

Smelt Monitoring Team – Tuesday, July 7, 2021

Post-Season Meeting #2: Non-Guidance Document-Related Process Items

PARTICIPANTS

- California Department of Fish and Wildlife (CDFW)
- California Department of Water Resources (DWR)
- National Marine Fisheries Service (NMFS)
- State Water Resources Control Board (SWRCB)
- U.S. Bureau of Reclamation (USBR)
- U.S. Fish and Wildlife Service (USFWS)
- Kearns & West (KW)

ACTION ITEMS

- USBR-led action items:
 - Reclamation will share last week's compiled recommended updates to the Guidance Document with the LTO Group ASAP.
 - USBR is developing a web tool using historical data to help identify patterns in DS life history in the absence of DS detections.
 - USBR to add the X2 tool to SacPas but rename as "an estimate of surface salinity of 2.64 by linear interpolation."
 - USBR to review PA and identify any actions that might require off-cycle meeting or coordination among SMT members in document similar to the one CDFW is producing.
 - USBR to share updated list of data sources incorporating SMT feedback at beginning of next season **Due: Nov 2021**
- CDFW-led action items:
 - CDFW to follow up with USFWS to determine whether providing email updates of survey results similar to CDFW's is feasible.
 - CDFW to discuss with Ian at DWR whether PTM modeling could be done for the Barker Slough area and what the level of effort would be.
 - CDFW will check internally to see if there are concerns with considering the impacts of shorter tow durations when calculating catch per tow.
 - CDFW to analyze DJFMP data to better understand movement of LFS past Chipps Island and into the south Delta.
 - CDFW to complete and share document outlining the process and relevant contacts if ITP Conditions of Approval are triggered.
 - CDFW to circulate an outline of the current ITP Risk Assessment for feedback.
 - CDFW to also check in with the Delta Monitoring Workgroup members for feedback on how to improve the Assessment's usefulness.
 - CDFW and DWR to form a subteam to develop a new structure for the ITP Risk Assessment discussion.
- USFWS-led action items:

- CDFW to follow up with USFWS to determine whether providing email updates of survey results similar to CDFW's is feasible.
- USFWS will follow up internally about the availability of crews to do earlier larval sampling and discuss whether the request needs to be elevated.
- USFWS to start analysis exploring the relationship between larval distribution and X2 during spawning/adult migration reassessing the temperature off-ramp for OMR management.
- SMT-action items:
 - SMT will form sub-teams to development criteria and/or decision-making frameworks related to (a) on-ramping of OMR management -- especially in response to no first flush trigger/drought conditions; (b) interpretation of PTM runs; and (c) initiation of OMR management for adult LFS protection.
 - For Subteam A/C: Brian, Nick, Trishelle, Michael, Felipe, April; potentially still need USFWS, NMFS participation
 - For Subteam B: Adam, Brian, Nick, Ian U; potentially still need USFWS, NMFS, State Board participation
 - The LFS Technical Team members will share the data from the Larval Smelt Entrainment Monitoring and eDNA pilots with SMT as it is available so that they can track. **Ongoing next season.**
 - SMT to review and add any additional data sources as well as note the relevant time of year and/or life stage when data sources are most useful for each species. **Due Friday July 30**
 - SMT members to share feedback on which sections in the outline of the current ITP Risk Assessment could be improved for next season.
- LTO Group to:
 - Consider recommended edits to the OMR Guidance Document.
 - Respond to the SMT's request for clarification re: instances in which the FMWT Index for Longfin Smelt (LFS) is zero (see details below).

MEETING SUMMARY

*Note: In order to keep process recommendations compiled in one place, we have retained the next steps discussed at last week's first post-season meeting in the notes below and added this week's process recommendations to them to create a comprehensive list. **Items in bold are action items.***

OMR Guidance Document Recommendations (discussed 6/29)

SMT members recommend that **the LTO Group document the following processes in the OMR Guidance Document:**

- Regarding the ITP Risk Assessment:
 - CDFW will lead the SMT in developing bullet points describing the key ideas to be incorporated into the ITP Risk Assessment.
 - CDFW will seek consensus on the executive summary as well as any advice to WOMT via live editing these sections of the ITP Risk Assessment.
 - SMT members will identify supporting data, references, and other pertinent information to support their assessments of low, medium, or high risk.
- Regarding information received outside of SMT meetings:

- SMT members will share data corrections or new data via email with a subject line highlighting the new information.
- SMT members will memorialize new or corrected data in the meeting notes as a post-meeting update.

