

**Minutes of the
Upper Mississippi River Restoration Program
Coordinating Committee**

**February 11, 2015
Quarterly Meeting**

**Holiday Inn and Conference Center
Rock Island, Illinois**

Gary Meden of the U.S. Army Corps of Engineers called the meeting to order at 8:00 a.m. on February 11, 2015. Other UMRR Coordinating Committee representatives present were Sabrina Chandler (USFWS), Mark Gaikowski (USGS), Dan Stephenson (IL DNR), Randy Schultz (IA DNR), Kevin Stauffer (MN DNR), Janet Sternburg (MO DoC), Jim Fischer (WI DNR), and Ken Westlake (USEPA) via phone. A complete list of attendees follows these minutes.

Minutes of the November 19, 2014 Meeting

Jim Fischer moved and Janet Sternburg seconded a motion to approve the draft minutes of the November 19, 2014 meeting as prepared. The motion carried unanimously.

Regional Management

Marv Hubbell explained that the Administration has directed District staff to provide more detailed allocation information in UMRR's proposed budgets. As a result, the program's budget is being characterized differently to align with Headquarters' expectations. This includes providing the science allocations in categories related to monitoring, science supporting restoration, USACE staff support, and habitat project evaluations. The amount of resources allocated to science is the same as would be provided at the given appropriations levels. Hubbell said he will present the internal allocations for FY 2015 and FY 2016 today and in future quarterly meetings based on how they are discussed in the program's budgets to the Administration. In addition, Hubbell said District staff are reformatting the budget spreadsheets provided in the UMRR Coordinating Committee quarterly meeting agenda packets to be more understandable, useful, and transparent.

FY 2015 Fiscal Update and Scope of Work

Hubbell reported that the FY 2015 Consolidated Appropriations Act was enacted on December 16, 2014 and includes \$33.17 million for UMRR. At that funding level, the program's FY 2015 internal allocations would be as follows:

- Regional Administration — \$861,000
- Regional Science and Monitoring — \$8,126,000
 - Long term resource monitoring — \$5,495,000
 - Regional science in support of restoration — \$1,907,000
 - Regional science staff support — \$69,000
 - Habitat project evaluations — \$655,000

- Habitat Restoration — \$24,183,000
 - Regional science support — \$70,000
 - MVP — \$7,234,000
 - MVR — \$9,645,000
 - MVS — \$7,234,000

Hubbell applauded partners' exceptional work to continue executing strongly.

President's FY 2016 Budget Request

Hubbell reported that the President's FY 2016 budget request includes \$19.787 million for UMRR. This represents a decrease of \$13.383 million from FY 2015, and is a result of increased competition from other USACE ecosystem restoration projects for construction funding, including Everglades and Chesapeake Bay. The final FY 2016 appropriation is unknown. Gary Meden recognized that District and Division staff worked closely with Headquarters and the Office of Management and Budget (OMB) to illustrate the value of funding for UMRR as well as to articulate the funding needs for long term resource monitoring in order to meet UMRR's authorization requirements and further understanding of the complex river system. UMRR's FY 2016 situation appeared to be much worse at various times during the budget development.

Under the President's FY 2016 budget scenario, the program's internal allocations would be as follows:

- Regional Administration — \$741,000
- Regional Science and Monitoring — \$6,567,000
 - Long term resource monitoring — \$4,500,000
 - Regional science in support of restoration — \$963,000
 - Regional science staff support — \$300,000
 - Habitat project evaluations — \$804,000
- Habitat Restoration — \$12,479,000
 - Regional science support — \$100,000
 - MVP — \$3,425,000
 - MVR — \$4,745,000
 - MVS — \$4,209,000

[Note: This District habitat restoration funds are not reflective of the historical split, but rather of program priorities and execution capabilities.]

Hubbell explained that Headquarters directed that base monitoring be funded at \$4.5 million, while allowing for science funding in other categories. Through these other categories, there is flexibility to fund additional analyses and support monitoring efforts. Hubbell recognized the difficulty for partners in moving from \$5.3 million in base monitoring to \$4.5 million. A February 19 conference call is scheduled with field station leaders to overview the FY 2016 science allocations per the President's budget and discuss any questions. Hubbell said he plans to hold more frequent calls with field stations leaders in the coming months regarding their FY 2016 budgets.

Hubbell said Headquarters issued guidance for developing the FY 2017 budget. District staff will initiate FY 2017 planning for UMRR shortly.

Jim Fischer expressed optimism that Congress will appropriate FY 2016 funds at a higher level than the President's budget for UMRR that will allow for the long term monitoring infrastructure to remain functional. Fischer applauded District staff who were involved in discussions with the Administration about the program's FY 2016 budget. He expressed concern with the long term monitoring allocation, noting that it is less than funding levels needed to maintain the continuity and integrity of the data set. He emphasized the importance that the program continues to advance UMRR's FY 2015-2025 Strategic Plan goals and objectives. Kevin Stauffer agreed with Fischer's comments, and expressed concern that the Administration appears to undervalue the program's science. Hubbell agreed and said he anticipates more dialogue with the Administration about UMRR's budget. He noted that it is rare for the Administration to provide District staff with this level of detail regarding its intentions.

