

Draft A-Team Minutes

Nov 6, 2014

Sara Strassman - Wisconsin, Teresa Newton – USGS, Jennie Sauer – USGS, Stephen Winter – USFWS
Jeff Houser – USGS, Andy Casper – INHS, Levi Solomon – INHS, Rich Pendleton – INHS, Nate Richards –
USACE, Nick Schlessler – Minnesota, Ken Barr – USACE, Charles Theiling – USACE, Kat McCain – USACE,
Karen Hagerty – USACE, Barry Johnson – USGS, Marvin Hubbell – USACE, Mike McClelland – Illinois,
John Chick – INHS, Scott Gritters – Iowa, Janet Sternburg – Missouri, Rob Maher – Illinois, David Potter –
USACE, Walt Popp – MN field station, Dave Herzog – MO field station

Mike McClelland—will replace Rob Maher on the A-Team, Rob will attend in spring and then hand over
to McClelland (Havana)

Corrections to minutes:

February 2014—Corps finished contracting for the MIPR, but it isn't technically "contracting", it is scope
of work and budget development—need to revise

½ MIPR for "science in support of restoration" "remaining work will be funded shortly"

Quinton was spelled incorrectly

Motion to approve Feb 21st (Gritters), second. Rob Maher will make the changes and send to Jennie for
posting on A-Team corner.

April 23 mtg:

Revise the 1st full paragraph of pg 3 to remove the term "without censorship"

Spell out "SP" with UMRR Strategic Plan

Hagerty Change: "send out RFPs by late June and get A-Team feedback on those before August"

Pg 6: Vision Hubbell: Change to NESP being authorized but not appropriated

John Chick moves to accept, Gritters move to second

Budget Update (Hubbell): FY13 started thinking probably below \$17M, ended up at \$24.5M because
they funded for construction on 3 projects, for FY14 they advanced to \$32M, FY15 looks like full
appropriation of \$33M, competition for funding in FY16 will increase

Have executed money effectively by Corps standards (99% execution rate), Capoli project added 2000
acres to area benefitted. base monitoring for FY15 is maybe only a 2% increase to that portion of
budget. "Science in support" is likely to go up to \$1.8M or higher, particularly if they are related to
restoration actions. This should not be interpreted as Corps disagreeing with the need/value of
research, but rather prioritize those that align with science to support restoration theme.

Marv understand that there are still questions about allocating funds and how budgets are presented at
UMRR-CC and UMRBA so the total expenditures in science are accounted for.

Janet: is this a short term shift so they can see how budgets are constructed or is this a long term?

Hubbell: Likely long term. We've been an exception in having retained a 'lump funds' model with an
allocation that we could expend with some of our own discretion. Move is to more centralized priorities
where it is likely that construction emphasis will come in.

Hubbell: OMB wants greater accountability toward meeting a final objective. Strategic Plan speaks of resiliency and health to get toward that request, but now we need to define those terms and get connections drawn back to the base monitoring system. We need to maintain the ability to monitor to evaluate those indicators and to truly be accountable, we have to maintain the base monitoring and trend evaluation. We'll need to have some reports that indicate what is being found (against those objectives)

Johnson: will they (ASA, HQ) look at each of these proposals and pick out the ones they like?

Hubbell: No, they will only see the breakdown of "science in support" versus base monitoring. They might argue that they don't want \$1.8M spent on "science in support", but will not weigh in on individual proposals.

Chick: how do they see the budgets come across at field stations?

Hubbell: they are worried only about the spend-out rate and expenditures, not the encumbrances. We (Corps) have the info, but it isn't loaded into the previously referenced HQ/OMB level "drill down" tool. There is a state MIPR and a USGS MIPR. The field stations are in a collective MIPR. The Corps benefits from having the states carry the program between the federal appropriations & pay outs. The only thing that could provide additional benefit would be faster pace of processing for pay-out requests from the states. There is a bit of a lag due to the USGS requirement to post to Grants.gov and then states apply. If states process their pay requests as quickly as possible, that is the best way to help.

