

Scenic Rivers Joint Study Committee
October 9, 2014
10:00 AM
U.S. Fish and Wildlife Service Ecological Services Office
9014 E. 21st Street
Tulsa, OK 74129

I.
SMITHEE called to order 10:05 and called roll

Members:

Arkansas Representatives	Oklahoma Representatives
Brian Haggard (HAGGARD)	Shellie Chard-McClary (CHARD-MCCLARY)
Marty Matlock (MATLOCK) - Absent	Shannon Phillips (PHILLIPS)
Thad Scott (SCOTT)	Derek Smithee (SMITHEE)

Contractor Ryan King (KING) present

See sign-in sheet for public members present which is attached to the minutes.

Brian Haggard arrived a few minutes late. Marty Matlock was stuck in the Chicago Airport and did not attend.

CHARD-MCCLARY reported that there was a computer issue in getting the April minutes to the committee and meeting. They will be submitted at next meeting.

II.
SMITHEE asked if all appeared to be going well with the contract and in accordance with the contract.

CHARD-MCCLARY stated that all appeared to be going well. There had been an invoice submitted and it contained the required documentation. The invoice was forwarded to Rand Young and JD Strong for approval for payment.

SMITHEE asked if all was OK from Dr. King's standpoint
KING replied that all was going well and he would be submitting another invoice soon.

SMITHEE asked if the project was fully funded.

CHARD-MCCLARY stated that it should be but will double check with Randy Young to verify.

III.
SMITHEE turned the meeting over to Dr. King to talk about the first two sampling events

KING provided the presentation on a flash drive so that it could be added to the record.

KING presented the material that he presented the previous week at another event. The presented material included:

- the Study Framework: to determine the total phosphorus threshold response level...at which any statistically significant shift occurs in algal species composition or algal biomass production that results in undesirable aesthetic or water quality conditions in the Designated Scenic Rivers
- Key elements of a numeric criterion field study: extensive and intensive spatial coverage of region, frequent sampling over multiple years, spans a gradient of conditions from reference to highly enriched, minimize confounding factors like channel unity, light, and substrate size.
- maps of the study area: three sampling events have been completed so far; since the area is only about six hour drive from Baylor they have developed an efficient field system; while Illinois River is the focus it is not the only sample area; the other Scenic Rivers and other water bodies in area help to establish baseline; There were 35 sites selected based on historical data from OK and AR, including intensive water monitoring and snap shots; the historical sites were important and will help with comparisons and changes over the time period; drainage areas in the basin flow through the sample sites; all of this allows for a lot of coverage
- key disclaimer: "the following slides are intended only to illustrate the distribution of total phosphorus values among sites using maps and cumulative frequency graphs and no stressor-response data are presented in these illustrations;"
- land use maps and total Phosphorus map: There is forest cover in the Upper Illinois River, Spring Creek, Lee Creek and Little Lee Creek, there is less forest cover in the main Illinois River area; the developed land is mostly in Arkansas and flows thru Flint Creek and the Illinois River and maintains 10% to Tahlequah; Pasture land is being filled in with development, sample areas still have pockets of pasture; total Phosphorus is not totally additive; developed areas impact more and forest covered areas has lower phosphorus
- cumulative distribution charts: demonstrated April higher flows with lower concentration with 70% of samples below the 0.037 mg/L Phosphorus standard; summer showed 50% of sites higher than the standard; October was a low base flow sampling event and Phosphorus results showed 0.01 mg/L; flow has impact; looking at log scale, there are similar results and numbers are tight in the same sample point

SMITHEE asked if study will quantify the land use Phosphorus contribution

KING replied that it will

PUBLIC asked why the number referenced was the 0.037 mg/L

KING replied that it was the OWRB Phosphorus standard is 0.037 mg/L and that is why it was specifically included and the purpose of the study is to validate the number or demonstrate a change is necessary

SMITHEE added that the specific criterion for 30 day geometric mean for Scenic Rivers is establish to keep rivers among the top 25% of all rivers of similar ecological characteristics among the worst reference conditions in same eco-region

PUBLIC asked about the possibility of illnesses in the summer months from recreation or fishing in the Illinois River and if health hazards would be addressed in the study.