In response to a question from Janet Sternburg, Hubbell said he anticipates that the Administration will seek more detailed budget proposals in the future. In addition, the program will continue to face increased competition for funding from USACE's other ecosystem restoration programs especially as USACE's total budget continues to be flat or decline. Meden added that a primary reason that UMRR received full authorized funding recently was the lack of other ecosystem projects able to execute. But that has since changed. Sternburg asked what partners can do to highlight UMRR's need for greater funding and increase its ability to compete nationally. Hubbell said UMRR has several habitat projects that will be completed in the next two years that will help showcase the program's accomplishments as well as accountability. At a minimum, it will help maintain UMRR's position and keep the program competitive. Meden added that OMB and the Administration consider partner input. He said the 2016 UMRR Report to Congress will also be an opportunity to illustrate the program's accomplishments.

In response to a question from Ken Barr, Hubbell said each District sets its own priorities for habitat projects. The three UMR Districts evaluate these projects together based on program priorities and resource capabilities, and then present them to MVD and Headquarters for consideration. The Administration expressed more interest in projects in construction rather than planning. However, District staff were able to make the case for project planning to provide long term capabilities.

Randy Shultz expressed appreciation to USACE staff for convening a call with field stations to discuss the budgets. Fischer thanked UMRBA for its advocacy efforts on behalf of the program.

Hubbell said he also anticipates convening UMRR's *ad hoc* funding group to consider programmatic implications from the reduced funding.

FY 2015-2025 UMRR Strategic Plan Implementation

Hubbell reported that, following its November 19, 2014 quarterly meeting, the UMRR Coordinating Committee established a team to develop an operational plan to focus program implementation on achieving the FY 2015-2025 UMRR Strategic Plan's vision, goals, and objectives. Team members include Andy Casper (Illinois River Biological Field Station), Kevin Stauffer (MNDNR); Gretchen Benjamin (TNC); Dru Buntin and Kirsten Mickelsen (UMRBA), and Marv Hubbell, Kat McCain, and Tom Novak (USACE); Tim Yager (USFWS); and Jeff Houser (USGS). Hubbell said the team held its first meeting held on January 20-22, 2015 in St. Paul. He explained that the team struggled a bit with the appropriate level of detail. There needs to be enough direction to explain the Strategic Plan's intentions while still retaining flexibility and innovation in program implementation. The team developed an operational plan framework and identified key implementing actions for the Strategic Plan's objectives. Ultimately, the team's initial recommendations are to create a communications plan, establish a habitat team that will function similar to the A-Team, update the Habitat Needs Assessment, and increase transparency in budgets and program implementation. The team plans to refine the framework in the next couple months before sharing a version more broadly with the partnership.

Kevin Stauffer echoed Hubbell's conclusions of the team's first meeting and acknowledged the difficulty of balancing the amount of detail that provides enough direction but does not become too prescriptive of partners' work. Fischer said the team's approach for referencing the strategic planning team's tabled action ideas was helpful.

Update on Non-Federal Project Partnership Agreements

Meden said USACE's cost share agreements have evolved over time. Recently, USACE revised the agreements, now called project partnership agreements (PPAs), adding protections for the federal government that, in turn, are more legally restrictive for non-federal sponsors. He recalled that, as an outcome of the September 19, 2014 UMRP Partner Leadership Event, program implementing partners agreed to work together to address issues related to non-federal sponsors' ability to execute PPAs. Meden said the 2014 Water Resources Reform and Development Act (WRRDA) directs USACE to contract with the National Academy of Public Administration to review and make recommendations for improving the PPA template and preparation, negotiation, and approval process. That contract has not yet been awarded. Meden said he anticipates that non-federal entities will have an opportunity to participate in that evaluation, at a minimum by providing comments. He will share the relevant information with UMRP partners as the process unfolds.

In response to a question from Sternburg, Meden explained that states can request that PPAs include language providing that future obligations are subject to availability of funds. This does not apply to non-governmental organizations. Dru Buntin recalled that Col. Deschenes offered to set up a meeting with UMRBA staff and Headquarters staff to discuss the PPA issues. Meden agreed to work with UMRBA and Headquarters staff to set up that meeting.

Lean Six Sigma

Nicole Lynch, Rock Island's process improvement specialist, presented Lean Six Sigma concepts and provided initial direction on selecting programmatic areas to examine. Lynch explained that Lean Six Sigma integrates tools and techniques from Lean and Six Sigma methodologies to provide a management approach to business performance improvement. The Lean methodology focuses on eliminating waste by removing unnecessary steps in the process whereas Six Sigma reduces waste by limiting variation in performance and outputs. The results of employing the Lean methodology is reducing service lead times, improving on-time delivery performance, and reducing costs. Employ Six Sigma results in improvements to service quality and cost. Lean Six Sigma together combines the speed and power of the two methodologies, using the customer to define quality and eliminating variation to the customer requirements.

