

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

April 19, 2006 Meeting

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.

Priest Rapids Update

Russell Langshaw, Grant County PUD, provided an update on Priest Rapids flows. For the week of April 3-9, the average flow was 123 kcfs. The band constraint was missed on April 7 and over the weekend, because inflows exceeded what was estimated. For the week of April 10-16, the weekly average flow was 160.4 kcfs. Flow fluctuations exceeded the bandwidth constraint on April 13, due to inflows exceeding capacity. The weekend protection flow operation is in its third weekend, with one more to go. Conditions were at 933 temperature units from the end of spawning, with the end of emergence expected in the next 9-10 days. Russell will provide another update at the May 3 TMT meeting.

Navigation Below Lower Granite

John Pigott, on behalf of the Towboaters Association, put forth SOR 2006-NAV-01. It requests spill reduction at Lower Granite when stream flows exceed 75 kcfs, to provide safe conditions for tow vessels and operators as they exit the lock heading downstream of the project. The recommended operation would require intervals of approximately 20 minutes of reduced spill (when spill reaches 75 kcfs) up to 5-6 times per week. John noted that the towboaters have taken safety precautions already, by reducing their barges on each boat from 4 to 2.

Russ Kiefer, IDFG, responded that safety takes first precedent, and that the preference would be to operate using the RSW and a basic training spill pattern if navigation problems require a spill reduction. Oregon, Montana and Washington supported Russ's suggestion. Walla Walla COE offered support for the request as well. The CRITFC representative needed to coordinate with staff on this. The COE clarified that a high safety risk situation would require COE operators to shut off spill at the project to allow for safe passage.

Snake River Transportation

SOR 2006-5 was submitted by the salmon managers and supported by the NMFS Science Center to address transportation operations at the Snake River projects. According to the court order, transportation was scheduled to begin on April 20 at Lower Granite, Little Goose and Lower Monumental. The salmon managers requested that Little Goose transport be delayed until April 24 and Lower Monumental transport be delayed until April 28. Based on travel time data, this shift would support in-river migration of juvenile spring chinook passing the dams.

A number of technical questions were raised by TMT members: *What impact would this operation have on steelhead?* Paul Wagner, from NOAA Fisheries, responded that given the cool temperatures, relatively high turbidity, and the fact that this is early in the migration period this operation should pose little risk to steelhead. *How did the salmon managers come up with the 4-day lag period estimate?* Real-time pit tag data, on individual fish moving from project to project, was used. The Fish Passage Center has a pit tag report on this. *Was TDG data considered in the technical discussions?* Russ Keifer, IDFG, responded that the salmon managers looked into this and found that TDG levels were not high enough to pose problems for in-river fish, and recognized the need to include TDG as a biological consideration.

The COE and BPA responded that it would be useful to see more detailed biological information and an explanation that supports the request, which deviates from the court order's specified transportation operations. In principle, both agencies supported the recommendation. The Corps noted this recommendation pertains to this year only under current conditions and does not set a precedent for future years.

Next Steps: A technical consensus was reached at TMT that supported moving forward with the request. Parties in support included NOAA, Oregon, Idaho, Washington, Montana, BPA, BOR, COE, Nez Perce and CRITFC. The following next steps were discussed:

- The Fish Passage Center will post the pit tag report with biological information supporting the recommendation to its website, and share it with the COE.
- Paul Wagner, Russ Kiefer and Rudd Turner will draft clarifying biological language including responses to questions that came up during the TMT discussion and pros and cons of the operation.
- Mark Eames (NOAA legal counsel) and other attorneys are coordinating on legal aspects of this request. If the parties to the litigation agree to move forward, the recommendation will be shared with the Judge during a status update hearing on April 21. The COE will check with its attorneys on the feasibility of implementing the operation, from a legal perspective.
- The COE planned to begin barging at Lower Granite on April 20. Operating flexibility exists to continue with the court ordered spill (begin collecting and barging at all projects on April 20) or to implement the recommendation in SOR 2006-5 (wait to collect and barge fish at Little Goose and Lower Monumental until next week). The COE added that they support the recommended operation for this year only, and that this would not set a precedent for future years.
- Cathy Hlebechuk, COE, will send email updates to the TMT as progress is made on the issue.