Hubbell: one of the ways in which we have an advantage over other programs is our multiple avenues of execution. We have many partners that can execute their elements, which also spreads risk over a huge structure. We also have plans available for many projects and SOWs ready, so that carryovers can be spent down when engineering estimates were too high and remainders were available.

Gritters: if there are budget people in Corps that need to go out to field stations or states to see how the program operates, we'd be happy to host

Hubbell: We appreciate that offer. Rock Island has used the proximity of the IA station for similar types of opportunities. At the leadership summit in Sept, one item raised was to provide the expenditures by state and by Congressional district to show that our presence on the river creates value for the state now and into future. Marv has those numbers that we can use in our states. He gave a presentation the IA legislature with that type of information that seemed well-received.

Strategic Plan Update (Hubbell): public review didn't bring in too many comments, it has been going through reviews, EMP-CC will be asked to endorse at November mtg, there have been some fundamental changes, but there are 4 primary objectives, integration is a theme—PDTs will reach out to USGS & Field Stations, vision for program and river (resiliency & health), will also treat projects like experiments for research opportunities (like Mud Lake-Theiling), implement through budgeting processes, but also need to focus on what changes need to be made in order to provide details to implementation (such as integration structure, defining resiliency and health).

There may be an addendum of implementation plan.

Hubbell: WI had the biggest concerns of anyone, do you think it will influence the ability of WI to support it?

Strassman: we did observe that not too many folks weighed in and that a few folks in our local area weighed in. I guess our biggest concern has remained the lack of an implementation plan and since it sounds like there will be some work on that going forward, that's probably where we'll focus our efforts.

Hagerty: by end of next week, we need official ranks from each agency. We might not be able to meet the EMP-CC Nov meeting deadline, but we might be able to endorse over email. They'd need our recommendations in with the highest ranking proposals for the EMP-CC folks can review

Use ranking such as high-med-low. Utilize the criteria that the Corps had provided. Folks can use numbers, but low=1 and high=3. Send to Jennie, Karen & Rob.

Lunch Break

Genomic Proposal:

Strassman: How do you plan to assign a demographic fish benefit to the HREPs based on their narrative objectives descriptions? It seems that you would have a hard time identifying a signal from an HREP.

Marlis: An indirect measure, correlation, you can get a signature in a localized population. So she is assuming that all HREP projects will have some sort of habitat lift that will have a genomic signature. Combine genomic data with other data available to assess relationships to HREPs and other driving variables in the system.

Michael Douglas: the reaches are beads on a rosary and each of these metacommunities represent different populations that will have differing levels of connection to the metacommunities, some are impacted by better habitat quality, so we would expect to see responses in those populations that are associated with the best habitat

Marlis: Jeff Janvrin had called to ask her about accounting for differences between winter and summer habitats based on observations that there is a dynamic movement pattern seasonally. She thinks that can be accounted for in the sampling design

Michael: HREPs will have varying quality, so the highest quality projects should be signaled in the population dynamics

Marlis: if population is growing and healthy, we'll see it in the genomic structure, the demographics are being tracked back onto the ecological value of that pool

Johnson: Will you use a software package off the shelf?

Marlis: The early stage analysis will be tailored to the project and to each species for the bioinformatics. Once they try to combine the bio info with ecological data, they will probably use R.

Johnson: Is there a limit to the technique in small populations?

Marlis: In past, they used 15-20 microsatellites and there were more issues with effective population size (less signal in the data in small population). Now that the genomics are available they look at 50,000-150,000 markers, so the low populations are less of a concern. There is sufficient variability in the high number of markers that are used

4yrs of work: is there a possible to do a proof on concept in a smaller area to see where it's going beforehand? They would like 1-3yrs of samples. Generating the data will take at least 1 year and it will

take about 1-2yrs to analyze per species. The proposed research cannot be shortened very much given the data processing time.

Strassman: Could you tell us about the species you selected and why? We are concerned that some species might be difficult to sample for up here.

Marlis: We picked them somewhat generically at a trophic level with input from the southern field stations, but the committee could make suggestions of other species to fit the guilds being desired.

Strassman: Has this technique been utilized in major/great river systems?