Lynch advised UMRP partners, when selecting a focal area, to employ the following steps:

- 1) Identify value levers, or customers' requirements
- 2) Identify project opportunities, or areas of interest, to explore through process improvement
- 3) Rank those project opportunities based on their estimated benefit (e.g., strategic fit and cost savings) and effort (e.g., resources required, project duration, project risk)
- 4) Define high priority project areas and assign sponsors
- 5) Prioritize potential project areas by rank of importance, and identify projects that could be Rapid Improvement Events that could be resolved in a three-day effort

Lynch recommended that partners focus on a particular piece of a process based on its relative benefit. Examining a large process in its entirety could be overwhelming and confusing. Hubbell asked how frequently the partnership should employ these process improvement techniques. Lynch explained that,

in an ideal world, the partnership would examine process improvements on a constant basis to continually seek improvements. However, periodic examinations, such as quarterly or semi-annually, may be more practicable.

Jim Fischer said he is pleased that this effort is moving forward, and recognized that it will be challenging to determine which aspects of the program to select. Fischer suggested that the UMRR's project planning process would greatly benefit from a Lean Six Sigma evaluation. Hubbell suggested that it may be useful for Corps staff to give an overview of efforts currently being made to standardize, and make more efficient, the project planning processes among all three Districts at a future UMRR Coordinating Committee quarterly meeting. Janet Sternburg agreed with Fischer's suggestion. Sternburg recalled that the partnership made a concerted effort to institute substantial efficiency improvements to the long term resource monitoring implementation, suggesting that it is now time to examine habitat project implementation. She noted that increased and better documentation of planning and design decisions might help to eliminate unnecessary reiterative discussions following staff turnover. Lynch acknowledged the importance of determining any sideboards upfront, including regulatory constraints.

In response to a question from Bob Clevestine, Lynch said USACE staff can certainly provide Lean Six Sigma training to partners working on the process if desired. Lynch offered that partners first hold a meeting to identify the programmatic aspect to evaluate through continuous improvement, and then consider training given the associated funding and time.

Fischer recognized that process improvement will be beneficial for the program in the face of declining budgets and thus is an important investment for the future. He urged that current funding is allocated to this effort.

In response to a question from Kevin Stauffer, Hubbell said he will send an email to the UMRR Coordinating Committee shortly to request their top five priorities to address through Lean Six Sigma. At its May 6 quarterly meeting, the Committee will establish a team and select one or two programmatic areas to address. Lynch said she assumes that some programmatic areas will be suggested multiple times, reflecting partners' priorities. Sternburg requested that clear directions are provided in the request, including the level of detail desired.

Program Database

Michael Dougherty presented on the purposes, design, construction, and applications of the UMRR Database, as well as ongoing work to input historical program information and digitize various features. Dougherty said the Database's primary purpose is to combine key UMRR information into a single database application to produce priority program- and project-level reports and analyses. The goals of the Database are to 1) standardize reporting to increase awareness of UMRR's accomplishments of its strategic goals and objectives and 2) support habitat project design, analysis, and performance monitoring to increase effectiveness of applied ecosystem restoration science. Dougherty explained that UMRR developed its first HREP database in 1997 and has created several others since then, but they all experienced similar problems. These include a single-user platform that does not allow for efficient multiple-user editing; geographic data and project summary data managed in different, incompatible formats; and the inability to coordinate and standardize updates among the three UMR Districts. Because of these issues, none of the databases ever reached a stage of maturity that would allow them to be useful for analyzing restoration effectiveness. Dougherty explained how those issues have been eliminated in a new, user-friendly database, which should provide long-term utility for program partners. The new UMRR Database integrates and georeferences information related to the program's habitat projects. It is a web-based application that allows for multiple, simultaneous editors within the three UMR Districts. Dougherty said the Database was created using Oracle Application Express

software, which is a fully supported, no-cost, low maintenance option that includes all available Oracle editions. The software is fully embraced by USACE so it will not change in the foreseeable future. Using only a web-browser, users can develop and deploy professional applications that are both fast and secure.

Dougherty listed several advantages of the Oracle Application Express software. It links all program data together, records programmatic history on key issues, standardizes and tailors reporting, allows accessibility to implementing partners, and ensures data quality and consistency. The Database is not a replacement for the program's existing data systems. Thus far in the Database's development, USACE staff have compiled current and historic habitat project data from all three UMR Districts, added habitat project total cost estimates, and combined habitat project status, spatial locations, financial costs, sponsors, documents, and other relevant information into a single framework. This will allow for generating comprehensive reports. In addition, USACE staff have developed several standardized reports, such as Congressional fact sheets; updated the user authentication model to support the definition of fine-grained user roles; performed several quality assurance checks of specific data elements; and established a standing PDT to guide continued Database development and maintenance.

Dougherty explained that current efforts to develop the Database include the following:

- a) Defining roles and responsibilities among USACE staff for making updates and doing quality assurance
- b) Digitizing key habitat project documents and UMRR Coordinating Committee meeting packets and inputting them into the Database
- c) Incorporating historical UMRR financial cost data and developing a plan for making routine updates
- d) Updating points of contact for habitat project specialty areas
- e) Inputting habitat project goals, objectives, and criteria
- f) Developing a standard data model for storing habitat project restoration features with three-dimensional geometry

As the Database continues to mature, Dougherty said USACE staff will migrate habitat project features to a new data model, update the geometry to three-dimensional, and establish a standard operating procedure. USACE staff plan to input habitat project images, contacts, and performance evaluation reports; automate the creation of J-Sheet reports, UMRR Coordinating Committee financial reports, and habitat project web fact sheet reports; and perform quality assurance of the habitat project boundaries and features with the project sponsors. In addition, USACE staff plan to make the Database accessible to UMR partners via a public-facing server in the next six months to a year.