UPDATE: Cathy sent an email to TMT with the following update on April 20: *As a follow-up to the SOR and discussions at the April 19 TMT meeting, late yesterday afternoon Paul Wagner provided a memorandum to the Corps about the Biological rationale for implementing a staggered start of transportation from the Lower Snake River projects. This morning Corps attorneys coordinated with the Department of Justice who sent Judge Redden a letter notifying the court of TMT consensus of this operation. Attached to the letter was Paul's memorandum. Accordingly, the Corps is implementing the staggered transport operation.*

WMP Spring/Summer Update

A draft of the Spring/Summer update of the WMP is on the TMT web page. Changes were made based on comments sent in already, e.g. Grand Coulee operations were modified to delete the extended drum gate maintenance work requiring the project to remain at or below 1255'. Tony Norris reminded TMT the project tries to do drum gate maintenance work every year but last year the project had an extended outage because routine maintenance work hadn't been done for a while due to the low water supply forecasts and shallow flood control drafts. The COE plans to finalize the document at the May 3 TMT meeting, so TMT members were asked to review the document, send comments to the COE and come prepared to finalize it at that meeting.

Flow Augmentation Volumes

Cathy Hlebechuk, COE, share the latest flow augmentation graphs. All 44 Dworshak ESP volumes were higher than the April final forecast and therefore, all ESP years are showing more flow augmentation volume than the April (50% confidence) final forecast. This means the ESP model is forecasting higher than the water supply forecast regression equations. The group acknowledged different model and forecasting methods have different methodologies and results. The Libby April-June flow augmentation forecast, using the April final water supply forecast, showed 142 kaf with 70% confidence, 311 kaf with 50% confidence, and 550 kaf with 30% confidence. Hungry Horse showed 660 kaf with 70% confidence; 704 kaf with 50% confidence, and 852 kaf with 30% confidence. Tony Norris, BOR, commented that the Hungry Horse model shows the likelihood discharge above minimum until April 30, and volumes to refill at the end of June.

The COE welcomed ideas for improving the forecasting tools. One suggestion was to put the graphs into the context of current operations to help the viewer understand how the volumes would be used.

ACTION: The flow augmentation item will be added to the 'Operations Review'/Reservoirs update for future agendas.

Operations Review

Reservoirs – Hungry Horse was at elevation 3520.4' and releasing full load, 11 kcfs. The April 30 flood control target was 3518'. Grand Coulee was at 1241.3', with inflows at 142 kcfs. The BOR was deviation request of the April 30 flood control target to 1233.4' was approved to avoid spill. Libby was operating at minimum outflows and at elevation 2407.5'. Albeni Falls was releasing 51 kcfs and at elevation 2055.5'. Dworshak was at 1538.1', with 15 kcfs out. Dworshak deviation was approved also. Lower Granite was releasing 152 kcfs. Hells Canyon was releasing 80 kcfs. The McNary weekly average flows were at 320 kcfs, Priest Rapids flows averaged 120 kcfs, and Bonneville averaged 292 kcfs. Dave Statler, Nez Perce, shared that Hells Canyon flows are high and that this may provide good conditions for migrants coming out of Lower Granite.

The salmon managers made an informal request that when big changes occur due to high flows, the COE coordinate with the smolt monitoring program so the program can adjust its work schedule (e.g. gas bubble monitoring). Also, the COE was urged to look at biological data when making spill changes if high levels of spill are required and there is time and flexibility to do so.

The COE informed TMT that they are trying to follow the Spill Priority list that is included in the Fish Passage Plan.

Fish – Rick Kruger, ODFW, reported that chum peak emergence occurred during the first week in April. Seining numbers are low. End of emergence is forecasted around the last week of April and could go into early May. Responding to a request for information about age distribution, Rick said there were 20 age 3, 96 age 4 and 13 age 5 adult carcasses counted.

Paul Wagner reported on juveniles. Yearling chinook numbers at Lower Granite and Little Goose were climbing. Steelhead numbers were starting to pick up. Sockeye numbers are likely mostly kokanee, and the numbers were low. As for adults, only 33 spring chinook were observed, indicating a late migration this year.