Has been used in Pacific NW for salmon rivers, Colorado River system, they have used it in the stickleback populations along the Pacific Coast.

Synthesis of environmental assessment approaches in large complex systems Proposal:

Hagerty: The A-team ad hoc indicators report is not sufficient identification of indicators? Which indicators was he planning to use?

Strassman: For discussion: how would the adoption of a more S&T-consistent mental model change the HREP planning & implementation processes?

Brian—had replied that he would omit that

Marv—we have used LTRM data, the S&T reports have come out every 10yrs, how often should those reports come out, how do those indicators link up with our actions?, for example, we have AHAG series that started out as a planning model, but it could also inform us of what we need to monitor post-project to evaluate performance, do any of these indicators have linkages to physical models we complete for design?

Assessing Early Spring & Biomass for Invasive Species:

Question: Will this require a lot of additional flights?

JC: The timing is critical. The plane is ready, so we can fly pretty readily. We can't fly with high water and we can't fly with cloud cover, but the schedule is pretty open to get the imagery.

Question: are you confident you can identify the target species from early spring images?

JC: The window between natives and invasives is sufficient to get these.

Q: When would funding be available? A: They hope by January

Q: How would it be used? JC: prove the methodology for mapping invasive species, it also gives us an idea of what is happening in floodplain forest, the data set could be used in a number of ways and would be available for the public

Q: Why isn't RCG included? JC: it can be difficult to differentiate, some has already been done in Pools 7-9, there's already work underway as part of De Jager's work

Q: How do managers use this information? Is this about rate of expansion versus exact locations?

Rob: it might be used for HREP evaluation of impacts, to use as a time series, understanding the impacts of forest disturbance and likelihood to become invasives, can the HREP suppress invasives?

Q: Could you apply this to the older photography once you've developed the markers?

JC: yes, we would like to compare early spring photography to the mid-summer photography by

developing the signatures for the invasives, we'd be able to leverage the summer photos, it could be used for older photos if there is a distinct signature

Bathymetry Footprint:

Karen: When the Corps uses it, they pull in the most recent hydrographic surveys, would this include that?

JC: We spoke with all 3 districts' GIS folks, that this would look at the existing LTMRP bathymetry with hopes of adding your surveys in at a later date, but this would take our data site and provide the footprint and date for when the sections were collected,

Strassman: could we add the stage information in the querying?

JC: yes, for things where we have the date, we could add it,

Marv & Karen: Bathymetry is based on flat pool, so adding stage information for when the imagery was shot might confuse people

Turtles & Dogs:

Rob: I can see using it to locate the turtle nests, but what happens when the dog doesn't find a nest, do we assume it is a zero?

Jennie: we test sensitivity beforehand so that we can apply a power function

Strassman: What do you see as the final product for the turtle p/a?

Jennie: Assess that the features are doing what they were built for in HREPs, then compare against sites with no features.

Once you find nests, you could see what survival, hatching rate, you could do some marked recapture (using LTRMP folks), etc. but those are not part of this study.

Strassman: Could we discuss how this functions as an investment in a monitoring tool to elaborate on what other uses might be made beyond just the turtle study?

Jennie: There are many other uses

Find invasive species (difficult through mapping and to get early strike)

Monitoring Asian carp (they've been used to track whales through feces)

Finding turtles themselves (Savanna District to relocate them)

Zebra mussel tracking

Rob: How many things can a single dog be trained to do?

Jennie: Many things, anything with a scent. One study demonstrated that the training of the dog decreases the more items you add (the study went up to 10 items)

Gritters: I wonder if we should use cameras or other techniques. Jennie: dogs are more efficient than other methods, typically. Example, Jim Nissen sends staff out to find the predated nests, the dogs can cover more area

The working life of the dog will be 8-10yrs.

Schlesser: MN has a dog from the pound that they trained to smell zebra mussels, so relative to a free dog with minimal training, the cost for this proposal seemed high

Jennie: It is a 4yr study, total cost \$300K with the first year \$116K

Strassman: How much is known about turtle demographics based on existing data? Example, how much does Jim Nissen know about the population demographics of turtles in his district based on the predation monitoring they conduct? We haven't seen much demographic data.