In response to a question from Randy Schultz, Dougherty said USACE will provide instructions to partners about how to navigate the Database and utilize the various features. Sternburg thanked Dougherty for the presentation. In response to a question from Sternburg, Dougherty confirmed that partners will be able to download GIS and other data files, such as acres per type of habitat and cost per acre of habitat. The Database will also offer web-based mapping applications. In response to a question from Jennie Sauer, Dougherty said USACE staff are scanning files with optimal character recognition to allow for full text searching. The particular software to support that capability has not yet been determined. Hubbell noted that the Database is not intended to replace any other UMRR-related database. He expressed appreciation to Dougherty for the great work in building the Database so that it will be easily maintained and user friendly.

2016 UMRR Report to Congress

Hubbell said he anticipates that USACE will soon finalize a contract with UMRBA to write and publish the 2016 UMRR Report to Congress (RTC). A first draft plan is scheduled to be distributed for partner review in August 2015, with a second review anticipated for late December 2015. Headquarters and MVD's official review is scheduled for spring 2016 with a final report incorporating graphics submitted to Headquarters in November 2016. In response to a question from Kirsten Mickelsen, Gabe Harris confirmed that MVD supports the outlined review schedule.

In response to a question from Karen Hagerty, Hubbell explained that UMRR's RTCs explore implementation issues and challenges and recommend any necessary adjustments to the program's authorization. The program's three RTCs have approached this in various ways, with the 2004 report focusing on programmatic implementation improvements in addition to authorization changes. Kirsten Mickelsen said she will contact UMRR Coordinating Committee members shortly to identify the issues to address in the report. The selected issues will be presented at the May 6, 2015 UMRR Coordinating Committee quarterly meeting for input. Ken Westlake suggested that the 2016 RTC discuss the challenges associated with habitat project partnership agreements (PPAs). Gary Meden noted that, depending on the National Academy of Public Administration's PPA review schedule, its recommendations may be included in the RTC issue write-up.

In response to a question from Hubbell, Mickelsen said the science section of the report will be framed similar to the FY 2015-2025 UMRR Strategic Plan's outcomes and strategies. She said an annotated outline of the science chapter has been developed. A more lengthy framework of the chapter will be shared with Jeff Houser and Karen Hagerty shortly. Mickelsen plans to work with Houser and Hagerty to refine the messages and identify the accomplishments to highlight.

In response to a question from Fischer regarding staff time expectations, Mickelsen referred to the anticipated review dates and said individual staff may be contacted to help develop certain segments of the report.

Public Outreach

Hubbell announced that, as an outcome of the January 20-22, 2015 UMRR operational planning meeting, a communications planning team will be established to consider UMRR's external communications and outreach. Hubbell said Kevin Bluhm will be asked to lead the team. Mickelsen added that external communications will be tailored both to the general public and elected officials as well as watershed programs and activities affecting the health of the UMRS. She said the operational planning team identified some individuals to participate on the team. Tim Yager noted that a USFWS human dimensions specialist may be able to provide expertise to the communications team. Chuck Theiling encouraged that an individual within the program is involved on the team. Kevin Stauffer said the operational planning team's intention with involving a communications professional is to get help in refining key messages as well as their dissemination.

Jim Fischer said Wisconsin DNR leadership are planning a "Bring the River to Madison" event to inform its state leadership about UMRS-related issues and benefits to the state. The event will likely be held in late summer 2015.

Brian Markert announced that the Batchtown habitat project received the 2014 Chief of Engineers Environmental Honor Award Recognition in a March 4, 2015 ceremony. The project was selected because of its innovative features and designs that will serve as a model in future ecosystem restoration projects.

Habitat Rehabilitation and Enhancement Projects

District Reports

St. Louis District

Brian Markert said the St. Louis District has been very active in advancing UMRR habitat projects. Markert said design work on Rip Rap Landing is pending receipt of a sponsor support letter from Illinois DNR. District staff hope to engage the agency's new leadership soon following the change in Administration. MVS is calibrating a physical model for Piasa and Eagles Nest Islands featuring the primary flow and island creation. The model will be used to develop and evaluate alternatives. A planning team has been established for Harlow and Wilkinson Islands and will begin work on the feasibility study soon. Markert said District staff are evaluating new potential habitat projects to begin planning in the next two to five years, as well as data needs to begin planning on those projects. The District's primary design effort is Clarence Cannon, and its construction work continues on Ted Shanks and Pools 25 and 26 Islands. Markert mentioned that MVS Commander Col. Anthony Mitchell toured the District's habitat project sites.

St. Paul District

Marv Hubbell said MVP awarded a \$12.3 million construction contract for Harpers Slough, with the \$6 million base contract awarded in the last weeks of FY 2014 and two options totaling \$5.9 million awarded October 2014. Mike Griffin observed that this contracting approach of providing full funding at the outset resulted in substantial cost savings.