KING replied that there were no human health impacts included in this study

KING discussed that the sampling frequency is on track and three events have been completed. They are watching gages gages and weather in order to schedule events to stay close to average or low flow conditions. There may be times that sampling cannot occur due to rainfall/weather events

SEE PHOTOGRAPHS IN PRESENTATION

KING displayed photographs and discussed sampling methods and findings.

- There was excessive nuisance algae growth (cladophera); study will look at species and biomass
- Study team is looking at the main characteristics of the river, where is the algal habitat; Saline Creek is very similar to Illinois River; need to identify large riffles and do 3 small streams 3 riffles with transect; 5 locations with washers and flagging method; nearest cobble to substrate; taken and put in white pan cover with water, they photographed each rock and documented; pictures illustrate some heavy growth of filamentous algae; they are getting good representation of the algae present; they are getting precise area of rock scrapped based on use of foil; get slurry of stream water and algae off rocks, this goes into dark bottles and is stored on ice; they analyze each night in a lab that is set up in the hotel; a taxonomist has verified they are doing good job and using good processes; they are using hotel and canoe operator sites for mobile lab; they pipet multiple aliquots and 2 chlorophyll filters; they wrap in foil and freeze then process at Baylor within holding times; other organisms will be looked at; committee insisted that this aspect be added; they use Hess sampler to collect invertebrates at each of the 15 locations; 1 event has been completed; there was a large number of organisms moving through a large sieve 5 ml; they getting thousands of organisms and are using the bigger ones; over 100 taxa so far; there are many grazers including snails and they are even grazing on each other; the stone roller fish are very prolific; seeing scaring on rocks from the stone rollers; in the higher nutrient sites the algae is thick and the stonerollers are cropping but you don't get the detailed observations; dissolved oxygen (DO) is a little tricky since it is effected by stream flow, temperature, and

organisms in the water; pH also goes along with DO; they deployed monitor at 33 sites to try to get good reading over 48 hour period.

KING explained the sample status report by saying that all key variables in contract for measurement were included. He needs input from the committee regarding species composition analysis due to cost.

PUBLIC asked what DIEL DO is

KING explain it was a 24 hour DO system where readings are obtained every 15 minutes

PUBLIC asked about the effect of the snails

KING replied that the grazers may filter some of the nutrients, they have dense teeth and scrap deep into the alga, they recycle nutrients by eating and excrete it in their waste products

SMITHEE stated that snails are like sheep. They graze on algae. Stone rollers are more like cows

KING stated that there is not likely to be a big change related to snails

KING shared a second disclaimer: the following slides are intended only to illustrate preliminary relationship between total phosphorus and select biological response variables; no statistical analyses have been conducted on the data; it is too early to draw inferences about a threshold level for total Phosphorus, and refrain from drawing conclusions

KING stated he was asked by the committee to include sestonic chlorophyll-a in the study. Graphs show high gradient with sampling on two dates. The Phosphorus was plotted on a log scale chlorophyll-a shown in ug//L. He is only presenting results and is not drawing conclusions. The team grabbed liters of water and extracted the chlorophyll-a.

COMMITTEE stated that they notice no gaps in the study so far.

PUBLIC asked for an explanation of what does these results tell us

KING stated that it is an index of how much algae is in sample

PUBLIC asked if it is a ratio or what is expected to get as a result

KING stated that this is not a focal endpoint but that it does help to interpret the other data

KING showed the next eight slides related to Benthic Carbon: Phosphorus (C:P) ratio versus total Phosphorus.

PUBLIC asked if there were overlapping dates and how they compared

KING stated that he hasn't looked at the data that way yet. He only received the data the night before the meeting. He stated that a few values were high in October and there were some really thick algae

PUBLIC asked how this information is going to help in inform the study result.

KING stated that the workplan has statistical analysis that will help inform decision. There is consensus among literature and the committee will establish the Phosphorus range. He will not

SMITHEE said he thinks the data collection will inform decision

PUBLIC asked when there will be an opportunity for public input

SMITHEE stated that public input is not required but the committee will continue to meet in the same process of open meetings with public input for the entire study

HAGGARD stated that public input will occur in the open meetings

SMITHEE said that the committee will continue to follow the AGs and Governor's charge

PUBLIC stated that this approach is a big miss and the committee should hold hearings

PUBLIC asked how the sites were select

KING replied that he looked at sites that were similar with respect to light, flow rate, geomorphology, etc. The sampling results show similar results, so far

PUBLIC asked if water depth was taken into account

KING stated that the team chose varies riffles to address water depth

KING then began a discussion of items for the committee to address.