Jennie & Steve Winter: no analysis has been worked up from that data

Q: Whose dog is it?

Jennie: It would be up to me to find funding for it moving forward.

Gritters: how do you differentiate between predated nests and successful nests?

Estimating trends in UMRR fish & veg:

Gritters; this was one of our original charges, so this would help us do that

Chuck: Is this similar to the report that came out about estimating trends in WQ data?

Brian: WQ data are easier, we don't expect to see temporal variations, we also don't see the sampling variability in our estimates for WQ that we do in fish or veg, third—we've used linear regressions primarily to estimate trends for WQ, but we don't typically fit linear models to fish & veg

Chuck: if you are successful, you can validate the premise of the program?

Brian: we will compare these complicated methods with simple methods so that folks can review on their own

Marv: will this lay the grounds for our later S&T work?

Brian: this addresses Gritters' comment, but we have done very little trend-style analysis, which I would think helps the next report dramatically

Jeff: if you get satisfactory results, we'll use this method to develop trends for that report?

Brian: yes, and there may even be more simple methods utilized

Strassman: just a comment to make sure the method is understandable so that managers can utilize it for hypothesis development, provide a robust explanation of assumptions and model structure

Fish Indicators of Ecosystem Health:

Strassman: how do you envision sharing updates across the partnership?

McCain: meeting with partners, report on the milestones, create archive of the checkpoints

AHAG mapping:

Janet: How were these species selected?

SOMEONE?: we looked at species in several guilds and looked for rarer species

Marv: How does advance AHAG?

Chuck: this just maps the 2.0 This could be used for HREP siting and prioritization. Also answering 'How far can we extrapolate out of the trend pools?' This refinement for 2.0 meets the Corps modeling requirements.

Geomorphic Associations Diverse Forests & Deep Backwaters:

Karen had asked Chuck to coordinate with Nate DeJager—this hasn't happened yet

This is looking at GIS and geomorphology.

How will you test these correlations in the field? Chuck: there are some that exist by accident (Huron Island), so we can see whether rates of backwater sedimentation differ?

Are the ridges located in particular areas?

They are looking at very proximate features—all they want to do are see patterns related to the association? We often have material that needs to find somewhere to go and if we have a template for where to place that material, we can find locations?

Strassman: Concerns about a couple of the hypotheses—are you accounting for proximity to the main channel? Also, the relationship with tributaries seems perhaps problematic—you discuss sediment transport, but wouldn't you be interested in depositional areas rather than just transport?

Theiling: That's what we're looking for—patterns on the landscape.

Gritters: some of these deep backwaters are old pits, some of them were dug out by the RR, how will you figure out how much of it was manmade?

Theiling: I'm not that concerned about those few instances.

Gritters: there could be more than just a few places where a manmade impact is the driver

Hydrogeomorphic

Strassman: I'm concerned about your focus on a minimum depth, as it would make sense to evaluate veg response and condition across a gradient of depths and also perhaps to establish some maximum amount that would be desirable

McGuire: we'd want to get to a suggested minimum, a greater amount was found to have this effect and then there might be an inflection point, we assume that we'll provide a caveat in the manual saying that "more is better", but we need to identify a cost-effective value

Strassman: Also concerned about how to account for conditions during establishment and any early care provided across these sites as those factor heavily into early recruitment and mortality.

McGuire: different sites had different conditions during establishment that would be too highly variable, so we need to have enough sites and would research site history as much as possible, wouldn't be able to account for weather, care, etc. I'd like to make a recommendation for a site with variable amounts of material that could test our findings

Q: How does this relate to Derrick & Yao's model?

McGuire: this is only terrestrial focus, while Yao's model is aquatic

McGuire: How to address substrate on restoration projects? There are multiple sites like this. If we have higher & drier islands, we need to address cost-effectiveness. Our channel maintenance side needs to have a target for vegetation establishment that keeps those project costs down.

Counter-gradients, bighead carp:

Karen: Start date is Nov 30—does that assume in-kind work?

