

BEIPC/Citizen Coordinating Council (CCC)

Meeting Summary Notes

July 18, 2017, 6:00 – 8:00 p.m.

Harrison Community Ambulance Building, 101 Frederick Ave., Harrison, Idaho

Jerry Boyd, CCC Chair, called the meeting to order at 6:05 p.m.

Introduction of Attendees:

Each attendee introduced themselves.

Signed in Attendees

Jerry Boyd (CCC Chair & **citizen**), Ethan Brandt (IDFG), Jamie Brunner (IDEQ), Glory Carlile (BEIPC), Jerry Collins (**citizen**), Craig Cooper (IDEQ), Julie Dalsaso (CCC member & **citizen**), Rene Gilbert (EPA), Dain Gillen (TerraGraphics), Bob Howell (**citizen**), Laura Laumatia (CDA Tribe), Dave LePard (**citizen**), David Leptich (IDFG), Dan McCracken (IDEQ), Ray Miller (**citizen**), Ed Moreen (EPA), Kim Prestbo (EPA), Rebecca Stevens (CDA Tribe), Jamie Sturgess (**citizen**), David Van de Riet (IDFG), Kajsja Van de Riet (IDEQ), Valerie Wade (PHD)

Meeting Agenda

- General discussion on CCC member and meeting attendee issues – Jerry Boyd
- Update on nutrient loading issues and concerns for CDA Lake – Craig Cooper
- EPA updates on Lower CDA Basin Superfund cleanup activities and actions (Cataldo to Harrison) – Ed Moreen (EPA) and Kim Prestbo (EPA)
- Robinson Creek wetland habitat project – David Leptich (IDFG)
- Natural resource restoration activities in the CDA Basin – Rebecca Stevens (CDA Tribe)

Citizen Discussion of Issues and Concerns

Dave LePard opened the conversation by saying that we are doing too well. He referred to needing more zinc in the lower river because the reduction of the zinc has caused an increase in aquatic vegetation which has impacted fishing.

Bob Howell wondered if anyone is looking at the aquatic vegetation and doing anything about it or just addressing the milfoil. Rebecca Stevens responded that native vegetation is not usually treated by the state of Idaho or Avista but they will be looking at it in the future.

Ray Miller commented that he also wondered if anyone is looking at it and added that he is also very concerned about the heavy metals.

Jamie Sturgess commented that he thought that LePard was being sarcastic but LePard explained that he meant that taking the zinc out in the upper basin has caused vegetation to be affected in the lower basin over the last few years and it seems that you can hardly fish from the banks now.

Jerry Boyd added that he has also heard similar comments. He shared that recently he and Bob Howell were talking with some people around Harrison and they were talking about algae. He heard that some people put strips of zinc at the bottom of the roots to keep the algae off. He said they are also looking at nutrients.

Update on nutrient loading issues and concerns for CDA Lake

Craig Cooper, Limnologist, CDA Lake Management (IDEQ) made a presentation of the “Development of a Phosphorus Nutrient Inventory for the Coeur d’Alene Basin” which talked about 1) why nutrients are important to CDA Lake, 2) where they are coming from in the CDA Basin, and 3) how nutrient dynamics are changing. He reported that we need high oxygen level in the bottom of the lake in order to keep metals in the sediment. Low oxygen level chemically release metals from the sediment. Higher

oxygen levels help protect and restore the lake. Phosphorus levels in the lake are slowly increasing, and we are seeing evidence of higher productivity in the lake. Chlorophyll levels are increasing in the surface waters, and bottom water oxygen levels appear to be slowly declining in the deeper regions of the lake, north of Harrison. This means that the lake is moving away from the preferred low productivity state. He added that the Lake Management Plan (LMP) is developing a nutrient inventory across the entire basin. This inventory will show where phosphorus is coming from, how phosphorus loading has changed, and provide insights into what factors are causing the change. One challenge is data gaps. There is not a consistent data record across the basin. This makes it difficult to account for the impacts of variability in annual runoff and stream/river flows. The inventory is being constructed in a manner that helps estimate what happens in a year where flows represent the long-term average.

