COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

May 11, 2016
Facilitator's Summary
Facilitator: Emily Plummer; Notes: Tory Hines DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Update Water Supply Forecast

Doug Baus, COE-NWD, provided an update on the official May water supply forecast, which is posted on the TMT website. Mary Mellema, BOR, noted that the forecasted volumes for the final May forecast for Hungry Horse Dam:

- May-July: 1,164 kaf (74%)
- January- July: 1,937 kaf (92%)
- April-August: 1,706 kaf (88%)
- May-September: 1,251 kaf (74%)

Mary stated that forecast volumes continue to decrease as the season progresses due to the early April runoff. Mary also noted that the minimum flows downstream of Hungry Horse:

- Columbia Falls: 3,500 cfs
- Hungry Horse: 900 cfs

Doug noted the final May forecast volumes for the USACE projects:

- The Dalles April-August: 87 maf (99%)
- Lower Granite April-July: 17 maf (90%)
- Libby April-August: 5,831 kaf (99%)
- Dworshak April - July: 2,090 kaf (86%)
- Grand Coulee April-August: 57 maf (100%)

Doug said that he will repost the May forecast volumes later today once he receives the official May 6th volumes. He explained that runoff is atypical this year because the system experienced flows well above average throughout April as a result of warmer temperatures and melting snowpack. The Corps is continuing to monitor the volume forecast and will keep the TMT informed as the season progresses. Paul Wagner, NOAA, stated that it is possible this year could be reminiscent of last year, with high flows early in the season and low flows during summer migration. He asked how the Corps is balancing an increase in flows with refilling Grand Coulee reservoir so that they can avoid low flows during June migration. Doug noted that the Corps is increasing the frequency of their flood risk monitoring so that they can adjust as needed. The Corps also acknowledges the request to operate Grand Coulee as high as possible leading in to summer migration.

Dworshak Spill Request

Tom Lorz, CRITFC, noted that FPAC would like to recommend operating Dworshak at full powerhouse to increase flows for juvenile migration. He asked for the AAs to consider increasing

flows are DWR as soon as possible and holding until the end of the day on Monday, May 16th, or longer if the scheduled maintenance can be moved to a different date. This increase in flow would improve passage of juveniles and would be more beneficial now than towards the end of June when fewer juveniles are passing.

Steve Hall, COE-NWW, noted that work on a hatchery intake pipeline is scheduled for May 17 and 18th, during which they cannot run water through Unit 3 for safety reasons. Tom requested that the hatchery work be conducted after the migration period has ended. Russ Kiefer, ID, agreed to follow up with the hatchery to see if pipeline work could be postponed in order for the Corps to increase flows out of Dworshak. In addition to the hatchery maintenance, there is a generation restriction for transmission testing scheduled for the 19th. Scott Bettin, BPA, suggested that they may be able to consolidate the ramp down for the two maintenance operations.

Steve noted that the Corps will continue to monitor the flows, and adjust accordingly to meet the end of month elevations. There are multiple criteria they need to meet and will do a snow flight towards the end of May. TMT will revisit this operation at the May 18th meeting.

- **ACTION:** The Corps will bring DWR up to full powerhouse and will hold until the end of the day on Monday, May 16th, or longer if the maintenance can be moved from the 17, 18, and 19th. Otherwise, the project will ramp down for hatchery work on Tuesday, May 17th.
- **ACTION:** The Corps, ID, and BPA will coordinate to see if the scheduled maintenance can be rescheduled to allow for the full powerhouse operation to be prolonged.