Marv: was this meant to provide targeted observations related to the outcomes

Jeff Houser: method in LTRMP is consistent among pools, so is there a detectable pattern in the N-S gradient

Big-headed carp everywhere:

Jeff Houser: I think the first is about the patterns and the second proposal is about explanations for that difference

Karen: There were only 5 hypotheses in his timeline, but 6 listed above

Linking floodplain forest communities to birds:

Marv: how are the two bird proposals related?

Eileen: Tim is proposing to use a different dataset, Eileen did CCA analysis that didn't find gradients of bird diversity with forest structure (perhaps habitat measures were too vague or could have been random sampling); because high diversity forests were not that common, they were undersampled;

Strassman: How will you account for landscape position of these two communities in hypothesis one?

Eileen: I'm hoping N. DeJager can help with that, I don't know if there will be a sampling bias related to the high diverse but we hope to span a farther area

Jennie: how does this differ from work done by Pat, et al. recently?

Eileen: very different. This study is looking at diversity impact on breeding birds, not migrants and their upland sites were truly upland in the bluffs whereas this study is focused down in the river bottoms and 'upland' sites are simply higher ridges relative to nearby elevations

Water Level Management:

Karen: Will you be able differentiate between island building and drawdown?

Steve: we could try to infer based on spatial patterns

Karen: Pool 13 as a partial control only, as there were two partial drawdowns (1' and 3 wk duration)

Steve: Ickes would have to attempt to account for that. Maybe we're evaluating both drawdowns and other management actions.

Steve: From the WLMTF, when implementing drawdowns, common questions arise. We need to demonstrate either the benefits or costs to the public. We get questions about how it will affect fish & the fishing resource? We don't have good data on this, thus far.

Q: Pool 4 has seen a shift in vegetation so we've seen a fisheries response already

Steve: Design is meant to look at the drawdown and the lower pool areas.

Strassman: Would it be better to build fish evaluation into the design of a future drawdown to get a more realistic picture of the drawdown response versus the sum of other management and ambient conditions? Could we include an articulation of fisheries objectives in a future WLM and observe it directly?

Steve: Yes, it would be good to do this study and factor fish objectives into a future drawdown.

Q: Will this study account for vegetation trends?

Steve: Brian will not be looking at vegetation.

Strassman: Concern that this is correlative, not causal, but managers are particularly pressed for causal relationships. How will the results be written to address that?

Steve: We will couch it as a correlation based on existing data. The study would support the direction for future hypotheses as well as formulating necessary information for future drawdowns.

Gritters: Potter's Marsh—in Pool 13, veg community was very good, but proceeded with a drawdown, there was a fish kill, Dan thought that it was detrimental to pursue a drawdown in Pool 13 when it was already fine, how do we treat Pool 13 as a control and how do we answer to objective-setting for drawdowns?

Chuck: would this apply to southern pools in side channels? Maybe we should include Pool 26 because there are regular drawdowns there that have been monitored? This otherwise seems very northern-pool centric

Steve: to a certain extent, it is more northern, as the WLMTF is a work group of the RRF in St. Paul, I'm not sure if Brian could address Pool 26

HREP expansion into IL River:

Marv: fundamental thrust seems to be that OW is the key limiting factor on the river, do other biologists agree?

SOMEONE: There is a latitudinal gradient, to be sure. There are some confounding factors for spawning access, overwintering areas, no veg, so this would begin a winnowing process. The hypothesis is evaluating if the reason for 3-4yr fish lacking is due to lacking OW habitat.

SOMEONE: Greater O2 requirements for larger fish might make limiting OW habitat an issue.

SOMEONE: Are you assuming then that survival is related to OW not to predator pressure or creel? Yes, the Raibley paper covers most of those things.

Chick: have you considered continuous O2 measurements? Can we confirm that we have O2 sags?

Karen: How are you finding the critical OW sites?

A: They will use historical maps and accessibility in current.

They will measure WQ parameters using LTRM and supplemental data. Will combine with depth, O2, flow, temp.

Janet: how is this connected to Middle Miss? Title references both, but no detail about Middle Miss.

A: Not really well connected, but there could be applications.