Sampling and Weather:

Cooper noted that their study is a culmination of many years of work. One challenge is accounting for variability in flow. The current data indicates that the amount of nutrients entering the lake have increased since the 1990's, even when variability in flow is taken into account. Flow impacts the amount of phosphorus entering the lake in several ways.

1. Nutrient load increases with increasing flow.
2. Two load equations that are dependent on flow: $\text{Load} = \text{phosphorus concentration} \times \text{flow}$ and phosphorus concentration also varies with flow. Currently, phosphorus concentrations increase at higher flows.
3. Flow variations alter load. Higher flows generate higher loads.
4. Both changes in flow, and the relationship between flow and phosphorus concentrations can be drivers of change.

The study accounts for flow variability by grouping data for similar flow years. This provides a way to aggregate data across multiple years and compare with historic periods.

Cooper discussed a map of area based loading intensity that shows mass of nutrients divided by the area. Areas of geographically focused loads are shown in red and yellow on the map, meaning a high ratio of load to area. It is likely to be easier to mitigate phosphorus loading from these areas of focused loading.

Questions/Comments:

Ray Miller asked about the effect of all the septic systems around the lake. Cooper answered a very rough estimate is that a total of the septic's approximately 1% of the total load but that it also depends how well they are functioning. Valerie Wade added that it would be hard to determine an estimate. Cooper reported that current very rough estimate is based on the housing records estimates developed by Bill Rust. They are still working on ways to improve the current estimate of septic contributions.

Rebecca Stevens asked if the data from Rust was post 1994 and it Cooper said it was post 1974 according to county records. Dave LePard asked about monitoring inspections of community wide septic systems. Cooper could not answer but suggested that we need to ask the engineering department and he would get back to him.

Miller asked about upstream vs. downstream total load of phosphorus and zinc. Cooper said the wetlands can be a significant source of phosphorus, but that the contribution can vary seasonally. Cooper added that the current estimate is for total phosphorus and that it is also important to evaluate the contribution of dissolved phosphorus that can be more bioavailable. He said they have not done a nitrogen study but that the USGS reports indicate that nitrogen may be decreasing over time.

Valerie Wade asked if there is a measurement at the outlet and Cooper said yes, the current measurements are taken near the CDA North Idaho College (NIC) beach.

Jerry Boyd asked about the relationship with phosphorus and nitrogen and whether it is important to know the relationship. Cooper answered that the ratio is very important. If the number comes close to

10 (calculated from grams nitrogen/grams phosphorus), then the system becomes nitrogen limiting. This shift affects the ecology and the productivity to an extent.

Cooper explained that the Water Year (WY) is October to October and calendar year is January through December. Based on the data we have, nutrient loads appear to have increased by a factor of 2, and the amount of phosphorus retained in the lake has increased by approximately 30%. Some of this may be due to differences in how representative the historic datasets are for high flows. It is likely that a significant portion of the change is real.

Trends:

What is going on? Do we see a change in hydrology? Is there bias from stream flows? Cooper answered that no, changes in flow do not appear to be the cause. Something else is going on.

Valerie Wade asked about the pie charts wondering about population increase. Cooper said there is not much change over the big picture, but there is population growth in some high development areas. The primary driver of change appears to be a shift in the relationship between flow and the concentration of phosphorus in the water.

There is a change in the concentration-flow relationship:

- The relationship between phosphorus concentration (ppb) and flow (cfs) has changed
- Phosphorus concentration (ppb) is now rising exponentially with flow. It did not do so in the 1990's data
- This change can account for the entire magnitude of the change observed

What's going on?

