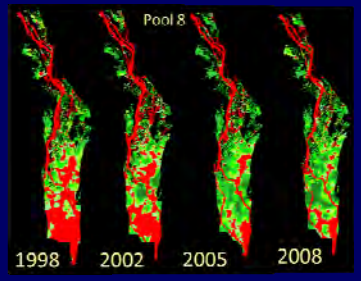


What contributes to ecological resilience in the UMR
(determines the depth and breadth of the "cup")

- Biodiversity: vegetation
  - Species differ in their tolerance of turbidity, flow, etc.
  - Allows SAV to persist across a wide range of conditions
  - What changes are occurring? What are the implications for the ecosystem?

USGS

SAV changes in Pool 8



http://www.umesc.usgs.gov/data_library/vegetation/graphical/surface_distribution_maps.shtml

Figure credit: Yao Yin, Jim Rogala, Ben Schlifer

What contributes to ecological resilience in the UMR
(determines the depth and breadth of the "cup")

- Hydrologic variability (seasonal and annual)
  - Locks and dams have removed the low end of the hydrograph
  - Management: water level management (drawdowns)

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A few questions that need answers

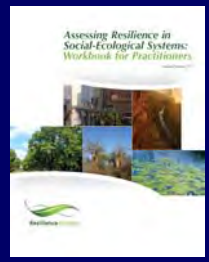
- What are the critical, slowly changing variables that define the "cup" that constrains the current state of the UMR?
- Some possibilities:
  - Catchment land use
    - Proportion tilled
    - Fertilizer application rates
  - Sediment accumulation in off-channel areas:
    - Loss of large-scale hydrogeomorphic diversity
  - Nutrient accumulation in sediments
    - Increased free floating plants and filamentous algae in backwaters.
  - Fundamental changes in fish populations due to species invasions
  - Propagule bank for vegation

A few questions that need answers

- Where is the current state acceptable, where is it not?
- What do we know about other states that are possible given the myriad of management constraints?
- What would the UMR look like in 25, 50, 100 years with no additional management actions?
  - Which of those changes would we most like to prevent?

Next steps for assessing the resilience of the UMR…

- Initial miniworkshop Dec 2015 / Jan 2016
- Discussion of output from that workshop with larger group for feedback, criticism, and modification.
  - LTRM Science meeting Winter 2015/16 ?
  - UMRCC 2016 ?



http://www.resalliance.org/

Acknowledgements

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