Cindy LeFleur, WDFW, proposed removing some of the sea lion exclusion devices (SLED's) on the Washington side to find out if this was causing a delay in the adult migration. She suggested making a change on the following Monday, April 24.

ACTION: TMT supported a test and suggested that further discussion occur between FPOM and members of a small group that has been focusing on marine mammal issues. A conference call should be coordinated in the next day or two to discuss how the test could be done, followed by a recommendation from FPOM to the COE. An update will be shared with TMT on the results of the discussions.

Water quality – Jim Adams, COE, shared a review of spill operations and TDG at individual projects. His slides can be found on the TMT web page linked to the agenda for today's meeting.

At The Dalles, the spill cap limited spill to below 30% due to higher TDG levels in the Bonneville forebay. CRITFC suggested that The Dalles is a sensitive project for juveniles and asked whether spill could be spread through bay 8 to reduce TDG concerns downstream and increase spill to get closer to the court-ordered spill level?

ACTION: Bernard Klatt, COE, will set up an FPOM call to discuss this request and if agreement is reached, FPOM will make a recommendation to the COE to change the spill pattern at The Dalles. A follow up email will be sent to TMT with the results of that discussion.

Suggestions were shared with Jim Adams to improve the TDG graphs: Include a 115% TDG line and include the downstream forebay TDG percentage. Jim said these changes are being made and will be posted to the web.

TMT Meeting Schedule

Wednesday, May 3 agenda items include:

- Finalize WMP Spring/Summer Update
- Navigation Update
- Priest Rapids Update
- Snake River Transportation Update

- Update on Fish Migration – SLED removal test
- John Day T-1 Outage Update
- Operations Review: Chum counts/error bounds, Upper Snake flow augmentation
- Sturgeon Pulse?

Technical Management Team Meeting Notes

April 19, 2006

1. Greetings and Introductions.

Today's meeting of the Technical Management Team was chaired by Cathy Hlebechuk and facilitated by Dona Silverberg. 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 Hlebechuk at 503-808-3942.

2. Priest Rapids Update.

Russ Langshaw said that, for the week of April 3, average Priest Rapids discharge was 107.8 Kcfs; the flow band constraint was exceeded on April 9. What happened was that inflows exceeded estimates, and the project was full, he explained. The maximum flow occurred at 3 am Saturday, so once we reached the maximum, the delta was only 21.1 Kcfs, he said.

For the week of April 10, said Langshaw, the flow band constraint was exceeded on April 13 due to increasing flows; spill was necessary to prevent overflow of the project. How many weekends are we into the weekend protection program now? Paul Wagner asked. Last weekend was the third week, so we have one more, Langshaw replied; we're now 933 temperature units into the program; 1,400 are required before the program ends, which should be achieved approximately nine or ten days from today. It sounds as though we'll hear from you at least one more time here at TMT, said Silverberg.

3. Navigation Below Lower Granite.

Prior to today's meeting, the action agencies received SOR 2006-NAV-01. This SOR, supported by the Columbia River Towboat Association, requests the following specific operations:

- This SOR recommends that the special operation of the Lower Granite spillways, to accommodate outmigrating salmonids, be modified to allow for a more navigation-friendly spill pattern and the reduction or cessation of spill, for the period of time it takes a vessel to depart the lock and clear the obstructing point of land, on the north shore, approximately half a mile below the dam. This is estimated to be approximately 20 minutes.

John Piggott said this SOR is intended to be implemented whenever total river flow exceeds 75 Kcfs at Lower Granite Dam. We're getting an increasing number of near-miss reports, vessels having difficulty clearing the point of land about half a mile below Lower Granite, he explained. The fact that Lower Granite is at MOP severely restricts the ability of the towboats to accelerate coming out of the lock, he explained – there is only a foot of clearance between the bottom of the barge and the sill of the navlock. We're concerned that we're going to see a boat driven onto that point of land if we don't get some kind of spill abatement while the tows leave the dam – it's a safety issue, Piggott said.

