

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM CONFERENCE CALL

August 10, 2005

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Donna Silverberg

Notes: Robin Harkless

The following notes are a summary of issues that are intended to 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.

Chum Operations

Ron Boyce, ODFW, reported that there will be a meeting with Ives Island researchers on Tuesday, August 16, to discuss chum issues, and 30 minutes has been set aside to allow TMT members to talk about operational flexibility and fish issues, from 1-1:30 pm. The meeting will be held at ODFW in Clackamas, and the call-in number is 503-808-5198/password 3295. An update from this discussion will be provided at the August 24th meeting.

Review of Notes

No changes to the TMT facilitator notes or official minutes were suggested at this time.

Migration Timing in the Lower Snake

Jay Hesse (Nez Perce), Billy Connor (USFWS) and Jerry McCann (FPC) provided a passage update for natural origin Snake River and Clearwater fall chinook. Their power point slides are attached to today's agenda on the TMT web page. Jay acknowledged the USFWS and Nez Perce researchers for their work, and funding from NPCC, BPA and the COE. Billy Connor presented data on passage of Snake subyearlings, which he noted makes up 75% of the total basin population while the other 25% is a sub-aggregate in the Clearwater. The Snake River samplings in 2005 saw an unusually large number of small fish migrating early; researchers believe it is a result of high velocities and the fish are too small to do anything but move with the flow. As the data was reviewed, Billy cautioned the group that the numbers and research are on passage data over Lower Granite and Little Goose dams. Conclusions about survival are not supported by the data reviewed to date. There are too many unknowns and passage variability below these projects (e.g. many are targeted for transport) to make any judgments about survival.

Jay Hess presented information on the Clearwater sub-aggregate population, noting that this group moved 1-1.5 months later than the Snake River stocks. 1,918 were pit-tagged, similar to last year. They are currently in the middle of their migration, where as the

Snake stock migration appears to be done or nearly done. 11-45% of the run are still to come. Data shows detections through the fall into spring.

Conclusions:

- Both groups under-represent early small fish;
- Estimates indicate that passage is nearly complete for the Snake River fish;
- Natural fall chinook from the Clearwater are still migrating and will potentially continue into next year (due to over-wintering).

Remaining critical uncertainties include:

- Movement during non-detection period
- Response to spill conditions
- Lack of collaborative M&E and research plan to be applied across multiple policy/management forums, leading to a need for collaborative forums to guide decisions, through
 - Pre-labeled decisions
 - Defined data quality/risk thresholds
 - Standardized performance measures

The COE offered that they have been holding policy discussions and are pushing to address the RM&E concerns. BPA is also working on these issues with NPCC and through the Pacific Northwest Aquatic Monitoring Partnership.

Jerry McCann explained the methods used by the Fish Passage Center to calculate distribution and migration patterns, and their application to current and historical Snake and Clearwater fish migration. Over the past ten years, supplementation of the fish has occurred earlier and earlier and has resulted in a difference in run timing.

A need was identified to have discussions about the effect of watering up projects on the migration. Russ Kiefer, IDFG, responded that at first, there does not appear to be much of an effect for a couple of weeks.

In summary, there is considerable year to year variability in subyearling and yearling migration patterns for Snake and Clearwater fish. There is a need for a future coordinated study before scientists will be comfortable providing numbers for percentages of the run passed.

Lake Pend Oreille Effects on Kokanee

Russ Kiefer, IDFG, provided a power point on impacts to kokanee populations in Lake Pend Oreille with yearly deep draw-downs as compared to pre-project construction. His presentation can be found as a link to today's agenda on the TMT web page. Kokanee are a major food source for listed bull trout (60%-80% of their diet); without a healthy kokanee population there would be more direct competition between lake and bull trout for a limited food supply. Consistent deep lake draw-downs have occurred since 1966, and kokanee abundance has dropped. Researchers believe this is because the draw-downs effect gravel levels and do not allow for cleaning of the spawning grounds. A 9-year

study of egg to fry survival of kokanee and lake level management impacts showed a 2.4 fold increase in egg to fry survival with an elevated lake level. It is believed that a varied winter water level will likely have a positive effect on habitat. To support the health of endangered bull trout, and to achieve a healthy sport fishery of kokanee, IDFG recommended a decision tree for years that would best support a lower/higher elevation level to improve the spawning habitat. It includes:

- Varying the winter lake level by 4 ft. in different years;
- Maintaining a higher winter pool level for 3 years, then lowering the lake to replenish the gravel; and
- Timing a full drawdown to coincide with years when kokanee numbers are low.