Dworshak Dam Spill Test

Steve Hall presented the results from the Dworshak Dam Spill Tests conducted on April 28th and 29th. A graph with the test results is on the TMT website. Steve noted that the TDG percentages in the river are highly variable and dependent on flows and heavily influenced by ambient conditions. In April, the system experienced higher than normal flows, therefore the TDG results may not be representative of actual percentages that would occur in season. Below are the TDG results from operating Dworshak with spill targets of 115% and 120% at the various gauge locations:

- PECK - 115% Test: 105%; 120% Test: 107%;
- Tribal Hatchery - 115%: 104%; 120%: 105.5%;
- Big Canyon - 115%: 102%; 120%: 102%;
- North & South D-Gas - 115%: 101%; 120%: 103%; and
- Burrow Pond - 115%: 101.5%; 120%: 103-104%

Steve noted that overall the test was successful in testing the ability of the equipment to strip gas from the surrounding area. Overall, the degasing equipment is working as designed. Doug noted that the difference between the two tests appears to be an increase in TDG of roughly 1%. He asked if it is appropriate to speculate that a spill target of 125% would increase TDG levels at the hatchery by another 1%. Steve said he is uncertain if TDG levels would only rise 1% with an increase to 125%. Paul asked what spill was needed to get to 115% TDG. Steve cautioned attributing TDG directly to flow, as there are other factors that influence TDG, however, during the test, 115% was reached between 8-10.5 kcfs. For the 120% test, discharge was near 11.5kcfs.

Ambient air temperature and pressure also impact TDG levels, with TDG generally being higher in the afternoon compared to morning and nighttime conditions.

Charles Morrill, WA, acknowledged that this test illustrates that the degassing equipment is working well. He noted that the hatchery is concerned with TDG levels above 100%; he asked if there were any thoughts on increasing degassing capabilities at the hatchery to get closer to 100%. David Swank, USFWS, explained that there are a few improvements that can be made to the equipment; however, it is unlikely that TDG would be decreased much, and costs would be high. Charles noted the importance in examining the capabilities of the equipment to provide the best possible protection to the hatchery while minimizing impacts in the river.

Libby Sturgeon SOR

Jason Flory, USFWS, presented TMT with SOR FWS #1 on Libby Dam Releases for Sturgeon and Bull Trout Augmentation. Jason noted that USFWS is looking to repeat the operation from last year with an emphasis on more water during the beginning of the operation. Due to the rapid snowmelt in April, the operation will consist of one period of peak flow, followed by a hydrograph that recedes towards the anticipated stable summer flow at Libby Dam. The sturgeon augmentation flow will begin 7-10 days prior to when the high elevation tributary run-off upstream of Libby is forecasted to peak. Jason noted there is a strong possibility the operation will commence this week.

Once the forecast of peak inflow into Lake Koocanusa occurs, the project will ramp up according to the 2006 BiOp (discharge will increase from VARQ flow to 2,000kcfs). Flows will be maintained at 20,000kcfs for 2 days, then discharge will increase to full powerhouse for 7-10 days. After 7-10 days of peak discharge, they will ramp down to summer flows and to meet bull trout minimum flows (7kcfs in a Tier 2 year). Jason stated that the operation is targeting spawning temperatures of 10˚ C and drafting flows to encourage migration with spawning towards the end of the peak. Tony Norris, BPA, stated that USFWS needs to coordinate with BPA today if they want to start the operation by Friday.

TMT members were polled on SOR FWS #1, with the following results:

- NOAA (support)
- BPA (no objection)
- Nez Perce (no objection)
- MT (support)
- ID (support)
- BOR (no objection)
- Umatilla (no objection)
- Kootenai (support)
- WA (no objection)
- OR (no objection)

- **ACTION:** The Corps will implement the SOR FWS #1 as stated above and then drop down to bull trout minimums. The duration of the operation will depend on real time conditions and shape of the inflow hydrograph, however, is requested to be 7-10 days.
- **ACTION**: The Corps, FWS and BPA will coordinate to schedule the operation.

Kootenai River Habitat Restoration September 2016 SOR

Sue Ireland, Kootenai, presented TMT with the Kootenai River Habitat Restoration SOR. She explained that this habitat restoration project is ongoing since 2011. The SOR requests a release

of 6kcfs or less from Libby Dam during September through the first week of November to allow for the contractor to implement in-water work associated with the Bonners Ferry Island Project. Additionally, the operation will provide a gradual declining discharge to target flows following ramping rate guidelines in the 2006 BiOp for bull trout and white sturgeon.