Rock Island District

Hubbell said MVR is accelerating its planning efforts on Beaver Island and anticipates completing its feasibility report in FY 2015 or FY 2016. The District is also finalizing the feasibility report for the Emiquon East project. Six projects are currently under construction in this fiscal year. MVR staff anticipate awarding a construction contract for Pool 2 Stage II Phases 2 and 4 together in the third quarter of FY 2015 and Huron Island Stage II in FY 2016. Hubbell said District staff are still awaiting Headquarters' decision on whether Illinois DNR will receive excess credits for construction work related to flood damages to Rice Lake.

Planning New Starts

Hubbell recognized that the pressure to select new projects for planning has lessened given the reduced funding in the President's FY 2016 budget request for UMRR and likely decreasing appropriations in out-years. Per the FY 2015-2025 UMRR Strategic Plan, the concepts of health and resilience will be integrated into the planning process to inform project selection. This will include the use of indicators of ecological health and resilience. Hubbell anticipates issuing a contract to UMESC in March to lead an interdisciplinary team that will define indicators of ecosystem health and resilience and link the indicators to the process of identifying habitat projects. The planned scheduled is for the team to begin this effort in spring or summer of 2015 and completing it at the end of FY 2017.

Hubbell said a team to identify the next generation of projects will be convened in fall 2015. The team will develop an outline, assemble key data sources, identify members of the system ecological team (SET), and utilize information from an updated habitat needs assessment (HNA). Hubbell anticipates that the process of selecting habitat projects will take two years.

Chuck Theiling asked how the “habitat team” being proposed by the operational planning team relates to project selection and whether there is potential overlap with the SET. Hubbell explained that the team’s concept is fairly new. The operational planning team envisioned that the habitat team would have similar roles as the A-Team. The Team would discuss technical information related to project features and restoration approaches.

Griffin recalled that the UMRR partnership has identified several potential habitat projects and suggested that they be used as a reference. In response to a question from Griffin, Hubbell said partners will first identify the major stressors affecting the UMRS’s health and resilience and then target restoration opportunities to address those stressors. This differs from past project selection efforts where the process would start by identifying potential project sponsors and then evaluate them based on their associated ecological benefits. The process details still have yet to be fleshed out. Hubbell said partners will be asked to develop fact sheets in a more standardized fashion to provide more consistency in comparing potential projects.

Fischer asked who will be involved on the health and resilience interdisciplinary team. Houser explained his preference to keep the group relatively small and focused, with representatives from field stations, USGS, USACE, and USFWS. In response to a question from Fischer, Houser explained that this approach diverges slightly from the initial project proposal only in the composition of the working group. Hubbell said the expanded composition beyond only scientists is in recognition that resilience will need to be applied to habitat project planning and implementation, as well as accountability in responding to the Administration about the program’s accomplishments and ongoing need. Karen Hagerty added that the scope and associated costs are not anticipated to change from the proposal. It is only the working group that changed.

Beaver Island

Kara Mitvalsky presented Beaver Island’s plans to restore mussel habitat with features to protect Albany Island and enhance rock substrate. The project is surrounded by urban area and has received considerable public attention. Beaver Island, which is located on USFWS refuge lands on the Iowa side of Pool 14, has experienced reduced aquatic habitat diversity, floodplain forest acreage and diversity, and wetland habitat, as well as island erosion. USFWS is the project sponsor. Beaver Island’s interagency PDT conducted a literature review and mussel surveys to define general mussel habitat criteria related to substrate and water velocity and depth. With this information, the team identified areas to target for mussel conservation and enhancement.

The Bertrom McCartney mussel survey concluded that there are typically 4.8 live species per square meter, and are found in water depths of six to seven feet with velocities of greater than three feet per second. The preferred substrate is river washed gravel/cobble with crushed quarry rock. A preliminary analysis of case studies indicates that conditions having greatest mussel density include a substrate mix of cobble, gravel, sand, silt, and clay with average water depth of 3.7 feet.

Mitvalsky said the PDT conducted a mussel survey of Beaver Island and collected 886 individual mussels of 17 different species. She overviewed the project’s potential features, including the protection and enhancement of Albany Island for mussel habitat by reducing water velocities and providing overwintering habitat. Riprap at the head end and one-third of length along the island will protect the island and provide the desired substrate for the mussels. The project will also construct a chevron and linear toe protection, as well as an intermix of riprap with river-washed rock. The PDT is also considering placing substrate in Albany Slough. Mitvalsky outlined the project’s next steps, including completing the project’s preliminary design, an incremental cost analysis, alternative selection, and public review opportunities. Mitvalsky anticipates that the project’s feasibility report will be finalized in 2015 with construction initiated in 2017.

Hubbell noted that the Beaver Island mussel habitat project illustrates the value of the program's efforts to better integrate its science and restoration. Theiling acknowledged that Steve Zigler from UMESC has provided mussel research and modeling expertise to the project. Zigler developed a two-dimensional mussel model that will help refine the project's design. Janet Sternburg asked if Beaver Island is UMRR's first project with features to improve mussel habitat. Mitvalsky said Bertram McCartney Lakes [constructed in 1992] included features to improve mussel habitat, but Beaver Island is the only project to create mussel habitat since then. Hubbell clarified that Batchtown includes mussel habitat protection features. Brian Markert said MVS is exploring options for new habitat projects that would restore or protect mussel habitat.