A first draft of a decision tree to address the above objectives was provided, with a request for feedback from TMT members and a decision in the next four-six weeks for winter operations. The decision tree seeks to balance needs for water levels, chum, power and resident fish. Ron Boyce, Oregon, cautioned the group to be mindful of the requirements in the BiOp for listed chum, and asked them to consider this when discussing whether there is discretion this year with operations.

ACTION: The salmon managers will discuss the recommendation and ‘success’ of chum for input into the decision tree. TMT will follow-up with a discussion at the August 24th TMT meeting. IDFG was asked to consider what level of kokanee is desired, and what level is acceptable, to add to the discussions.

Review of Summer Treaty Fishing

Kyle Dittmer, CRITFC, provided a handout summary of the summer tribal treaty fishery for 2005. Three SOR’s were submitted this year, requesting that a 1’ tailwater be maintained at Bonneville, John Day and The Dalles. The COE operated a 1.5’ hard and 1’ soft constraint at Bonneville this year, and was mindful of the tribes’ request while operating each of the projects. On July 22, two nets went missing, and again on July 26, one net was missing. The COE acknowledged that some miscommunications occurred this year that led to fluctuations; they will work to tighten the operation up in the future. Kyle noted that there was an improvement at John Day this year, which has become the most important of the three dams to the tribes for the summery fishery.

Salmon Managers’ Response to MOP at Little Goose

A discussion at FPAC led to a consensus from the salmon managers to operate outside MOP during the day and spill the balance at night at Little Goose, in order to have the least impact on migrating adults during double testing at the project. This is scheduled to begin on August 22; the timing for the test was selected by the action agencies during the least intrusive time for adult migration.

Salmon Managers’ Response on Emergency Protocols Priorities

Bob Heinith, CRITFC, reported that the plaintiffs to the court case, DOJ and project operators are in discussions about Group 1 and 2 of the emergency protocols in the WMP. BPA will be sharing something with that group, for discussion and input. Until

then, they will advise their operators to use the current living document in the event that a short-term emergency occurs.

Status of Summer Operations as a Result of the Court Ruling

Updated graphs of operations of the Lower Snake and McNary dams is posted on the TMT web page. The dams are being implemented per the court order.

End of MOP on the Lower Snake

This agenda item was included today to give the salmon managers a heads up to discuss it at FPAC and come prepared to have a fuller discussion and decision at the August 24th TMT meeting.

Operations Review

Reservoirs – Libby is releasing 18.9 kcfs out and is expected to decrease flows to 16.5 on August 17th. The operational goal is a gradual ramp-down to elevation 2439’ by the end of August. Hungry Horse is at elevation 3548’ and operating to reach 3540’ by the end of August. Grand Coulee is at 1284’ and operating to reach 1278’ by the end of August.

Dworshak – The project is currently releasing 12 kcfs out and temperatures of 45-47°, and expected to reach elevation 1535’ by the end of August. The Nez Perce has requested that there be enough water to release 10 kcfs in early September, and avoid a ‘double peak’. To meet these objectives, flows would need to be reduced now. Participating members at FPAC on Tuesday agreed to maintain temperatures and reduce flows to powerhouse capacity (~9.6 kcfs). Dave Statler, Nez Perce, also agreed with this recommendation. Dave Wills, USFWS, noted that the hatchery fish responded positively to the 3° increase in temperatures over the last two weeks. The salmon managers would like to maintain a caveat that 67.5° is the threshold temperature at Lower Granite, and will pursue further discussions about whether this would trigger operating at 12 kcfs or lowering temperatures.

ACTION: Cindy Henriksen, COE, will send Dave Statler, Nez Perce, the STP run for Dworshak and follow up with the Dworshak Board and Dave on an operational strategy. This will be added to the August 24th TMT agenda.

Power system – A Bonneville line outage has been scheduled for August 15-17th, which will require units 15-18 to be out from 0700-1800 hours. FPOM is/will discuss this issue.

Water quality – Updated water quality information is posted on the TMT web page.

Next Meeting, August 24, 9am-noon

Agenda items include:

- Report on 8/16 Chum Discussion with Ives Researchers
- Lake Pend Oreille/Chum Discussion
- Dworshak Operations
- Emergency Protocols
- MOP Issues

- End of MOP on Lower Snake
- Lower Granite double testing
- Fall Treaty Fishery

1. Greetings and Introductions.

Facilitator Donna Silverberg welcomed everyone to today's Technical Management Team meeting, chaired by Cindy Henriksen. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at this meeting. Anyone with questions or comments about these notes should contact Henriksen at 503/808-3945.