The purpose of the restoration is to improve habitat conditions in the Kootenai River to help adult sturgeon migrate upstream, improve spawning habitat, increase juvenile rearing habitat and improve the overall ecosystem function. Components of the restoration include: creating deeper pools, building bank structures to adjust water currents, developing instream island surfaces, grading eroding river banks and planting native vegetation.

TMT members were polled on the SOR for Kootenai River Habitat Restoration, with the following results:

- NOAA (support)
- BPA (no objection)
- Nez Perce (no objection)
- MT (support)
- ID (support)
- BOR (no objection)
- Umatilla (no objection)
- Kootenai (support)
- WA (no objection)
- OR (no objection.)

- **ACTION**: The Corps will implement the SOR to maintain flows of 6kcfs or lower from September through the first week of November.

Libby Operations

Joel Fenolio provided an update on Libby Operations. He noted that the April to August, May inflow forecast for Libby Dam is 5.8 MAF (99% of average). October through April saw above average precipitation; however April saw temperature departures in the basin and the Kootenai by 6-10 degrees above average. The month of April was below 50% for precipitation which when coupled with higher than average temperatures resulted in rapid snowmelt. The BiOp requirements at Libby will be similar to last year. Sturgeon volume of .93 MAF, which triggers the bull trout minimum, 7kcfs, after the pulse through August 31st. For habitat operations, minimums in September will be 6kcfs and the target elevation of 2,449 ft will be set for the end of August rather than the end of September. In summary, the timing of inflows shifted up by 4-6 weeks. Current flood risk is low due to the below average snowpack. Libby Dam will likely not refill to 2,452-2,454 ft this summer, anticipated refill will occur in late July to August (2,449 ft). The Seattle District is considering refilling earlier than late July and the District will continue to evaluate June targets throughout May.

For this year refill operations will be aggressive after the Sturgeon Volume is expended in early June. The operation for the end of June will be to target an elevation of 2,445 to 2,449 ft on the 30th of June. This elevation band gives the project a 25 percent change of double peaking in the summer to meet 2,449 ft at the end of August.

Brian Marotz, MT, asked if the Corps is looking at remodeling the end of December draft which occurs before reliable inflow forecast data is available. He continued that reconsidering the large releases early in the season may provide more flow later on to combat an early runoff as occurred

in April. Joel noted that there are additional variables which could be used in the equations to provide a more holistic view of the hydrology system. Dave Statler, Nez Perce, agreed with Montana and expressed concern about the Dworshak operation where early runoff is becoming the "new norm". He inquired as to if there are forecasting tools available to provide accurate information considering the observed change in weather patterns. Dave also suggested exploring operational modifications at all storage reservoirs. Joel noted that 2011-2014 saw peak flows on time, the last two years are the only recent years with early runoff. Paul asked if the bull trout minimum is calculated on a sliding scale. Joel noted that the minimum can be 6-9kcfs after the sturgeon volume is down based on the May-August water forecast, this year it is 7kcfs.

Lower Monumental Spill Pattern

Russ Kiefer, ID, reported that FPAC is concerned with Sockeye following last year's high temperatures and mortality. He noted that FPAC is interested in doing what can be done to assist juvenile and adult Sockeye this year and pointed to projected flow levels and current low flows which have reduced spill to 22% of outflow at Lower Monumental Dam. Russ continued that the transportation data for Sockeye indicates that transport is less effective for Sockeye than Steelhead, and the sockeye's homing ability appears to be impacted. Russ noted that FPAC discussed adjusting the spill pattern at Lower Monumental from bulk to uniform as soon as possible, holding the uniform spill pattern for two weeks or until PIT-tag data shows that smolts have passed the dam. Changing the spill pattern could increase spillway passage during a critical time for Sockeye migration and improve spill levels from 22% to 30% at Lower Monumental.

The Salmon Managers present were polled to see if there was support for the operational change from a bulk to uniform spill pattern at LoMo. The results of the poll were as follows:

- ID (supports)
- Umatilla (supports)
- WA (supports)
- OR (supports)
- USFW (supports)
- Nez Perce (supports)
- NOAA (supports)

The Action Agencies took a brief caucus to discuss FPAC's request. The Corps asked that Salmon Managers provide an SOR with the proposed operational change and the dates of duration. The Corps will conduct internal coordination and let TMT members know whether they will implement the operational change by COB on Friday, May 13th.