If it is indeed a big safety issue, the project on its own has the prerogative to go to zero spill, Hlebechuk said. Are you having problems entering the lock? Hlebechuk asked. The downstream exit is more problematic, but entering is difficult as well, Piggott replied. And is it possible that some sort of spill reduction might be required even if flows are below 75 Kcfs? Hlebechuk asked. It's possible, Piggott replied but we are only requesting spill reduction if flows are above 75 kcfs. He added that the Towboat Association has already reduced its loading by limiting tows to two barges; we're leaving two of our usual four barges at Wilma, then returning upstream to get them once the first two are past Lower Granite, Piggott added – in other words, we're doing what we can to accommodate your needs. In response to a question, Piggott said there are approximately 5-6 lockages per week at Lower Granite.

In response to another question from Wagner, Piggott said he is unsure whether it will be necessary to completely stop spill during lockages, or whether a reduction in spill would be adequate. Maybe what we can do is to try to do that first, and see whether that will create safer conditions. Clearly human safety trumps spill for fish passage, said Kiefer; perhaps we could try a spill reduction, to RSW spill plus reasonable training spill, about 18 Kcfs, during lockages and see whether conditions improve for the towboat operators. If not, we can further reduce or eliminate spill, Kiefer said. I would think that would be sufficient, Piggott said.

After a few minutes of further discussion, no TMT objections were raised to the spill reduction at Lower Granite during lockages, to RSW plus training spill, for a total of 18-20 Kcfs spill. Kyle Dittmer said he will need to check with the CRITFC managers before agreeing to this operation, but added that he does not believe CRITFC will have any objections.

4. Snake River Transportation.

Prior to today's meeting, the action agencies received SOR 2006-5. This SOR, supported by USFWS, IDFG, ODFW, WDFW, NOAA Fisheries, the Nez Perce Tribe, the Shoshone-Bannock Tribes and CRITFC, requests the following specific operations:

- According to the court order, transportation is to begin at the Snake River transportation sites on April 20. Delay initiation of transportation of juvenile salmonids until April 24 at Little Goose and April 28 at Lower Monumental.

Kiefer provided an overview of this SOR and its justification. The full text is available via hot-link from today's agenda on the TMT homepage; please refer to this document for further details. Kiefer noted that there is an upcoming conference with Judge Redden, at which this operation will be discussed; if we can achieve regional consensus that this is the preferred operation, that would be helpful, in the context of the litigation, he said.

Litchfield said that, according to the data he has seen, this operation would benefit spring/summer chinook more than steelhead. That is true, but there are fewer steelhead traveling through the system at this time, Kiefer said. Steelhead do, in general, show a higher benefit from transportation, but that benefit increases as we move farther into the season, Wagner added – we don't see increased risk to steelhead if this operation is implemented.

The group reviewed the most recent smolt monitoring data from the Fish Passage Center; it was noted that steelhead numbers have increased significantly at the Lower Snake projects in the last few days. Turner noted that the SOR contains no biological information on which to base a decision to change action agencies' implementation plan; there appears to be some contradictory information, with respect to the passage index information. At Lower Granite, there is a surface collection system; it isn't really appropriate to compare passage indices at different projects, Margaret Filardo said. We were not sampling 24 hours a day at Little Goose until April 16, because we were not yet collecting fish. It's difficult to compare timing at Little Goose and Lower Granite, unless you go to the PIT-tag data, Filardo said. Early in the season, fish tend to take a little more time, due to physiological and temperature differences, she said – travel times tend to be longer. When you put all of that data together, that's where the Lower Granite-Lower Monumental estimate of 8.5 days came from.

We have had our technical folks look at the PIT-tag data, and they have informed us that the travel time for the individual fish we can track is 8.5 days between Lower Granite and Lower Monumental, Kiefer said. Are you questioning that? All I'm saying is that, if we're being asked to change the implementation plan, we need to understand the biological information that would justify such a

change, Turner said. We can send you the PIT-tag report on which this request is based, Kiefer said. That might be helpful, said Turner. There were 118 hatchery chinook and 84 wild chinook in the PIT-tag group, Filardo added; again, their travel time was about eight days between Lower Granite and Lower Monumental. I would add that it isn't really true to say that there is no biological information associated with this SOR, said Dave Statler – if the action agencies want to see the details of the salmon managers' calculations, that's fine.