Ron Boyce said that chum researchers, looking at the Multnomah Creek and I-205 Bridge sites, will be holding their quarterly coordination meeting next Tuesday, August 16. They have asked for a half-hour time-slot for TMT members visit with them and discuss operational issues, particularly what operational flexibility may be available during daytime hours, as well as the potential consequences of chum operations on refill. The meeting is scheduled for 1 pm, and a phone bridge will be available, said Boyce; I would particularly like to give the action agencies an opportunity to discuss operational concerns and opportunities.

2. Migration Timing in the Lower Snake River.

Jay Hesse of the Nez Perce Tribe, Billy Connor of USFWS and Jerry McCann of the Fish Passage Center led this presentation. Hesse noted that the goal of this presentation would be to update the TMT on the status of the Snake River fall chinook emigration through the lower river; this information is derived from data and fish observations for PIT-tagged fish from both the Clearwater and Snake Rivers. The presenters touched on the following major topics:

- Funding sources: BPA and the Corps.
- The geographic scope of ESU status within the monitoring area – includes the Snake River basin (Snake River and Clearwater ESUs, which have very different life-history characteristics), as well as smaller production areas.
- Percent of the total outmigration from the Snake and Clearwater rivers – the percentage from the Snake appears to be growing
- Emigration life-history
- Description of the Snake River life-history – earlier
- Description of Clearwater life-history (later)
- How natural subyearling fall chinook are sampled (beach seining, begins in March)
- 2005 sampling success – sampling peaked in late May; heavy rains and flooding caused catch to drop dramatically; fork lengths averaged 49 mm;

minimum size required for PIT-tagging: 60 mm. The 2005 sampling may therefore under-represent some migratory components.

- Last 2005 sample fish captured in the first week in July.
- Mean size at PIT-tagging is decreasing for the Snake River fish in recent years; particularly for those fish originating in the Upper Snake, where quality rearing habitat is rarer, this may be an indication of density-dependent effects.
- Distribution over time of tagged fish – 9,301 wild/natural subyearlings tagged in 2005, the largest sample size ever. More than 121,000 hatchery surrogates also PIT-tagged in 2005.
- 2005 Snake River wild fall chinook outmigration peaked around June 20; it is now virtually zero, which means that the 2005 outmigration is now nearly complete.
- In 2005, researchers saw roughly 38% PIT-tagged wild Snake River fall chinook survival from the release point to Lower Granite Dam, somewhat lower than the multi-year average of about 47%; some of these fish may choose to overwinter, so the percentage may rise. Ron Boyce noted that the summer spill program at the Lower Snake projects means that all of the usual survival metrics are out the window in 2005.
- Clearwater fall chinook PIT-tagging – peak occurred in mid-June, about a month later than the Snake outmigration. Researchers continued to catch fish into late July. A total of 3,605 wild Clearwater fall chinook were captured in 2005, 1,918 were PIT-tagged. A total of more than 45,000 Clearwater surrogates were tagged and released over a two-week period.
- Timing of downstream observations sporadic and prolonged, compared to Snake River fall chinook. Clearwater fish are still moving down through the system, currently.
- Less than 3% of the Clearwater surrogates have passed Lower Granite to date, and less than 1% of the Clearwater surrogates have passed McNary to date, indicating that almost all of these fish are still passing through the system.
- Key critical uncertainty, in terms of making survival estimates, include non-detection periods and violations of the assumptions within the SURF model. These factors create major uncertainty in terms of researchers' understanding of fish movement and emigration patterns for the Clearwater fish.
- Both Snake and Clearwater fall chinook are often still passing Little Goose in November, and have been documented as late as the spring of the year following outmigration. The same is true of McNary.

The presenters offered the following conclusions:

- Neither the Snake nor the Clearwater PIT-tagged fish fully represent the earlier, smaller outmigrants moving through the system. Looking at the estimates of survival to Lower Granite, passage of the natural Snake River fall chinook is probably nearly complete. However, the natural fall chinook

outmigration from the Clearwater is probably just starting; looking at historical passage data, researchers expect the Clearwater outmigration to continue all the way through next spring.