- **ACTION**: Salmon Managers will provide the Corps with an SOR detailing the operational request to change the spill pattern at Lower Monumental from bulk to uniform spill as soon as possible.
- **ACTION:** The Corps will coordinate internally and notify TMT members via e-mail no later than Friday, May 13th with the course of action, whether to implement or deny the SOR.

The next TMT meeting will be a face to face meeting on May 18th at 9:00AM.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM MEETING OFFICIAL MINUTES

May 11, 2016
Minutes: Pat Vivian

1. Introduction

Representatives of Idaho, Montana, Umatilla Tribe, Oregon, BOR, BPA, NOAA, COE, USFWS, Washington, Kootenai Tribe, Nez Perce Tribe and others participated in today's TMT conference call chaired by Doug Baus, COE, and facilitated by Emily Plummer, DS Consulting. This summary is an official record of the conversation, not a verbatim transcript. TMT members added two items to today's agenda:

- Tom Lorz, CRITFC/Umatilla, requested a discussion of Dworshak operations in conjunction with the COE's presentation of results from recent TDG spill testing at DWR.

- Russ Kiefer, Idaho, requested a discussion of switching Lower Monumental from a bulk to uniform spill pattern to aid juvenile migration, especially sockeye.

2. Official Water Supply Forecast

Baus and Mary Mellema, BOR, gave official May volume forecasts for individual basins. They both reported that water supply forecasts have been steadily decreasing everywhere, due to early runoff this year.

- Hungry Horse (May-July) – 1164 kaf, 74% of average
  (January-July) – 1937 kaf, 92% of average
  (April-August) – 1706 kaf, 88% of average
  (May-September) – 1251 kaf, 74% of average

  The minimum flows downstream of Hungry Horse remain: 1) Columbia Falls - 3500 cfs and, 2) Hungary Horse - 900 cfs.

- The Dalles (April-August) – 87 maf, 100% of average
- Lower Granite (April-July) – is 50% spill 18 maf, 91% of average
- Libby (April-August) – 5831 kaf, 91% of average
- Dworshak (April-July) – 2090 kaf, 86% of average
- Grand Coulee (April-August) – 58 maf, 101% of average

Baus said the COE is keeping a close eye on this year's trend and has been evaluating flood risk management more frequently than the usual once a month. The runoff is atypical this year because the system experienced flows well above average throughout April as a result of warmer temperatures and melting snowpack. NOAA is particularly concerned about sockeye migration in light of last year's difficulties and

NOAA's recently released sockeye report, Paul Wagner said. A similar situation could arise this year with summer runs. Because sockeye, summer chinook, fall chinook and steelhead are all at risk again of low flows late in the season, Wagner advocated early refill of Coulee as a hedge against a repeat of last year. Baus said the COE is monitoring water supply volumes on a weekly basis. This will ensure the Grand Coulee Dam end of May Flood Risk Management (FRM) elevation will accurately reflect residual water supply volumes. Subsequently, if this evaluation provides a higher GCL end of May FRM requirement this could provide more flow in June that will minimize impacts on sockeye that were observed in June of 2015. That said, the COE will target a GCL end of May elevation that adheres to FRM requirements.

3. Dworshak Dam Releases for Juvenile Migration and Spill Test

3a. Juvenile Migration. This topic was added to today's agenda at the request of Tom Lorz, CRITFC/Umatilla. FPAC would like to recommend operating Dworshak at full powerhouse to increase flows for juvenile migration. He asked for the AAs to consider increasing flows are DWR as soon as possible and holding until the end of the day on Monday, May 16th, or longer if the scheduled maintenance can be moved to a different date. In light of high adult sockeye mortalities last year, the Salmon Managers want to give juvenile sockeye every possible benefit at this time.