Request for Clarification from the LTO Group

SMT members noted that the current critically dry conditions could lead to low Fall Midwater Trawl Survey (FMWT) catches this autumn. **SMT members requested clarification on the following:**

- If the FMWT Index for Longfin Smelt (LFS) is zero, can the SMT conduct a risk assessment based on biotic and abiotic factors, per ITP Conditional of Approval 8.3.3 (Adult LFS Entrainment Protection)?

Other Topics

SMT Processes

- In their weekly review, SMT members will continue to identify any language carried over from previous ITP Risk Assessments that should be revisited by the group. SMT members will then discuss any flagged language at the next SMT meeting.
- CDFW started to develop a document that summarized each ITP Condition of Approval, how a condition could be triggered, and what steps should be taken if a trigger is met, including the appropriate points of contact. **CDFW will revisit this document and share with the SMT.**
 - **USBR offered to review the PA and develop a similar document** if responding to triggers from any PA actions would require off-cycle coordination of the SMT.
 - Both documents could be added to the OMR Guidance Document at a later date.
- SMT members discussed their process for reaching consensus. SMT members agreed that they define consensus as developing recommendations that the group is comfortable with and capturing any disagreement in the meeting notes, including any concerns that will be elevated to WOMT.

Data Sources

- CDFW noted that the ITP provides the SMT with the flexibility to consider a broad range of data sources. Developing a conceptual model that identifies which data is most relevant at a given time of year or life stage for each species. CDFW encouraged SMT members to raise whatever data they believe to be relevant at SMT meetings.
 - DWR noted that some typically secondary data sources can become more important during years when data is limited overall, e.g., broodstock collection data was helpful this season due to a lack of detections in other surveys.
 - **USBR will circulate a list of data sources they developed at the beginning of this season. SMT members can update this list with additional resources** (e.g., broodstock collection, DWR's X2 tool, qualitative larval sampling) **and indicate the time of year and/or life stage when data sources are most relevant for each species.**
- SMT members shared suggestions for additional data sources that could be considered if the FMWT Index is zero in future seasons, including:
 - Environmental surrogates
 - Catch data from other surveys:
 - Bay Study
 - December Kodiak Trawl for Delta Smelt (DS)

- EDSM
- Estimates from life cycle model
- Occupancy modeling
 - Although FMWT does not do replicate sampling, USFWS indicated it may be possible to combine tows within a region to develop occupancy values by subregion.

ITP Risk Assessment

- CDFW requested feedback on how to structure the ITP Risk Assessment discussion.
 - CDFW suggested developing a conceptual model or outline to help guide the conversation while still giving the SMT the flexibility to consider a broad range of relevant data.
 - **CDFW offered to form a subteam to work on developing a structure for the ITP Risk Assessment discussion over the summer. DWR agreed to participate.**
- CDFW also requested **feedback on how to improve the ITP Risk Assessment, e.g., which sections could be streamlined, removed, or expanded.**
 - If the outline of the ITP Risk Assessment is revised during the off-season, and updated version can be incorporated into the OMR Guidance Document prior to next season.
- SMT members discussed external users of the Risk Assessment and meeting notes and how to make these documents more helpful to those outside the SMT.
 - **CDFW recommended asking the Delta Monitoring Workgroup for input.**
- SMT members discussed developing definitions for high, medium, and low risk.
 - CDFW suggested low risk could indicate a near-zero probability of entrainment in the near-term; high risk could indicate entrainment is imminent or continued entrainment is imminent; medium risk could indicate entrainment is likely or conditions will set up entrainment in the near future.
 - SWRCB emphasized the importance of ensuring any definitions preserve the SMT's ability to make professional judgements based on the best available information.
 - CDFW agreed that maintaining flexibility was useful.
 - USFWS pointed out that it is also important to consider cumulative risk, e.g., two weeks of medium risk can develop into a high-risk scenario.
 - DWR recommended developing definitions that would be consistent both within and across seasons.
 - CDFW suggested staying away from numerical definitions of risk, as this does not provide the flexibility needed to assess risk as populations fluctuate. Instead, the SMT should provide supporting data to put their risk assessments in context.
 - DWR noted that new tools may be in development that could shift how the SMT interprets risk in the future; this is another reason to avoid developing numerical definitions at present.
 - USFWS supported the continued use of language such as, "current OMRI levels are sufficiently protective".