Cooper reported that we really don't know because this is new. There is likely some data bias with less historic data for high flows. It is also likely that some of the change is real. Only apparent in phosphorus and is consistent across multiple phosphorus datasets. There are many phenomena that could potentially contribute such as the river down-cutting into new sediment horizons, exhaustion of the soil's capacity to bind phosphorus and possible examples could be aging septic/lagoons, aging historic bio-characteristics, land/stream modifications could change the nature of riparian zone dynamics during high flow events, and human changes to land use and phosphorus use.

EPA updates on Lower CDA Basin Superfund cleanup activities and actions

Ed Moreen (EPA) gave an update on cleanup activities in the lower basin focusing on the main stem of the CDA River - river channel and floodplains. He stated that the goal for cleanup and EPA'S mission is to protect human health. They have been working on developing models and updating data. He described the EPA's Lower Basin Conceptual Site Model as a working understanding of the CDA river system.

Component of Lower Basin Strategic Plan:

Fundamental Requirements are to apply CERCLA mandates, policy and guidance to achieve appropriate and technically feasible remedies and to manage available financial resources and proved stewardship of funds. The goals for cleanup are to reduce risks for people and wildlife, control sources of contamination, and to promote long-term stewardship.

What has been learned about the Lower Basin?

The 2002 ROD acknowledged that more data, monitoring, modeling, and pilot studies required to select specific remedial action. The ECSM (2010) compiled existing information and data gaps. Since then, EPA conducted data collection and modeling and is currently filling in the data gaps and updates to sort out the information and identify the issues.

Moreen announced that he has the reports on Sediment and Lead Transport Erosion and Riverbed Characterization that are available on thumb drives for distribution. He showed graph of March 2017

flood – suspended sediment using 2 techniques. Grab sampling (metals) and Casting (particle size and loading).

Regarding Boat-based vs. Bridge-based sampling, he said that they have been focusing their sampling on bridge-based techniques. Resolution of metals data significantly improved compared to previous bridge-based sampling and the data will be used to validate the sediment transport model.

USGS data showed comparison from the past. Metals increase from upstream to downstream. Dissolved lead is small proportion and proportion of dissolved zinc increases downstream. However, dissolved zinc does not change much as you move downstream.

Lower Basin riverbed characterization:

Moreen reported that sediment budget shows riverbed to be the primary source of contamination and that much of the lead at Harrison comes from the riverbed. Riverbed consists of both depositional and erosional features. Riverbed Geomorphology forms is used to determine where to sample. You can see transition from dunes that are more prevalent in the upper part of the riverbed and planar bed more common downstream showing the evolutionary features. Riverbed coring results showed the efficiency from the mining industry sources. Cleaner material is overlaying the hot stuff (layers with higher lead concentration) that we don't want to uncover. Graphs showed the riverbed characterization and evolution of riverbed and sediment and lead "budget" review. He shared a picture of the finished pilot project at Khanderosa bio-stabilization of the riverbank noting that it is an example of management of the exposure of lead in recreation areas.

It was asked about significant change in pH soils over time and if lead is changing due to oxidation. Kim Prestbo (EPA) responded that we will be looking at it in the data from the wetlands areas. She added that the main focus has been in the channel with particulate lead but do not have much data yet. She said that they will be looking at it over time.

Prestbo gave a quick rundown on the 2D Hydraulic and Sediment Transport Modeling that helps to estimate what the lead flux will be over time. She noted that hydraulics is really complicated. They have completed 1D model that showed where in general in order to identify and make estimates. The 2D model allows them to predict in the flow plains areas.

The sediment transport model is a grid showing a 3D model that flows into the wetlands areas and has a lead component to show where lead is traveling and the concentrations.

Uses of Modeling Tools:

Modeling tools are used to see what are expected and estimating system changes over time under natural conditions, prioritizing areas for off-channel remediation, and evaluating impacts of potential actions. Prestbo explained that floodplain tile is a way to measure depositional sediment using a tile in the area. Depositional Sediment - Floodplain Coring 2016 collected data that helps validate modeling data.