Jim Litchfield noted that, in the context of the current legal situation, it is incumbent on the region's decision-makers to build a careful record of any decisions made or any requested change in operations – I think that's all the Corps is saying, he said. Frankly, this SOR is somewhat thin, in terms of biological justification, Litchfield said.

John Wellschlager said that, while Bonneville is not opposed to what the salmon managers are proposing in this SOR, they are also sympathetic to the Corps' request for more biological justification. The salmon managers have been exchanging information on this issue for a couple of weeks, and you're all completely comfortable with this information. We're not questioning your data or its validity, he said – we're just saying that, in the context of a post-lawsuit world, we need a little more data so that we can cross all of our Ts and dot all of our Is.

Ultimately, Silverberg said that, what she had heard is that BPA and the Corps agree in principal to this request, but need to be very careful to understand the biological justification. It was agreed that, immediately after this meeting, Kiefer, Wagner and Turner will draft a statement clarifying the biological justification underlying this request for the benefit of the court. We also discussed the process for any change to the implementation plan, which would include a discussion of any pros and cons, a thorough vetting with all parties to the lawsuit, and a clear statement of any requested change in operations, she said.

There is some uncertainty about whether it will be possible to accomplish this in time for Friday's meeting with Judge Redden, Silverberg said; the next question was, is there TMT consensus that this change is warranted? After a few minutes of discussion, TMT consensus was achieved on this issue as all TMT members, including the action agencies, supported it, with the proviso that additional biological justification will be provided. It was agreed that Hlebechuk will email the TMT to let them know what the next steps are.

In terms of operations, it was agreed that the Corps will begin collecting fish for transport at Lower Granite tomorrow, but will hold off collection at the other Lower Snake projects pending the outcome of this issue. Hlebechuk said she will check with Corps legal staff to ensure that there are no serious issues with this change in planned operations.

Litchfield noted that TDG levels are very high at Lower Granite, currently; he asked whether the salmon managers have taken that into account in their request. We have looked at the biological monitoring, and have seen no serious signs of gas bubble disease, Kiefer replied – we'll include that in our discussion of the pros and cons of this operation.

The Corps supports this SOR in principal, but I want to make clear that it applies to this year only, under current conditions, and does not set a precedent for future years, Hlebechuk said.

5. Spring/Summer Update Update.

Hlebechuk asked whether the other TMT participants had had a chance to review the most recent draft of the Spring/Summer Update; she noted that it contains a number of changes. I would like to finalize it at the next TMT meeting on May 3, she added.

6. Flow Augmentation Volumes.

Hlebechuk directed the group's attention to the most recent ESP model runs, which continue to run higher than the water supply forecast estimate. The flow augmentation volume graphs are available via hot-link from today's agenda on the TMT homepage; please refer to these documents for full details of the current forecast. These graphs show runoff volume to date, volume to fill, volume needed to provide minimum outflow, and the estimated volume of flow augmentation water available, given a 30 percent, 50 percent and 70 percent probability of refill in 2006, based on conditions seen during 44 historic water years. These volumes ranged from about 500 kaf to about 800 kaf.

The next forecast was for Libby; given 30 percent, 50 percent and 70 percent confidence of refill in 2006, the available flow augmentation volume was estimated at 550 kaf, 311 kaf and 142 kaf, respectively, based on the most recent runoff volume forecast. In other words, there isn't going to be a lot of flow augmentation volume available from Libby this year, Hlebechuk said. At Hungry Horse, said Tony Norris, assuming a 900 cfs mid-month flow, the current estimate is that there will be between 660 kaf and 842 kaf available for flow augmentation from Hungry Horse in 2006, above that minimum discharge.

7. SLEDS at Bonneville.

Cindy LeFleur said WDFW would like to see some of the sea lion exclusion devices (SLEDS) removed from the Washington side of Bonneville Dam; there are indications that the fish may be reluctant to pass through the SLEDS. Something is delaying the migration, she said, and I wanted to have some discussion of the possibility of removing at least a couple of the SLEDS.