Kraig McPeck asked about the project's criteria for success. Jon Duyvejonck explained that a monitoring plan is being developed with assistance from mussel experts Zigler and Teresa Newton. Duyvejonck recalled that Bertram McCartney provided valuable information about the desired substrate for mussel habitat. However, Beaver Island's location is more representative of the typical river system where we find larger mussel beds. Therefore, Duyvejonck said he believes this project will help determine whether managers can create larger sized mussel beds. Griffin noted that since Beaver Island has low quality habitat, improvements to the site should be readily measured and determined. McPeck emphasized the importance of documenting success and insights gained. This project has the ability to inform greater mussel restoration and mitigation efforts. Currently, mitigation for mussels involves moving the species because it is the only known successful tool.

Huron Island

Mitvalsky presented on Huron Island's project construction and the contractor's innovative approach to excavating the site. Huron Island is a 2,600-acre complex located on General Plan lands owned by the Corps and managed under the terms of successive cooperative agreements between the Corps, USFWS, and Iowa DNR. The project MOU acknowledges this relationship and places responsibility for OMRR&R with the Iowa DNR.

Mitvalsky explained that Huron Island has experienced significant impacts to its hydrology, topography, and biotic communities that includes reduced native plant and animal populations, degraded quality of remaining natural resources and plant communities, and impaired ecosystem structure and function. It is estimated that, without restoration improvements, the aquatic habitat would potentially reduce by 70 percent in the next 50 years, a large portion of the existing forest would be replaced by shrub-shrub habitats or reed canary grass, and side channel islands would continue to erode and cease to exist as spawning habitat. Mitvalsky listed the Huron Island's objectives as follows:

- Increase the areal coverage as measured in acres of emergent and submersed aquatic vegetation in backwater areas during the growing season
- Increase diversification of year-round floodplain forest and scrub-scrub habitat on Huron Island, as measured in acres
- Increase the structure and function of year-round aquatic habitat diversity, as measured by acres and native fish use of spawning, rearing, and overwintering habitat in the project area
- Maintain side channel riverine hydrodynamic, sediment transport and geomorphic processes in Huron Chute

Mitvalsky discussed the PDT's recommendations for the project's design, including increasing bathymetric and forest diversity, installing a water management control structure, and creating riprap island protection. The project's construction cost was estimated at \$12.8 million. Mitvalsky said Trade West Construction from Mesquite, Nevada received the construction contract award of \$2.66 million.

Trade West Construction's innovative approach resulted in a bid that was well-below the construction cost estimated. Even though USACE staff had reservations, the innovative approach proved to be successful. Mitvalsky provided an overview of typical dredging operations on UMRR's habitat projects for a comparison to the Trade West Construction's approach, which included constructing a berm and draining the pools to create dry conditions to enable dredging with excavators. The contractor was able to capture and move fish to deep water using an excavator. Mitvalsky said MVR staff anticipate awarding a construction contract for Stage II in FY 2016, following the completion of Stage I.

Theiling acknowledged that the design was informed by hydrologic modeling that included Nate De Jager's analysis on which species to expect at various elevations. Jim Fischer noted that this project suggests that UMRR might benefit from design-build agreements with contractors to foster more innovative designs. Mitvalsky noted that USACE has contracted certain design features before that were unsuccessful. Fischer suggested that the project planning process be evaluated through Lean Six Sigma to determine the benefits of involving contractors earlier in the planning and design process. Mitvalsky said one insight gained from Beaver Island is that project designs can be less prescriptive regarding construction techniques.

Long Term Resource Monitoring and Science

Highlights

Jeff Houser described the value of UMRR's long term resource monitoring fish data set and the capabilities that the 22-year trend data now allows for research and analysis, including the effectiveness of management approaches. Citing Mel Bower's analyses of the long term fish monitoring data in Pool 13, Houser outlined the purposes of the fish data collection and the information generated from the monitoring data. Long term monitoring of fish has significant public value as the UMRS supports multi-million dollar commercial and sport fisheries, fish are indicators of the biotic integrity of the UMRS ecosystem, and information about fish populations and communities can inform our understanding of dynamics of other organisms and physical and chemical processes. Short-term monitoring does not allow for determining factors affecting fish populations because fish populations are highly variable among years and there might be multiple possible causes that impede identification of short-term cause-and-effect relationships.

Houser said a Pool 13 long term data analysis of sex-specific age structure, growth, and mortality of black and white crappie in Pool 13 show that it is unnecessary to separate sexes when examining growth and population metrics for black and white crappie and that otoliths may only need to be collected once every five to eight years to accurately assess age and size structure. In another example, analysis of fish monitoring data in Pool 13 showed that a mandatory catch-and-release regulation of riverine largemouth bass populations had only a short-term positive effect. Long term data was necessary to determine that there was a natural population upswing in accordance with its natural variation. Mike Griffin acknowledged the importance of the Pool 13 analysis for providing management insights, such as the effectiveness of the catch-and-release regulation.