KING stated that there was a need to reconsider the site locations identified as ILLI1 and EVAN1 due to lack of flow. This should not have an impact since there are other representative locations. It is possible to move the Evansville site to a location on the Barron Fork which was identified by Ed Fite

CHARD-MCCLARY asked if KING had recommendations

KING stated that he was on the fence

SCOTT stated that there were 10 sites below 0.015 and wondered if there was something specific about those sites

KING said they are spread out all over the sample area

SCOTT suggested that the Evansville site be moved

PHILLIPS commented that it made sense

KING said that he will need to look to find a riffle area for Illinois 1. Now is the time to make the decisions so that the study can move ahead.

SCOTT asked if there was any other data being captured at Evansville or Illinois 1

KING and COMMITTEE said not really

SMITHEE said that if we don't move the sites they will have no utility. We should move to area where we can get more data and use the data in the study

HAGGARD said that if we have a hot dry summer or fall we could possibly have inadequate data.

Kendra Jones, Arkansas Assistant AG stated that these changes could be made to the workplan by the committee.

HAGGARD said that we should do it. We have a minimum of 25 sites so moving a couple should be easy to do

SMITHEE said that is a "green light" to move those sites and we should move on to the next issue.

KING thought it was important for the COMMITTEE to discuss if taxonomy identification, biovolume and soft algae would be analysed from a few sites every event or not. The original plan was to do early spring and early fall. He thinks we should do the October ones but would like feedback.

SMITHEE asked what the included in the budget to do the taxonomy work.

KING stated that around \$48,000 was budgeted.

HAGGARD asked if we are missing biovolume data based on the timing

KING stated that June was early summer and the next years samples would be collected in April and August

CHARD-MCCLARY stated that this should be part of the study

SMITHEE voiced concerns about the funding and the cost to do the work

PHILLIPS asked how long the samples are viable

KING stated that they were viable for a long time. He said he would need to check to determine when the taxonomist was available

HAGGARD stated that we may want to hold the October samples and see what happens in April

KING said there could be a small number of sites that are sampled each time and do identification for nuisance species only

PHILLIPS agreed that was a good approach

HAGGARD added that there was a lot of value in that approach

SMITHEE agreed that we should do it

SCOTT stated that we need to talk about how to pick sites to evaluate gradient loss

KING said there is a demonstration of cladophera presence. This gives a longer term look rather than a snap shot

HAGGARD asked if the process would be to break into groups or randomize

KING said they would try to pick sites most similar to Illinois River and not effluent dominated streams

CHARD-MCCLARY asked for verification that all sites would be sampled twice each year and at least 5 or 6 sites would be sampled at each sampling event.

KING replied "yes"

HAGGARD asked if there were still needed sites on the Illinois River and if KING could send committee recommendations

KING described the need for additional snail density estimation method; he wished the team had thought of this approach from the beginning for the Hess sampling. He is confident they have underestimated snail density; based on the number of snails falling off; some snails are "glued to the rock"; modifying the collection method does not much time the their sampling events

KING asked if there was anything else that needed to be discussed

SMITHEE stated he was glad there had been no vandalism or theft of equipment

KING agreed and said there had been good interaction with land owners

SMITHEE asked if there were any surprises

KING stated that the team was outstanding; they have been leveraging funds from other Baylor projects, and had hired some research techs. There are Ph.Ds, graduate and under grad students working on the project.

SCOTT asked how the field work is being conducted

KING stated that there was one big team of 6 and they can do each site in 50-60 minutes. In about 8 hours to do all sites including drive time and then set up mobile lab at night. They are astonished by the amount of grazing organisms and the last event highlighted that.

SMITHEE stated that it is easier for otters when the grazers are close

PUBLIC stated that otters were seen last week

KING said that in the Illinois River in OK he saw small mouth buffalo but not much in other areas; he thinks snail biomass may be related to the small mouth buffalo. He will be studying this to see potential impacts, etc.

SMITHEE asked if there were any final comments or questions from the public. There were not.

VI.

SMITHEE stated that we need to schedule the next meeting for some time in April. Since April would be a time for a sampling event, it would be nice to meet with the entire team. Therefore, Tahlequah would be a good location. He will send out a "doodle poll" to establish a meeting in mid-April 2015.

Adjourn 11:55