The group devoted a few minutes of discussion to this topic; Bernard Platt of the Corps said there is a technical group that meets regularly to discuss the SLEDS, including state, tribal and federal agencies. Hlebechuk said she will give LeFleur contact information for the marine mammal technical group, which would be the body that would actually make a recommendation to the Corps. And you would like to see this change made very soon? Silverberg asked. Yes, LeFleur replied. FPOM would actually be the group that would make a recommendation to the Corps to take the SLEDS out, another participant observed. Perhaps the FPOM folks and the marine mammal technical group should talk, Silverberg said.

Gary Fredricks said NOAA Fisheries has not seen evidence that there are a lot of spring chinook holding in the tailrace, but it might be worth considering removing one or two of the SLEDS from the downstream entrances at PH2, for perhaps a day, to see if a burst of salmon passage occurs. One problem is that the project would have to rent a crane to get those out, he said. We will discuss that possible test with FPOM tomorrow or Friday, Fredricks said, adding that this is the point in the season when adult passage numbers would normally increase dramatically. We'll have to try to sort out that fact from what we might expect to see if the fish have been piling up in the tailrace. He added that there have not been large numbers of observations of sea lion predation in recent days; in fact, many of the sea lions have left, apparently because they're bored, he said. Fredricks said he will coordinate a conference call to bring together representatives from FPOM and the marine mammal technical group to discuss this issue. There was general agreement that TMT supports this approach.

8. Operations Review.

Norris said he hasn't yet heard final numbers, but based on the April final forecast, his guess is that it should be possible to achieve what is allowed under the settlement, either 427 kaf or 487 kaf, in terms of Upper Snake flow augmentation. We won't know until we see what the irrigators actually offer up, he said. At Hungry Horse, the current elevation is 3520, down from the flood control objective of 3521 on April 15. The project is releasing full load – about 11 Kcfs – and drafting as much as possible; that will likely continue until project elevation nears 3518, the April 30 flood control objective. Inflows to the project are on the rise, and refill could be somewhat tricky, given the transmission limitations at that project this year.

At Grand Coulee, the current elevation is 1241.3 feet; inflows are creeping up, to about 142 Kcfs, Norris continued. The April 10 flood control target at Grand Coulee was 1248.4, originally, but that was subsequently recalculated to just over elevation 1250. We were actually at 1249.9 on that date, he said. Current Priest Rapids flows are about 180 Kcfs, Norris added. We're having a tough time drafting toward Grand Coulee's April 30 flood control elevation; we'll be at about 1233 feet, then at elevation 1229 by May 5, to avoid spill at Grand Coulee, he said – we had to request a deviation from the flood control objective to avoid spill

and conflict with the draft rate limitations at that project. We can draft about one foot per day at Grand Coulee, he added.

Hlebechuk said Libby is releasing minimum discharge; the project is at elevation 2407.5 feet and filling slightly to achieve its April 30 flood control elevation. Libby's runoff volume forecast went down slightly between March and April, but is still about 98 percent of average. Albeni Falls is at elevation 2055.5 feet and releasing 51 Kcfs, up from 17 Kcfs on April 1. This is bringing a ton of water into Grand Coulee, she said. The current elevation is 1538 feet at Dworshak and the project is releasing 15 Kcfs, up to the gas cap. We, too, requested and received a flood control deviation from the Corps for that project, she added; Dworshak will be above its end of April flood control target.

Lower Granite is currently releasing 146 Kcfs, Hlebechuk said, up from 73 Kcfs on April 3. Hells Canyon is releasing 80 Kcfs. Since April 3, the average flow at Lower Granite has been 123 Kcfs. Yesterday's day-average flow was 355 Kcfs at McNary; the spill season started on April 10 at the Lower Columbia projects. At Priest Rapids, the average flow for the period of April 1-18 was 142 Kcfs, with 176 Kcfs yesterday. At Bonneville, yesterday's average discharge was 370 Kcfs; the April month-average is 292 Kcfs to date. John Day is operating in the 262.5-264 range, the elevation at which irrigation can occur.