Non-Guidance Document Related Process Suggestion (discussed 7/6)

The SMT discussed each of the following process suggestions; outcomes and next steps are listed after each item.

Additional SMT (Non-Guidance Document) Process Items

- SMT discussed whether to add San Luis Reservoir levels to the outlook.

- DWR agreed to follow up with their operations staff to understand whether this data would be useful or feasible to include in the Outlook.
- Outcome: DWR followed up after the meeting with a recommendation not to include San Luis Reservoir levels in the Outlook as San Luis operations are not correlated with OMR or exports.
- SMT discussed the development of criteria and/or decision-making frameworks, including conceptual models, to help make decisions more repeatable, particularly related to (a) on-ramping of OMR management -- especially in response to no first flush trigger/drought conditions; (b) interpretation of PTM runs; and (c) initiation of OMR management for adult LFS protection.
 - CDFW emphasized that they want to stay away from prescribed formulas for assessing risk given the ever-changing conditions in the Delta but supported developing guidelines.
 - CDFW and USBR distinguished between the level-of-effort required to develop a comprehensive decision-making framework integrating the range of biotic and abiotic conditions that inform their assessment of risk, versus decision-making frameworks to address the specific decision instances called out in a-c. They suggested starting with a-c this year and eventually feeding that effort into something more comprehensive.
 - For “a”, CDFW suggested looking at notes from previous years to see what has occurred in the past and how decisions were made. They also suggested focusing the discussion on what to do this coming year, in that they anticipate the absence of first flush conditions given the drought.
 - **The SMT agreed to form sub-teams to develop decision making frameworks for a-c;** the discussion for “a” and “c” could be combined. Each agency should have representation. Initial volunteers included:
 - For Subteam A/C: Brian, Nick, Trishelle, Michael, Felipe, April; potentially still need USFWS, NMFS participation
 - For Subteam B: Adam, Brian, Nick, Ian U; potentially still need USFWS, NMFS, State Board participation
- The SMT discussed the desire to standardize data distribution across all surveys. The concern articulated by SMT members was that USFWS data was only shared verbally on the call, which leaves a high possibility of transcription errors; while there are USFWS daily email updates, those emails do not provide cumulative totals which makes them difficult to track across the season. There was also some interest in a more standardized format between survey reports.
 - NMFS noted that USBR is keen to use SacPas as the centralized location for real time updates.
 - CDFW expressed the concern that using a third-party site will result in delayed receipt of data.
 - CDFW stressed that they support having a similar method for sharing results, but cautioned that requiring a standardized format (e.g., table) might be too burdensome in that sometimes the results do not warrant something so regimented.
 - **The SMT agreed to follow up with USFWS to determine whether providing email updates of survey results similar to CDFW’s is feasible.**
- The SMT considered whether PTM runs or other tools could inform Barker Slough advice.
 - CDFW was interested in whether PTM runs could be helpful in that the SMT’s understanding of hydrodynamics in that area is low. For instance, if Barker Slough pumping rates were high, should the SMT be looking at catch more broadly in the area to inform risk? CDFW acknowledged that it could be difficult to set up the insertion points for the modeling, especially given the lack of larval sampling data in the North Delta.
 - **CDFW to discuss with Ian at DWR whether PTM modeling could be done for the Barker Slough area and what the level of effort would be.** Stressed that this is not a high priority.