- Critical uncertainties associated with these stocks include major challenges associated with fish movement through the system during the winter, when PIT-tag detection facilities are not operated by the Corps. That non-detection window inhibits researchers' ability to develop sound survival estimates for Snake and Clearwater fall chinook; it also hampers the researchers' ability to do SAR survival for the non-detected or in-river components in a transportation/in-river/bypass-type study. It is problematic because fish are migrating during periods of spill, as well as periods of non-detection. The non-detection period also weakens researchers' ability to provide estimates of representative population SARs, because they cannot establish a common starting point for juvenile production out of the system. The winter non-detection period also severely masks in-river rearing distribution.
- Another key uncertainty: because this is the first year of summer spill at all four Lower Snake projects, researchers are uncertain whether those conditions will stimulate additional movement of fish that otherwise might have elected to check up and delay outmigration if no spill had been provided.
- Finally, a challenge for the TMT: one factor that inhibits progress in fall chinook research is the lack of an agreed-to, collaborative effort for monitoring performance, or guiding the analyses to be undertaken in support of decision-making, not just at TMT, but across multiple forums that discuss similar topics. The technical information arrives piecemeal, and the full picture is not presented consistently to these groups. A consistent plan – not a study design – is needed. The individual groups need to define and develop pre-labeled decisions on which the TMT could reach agreement, which will guide processes. Second, assigning the risk associated with those decisions and the level of data quality needed to guide them needs to be clearly defined and understood – i.e., the confidence intervals. Finally, once those confidence intervals are defined, it will be possible to develop standardized performance measures that will guide those evaluations. Let us, as biologists, put those caveats up – that the SARs for spring smolts are not the same as those for summer smolts. Let us develop a common unit currency, in other words, said Hesse. This is up-front work that, in my opinion, is not being done in the basin, he said; I challenge this group to get that process rolling, as I will be challenging other groups.

Paul Ocker said efforts are underway to craft a policy regarding fall chinook in the basin; we have been having meetings, he said, but with everything going on in the basin, currently, it has been very difficult to get those meetings going. We're continuing to push on this issue, however, to get some policy direction as to where we need to go. A Bonneville representative noted that BPA

is very involved with many of these RM&E efforts; we're working with the Council on focusing our program on certain aspects of RM&E; we're working with the Pacific Northwest Aquatic Monitoring Program to develop standardized performance measures. We're not standing still, in other words, she said.

Jerry McCann provided an overview of the nuts and bolts of the fall chinook collection efficiency estimates, as well as the historic timing data of various PIT-tagged groups and the timing of the run at large passing Lower Granite Dam. Key points of his presentation included:

- Summary of Lower Granite detections (natural and surrogate), 2005
- Methods of estimating population size and passage at Lower Granite
- The FPC method: broken down into two periods – prior to the onset of spill on June 20, and after the onset of spill.
- Estimates of the percentage of the PIT-tagged Snake River wild fall chinook population that has passed Lower Granite to date – ranging between 29 percent and 54 percent. This compares to Billy Connor's estimate of 38 percent.
- The FPC's estimate of the percentage of PIT-tagged wild Clearwater fall chinook passage at Lower Granite is 3 percent to 6 percent to date; for the Clearwater surrogates, the range is 1-3 percent, based on expanded detections.
- Detailed collection efficiency information – detected fish to total fish passing the dam.
- According to the Cormack-Jolley-Sieber methodology, roughly 41 percent of total detections have passed Lower Granite to date. The two FPC approaches, which are similar to the Sanford and Smith methodology, show a range of 29-47 percent. The spill expansion method shows the highest estimated passage to date, 52 percent.
- 2005 daily passage indices at Lower Granite, run-at-large population, vs. historic daily passage indices. Compared to cumulative passage distributions 1991-2004, 2005 data shows a similar pattern to recent years – earlier migration timing.

Is it necessarily a bad thing that we're seeing earlier outmigration timing in recent years? asked John Wellschlager. I think that's an open question, McCann replied – the evaluation of that impact is an important issue. At this point, I can't tell you whether that's a good thing or a bad thing.

Boyce noted that management of flow and spill under the BiOp is obviously a crucial consideration; with respect to the migration timing of yearlings, it may make sense to water up the facilities when those fish are there, to water up the bypass facilities and start to do detection. I think how to better protect those fish is an issue that deserves further discussion, Boyce said. Actually, what I've seen, in looking back at 2004 and other years, is that, after those facilities are watered up, there is usually a period when we don't see any

fish, Russ Kiefer observed. My concern is that the early spring migrants are the big overwinter fish, and that they are very high-value fish, Boyce said – they are high contributors to adult returns, and I want to be sure we're taking the best possible care of them operationally.

