To:	**WEI Technical Working Group members**
From:	Jayson Kurtz and Jennifer Carter
Date:	December 15, 2021
Re:	**Summary of TWG meeting held Wednesday, December 15, 2021, 9:00 am to 12:00 pm**

Attendees:

- Rahul Ray (EDI)
- Jayson Kurtz (Ecofish)
- Jennifer Carter (Ecofish)
- Nicole Wright (Ecofish)
- Heidi Reghr (Ecofish)
- Phillip Krauskopf (FLNRORD)
- Maria Sotiropoulos (DFO)
- Dan Sneep (DFO)
- Wayne Salewski (Nechako Environment and Water Stewardship Society)
- Stephen Dery (UNBC)

Meeting Objective: review and discuss Nechako Reservoir wetland and wildlife memos, associated interests, and next steps

Agenda:

- climate change update
- discuss Nechako Reservoir wetland memo
- discuss Nechako Reservoir wildlife memos

Meeting summary:

Climate change update

- Modeling is on track for climate change predictions to be built into model in late spring. There still is an alternative option if needed.
- Need to determine how we use this information to model scenarios – to discuss in the new year.
- Stephen's research suggests climate change will bring on more atmospheric rivers in the future. His work is currently working on this and how the Nechako watershed can respond to high rain input.

Sturgeon update

- Will request an update from NWSRI in the new year
- Exploring alternatives including science exchange with other researchers

Wetland memo

1) Review approach
    - Used watershed Atlas wetland coverage and reservoir DEM to determine on reservoir operations affect wetlands
        - Uncertainties:
            - DEM doesn't cover entire reservoir. No elevation level data for Tetachuk data, assumed similar to Tahtsa
            - DEM minimum scale is 0.5 m, drawdown is only 4 m
            - Atlas doesn't cover swamps very well and doesn't have good accuracy when there is tree cover. However, to go more accurate you need to ground truth, use drones, etc.
                - Atlas missing microsites
2) TWG feedback
    - seems like this is not a major concern and that wetlands are not that sensitive under current regime.
    - more detail for tree swamp areas would be more helpful but report is sufficient
    - climate change will be affecting wetland distribution and function
    - wetland piece is likely more of an issue on the river
    - could ground truth wetlands closer to reservoir or flying drones to focus on habitats that are in the zone range we aren't capturing but are affected by operations
    - having a more accurate DEM would support the study
3) discussion of interests
    - one wetland is affected, and only 26% of that wetland is affected by operations. However, hydrological regime of reservoir suggests that this wetland is still functioning properly.
    - located on river in reservoir (partially outside of reservoir) and affected at upper band of drawdown zone
    - what about looking at upper reaches of arms or rivers?
4) next steps
    - good first step would be to look at habitat in draw down zone during spring reservoir tour

Wildlife memo

1) Review approach
    - Reviewed existing information (literature, biologists, general knowledge), ranking and screening process
    - Caribou looked in more detail – DEM modeling

- Uncertainties:
    - data gaps play largely into priority factor
    - large amount of data gaps exist
    - how are species using the reservoir

2) TWG feedback
    - an annual funding mechanism should be considered to catch up on data gaps
    - report is easy to read and characterizes uncertainty. Addressing uncertainties would be valuable if MT would like to develop a PM for species groups
    - some things are reasonable to look into and address (i.e., seasonal issues) while some things will require more data to address
    - general PM like high and stable levels in spring and summer is an option or pick up particular species that are important. Anything more specific is going to take a lot more effort
    - should include good description of what the draw down zone looks like in terms of habitat would be good in recommendations. Often that habitat is not good in drawn down zone. If these habitats don't exist it is a mute point
    - could include vulnerability period in table and what is the reservoir doing at that time (i.e., increasing or decreasing)
    - consensus that wildlife risk matrix is appropriate approach and should move forward on high priority groups.
    - consensus that LWD is best addressed by physical works but could use land links to inform water level PM
3) discussion of interests
    - aquatic amphibians – high priority.
    - waterbirds & near-ground nesting – high priority
    - caribou – high priority
        - LWD was original interest but we realized there was another potential issue with land bridges
        - used DEM data to evaluate land links
            - need to know if there were more islands if caribou would use them – likely true
            - have a clear PM and reservoir alternative to address land links
            - LWD on islands are important to ensure they can access them but can be addressed through alternative pathway (i.e., manual removal)
    - aquatic mammals – high priority
    - riparian species – high priority
    - moose – low priority
    - near-water cavity nesting birds – low priority
    - raptors – low priority
    - predatory birds – low priority
4) next steps

- focus on species groups that are high priority, understand the periodicity of the species and reservoir, lay out risk mechanism and think how we could answer each one
    - if we had more info what would that look like
    - is there a way to collect more information
    - good first step would be to look at habitat in draw down zone and looking for bird nesting during spring reservoir tour
- scoping report will summarize information and describe why we are or not going to develop a PM

Other

- TWG will provide comments on both memos for January 12, 2022
- next meeting will be on Jan 19th and Feb 2nd, topic: review reservoir aquatic memos