- The SMT discussed whether shorter than standard tow durations should be considered when calculating average catch per tow.
 - CDFW noted that the ITP is very specific about the calculations of catch per tow and what those calculations trigger. The ITP assumes that in all cases 20mm surveys do three tows, SLS does one, and that all tows are a standard 10 minutes. However, CDFW noted that there were several times this season when the survey crews did several short tows instead of one long one because of algae. CDFW believes this should be taken into consideration when the data is interpreted. They suggested this may need to be elevated to their legal team.
 - NMFS shared that they addressed the same issue in DOSS; when the trawl catch numbers looked suspicious because the trawl time had been longer or shorter than the average, they provided calculations by both minutes and number of trawls in a footnote, so that those using the data could keep the potential impacts of trawl times in mind, even as the “official” documentation of catch was based on the number of trawls.
 - CDFW said that even if they cannot change the hard trigger to reflect differences in trawl time, they could incorporate the information into the risk assessment as a footnote.
 - USFWS observed that shorter tows should not be dismissed if they caught fish; they could be adjusted to account for time by calculating density of fish/meter. USFWS noted that salvage counts suffer the same kinds of discrepancies in that they are not always counting at the same interval.
 - **CDFW will check internally to see if there are concerns with considering the impacts of shorter tow durations when calculating catch per tow.**
- The SMT asked whether there are opportunities to use the early information on adults to be preventative with regards to larval fish (i.e., preventing 8.4.2 trigger exceedance). They discussed how to use adult LFS distribution and the 8.4.1 (Adult LFS) trigger to inform subsequent young-of-year (YOY) LFS entrainment risk and improve the distribution for YOY to keep them outside of the central-south Delta and export facilities.
 - CDFW liked the idea of being more proactive and reorienting discussions of risk to look at cumulative risk across the season, rather than as a week-to-week snapshot.
 - CDFW suggested that once the SMT has a sense of the adult distribution, they can use that to inform where spawning will occur. Then they can begin to ask questions about whether several instances of moderate risk to fish in those areas may in combination pose a high risk. Those sorts of possibilities should at least be acknowledged in the notes.
 - CDFW also observed that the SMT treats DS and LFS as two different species with different risk profiles, but the SMT should consider that these species are indicator species for the whole ecosystem, so if there is risk to one or both species, does that mean there is higher risk to the fish community more broadly? CDFW acknowledged that this kind of approach would need to be integrated into the SMT’s thinking over time.
 - **The SMT agreed that in next OMR Management season they will utilize the adult distribution of fish to inform their understanding of where spawning is occurring and use that information over the course of the several weeks to understand cumulative risk.** Similarly, they will use the distribution of larval fish to inform risk to juvenile fish.

Items that likely need to be elevated to LTO Group, potentially with a recommendation from the SMT