You have drawn a conclusion that the fish that overwinter have the highest adult returns, said Wellschlager – I thought I heard Jay say earlier that you can't conclude that. We don't know what percentage of the fish that overwinter survive to outmigrate, so you're not comparing apples to apples. You're characterizing performance measures, Hesse replied, and with respect to one SAR vs. another, we can't say that we have apples to apples to compare. Looking at Billy Connor's scale pattern analysis, the contribution of the yearling life-history trait has averaged 41 percent. That is an average, Hesse cautioned; it has been highly variable, from the teens up to 60+ percent. It is important that we protect those fish, but whether that reflects the actual equal percentage of juvenile performance that would pertain if in-river conditions were equal, I don't know, Hesse said. Another cautionary note is that the yearling life-history component, which is based on scale pattern analysis, doesn't necessarily depict overwintering above Lower Granite – those fish could be anywhere from the spawning grounds down to the estuary, in terms of how that analysis is done.

Still, we need to take a close look at those yearling migrants, given their high value as returning adults, and do the best possible job of protecting them, Boyce said. And that includes not only starting sooner, but continuing monitoring through the winter, to get at some of the critical uncertainties we've identified today, said Hesse. I need a better understanding of what you're asking for, said another meeting participant – are you talking about our water-up procedures, or about whether we're routing the fish in the appropriate way once they get there? I just want to make sure that the bypass systems are being operated in a manner that will best protect the yearling migrants, said Boyce.

Silverberg summarized this morning's discussion by saying that, despite intensive study over the past five to 10 years, there is still a great deal of year-to-year variability in migration timing. We have also heard that there is considerable variability in when the Snake River fish outmigrate vs. when the Clearwater fish outmigrate, she said. Obviously, there is also a real need to continue to collaborate and coordinate on the studies designed to gather data on this issue, Silverberg added.

3. Review of Summer Treaty Fishery.

Kyle Dittmer distributed a handout summarizing the outcome of the summer tribal treaty fishery. He noted that CRITFC submitted three SORs requesting operations in support of the 2005 summer treaty fishery in the Zone 6 pools; in each SOR, the tribes requested that the Corps operate Bonneville, The Dalles (Celilo) and John Day pools within a 1-foot operating range. The Corps

agreed to operate Bonneville pool within a 1.5-foot range as a hard constraint, with 1 foot as a soft constraint, and was mindful of the tribes' requested operation at the other pools. Dittmer noted that this year, for the first time, CRITFC did not request a specific elevation target at the pools, but instead requested a specific operating range.

Dittmer said the Corps' 2005 compliance with the requested summer treaty fishing elevation range was 78 percent in Bonneville pool, which compares to a summer 2004 compliance rate of 71 percent. In The Dalles pool, the 2005 compliance figure was 75 percent, compared to 58 percent last year. In John Day pool, the figure was 89 percent, compared to 17 percent in 2004. However, there were higher fluctuations in all three pools in 2005 compared to 2004.

There were two incidents I wanted to pass along, from the CRITFC law enforcement office dispatch logs, Dittmer continued. On July 22, one of the Yakima Tribal fisheries monitors was informed by a tribal fisher that he was missing two nets, each 300 feet in length. The nets were missing from the area of the Chamberlain Lake rest area in Bonneville pool. The second incident happened on July 26; a tribal fisher reported that he was missing a net from the Preacher's Eddy area on the Washington side of the river. That net was 260 feet in length, and was not recovered.

You noted greater pool variability, said Wellschlager; in my opinion, that was a result of adjusting the system to deal with load fluctuations resulting from spill at the Lower Snake projects and McNary. When flexibility is removed, the need to follow load doesn't go away, Wellschlager said; it is simply imposed on a smaller number of projects. In other words, it's not the Corps' fault; it is probably us having to lean on the system for excursions, and to follow load. There were also a miscommunication on our part to Bonneville Dam one week, Henriksen said, the operating range was not extended through the last day one week.

4. Salmon Manager Response to MOP Variance at Little Goose for Doble Testing Outage.

Wills said that, at yesterday's FPAC meeting, there was general consensus that, in the context of a 3-5-day operation, the salmon managers would prefer to keep adult passage viable at Little Goose. That translates into a salmon managers' preference to spill less during the day and more at night, said Paul Wagner. We would prefer that you go outside of MOP during the day, while the Doble testing is occurring, then spill at night to draft the pool to its desired elevation. It was noted that the Doble testing, which is essentially a health check on the transformers, will begin August 22; during this test period, there will be no generation during the day. Lower Snake flows are about 30 Kcfs, currently.

