

**Texas Instream Flow Program  
Lower Sabine River Study Design Workgroup  
Meeting Notes  
April 9, 2010**

The Study Design Workgroup met in Orange on April 9, 2010 from 8:30 a.m. to approximately 1:30 p.m. The following notes capture key discussions and decisions of the group.

**Action Items**

- Per request to extend comment period on Draft Study Design: Agencies to check with USGS to see if deadlines can move back to May 9 for SH comments

**General Comments/ Questions**

Comment: The tone of the study design is a concern. Participant (SRA) would like:

- o A list of known problems on the Lower Sabine River
- o With basis for designating each problem
- o If no problem is identified, need to be clear on current conclusion
- o TIFP agrees to provide justification for concerns in basin

How is existing data used?

Example: Species disappearance.

- If they are disappearing (specific to Sabine):
  - o What data supports it
  - o If no data- what needs to be done to verify factors related to disappearance

Questions about nature of data: Flow data, fisheries data, water quality data

- No document that discusses this together
- Don't have an historic document about other activities connected to the river
- Possible research on what the water was like pre-1955.

Response: what is the benefit of a pre-history study?

Q: What is the standard (SRA) will be held to

- For FERC - looking at current condition and
  - Not degrading current condition
  - If a degraded condition, what can address it
- SB II- what conditions river is starting from
  - Concern is design and use [of the study]

TCEQ: Can work with you to identify what concerns

Q: Is the purpose of study to determine what high quality water is? Or is the purpose what is [the river] today?

A: What is the condition today relative to the past but also relative to expected future conditions? If conditions show up, what could be done?

Q: What have other studies done?

A: Assessment of current conditions

Q: Is there a test to verify what causes a species to decline or improve? True decline? Cycle? What factors?

A: Recognizes ebb and flow of species

Comment: One main concern- don't link species decline to Toledo Bend dam operations without looking at all factors.

Comment: Option to look at thresholds and tipping points. At what point in time are we moving from a natural range of variability to a response to a particular condition.

### **Site selection process**

- Concern there is not a survey of RM 90 → rest of study area of mussels
- Q: Does study go up tailrace?

A: Data now being collected there for FERC process

### **Conceptual model**

Ecological Process/ flow regime

Land use changes and overbank flow- influenced by other than reservoir operations?

Silvaculture?

Municipal stormwater?

Contaminants impacts on water quality?

Comment: Impacts of Clean Water Act over time may have improved water quality

Comment: Impacts of forestry best management practices vary by state; are voluntary

### **Hydrology and hydraulics**

Q: How does 2-D model (RMA-2) deal with changes in channel?

A: RMA-2 does not model changes in bathymetry, but other models can use used to respond to things like sediment changes. Other models are being evaluated that might respond.

Q: How to respond to habitat changes with flow (e.g. shifting sands)

A: Reach is larger than a point- so model should capture overall area. Can do multiple runs for different changes

Q: How are flow recommendations made? How do models interact?

Concern is that model shows what is important at different flows.

Concern also with interaction of Senate Bill 2 and Senate Bill 3.

### **Biology**

Comment: The study should take in areas on Texas and Louisiana sides for riparian work. Floodplain on Louisiana side is generally greater

Comment: Consider whether the differences are important.

Q How do you define native baseline?

A. Native to Sabine

Q. (Terminology) What is the purpose of riparian habitat studies element?

A. What riparian species are in riparian zone defined by habitat, hydrology, soils, and vegetation.

Q. What constitutes mesohabitat? Oxbows?

A. Mesohabitats are typically riffles, runs, and pools. Oxbows are important to fish dynamics (certain species). Also, some floodplain dynamics that LIDAR data may show. Can use this to look at oxbow and yazoo connectivity.

Q. Do we need extensive surveys/ sampling of refuge areas (e.g. tributaries and oxbows) for species not found on the main-stem?

A. Main-stem assemblage depends on refuge areas, so agencies think this is important.

Comment: Paddlefish

SRA may use larger net opening size in FERC sampling to see if they get paddlefish.

#### Blue sucker

Q. Why use as an indicator if we don't understand it?

A. Understanding fish is an important part of the study.

Need to understand some aspects of it better.

Comment: SRA has picked some up some blue suckers- including small ones

Comment: Nebraska study pursuing blue sucker- could inform Texas effort

#### Floodplain species

Q: Can you correlate fish data with floodplain records?

Agencies: Expect limited floodplain sampling

Comment: Could be a lag -- species show up after floods and other connecting events

Comment: Fisherman use oxbows on Wednesdays, when levels drop due to low flows resulting from Sunday's drop in hydroelectric releases. Extremely high catch rates following oxbow connectivity and mainstem recruitment.

#### Mussels

Q: Are there 5 threatened and 9 species of concern in the Sabine?

A: Yes. Table on page 15.

Comment: There may be 16 species in the Sabine.

Comment: We know they are present. Don't know anything about abundance, distribution, etc.

Comment: The sampling effort that may imply decline from 32 to 16 species is not the same. There may not be a decline. Needs more study. Be careful about making any conclusion about decline.

Clarified the agencies not sure if mussels will be used because of limited data, but agencies haven't given up on them yet.