Houser said the Illinois River Biological Field Station on the La Grange Reach is evaluating population dynamics of Asian carp to better assess their ecological impact. Thus far, research is showing that three to five year old fish dominate the population. This could indicate that there is a recent lack of successful recruitment to adulthood, unless there is a gear bias towards that age group. Continued monitoring will help clarify the results. Houser said the Illinois River Biological Field Station is also evaluating population dynamics of key indicator species to inform habitat project selection, among other information and management needs.

Houser reported that the National Great Rivers Research and Education Center (NGRREC) is working cooperatively with UMRR to evaluate new monitoring platforms capable of collecting real-time data on a wide variety of water quality conditions, including the YSI PISCES Platforms that are used in the Great Rivers Ecological Observatory Networks. Houser explained that high temporal resolution data are beneficial in that the data provides insight into river ecosystem processes and improves assessments of nutrient and sediment concentrations and loadings. High resolution data detects short term associations between nitrate and discharge, while standard monitoring detects longer term associations. Analyses of the two data methods are highly correlated. Given the limitations in spatial resolution, UMRR's traditional sampling methods should be continued.

Houser said USGS is developing methods to assess mussel survival rates using passively integrated transponder tags to monitor vital rates (e.g., mortality, recruitment, growth). These tags could offer a better long term monitoring method for mussels, and provide for an indicator of ecological health and environmental changes.

Houser reported that Wisconsin DNR hired two new UMRR long term resource monitoring staff. John Kalas was hired as the water quality specialist and Dr. Deane Drake as the vegetation specialist. Jim Fischer said he is very pleased with these two new hires, who he believes have very complimentary skillsets.

USACE Science Update

Karen Hagerty said an updated FY 2014 scope of work milestone chart for science in support of restoration and management is included on pages C-9 to C-11 of the agenda packet. Hagerty reported that the UMRR Coordinating Committee endorsed via email the recommendations for FY 2015 funding for science analyses in support of restoration. She anticipates that USACE will issue the project funds in late February.

Science Highlight: UMR Landscape Ecology

Nate De Jager presented a summary of his landscape ecology research over the past several years and how that analysis can now lend insights into synthesis and significance. De Jager explained that landscape ecology analyzes relationships among various influences to the floodplain system, patterns and distributions (such as habitat or hydrology), and consequences or process (such as plant and animal growth or movement and nutrient cycling). Landscape ecology connects program managers' perspectives of improving the overall condition of the river system and local resource managers' perspectives of addressing site-specific habitat and resource limitations. A suite of landscape indicators allows for tracking the status and trends of pattern metrics, identifying potential areas for restoration, and developing a better understanding of the ecological consequences of modifications to landscape patterns.

De Jager said the three main objectives of UMRR landscape ecology research is to develop and maintain the landscape indicator graphical web browser, research of pattern-process relationships to support river-floodplain decision support modeling, and conduct syntheses using information generated from the web browser and research. While an incredible amount of information has been generated, it has not yet been synthesized into major points. This includes examining the consequences of restoration and climate change on landscape patterns and associated ecological patterns and process. Next steps include reviewing the information learned so far across multiple ecological and landscape components and distilling them into main points. In addition, UMESC staff will synthesize the results in the form of models and tools that can be used to inform restoration decisions.

De Jager provided an example of using models to quantify hydroecological patterns in order to inform where certain ecological functions are likely to be supported in different areas of the river floodplain. He said landscape modeling is challenged by its dependence on LiDAR and/or bathymetry data, flood or flow models, and solid hydro-ecological relationships. De Jager said he intends to continue fulfilling the landscape research framework priorities, which include analyzing the effects of alternative hydrological regimes and management scenarios on landscape-scale ecological distributions. Thus far, nearly twenty manuscripts of UMRS landscape ecology research have been completed. De Jager said the data sets and research are coming together at the right time to be able to examine important landscape research questions.

In response to a question from Hagerty, De Jager said the land use/land cover data is anticipated to be ready for use by the end of this fiscal year. Hagerty asked how the landscape information might be applied to selecting the next generation of habitat projects. De Jager said the landscape indicators would be very useful for identifying habitat projects that would improve larger-scale restoration needs. There are maps available on UMESC's UMRR long term resource monitoring website that would be a great reference.

Janet Sternburg suggested exploring opportunities to seek grant funding through the National Climate Science Center to support development of the river-floodplain decision support model.

Emerging Issues and Trends

Draft Invasive Species Policy Paper

Karen Hagerty recalled that she presented a draft UMRR Invasive Species Policy Paper for partner input at the UMRR Coordinating Committee's November 19, 2014 quarterly meeting. Following the meeting, Hagerty coordinated a review of the draft Policy Paper with the UMRR Coordinating Committee members via email. A revised version based on that feedback is included on page D-1 of the agenda packet. Hagerty noted that the modifications were only minor editorial changes, not any substantial changes to the policy itself.