After a brief discussion, it was agreed that, during the Doble testing period, the Corps will pass 5 Kcfs through speed-no-load during the day at Little

Goose, ponding the bulk of total river flow for release during nighttime hours through one unit of generation and spill. It was noted that Doble testing also needs to be conducted at Lower Granite this year.

5. Lake Pend Oreille Effects on Kokanee.

Russ Kiefer said he would be presenting some of the results of the research from IDFG's North Idaho Large Lakes/Reservoirs group. What we want to talk about today is our research into lake level management which leads us to believe that the lake level at Lake Pend Oreille is important for our kokanee and bull trout populations in that system, Kiefer said. Kiefer noted that Lake Pend Oreille is a natural lake, but Albeni Falls Dam has been build across the outlet to the Pend Oreille River. There is also Cabinet Gorge Dam on the Clark Fork River, the inlet to Lake Pend Oreille, Kiefer explained. Because of Cabinet Gorge, there aren't many major tributaries to Lake Pend Oreille, Kiefer said, so that pretty much confines the kokanee population to shoreline spawning in the lake itself.

Moving through his presentation (hot-linked to today's agenda on the TMT homepage), Kiefer touched on the following topics:

- Measurements of the natural lake elevations, pre-facility
- Current lake elevation measurements – higher than natural during the summer, negatively impacting kokanee spawning habitat.
- Why are kokanee important to bull trout? Because kokanee are 68 percent of the diet of the bull trout inhabiting this system. The Fish and Wildlife Service has concluded that, if the kokanee in Lake Pend Oreille fail to survive, the bull trout will likely fail to survive.
- Lake trout competition is one of the main threats to bull trout survival, particularly if the kokanee population disappears.
- Estimated adult kokanee abundance, 1922-present – sport anglers harvested an average of 1 million kokanee/year from 1952-1966 from Lake Pend Oreille, but the population was stable until, in 1966, the reservoir started to be consistently drawn down to elevation 2051 each winter. Since then, the kokanee population has dribbled along at a fairly depressed level.
- Spawning habitat is the limiting factor for kokanee in this reservoir, because, at elevation 2051, wave action stirs up the fines, cleaning the gravel below that level. This means that the kokanee have to be right at that level in order to spawn, said Kiefer – they can no longer spawn right at the lake surface, because the gravel there is no longer being cleaned.
- Jeff Lauffle noted that the Corps has looked for suitable spawning gravels at lower lake levels, but has not found it at those deeper elevations – we're trying to figure out why, he said. Right now, we're keeping the lake levels as they are because the wave action seems to be doing something at the higher lake elevations.
- Prior to dam construction, there was a substantial run of kokanee up the

Clark Fork River. The majority of the kokanee, however, spawned along the lakeshore.

- Because the modified system has existed for so long, the best spawning gravel now exists at the upper lake elevations. If a lower lake elevation were to be chosen, operationally, it would be difficult for the kokanee to spawn in the larger substrate. It could take up to a decade for more gravel to be deposited in the lower area, although there is some evidence that this process would occur more quickly.
- IDFG has been investigating whether it would be possible to improve kokanee survival through winter lake level management. Since 1997, IDFG has been requesting varying lake levels each winter; some years the lake has been drawn down to elevation 2051, and some years it has been kept up to elevation 2055. The agency has also been attempting to develop estimates of naturally-produced kokanee vs. hatchery kokanee, and using hydroacoustic and trawl surveys to estimate the number of mature female spawners each fall. Fry nets are used to estimate fry population abundance.
- Wild egg-to-fry survival estimates at lower lake elevations; the more females available, the more depressed the egg-to-fry survival, at least at the lower lake elevation.
- The Lake Pend Oreille kokanee are significantly more productive when the winter elevation is held at 2055 following a period when the lake elevation is held at 2051, because wave action cleans the spawning gravels at elevation 2051, providing good spawning conditions for the subsequent year's spawners at elevation 2055. Point estimates over the nine-year study period show a 2.4-fold egg-to-fry survival at the raised lake level.