Steve Hall, COE Walla Walla, said the big unit at DWR is currently releasing 5.4 kcfs and outflows are scheduled to drop to 4.8 kcfs from May 17-19 to accommodate work on the Dworshak National Fish Hatchery floating variable intake pipeline that passes through the dam. As things stand, on May 19 a generation restriction for transmission system testing will take DWR down to two small units. Subsequent releases of 9 kcfs will be needed to manage pool elevation and aim for the end-of-month elevation target. At the end of the month, the COE will make decisions regarding final refill. There's also a snow-covered area flood control requirement that calls for increased releases in late May and early June.

Lorz and Charles Morrill, Washington, asked whether the hatchery intake work could be done at some other time than prime time juvenile outmigration. Scott Bettin, BPA, said it's best to do the work now because the reservoir elevation is low, and there's no water in the nursery. Kiefer said he will check with IDFG hatchery personnel regarding the potential for shifting the hatchery outage date to a week or so earlier than scheduled. Bettin said the May 19 outage for transmission work probably can't be moved, but he will check. Hall said the COE might be able to release some of the 9 kcfs earlier by increasing to full powerhouse as soon as possible, probably starting at the end of the day May 16. The Action Agencies will coordinate internally on this and report back to TMT on May 18. Kiefer asked whether full powerhouse flows will continue for as long as prudent before DWR drops down to either the large unit or two small units through the end of the month; Hall said yes.

3b. DWR Spill Test. Discussion turned to the spill test scheduled at DWR as preparation for next year's operation with unit 3 out of service. On the first day of the

test, April 28, DWR released between 8-10.5 kcfs and TDG levels rose to 115% for about an hour as measured at the water quality station downstream of the confluence of the north fork of the Clearwater River. By the second day, April 29, DWR released 11.5 kcfs at 120% TDG saturation for a longer period. Hall cautioned that the numbers shown in Attachment 3a might not be representative of TDG levels throughout passage season because river flows were high when the test was done. On April 28, TDG levels were 115% coming out of the dam and 105% at the Peck water quality station downstream, with a peak of 107% TDG. In addition to Peck there are two stations below DWR, the tribal hatchery intake and the Big Canyon holding facility. On April 29, the TDG peak at the hatchery intake station was 104% during the 120% TDG test and about 105.5% at Big Canyon, which has a degassing device. During the test of 115% TDG the Big Canyon reading peaked at just under 102%. Similar reductions in TDG levels during the test were seen at other hatchery locations. It appears the degassing equipment at the hatchery is working well. Only slight differences were noted in what fish would experience at 115% and 120% TDG releases from DWR.

Hall reported that on the first day of the test, DWR was spilling through the gates instead of the ROs, while on the second day, spill passed through the ROs. A number of factors such as ambient air temperature and flows interact with TDG levels, which tend to be higher in the afternoon than any other time. Although the test was successful in terms of proving the degassing equipment is working as intended, it does not necessarily mean that releasing 115% TDG from the dam will produce 105% TDG downstream at all times. For example, if access to the spillway is cut off when the reservoir elevation drops below 1555 ft in mid-winter, spill must pass through the ROs which produce higher TDG levels.

Morrill said hatchery staff will probably be concerned about TDG levels exceeding 100% in the raceways, which is likely at releases of 115% TDG from the dam. Hall said the COE will meet with hatchery staff next week to discuss the test results.

4. Libby Sturgeon SOR FWS#1

Jason Flory, USFWS, presented this year's operational request for the Libby sturgeon pulse. Initially the goal was to repeat the sturgeon operation of two years ago, when a double peak with a pause of about a week between peaks seemed to enhance sturgeon spawning and migration. Unfortunately, in 2015 there was not enough water to repeat the double peak operation, and this year again there won't be enough for a second peak. So the 2016 sturgeon SOR replicates last year's sturgeon operation while attempting to release a bit more water at the beginning of the pulse. The SOR calls for maintaining 20 kcfs releases for a few days at Libby, then going to full powerhouse capacity for 7-10 days followed by dropping outflows. With just one peak this year, the goal of the sturgeon operation is to make that peak last as long as possible. In recent years, spawning temperatures of about 58 degrees F were targeted toward the end of the second peak. This year, the plan is to achieve 58 degrees F toward the middle of the peak as a test of sturgeon spawning behavior.

