

**Aquatic Life Workgroup
Meeting Summary
February 21, 2008**

The Aquatic Life Workgroup met on February 21, 2008, 9:00 a.m. to 11:45 a.m., at the Rachel Carson Room, 4300 Cherry Creek Drive South, Denver, Colorado. This memorandum briefly summarizes the major topics discussed at this meeting.

The meeting was attended by:

Todd Harris (MWRD), Kristi Livedalen (Jackson Kelly), Lee Bergstedt (GEI), Craig Wolf (GEI), Joan Carlson (USFS), Ed Rumbold (BLM), Jamie Anthony (DOW), Al Polansky (DEH), Lareina Wall (EPA), Karl Hermann (EPA), Dave Moon (EPA), Gabe Racz (Trout Raley/NCWCD), Andrew Todd (WQCC), John Roach (TU), Jennifer Richards (CH2M Hill), Bob Anastasov (Aurora Water), Steve Lundt (MWRD), Maggie Pierce (WQCD), Blake Beyea (WQCD), Mindi May (WQCD), Jim Saunders (WQCD) and Chris Theel (WQCD). On the phone were Barb Horn (DOW) and Tina Laidlaw (EPA).

Meeting Agenda

- OE fish model update
- Reference criteria revisions
- "Looking Towards Biocriteria" presentation
- Reference sites for big rivers in plains
- Stream types or sub-categories
- Macroinvertebrate tool recalibration timeline

OE Fish Model

Chris gave a brief update on the progress of the OE fish model currently under development by Utah St. Chris first included a summary of what was discussed at the January 23rd workgroup meeting and then provided an update on what has happened since then. The main points were outcomes of the initial modeling, individual species mapping, mapped output capabilities and streams with no fish inclusion into the model. John Roach inquired as to why fathead minnows would not be considered a good indicator just because they are found everywhere. Blake responded that selecting species that are not widespread narrows the range of your condition.

Reference Site Criteria Revisions

Chris gave a brief primer on how the reference criteria have evolved from what was handed off to the Division in 2005 to where we are at now, namely the weight of evidence approach using only GIS watershed scale measures of human disturbance and all the iterations in between.

Chris discussed how the Division wished to avoid any issues of circularity so all water chemistry and habitat parameters were eliminated.

Then Chris discussed how large rivers in the plains were being unfairly dinged for the number of dams upstream in the entirety of the watershed. So the Division looked only at dams within a 5km buffer upstream in the watershed area and re-scored using the same weight of evidence scoring system: 2, 1, and 0. If no dams were present in the 5km buffer then the site received a 2. If the dam fell on a tributary or fell on a mainstem but was insignificant it received a 1. If it fell on the mainstem and was considered significant then it received a 0. Chris then discussed how the Division looked at mountain marginal reference sites (those scoring 16 out of 18) within a 10 km buffer around the bioregion interfaces. The Division wanted to see how many marginal reference sites were being unfairly dinged because of low forest density, when it is commonly known that forest density dwindles as the mnts approach the plains. The Division found several marginal ref sites that had low forest density but relatively few other problems and determined that these should be added into the candidate reference site pool and go thru the BPJ screening.

Chris then wrapped up things up by talking about how the Division will use super-imagery from EPA's Global Explorer during the BPJ phase. Chris explained that the Division will take coordinates from all mnts, plains and xeric candidate reference sites and use Global Explorer to further exam these sites for any unseen localized disturbances, such as grazing. Sites exhibiting localized disturbances will be scrutinized and likely removed from reference consideration.

“Looking Towards Biocriteria” Presentation

Blake Beyea provided a PowerPoint presentation on “Looking Towards Biocriteria”. Key points were lack of reference sites for big rivers in the Plains bioregion and a look into what potential stream types or sub-categories may need separate biocriteria. Blake also identified a simplified timeline of major tasks that need to be completed by 2009. Blake asked the workgroup what we needed to sample this summer to collect data from potential stream types. He also asked who would be willing to sample.

Reference Sites for Big Rivers in Plains

The big portion of the meeting was discussing the lack of reference sites for big rivers/large watershed areas in the Plains bioregion. Chris provided a quick introduction and problem statement to the workgroup. The question was posed: Did the absence of points in the upper right and lower left quadrants weaken the bioassessment tools to a degree to be concerned? A graph showing WOE scores vs. catchment area was presented. Many in the workgroup agreed that this was a problem. Chris then offered 4 alternative solutions, one at a time and then discussed pros/cons to each alternative. The gap is that the Division lacks small streams with low WOE scores and large rivers with high WOE scores.

Chris further explained that if we want these tools to be recalibrated in the correct way that we have to deal with this problem of filling these gaps. The Division asked what the workgroup thought about these options. Discussion ensued. It appeared that nobody in the workgroup

liked alternative solution #1 – go with what we have. Jim Saunders offered up alternative #4 to the group – basically using a consortium of biologists to generate a high quality, large river reference site in the Plains. Tina Laidlaw indicated that EPA Region V did something similar whereby they convened a group of experts and created a range of conditions. Al Polansky (DEH) discussed “Frankenstreams”, whereby they could not generate a true reference site so they made one up. Metro indicated that they compared similar habitats and tried to come up with a reference score. Due to fluctuating conditions, their reference sites were always roving though, basically changing year to year.

While a few folks agreed to help the division develop an ideal reference site in the plains, it appeared that the overall majority didn't think alternative #4 was a very viable option. Those in disagreement were Lee Bergstedt, Tina Laidlaw, Gabe Racz and a few others. At this point Todd Harris brought up stratifying each bioregion, such that the Division could make the WOE approach less stringent on the plains in order to get higher scores. Tina echoed Todd's suggestion, but Jim countered that stratifying before tool development could risk diminishing the ability to distinguish good and bad sites. Tina countered that revising the screening criteria for those best of the non-wadeables would be an idea. By the end of this conversation, it seemed most everybody was okay with either alternatives 2 and 3. Tina insisted that the Division needed to do alternative #2 at a minimum for the MMI recalibration but that option 3 may be necessary for the OE macroinvertebrate model recalibration.

Stream Types and Sub-categories

Chris then discussed stream types or sub-categories (aka subclasses) potential. He indicated that this is where biocriteria would live. Basically, what are the expected biological conditions for these particular classifications?

He presented a list of class types to discuss, including hydrologic, geologic and anthropogenic. The focus was on how we might define these subclasses and if we had sufficient data for each subclass. Chris suggested that this is prime opportunity for those stakeholders with a vested interest in a certain type of classification to get involved now and be part of the process. Gabe asked if lakes/reservoirs fit into our thought process. Jim countered that, no, they are not part of this particular effort: look to 2015. John Roach (TU) suggested testing these subclasses statistically. Is ephemeral vs. perennial a good predictor of subclasses? John didn't think this would be too difficult – in terms of dominant geology you can see where some of this breaks out. Dave Moon suggested using natural gradients for the classes. Basically use UAA rather than deviating from TVS. He indicated that saving man induced irreversible ones (i.e. urban) for UAA's. Dave preferred a site-specific approach to dealing with anthropogenic classes. Barb asked about what role TALU would have in all of this, but Chris countered that tiering aquatic life uses is much different than tiering aquatic life conditions. One requires a UAA while the other is a decision to be made by the WQCC. Dave agreed that intersection with TALU is still cloudy.

Bug Tool Recalibration Timelines

Chris went over an abbreviated timeline for when tools will be developed and EDAS adjusted to fit the new bug and fish tools.

Next meeting: TBD