Kiefer said the salmon managers understand that this is a high-flow year, sometimes requiring swift adjustments to the spill program. When significant changes occur to the spill operations, we would ask that they coordinate those changes with the smolt monitoring program personnel, Kiefer said, so that they can adjust work schedules to be sure they get the most up-to-date GBD information following those changes. We will certainly do so to the greatest extent possible, Wellschlager replied.

Hlebechuk said she wanted to revise her default high-flow operation, as discussed at the last TMT meeting. We have the spill priority list, and try to follow that, she explained; we will plan on staying within 1 percent peak efficiency. It would be a nightmare, logistically, to try to go outside 1 percent. What we plan on doing is to use the spill priority list, and staying within 1 percent, in short, she said.

Moving on to fish, Rick Kruger said the peak of chum emergence occurred the first week in April. The number of chum fry seined this year is the third-lowest since 1999, although high water may be affecting the efficacy of our sampling effort, he said. Our current prediction is that emergence could be over as soon as the end of April, and as late as the third week in May, he said. I also have some age information on the carcasses recovered from the Ives/Pierce Island spawning area: 20 age 3, 96 age 4 and 13 age 5 fish, based on scale analysis, Kruger said. The proportion of age 3 fish was larger in the earlier years of the chum program, Kruger added.

Wagner said that, in terms of the juvenile passage numbers, at Lower Granite, decent numbers have been seen throughout April, and they're climbing. There are good numbers at Little Goose as well, although the numbers are lower at Lower Monumental, in terms of yearling chinook. there are good yearling chinook numbers at the Lower Columbia projects as well. Steelhead numbers are also climbing at both the Lower Snake and Lower Columbia projects. Kiefer said that, with respect to sockeye numbers, very large numbers of kokanee were seen at Dworshak in 2005; typically, the Redfish Lake sockeye don't arrive until later. In all likelihood, the sockeye we're counting in the Snake, currently, are actually from the Dworshak kokanee population, Kiefer said.

With respect to adult counts, the highest daily count we've seen to date at Bonneville is 33 fish, dismal for this time of year, said Wagner. Steelhead passage is near the 10-year average for this date. We hope the chinook are still out there, and will begin arriving soon, Wagner said; at this point, however, there is a lot of concern about the spring chinook run.

Wellschlager said there are no power system problems to report; the system is being operated for power production, and to achieve flood control targets. Moving on to water quality, Jim Adams reviewed the current flow, spill and TDG data for the Corps project; this data is available via hot-link from today's agenda on the TMT homepage. Adams noted that, since the spill season began, spill volumes have, in general, significantly exceeded the court-ordered spill volumes. Numerous water quality exceedences have occurred due to high flows throughout the system. Adams noted that spill is occurring at both Albeni Falls and Dworshak, currently.

The Corps also provided a brief update on the wire rope replacement effort at The Dalles; bay 8 is now available and work on bay 9 will be finished no later than Monday, April 22.

9. Next TMT Meeting Date.

The next Technical Management Team meeting was set for Wednesday, May 3. Meeting summary prepared by Jeff Kuechle, BPA contractor.

**TMT Participant List
April 19, 2006**

Name	Affiliation
Scott Bettin	BPA
Tom Le	PSE
Jim Adams	COE

Cathy Hlebechuk	COE
Ann Glassley	COE
Paul Wagner	NOAAF
Margaret Filardo	FPC
Tony Norris	USBR
Donna Silverberg	Facilitation Team
David Wills	USFWS
Jim Litchfield	Montana
John Wellschlager	BPA
Rick Kruger	ODFW
Russ Kiefer	IDFG
Rudd Turner	COE
Don Faulkner	COE
Tim Heizenrater	PPM
Todd Cook	PPM
Dan Spear	BPA
Dave Statler	NPT
Russ George	WMCI
Robin Harkless	Facilitation Team
Kyle Dittmer	CRITFC
John Piggott	Col. R. Towboat Assoc.
Bill Crampton	CBB
Cindy LeFleur	WDFW
Dave Benner	FPC
Richelle Beck	D. Rohr & Associates
John Coffee	Snohomish PUD
Russ Langshaw	Grant PUD
Glenn Traeger	Avista

Mike Buchko	Powerex
Tom Lorz	CRITFC
Dave Statler	NPT
Gary Fredricks	NOAAF