- USFWS made a request to consider extending SLS through the end of March to monitor the smaller Delta Smelt larvae since these stages are better sampled by SLS than using the 20-mm Survey.
 - CDFW noted that SLS does overlap with the 20mm Survey in most seasons, but the number of crews is a limiting factor. They could look into extending the SLS survey later in March, but it would be difficult logistically.
 - USFWS noted that EDSM usually shifts to sampling larval DS in April, but they could potentially shift larval sampling into March. **USFWS will follow up internally about the availability of crews to do earlier larval sampling and discuss whether the request needs to be elevated.**
 - The LFS Technical Team overseeing the LFS Science Plan as part of the ITP could be a good place to evaluate any potential changes to the monitoring enterprise – whether extending surveys during shoulder periods of life stages or changing survey timing based on temperatures. They would also assess whether any suggested changes would have negative impacts on DS monitoring.
 - DWR liked the idea of having better monitoring during the life stage shoulder periods but noted that it might not have much impact on their recommendations regarding operations.
 - The LFS Technical Team will be starting their entrainment monitoring pilot next season, as well as an eDNA sampling pilot. These efforts might also help fill the data gaps. **The LFS Technical Team members will share that data with SMT as it is available so that they can track the efforts.**
- USFWS raised their desire to reassess the timing and purpose of qualitative larval sampling: in the 2008 BiOp, it was recommended that within a year of implementation, the projects should develop a quantitative larval sampling program. The two species have shown less and less presence in surveys and salvage, but that does not mean the fish are not present. Because of limitations in sampling, it would be prudent to extend the qualitative larval sampling period – and if possible, to convert to quantitative larval sampling at least during the time when CDFW is working on larval entrainment monitoring pilot.
 - a. DWR observed that the path for tackling this topic more broadly is to bolster outside-facility monitoring, which is not the focus of the first couple year's efforts within the LFS Technical Team.
 - b. **The SMT will continue to track the ongoing pilot projects via their members who are involved in the Larval Smelt Entrainment Monitoring group;** that project data will be incorporated into regular reporting.
- The SMT raised two items in the PA and/or ITP that could warrant reconsideration: (1) the method for determining the salvage trigger for DS and (2) the temperature off-ramp for OMR management.
 - USBR stated that they would need to raise any concerns about PA content to their management and would want supporting data/analysis.
 - CDFW agreed and said they would want to confirm that all the SMT-agency representatives were on the same page about their concerns before advancing internally.
 - NMFS warned that proposing any changes to the project description is very difficult in that any proposed change that was not analyzed in the BiOp or CDFW's Consistency Document could reinstate consultation. Changes can be made, but they are restricted to topics that are within the scope of what was analyzed or reasonably connected.

- USFWS suggested that the topics are worth exploring even if the information does not get used immediately. Any analysis could be used to inform future consultations or the independent science panels that will be convened in several years.
- The SMT agreed to start initial data analysis on these topics with the understanding that actual changes may not advance at this point, but that it is worthwhile to document potential shortcomings in the existing language/triggers. **The SMT added these topics to the list of proposed studies and data analysis.**

Proposed Studies & Data analysis

The following are studies proposed by members of the SMT. In bold are the group's decisions about next steps.

- Explore if OMR management can have a positive effect on adult distribution and reduce later young of year entrainment and salvage.
 - The SMT agreed that this is a large and daunting analysis. **It would be worth synthesizing what has been analyzed on this topic to date, identifying some smaller pieces that could be tackled, and potentially elevating the need for additional studies.**
- Determine what would be a meaningful site-specific change in catch (i.e., could increases of one or two individuals at a single station be the result of random sampling variability, tow time, etc.).
 - Need to establish next steps on this.
- QWEST investigations: (1) Explore how QWEST effects salvage and distribution; and (2) Explore the role of OMRI and QWEST in the initial distribution of fish using the first year of December SLS data.
 - **The SMT agreed to put these on hold for now.**
- Analyze DJFMP data to better understand movement of LFS past Chipps Island and into the south Delta.
 - **CDFW (Trinh) will take on this analysis.**
- Explore the relationship between larval distribution and X2 during spawning/adult migration.
 - **USFWS (Gonzalo) will start this analysis.**
- Develop a web tool using historical data to help identify patterns in DS life history in the absence of DS detections. Also incorporate abiotic surrogates for distribution.
 - **USBR (Nick) is turning this into a web tool now.**
- Ground truth the DWR X2 tool. Integrate tool onto webpage.
 - **The SMT is putting the ground truthing on hold. DWR needs to weigh in on whether they would want the tool online without additional ground truthing in that it was not created for public use.**
 - *Input from DWR after the meeting:* The tool should not be called an estimate of X2; rather, it should be described as “an estimate of surface salinity of 2.64 by linear interpolation.” With that reframing, there is no need to ground truth the tool, since if someone want to use it as X2, the risk of error falls to them. It is not a complex calculation, so there should not be significant technical issues with it going to SacPas, if that system is already able to get data from CDEC.
- Reassess the method for determining the salvage trigger for DS.
 - Need to establish next steps on this.
- Reassess the temperature off-ramp for OMR management.
 - **Gonzalo will take this on.**