Lane Marsh Plots:

Prestbo reported on the water fowl project which is a testing ground to try out some techniques such as thin layer capping of 2 – 4 inches of material over contaminated wetland sediments. The focus of the project is to reduce exposure and help protect water birds from lead. They will also evaluate using this method to reduce the effect of recontamination from flooding.

Key Plot Preliminary Conclusion: After 2 years looks great. Phase 2 of Lane Marsh project is to include increase in test plots. EPA is evaluating this approach as part of an overall strategy to increase the amount of healthy, usable waterfowl habitat in the Lower Basin.

Amendment evaluation – Bench-Scale Testing

There are several potential amendment approaches to reduce exposure to lead including converting lead to less bioavailable forms and binding lead to amendment particles. These can be applied to the site to

promote vegetation, revitalization, and reuse. Prestbo added that the first step is to collect field data with test plots and lab tests will follow, with potential pilot testing in the field in 2019.

They have determined the top 10 Waterfowl that use wetlands and will target them. The goal is to sustain the wetlands and potentially create them.

Natural resource restoration activities in the CDA Basin

Rebecca Stevens (CDA Tribe) gave an update on Restoration Partnership beginning with an overview. She said that the Restoration Partnership is made up of Natural Resource Trustees and have been working on the Restoration Plan (RP) for the last 6 years to address natural resource damages by contamination and recontamination potential.

Natural Resource injuries by contamination include surface water and groundwater, soils and sediments, fish, and waterfowl. Damages are assessed and data collected with the goal to use the settlement funds from Hecla for restoration. They have mapped contamination areas in the CDA basin for strategic geographic restoration, developed strategies and techniques, and will coordinate projects with EPA remediation activities.

First there was public scoping with a programmatic approach following the National Environmental Policy Act (NEPA) process. Trustees are responding to the public comments (period of 90 days) on the draft RP and Environmental Impact Statement (EIS) in the process to finalize a Record of Decision (ROD). They are hoping to solicit and implement projects in 2018.

There was a question about investment of the funds and Stevens answered that the funds are sitting in the Federal Department of the Interior federal fund. Moreen added that they have requirements of the use of federal money making the funds unavailable for investing.

Robinson Creek wetland habitat project

David Leptich (IDFG) reported that in the first year they spent time on the site to monitor the site and constructed a retention berm with a water control structure to impound water and over time manage the water depths. He said that the diverse water depth provides diversity of plant community and food sources creating a cascade down the line.

Leptich shared that there was a tribal blessing ceremony to open up the project in 2015. They have moved over 105,000 yards of material over 35 acres and have created a channel to be able to raise the water level or drain the wetland entirely. He added that it was important to have the ability to drain the wetlands over time to keep the water level stable. They have planted over 7000 plants by hand. They are currently in the second growing season but will take about 10 years to be well established.

Questions/Comments

Jamie Sturgess asked about water rights on these projects and David Leptich answered that they must apply for them. Julie Dalsaso wondered if there is waterfowl sampling. Leptich said that Fish and Wildlife have been doing that. David Van de Riet wondered about when the project will be ready and Leptich answered in about 3 to 5 years. Jerry Collins asked about Black Lake project and Leptich replied that not much will be happening on the ground for about 2 years.

Announcements

Kajsa Van de Riet (IDEQ) announced a cooperative study about fish tissue. Data will be coming together with an updated health advisory if warranted.

Jamie Brunner (IDEQ) shared that IDEQ is performing a periphyton study in six bays in the northern end of the lake to look at productivity in those bays (Neachen, Kidd Island, Bennett, Blue Creek, Beauty, and Wolf Lodge Bays). There are three yellow buoys in each of these bays marking a substrate placed on the lakebed that we collect samples from on a weekly basis.

Meeting adjourned at 8:05