Plankton community Lake Pepin:

Walt: better understanding of drivers of phyto is the best relationship to HREPs, water residence time will be a factor—they're looking at it

Pool 12 OW:

Gritters: this is a cheap proposal because we add a lot of in-kind, continues a long-term dataset,

Chuck: Not sure why we argue about this one, since it was built into the budget of the project

Janet: Does integration mean more \$ to the LTRMP side, but now we're bringing over an HREP project that used to be budgeted on the HREP side of the house? Difficult to track where things are best budgeted.

Marv: There's no answer. But you can see that projects like N&S veg model or Pool 12 have applications elsewhere. If there is a potential programmatic application, it makes sense to budget that way.

Johnson: As we use HREPs as an experiment, how will we be writing them into the HREP budgets versus having them apply through the proposal process?

Ken: for adaptive mgmt & monitoring and feasibility reports, they would be part of the project costs and would be cost-shared with the partners, but for things that can be scaled up at program level, would be tied into the "science in support" budget

Chuck & Marv:--Regardless of what the ratings are here, it is going through as a project, so it probably should be noted that this one is not competing

Chuck wants us to keep up to speed on it, hence the proposal

Predictive Aquatic Cover Type Model:

Marv: this is similar to the above, we need to do this type of work to make it applicable across other pools

Yao: last year fit the model with Pool 8 data, so now they want to validate with other Pool 8 data not used, then try it in 4 & 13, when they tried to fit Pool 13, they had difficulty with flow velocity element of model that relies on a Pool 8 discharge, so they need to pursue with Pool 4 dataset

Rob: basically, we need to rank using full funding level in order to get the product and make it

programmatic

Spatial patterns of mussels:

Jennie: what are the management directions for this?

Patty: we don't have a good definition of size of mussel bed, particularly if relying on p/a data, they want to look at spatial distributions to find patterns at small scale

Standard Methods for HREP fish

Jennie: is this for long-term trends or is it for HREP designs or both?

Marv: we are starting to standardize methods on all indicators

Barry: this is a minimum we could build from for the most basic info that would be used?

Dave: yes, this could be scalable, but trying to get to a minimal design that could be achieved

Barry: this isn't the maximum?

Dave: no.

Chuck: years ago, there was an interest in assessing the "area of influence" to incorporate spatial spread to evaluate that response area

Dave: no, that isn't included here. there was a proposal related to that last year

Janet: can you provide some very obvious description of what is meant to be used for so that it isn't misused by other interests (i.e. scoping for other fish evaluations)

Gritters: how do you resolve the issues of free data you are getting from states, it can't be simply summarized into a single method or directly compared across projects?

Marv: PDT determines the "area of influence" for an HREP, so it isn't necessarily up for determination at a project scale

Systemic Photo Scanning:

Kat: St. Louis library for Photogrammetry may have some of these

JC: No, we didn't coordinate with them

Kat: I'll make sure to coordinate with them

JC: These were photos taken for LC/LU, many only exist (as far as we know) in UMESC

UMRS Bird Ordination:

Bird benefits have always been a subject of HREPs, but has been included more recently in the projects with berms, so something like this helps us better understand the role of the projects in bird-forest relationships

Chuck: purpose is to define physical structure to biological response

There are 2 sites where the bird points overlap HREPs, Huron Island and Pleasant Lake.

Biochronology of Common Carps:

Karen: what is causing the lack of recruitment?

Quinton: the study will begin to address it, one of the most important components is to understand why they are occurring, we may be able to tell what is limiting recruitment

Karen: control elements are central and that isn't part of this program

Quinton: we aren't focusing on that so much as on what mechanism is regulating their population

Marv: why wouldn't we focus on limitations of recruitment of native species?

Quinton: with common carp, you see that they dominate the fish biomass, so identifying their regulation will provide insight to what is going on with native fish populations, is there a trophic cascade?

Schlesser: It is true that this is the only species that is seeing a consistent decline? MN has been finding that bluegill presence and predation on eggs is suppressing common carp

Quinton: carp already collected from pools for work this year will be used

Karen: it says you "will" collect fish

Quinton: it should say that we'd collect specific classes or locations as needed, but that existing fish will be utilized

Strassman had to leave call (3:45).