Kiefer said IDFG recommends the following operations for Lake Pend Oreille resident fish:

- Hold the lake at its higher elevation (2055) for three out of four years
- During the fourth year, maintain a winter elevation of 2051 to clean the gravel the kokanee will then spawn in during subsequent years.
- Time the single low-elevation year for a time when adult kokanee abundance is at a lower level, if possible, to yield less competition for redd sites and less redd superimposition

Kiefer reiterated that, during the 1950s and '60s, sport anglers were catching in excess of 1 million kokanee each year in Lake Pend Oreille; in 2000, IDFG was forced to halt sport harvest of kokanee in the lake. We have lost a very significant recreational fishery in our efforts to protect the bull trout, he said, and our goal now is to rebuild it to the point that we have both a healthy bull trout population and a healthy kokanee sport fishery.

Kiefer emphasized that these recommendations are merely an initial take on a management solution; we realize that some of this water is used to support

chum spawning, and we do not want to adversely impact chum while focusing solely on resident fish in Idaho. What we want is a good understanding of the relative benefits of that water for resident fish and chum, so that we can develop a decision tree that will allow us to make this decision on a more logical basis.

Kiefer distributed a draft of such a decision tree, emphasizing that it is intended only to stimulate discussion – it is not a final document. We understand, for example, that if there is a power emergency, we will use available water from Lake Pend Oreille to generate electricity. Also, he said, if the previous year's operations adversely impacted chum, we would then give more weight in the decision tree to operations the following year to benefit chum. We need the chum experts to give us an idea of what might constitute a significant impact on chum, he said. We also need to talk, by mid-September or so, about the long-range forecast – if 2006 is likely to be another low water year, then we will have a higher probability of going to elevation 2051 over the winter. Also, if the estimates show that less than 70,000 female kokanee will spawn – an extremely depressed estimate, given the fact that we used to see 2 million+ female kokanee spawners – that's the next point on the decision tree.

Running all of these factors through the past history, said Kiefer, it basically works out that a little over 2:1, rather than our preferred 3:1, ratio will result, under this decision tree, on average, in two years up and one year down. The up years will hopefully coincide with wetter years and higher spawner abundance, while the lower years will hopefully coincide with dryer years and lower abundance.

I know we've been alternating up and down winter elevations for the past decade, but from this point forward, isn't it correct that there is no official direction? Wellschlager asked. That's right, Kiefer replied – from this point forward, we need to make decisions at Lake Pend Oreille based on the available research, and based on the information from chum salmon, starting this winter. We will need to make the decision about this winter's elevation within the next six weeks or so, he said, so I wanted people to start thinking about this issue.

Boyce noted that the Lower Columbia chum are ESA-listed, and there are specific operations for those fish in the Biop. We don't have a lot of operational discretion when it comes to chum, he said; this group doesn't have much discretion to negotiate on Lake Pend Oreille elevations.

It was agreed that the salmon managers will discuss Lake Pend Oreille kokanee operations in the context of chum needs, and will provide their input on IDFG's strawman decision tree. It was further agreed that IDFG will provide their input as to the desired Lake Pend Oreille kokanee population to be achieved through winter lake elevation manipulation, and that the TMT will revisit this topic at its August 24 meeting.

6. Salmon Managers' Response on Emergency Protocol Priorities.

Bob Heinith said there was a phone discussion on this topic about three weeks ago between the plaintiffs in the court case, the Department of Justice and the action agencies. Tribal reps were invited to listen in to the call; there was agreement from DOJ and the project operators that they would get back to the salmon managers about the first two tiers that the salmon managers sent to the operators. It was our understanding that the action agencies were going to get back to us within a few days with an explanation of what was meant by some of the items in the first two tiers, Heinith said; that has yet to happen. My understanding is that the court is the venue through which we're working this process, said Heinith; we continue to expect a response from the project operators.

I think you can expect a response soon, said Wellschlager; the difficulty has been building in legal language that is only going to apply to the next 30 days, in terms of Appendix 1 to the Water Management Plan. There are three different agencies commenting on what those protocols mean, he said, so it's just taking some time. Wellschlager noted, however, that there is a difference between tiers 1 and 2, and the protocols he has been seeking the salmon managers' feedback on, which essentially cover the actions that schedulers will take in response to a sudden, short-term emergency.

I guess there is something of a disconnect, then, because there are issues in the first two tiers that still need to be resolved, Heinith said. We're not talking about the first two tiers, Tony Norris replied – what we're after is the salmon managers' feedback on the actions the operators have to take within 4 seconds of a sudden emergency. We have presented this to TMT several times, seeking the salmon managers' input as to how those sudden emergency actions should be prioritized, Norris said. We're talking about the actions that would be taken if lightning strikes Chief Joseph, and we have only a few seconds to make up 900 MW of generation from the lower river projects, said Wellschlager. Currently, the last projects we would lean on, in the event of an emergency, are the court-ordered projects – if you guys don't like that idea, then tell me. We are seeking input on what you would prefer to see us do, when we take action in real time.