Kevin Stauffer noted that the reporting requirement provision was strengthened. Sabrina Chandler asked if UMRR Coordinating Committee members had any questions or were prepared to offer a motion of endorsement. Mark Gaikowski asked for the individual states' reporting requirements to the USGS's Nonindigenous Aquatic Species (NAS) Alert System, and who is responsible for reporting new or rare captures under UMRR. Stauffer and Janet Sternburg said their respective states do not mandate, but rather strongly encourage, such reporting and staff do follow through. Stauffer acknowledged that there is not a well-defined process for reporting to NAS. Gaikowski suggested modifying the language to more explicitly direct partners to report to the NAS as soon as possible. Bob Clevestine offered support for Gaikowski's suggestion, noting that resource managers have a responsibility and charge to limit the spread of invasive species. Sternburg suggested adding "or encouraged" following "each UMRR partner agency is already required." Dan Stephenson added that UMRR Coordinating Committee members can provide guidance to staff to report any new or rare captures.

In response to a request for a motion from Chandler, Sternburg moved and Stauffer seconded a motion to approve the UMRR Invasive Species Policy as provided in the agenda packet, with language modifications regarding the reporting of new or rare captures or sightings of invasive species. Hagerty said she will send a revised version to the UMRR Coordinating Committee for approval.

Other Potential Issues to Explore in FY 2015

Marv Hubbell explained that UMRR Coordinating Committee agreed to identify any new emerging threats or issues that might affect program implementation at its February quarterly meetings. This recommendation came from the Implementation Issues Assessment (IIA) paper on emerging threats and issues.

Olivia Dorothy noted that UMRR's authorization covers the geographic extent of the UMRS's commercially navigable waterways. Dorothy asked if the closure of Upper St. Anthony Falls L&D will eliminate that area from UMRR's geographic scope, and whether that would result in any lost restoration opportunities. Hubbell said he will seek guidance on that question and report back at the UMRR Coordinating Committee's May 6, 2015 quarterly meeting.

The UMRR Coordinating Committee offered no new emerging trends or issues affecting UMRR implementation to explore in FY 2015.

Other Business

Future Meetings

The upcoming quarterly meetings are as follows:

- **May 2015 — St. Louis**
 - UMRBA — May 5
 - **UMRR Coordinating Committee — May 6**

- **August 2015 — La Crosse**
 - UMRBA — August 4
 - **UMRR Coordinating Committee — August 5**

- **November 2015 — St. Paul**
 - UMRBA — November 17
 - **UMRR Coordinating Committee — November 18**

With no further business, the meeting adjourned at 2:00 p.m.

**UMRR Coordinating Committee Attendance List
February 11, 2015**

UMRR Coordinating Committee Members

Gary Meden	U.S. Army Corps of Engineers, MVR
Sabrina Chandler	U.S. Fish and Wildlife Service, UMR Refuges
Mark Gaikowski	U.S. Geological Survey, UMESC
Dan Stephenson	Illinois Department of Natural Resources
Randy Shultz	Iowa Department of Natural Resources
Kevin Stauffer	Minnesota Department of Natural Resources
Janet Sternburg	Missouri Department of Conservation
Jim Fischer	Wisconsin Department of Natural Resources
Ken Westlake	U.S. Environmental Protection Agency, Region 5[On the phone]

Others In Attendance

Gabe Harris	U.S. Army Corps of Engineers, MVD
Terry Birkenstock	U.S. Army Corps of Engineers, MVP
David Potter	U.S. Army Corps of Engineers, MVP
Ken Barr	U.S. Army Corps of Engineers, MVR
Michael Dougherty	U.S. Army Corps of Engineers, MVR
Kayleigh Easter	U.S. Army Corps of Engineers, MVR
Kim Ferguson	U.S. Army Corps of Engineers, MVR
Angie Freyermuth	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Dennis Hamilton	U.S. Army Corps of Engineers, MVR
Marvin Hubbell	U.S. Army Corps of Engineers, MVR
Nicole Lynch	U.S. Army Corps of Engineers, MVR
Kara Mitvalsky	U.S. Army Corps of Engineers, MVR
Monique Savage	U.S. Army Corps of Engineers, MVR
Karla Sparks	U.S. Army Corps of Engineers, MVR
Chuck Theiling	U.S. Army Corps of Engineers, MVR
Brian Markert	U.S. Army Corps of Engineers, MVS
Sharonne Baylor	U.S. Fish and Wildlife Service, UMR Refuges
Bob Clevestine	U.S. Fish and Wildlife Service, UMR Refuges
Jon Duyvejonck	U.S. Fish and Wildlife Service, RIFO
Kraig McPeck	U.S. Fish and Wildlife Service, RIFO
Tim Yager	U.S. Fish and Wildlife Service, UMR Refuges
Nate De Jager	U.S. Geological Survey, UMESC
Jeff Houser	U.S. Geological Survey, UMESC
Jennifer Sauer	U.S. Geological Survey, UMESC
Dave Bierman	Iowa Department of Natural Resources
Mike Griffin	Iowa Department of Natural Resources
Robert Stout	Missouri Department of Natural Resources
Tom Boland	AMEC Foster Wheeler
Olivia Dorothy	American Rivers
Brad Walker	Missouri Coalition for the Environment
Josh Spies	The Nature Conservancy
Dru Buntin	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association