The SOR calls for augmentation flows to begin 7-10 days prior to the peak in high elevation runoff upstream from Libby Dam. If that means the sturgeon pulse should begin on May 13, a decision is needed today because BPA needs at least 24 hours' notice to move that energy, Tony Norris, BPA, emphasized. TMT decided to discuss Libby operations first, then address questions about the sturgeon operation before polling on SOR FWS #1.

5. Libby Operations

Joel Fenolio provided an update on Libby Operations. He noted that the April to August, May inflow forecast for Libby Dam is 5.8 MAF (99% of average). October through April saw above average precipitation, however April saw temperature departures in the basin and the Kootenai by 6-10 degrees above average. The month of April was below 50% for precipitation which when coupled with higher than average temperatures resulted in rapid snowmelt. The BiOp requirements at Libby will be similar to last year. Sturgeon volume of .93 MAF, which triggers the bull trout minimum, 7 kcfs, after the pulse through August 31st. For habitat operations, minimums in September will be 6 kcfs and the target elevation of 2,449 ft will be set for the end of August rather than the end of September. In summary, the timing of inflows shifted up by 4-6 weeks. Current flood risk is low due to the below average snowpack. Libby Dam will likely not refill to 2,452-2,454 ft this summer, anticipated refill will occur in late July to August (2,449 ft).

For this year refill operations will be aggressive after the Sturgeon Volume, which is expended in early June to be expended in early June. The operation for the end of June will be to target an elevation of 2445 to 2449 ft on the 30th of June. This elevation band gives the project a 25 percent change of double peaking in the summer to meet the elevation target of 2449 ft at the end of August.

Brian Marotz, MT, asked if the Corps is looking at remodeling the end of December draft which occurs before reliable inflow forecast data is available. He continued that reconsidering the large releases early in the season may provide more flow later on to combat an early runoff as occurred in April. Joel noted that there are additional variables which could be used in the equations to provide a more holistic view of the hydrology system. Dave Statler, Nez Perce, agreed with Montana and expressed concern about the Dworshak operation where early runoff is becoming the "new norm". He inquired as to if there are forecasting tools available to provide accurate information considering the observed change in weather patterns. Dave also suggested exploring operational modifications at all storage reservoirs. Joel noted that 2011-2014 saw peak flows on time, the last two years are the only recent years with early runoff. Paul asked if the bull trout minimum is calculated on a sliding scale. Joel noted that the minimum can be 6-9kcfs after the sturgeon volume is down based on the May-August water forecast, this year it is 7kcfsTMT members were polled on their views of SOR FWS #1:

- **NOAA** – Supports the SOR
- **Oregon** – Supports the SOR, but hesitant because it's still being adjusted
- **Washington** – No objection
- **Kootenai Tribe** – Supports the SOR
- **Umatilla** – No objection, but adjustments need to be monitored
- **BOR** – Supports the SOR
- **Idaho** – Supports the SOR
- **Montana** – Supports the SOR
- **Nez Perce** – No objection
- **BPA** – Supports the SOR with the caveat that if sturgeon augmentation flows are to start Friday, BPA needs to know today

The COE will implement the SOR, with augmentation flows to begin May 13 or 14 after coordinating with BPA on the timing.

6. September through November 2016 Libby Outflow for Kootenai River Habitat Restoration Program

Sue Ireland, Kootenai Tribe, presented this year's habitat SOR, which limits Libby outflows to 6 kcfs from September through the first week of November to accommodate Kootenai River habitat restoration at Bonners Ferry. The goal of the project is to provide sufficient river depth to enhance sturgeon spawning and improve rearing habitat in accordance with BiOp requirements. Therefore, the COE proposed targeting 2449 ft elevation at Libby by end August rather than end September, as has been done in past years. TMT members gave their views of the SOR:

- **Nez Perce** – Supports the SOR
- **Oregon** – No objection
- **Washington** – No objection
- **Umatilla** – No objection
- **BOR** – Supports the SOR
- **Idaho** – Supports the SOR
- **Montana** – Supports the SOR
- **Nez Perce** – No objection
- **BPA** – Supports the SOR
- **Kootenai** – Supports the SOR

The COE will implement the SOR, Baus said.