Boyce replied that there is still considerable confusion, for the salmon managers, as to what emergency actions are available to the action agencies short of operations that would negatively impact fish. It sounds as though there is a serious miscommunication on this issue, and that there is a real need to improve that communication, sooner, rather than later, said Silverberg. There are attorneys working on this, and we can let them figure it out, Wellschlager said. You should receive something from them in the next couple of days, and I think you'll be satisfied, although you may have a couple of questions. In the meantime, said Norris, this is the emergency protocols list the operators are

using, and if the salmon managers have additional guidance, we'd like to hear it. We will always consult with TMT on an emergency if time allows, added Wellschlager; the reality, however, is that time doesn't always allow us to do so.

7. Status of Summer Operations as a Result of Recent Court Rulings.

Henriksen reported that court-ordered spill is ongoing at the four Lower Snake projects and McNary, and will continue through August 31.

8. End of MOP Operations at the Lower Snake Projects.

It was agreed that the end of MOP operations at the Lower Snake projects will be discussed at the next TMT meeting on August 24.

9. Current Operations Review.

Henriksen said Libby continues to release 18.9 Kcfs; the project will be stepping down to either 14 Kcfs or 16.5 Kcfs outflow by August 17, to achieve a gradual draft to elevation 2439 by August 31. Norris reported that Hungry Horse is at elevation 3548 and drafting toward elevation 3540 by August 31; Grand Coulee is at elevation 1284, heading toward 1278 by Aug. 31.

Henriksen reported that Dworshak continues to release 12 Kcfs; the objective is to reach 1535 by Aug. 31. Our concern is that the Nez Perce Tribe would like to be at 10 Kcfs Dworshak outflow at the beginning of September without a double peak, she said. If we continue to release 12 Kcfs for much longer, Dworshak will likely be releasing far less than 10 Kcfs out by the end of August, in order to avoid going below elevation 1535. We may want to reduce Dworshak to full powerhouse (about 9.6 Kcfs) now, Henriksen said.

That was what FPAC felt would be prudent as well, said Kiefer. Statler said the Nez Perce Tribe would concur with that operation. Wills said he had spoken to Howard Burge at Dworshak National Hatchery; Burge told him that the feeding of the hatchery fish increased dramatically in response to the increase in Dworshak outflow temperature to 46 degrees F. He noted that Hells Canyon discharge has increased, so maintaining the current Dworshak outflow temperature profile is important. If we see temperatures rise above 67.5 degrees F at the Lower Granite tailrace, the salmon managers would like to see Dworshak outflow increased to 12 Kcfs at the same outflow temperature currently in place. It was agreed to go to full powerhouse capacity at Dworshak beginning today, and hold that operation as long as possible. Hlebechuk noted that, at full powerhouse capacity, the 15 feet of September storage would last only about 11 days before it would be necessary to go to minimum outflow.

Hlebechuk said that, on August 15, units 15-18 at Bonneville will be taken out of service from 7 am to 6 pm due to a breaker replacement.

10. Next TMT Meeting Date.

The next meeting of the Technical Management Team was set for Wednesday, August 24. Meeting summary prepared by Jeff Kuechle, BPA contractor.

**TMT Meeting Participants
August 10, 2005**

Name	Affiliation
Donna Silverberg	Facilitation Team
Ron Boyce	ODFW
Jay Hesse	NPT
John Wellschlager	BPA
Cindy Henriksen	COE
Tony Norris	USBR
David Wills	USFWS
Paul Wagner	NMFS
Ray Gonzales	COE
Russ Kiefer	IDFG
Billy Connor	USGS
Jerry McCann	FPC
Margaret Filardo	FPC
Dave Benner	FPC
Jim Admas	COE
Larry Beck	COE
Laura Hamilton	COE
Tom Haymaker	PNGC
Dan Spear	BPA
Steve Haeseker	USFWS
Bob Heinith	CRITFC
Kyle Dittmer	CRITFC

Ruth Burris	PGE
Dave Statler	NPT
Kevin Nordt	Mid-Cs
Tim Heizenrater	PPM
Bill Crampton	CBB
Glenn Traeger	Avista
Mike Buchko	Powerex
Bruce MacKay	Consultant
Richelle Beck	D. Rohr & Associates
Tom Le	PSE