### Mesohabitat

- Q. Will the study try to sample all the types of mesohabitat listed on the slide?  
A. As encountered.

### Habitat change

- Q. Will habitat be stable over time at the same flows?  
A. Yes- unless some major event.
- Q. What about sandy river situations?  
A. Ratio stays same in an area; but location may differ, unless a major event occurs.
- Q. Do you recalibrate model after major event?  
A. That creates problems with studies if continual changes to the model have to be made, Need to capture a snap shot of a representative area.
- Q. What is a 'major' event? Are studies valid after major events?  
A. Habitat may shift, but overall we would expect to have the same relative amount and ratios of habitat.

### Spotted bass

- Q. Are preyfish used?  
A. Could be.
- Q. How do we calibrate habitat model (for biological needs) to know if a species can flourish in a specific environment?  
A: Model input is derived from fish habitat use
- Q: How do you know when you no longer have that habitat for the fish? How do you know when you don't have habitat for the species?  
A: Agencies agree to the importance of calibration  
Comment: Also temporal and dynamic importance. Does it have to be constant-+ or periodic or sporadic

### Geomorphology

Phillips- doing geomorphologic research: grain size, general descriptive, not on modeling

Aerial photos- some has been done. Check with Mark.

Concern: 1930s photos are so grainy. Can see movement, but difficult to see changes due to erosion; difficult to measure bank erosion rates. Could see channel migration.

### Water Quality

- This section of the study can be generic.
- Possibly delete UAAs- due to relevance
  - Wastewater discharges

- Need info from the Louisiana side on discharges

Discharge location: 1 (Temple Inland) may be another missing. SRA to provide updates

Volumes in study:

Comment: These are permitted volumes and are not close to real number.

Comment: EPA eco-database may have Louisiana information

SRA WQ website has a large amount of data and TIFP will also use and analyze data collected through the FERC process.

Agencies will change TSS to Turbidity

Q. What is the frequency of Brazos monitoring?

- By- comparison, SRA is doing monthly
- FERC sampling- 2 week periods; 1 time a month. Began in Sept/Oct. Have done 3. Dam/powerhouse to Burr Ferry, DO; temperature, pH, conductivity

### Connectivity

Inundation modeling- what is the status? This is a question for Mark & Melissa.

Maybe get several people together to get on same page re: riparian, etc.

Coordinate with SRA on transduced locations.

- RM 94 and 100: SRA will have a year's worth of data- pressure transducer
- RM 54- also a transducer location

### General

Comment: Descriptions of the study pieces are generic- don't describe what agencies will do. It's at a 5,000 foot level, but needs to be at a 500 foot level.

A. Study design is a higher level - what will be studied. Protocols will be more detailed (how things will be done). They will plan to get data at targeted flows.

Q. What kind of coordination will be done with SRA?

A. Will ask SRA what type releases and timing.

Q. Fisheries- at what flows will sampling be done?

A. Base flows primarily. High, low, medium base flows

Q. What constitutes a compromised sampling event (page 53)?

**A. If for example, a seine gets snagged and all fish are lost from the net or a water quality sonde or temperature logger is washed downstream and not recovered.**

Q. How to differentiate between sampling efficiency and habitat preference and adjacent habitat variability etc.?

A. If enough data is present, there will be a robust suitability curve.

Q: How do you relate fish to habitat?

A: Enough sampling; expert input.

Q. Is there enough money for enough data collection?

A: Will use state agency staff, and welcome SRA staff. May need to use experts and contractual studies.

### **General concluding discussion**

Agencies will generate a revised draft study, including comments and responses. Send to USGS for peer review and to stakeholders

Q: Where is the evaluation of data to determine if there is a sound system? Would like to see opportunities for this

Opportunities- study design workshops (current), and data integration workshops, and review study report.

Q: What is the base to determine soundness; declines?

Comment: Need to evaluate data so you can be able to determine soundness or degradation. There is concern that managing for one thing (a single species) will degrade another.

Response: Can look at how modifying for key species might impact conditions for other species.

Comment: We'll have data at the end that can be used to model changes in output. The question then is value- do changes drive to or from a sound ecological system.

Stakeholders feel value judgment comes between steps 4 and 5 (in the chart describing the study steps).

Comment: Assure one species is not managed to the detriment of another species.

Concern that the tone of the report does that.

Response: Agreed on need to manage for mesohabitat and species diversity. Important to look at flows through time not just in one season or year and to determine flows required for a suite of species and possibly multiple life stages of those species.

How were key species chosen? Is process collaborative throughout?

A: Yes. Data collection can include collaborators. Integration workshops include data evaluation, where to go with results. Peer review of draft study report also occurs. Adaptive management will be used collaboratively, including in Senate Bill 3 work plan.

### **Senate Bill 2 & Senate Bill 3 interaction**

Comment: Page 5, first full paragraph creates confusion. Seems to be a conclusion. Add new section immediately after this that discusses intersection of SB2 and SB3. Discuss how these studies accomplish purpose of legislature.

- SRA will propose edits

Q: How can SRA and others be kept better informed and involved in the study design, and assure the contracts and studies are filling gaps. How to better coordinate to better integrate decisions on money for studies?

A: Desire to improve information about contracts and studies. Also to discuss with TWDB.