7. Lower Monumental Spill Pattern

This topic was added to today's agenda at the request of Russ Kiefer, Idaho. During yesterday's FPAC call, the Salmon Managers noted that current Lower Monumental inflow levels could result in limited spill with the spill pattern currently in use. According to data collected over the past several years, transport appears to be

less effective for sockeye than steelhead at this time of year. Transport affects homing ability, which was lethal for sockeye in last year's warm water. While the adverse effects of transport were most dramatic in 2015, the trend has persisted over several years.

Therefore, in order to balance the benefit of spill and transport between sockeye and steelhead, FPAC requests that the current bulk spill pattern at LMN be switched to a uniform pattern as soon as possible, Kiefer said. Uniform spill should be maintained for at least two weeks and possibly less, based on when PIT tag data indicate the vast majority of smolts have migrated past LMN.

Kiefer and Wagner are drafting an SOR formally requesting this change in spill pattern, which they will send to the other Salmon Managers to establish a consensus recommendation. The goal of the SOR is to increase spillway passage of juvenile sockeye at a critical time in outmigration. A switch from bulk to uniform spill will help control TDG levels and allow spill to increase from 22% to potentially 30% of the river.

Baus said the COE recognizes the Salmon Managers request to implement this operation as soon as possible. Unfortunately, a draft SOR is not complete at this time and the COE does not have an idea of the general level of consensus regarding this type of operation from Salmon Managers. In order to expedite the COE internal coordination process prior to the receipt of an SOR Baus said it would be helpful to better understand the relative level of Salmon Manager consensus regarding this type of operation. The Salmon Managers provided their feedback on what would likely be contained in a forthcoming SOR. Specifically, the SOR would likely request changing the LMN spill pattern from bulk to uniform for a period of 2 weeks effective as soon as possible. Making the change from the bulk to uniform spill pattern would likely increase spill approximately 8-10 kcfs.

- NOAA – Of all the projects, LMN is the best candidate for a spill pattern switch because it has the lowest relative benefits of transport of all the Lower Snake projects. NOAA supports the request, given that Idaho advocates it and will be the most affected by the fish that return under uniform spill conditions.

- Oregon – Supports the proposal to switch from bulk to uniform spill at LMN.

- Washington – Supports the proposal to switch from bulk to uniform spill at LMN.

- Umatilla – Supports the proposal, given that bypassed fish don't do as well as fish passing migrating the spillway. Sockeye are adversely affected by transport.

- USFWS – Supports the proposal to switch from bulk to uniform spill at LMN.

- Nez Perce – Supports the proposal to switch from bulk to uniform spill at LMN.

With consensus from all the Salmon Managers present on today's call, the Action Agencies held a brief caucus to discuss it among themselves. After the caucus, Baus said the COE looks forward to receiving the SOR. He asked for clarification of the duration of the request. When the COE receives the SOR, they will coordinate internally and notify TMT via email by close of business May 13 whether the SOR was implemented. Kiefer said the duration requested would be two weeks of uniform spill at LMN, or until PIT tag data indicate that sockeye passage has primarily passed LMN. TMT will revisit this topic at its next meeting May 18.

8. Next TMT Meeting

TMT will meet next in person on May 18.

Name	***Affiliation***
Russ Kiefer	Idaho
Brian Marotz	Montana
Tom Lorz	CRITFC/Umatilla
Erick Van Dyke	Oregon
Mary Mellema	BOR
Scott Bettin	BPA
Tony Norris	BPA
Paul Wagner	NOAA
Laura Hamilton	COE
Doug Baus	COE
Lisa Wright	COE
Scott English	COE
Karl Kanbergs	COE
Dave Swank	USFWS
Sue Ireland	Kootenai Tribe
Steve Hall	COE
Paula Calvert	ODEQ
Greg Hoffman	COE Libby Dam
Dave Benner	FPC
Laura Berg	Energy News Data
Michael Bryant	CBB
Charles Morrill	Washington
Doug Baus	COE
Dave Statler	Nez Perce Tribe