

**Final Notes**  
**Bear River Environmental Coordination Committee Meeting**  
**April 18, 2007**  
**Pocatello, Idaho**

---

<b>Commitments Made at the April 18, 2007 Bear River ECC Meeting</b>	
All	<ul style="list-style-type: none"> <li>• Forward comments on ECC memo to FERC regarding Twin Lakes to Colyer by Wednesday, April 25. If no further comment, Colyer will finalize.</li> <li>• Get up to speed on issues relative to boater flow ramping.</li> <li>• Those interested in boater flow ramp rate discussions meet at 9 a.m., Tuesday, May 15 at PacifiCorp's Grace facility. A conference call line will also be available</li> </ul>
Warren Colyer	<ul style="list-style-type: none"> <li>• Finalize ECC memo to FERC regarding Twin Lakes if no comments are received by close of business April 25.</li> </ul>
Mark Stenberg	<ul style="list-style-type: none"> <li>• File ECC memo regarding Twin Lakes with FERC.</li> <li>• Work with NRCS to identify potential conservation easement contacts.</li> <li>• Send notice of awards and instructions on how to receive funding to applicants awarded funding during 2007 review.</li> <li>• Arrange a conference call for those interested in discussing/asking questions about statistical analysis in Black Canyon monitoring study.</li> </ul>
Eve Davies	<ul style="list-style-type: none"> <li>• Forward seed mix used at Cove decommissioning site to Capurso</li> <li>• Bring options for potential Harris easement to next ECC meeting</li> </ul>
Dave Teuscher	<ul style="list-style-type: none"> <li>• Forward copy of Matt Campbell's genetics report to Stenberg</li> </ul>
Teuscher, Colyer, Capurso	<ul style="list-style-type: none"> <li>• Meet at IDFG offices Wednesday, April 25, 10 a.m. to develop protocol for upcoming irrigation diversion inventory.</li> </ul>
Sagebrush Steppe Land Trust	<ul style="list-style-type: none"> <li>• Proceed with closing on Bear River conservation easement parcels</li> </ul>
Lynn Van Every	<ul style="list-style-type: none"> <li>• Speak with bearriverinfo webmaster about consolidating/tagging information generated from ECC studies.</li> </ul>
Funding Proposal Subcommittee members	<ul style="list-style-type: none"> <li>• Notify applicants for 2007 habitat enhancement funds of decisions regarding their proposals</li> </ul>

**Consensus Decisions Made:**

- Sagebrush Steppe Land Trust will proceed with closing on six of the Bear River conservation easement parcels. One remaining parcel to follow.
- File ECC memo to FERC regarding Twin Lakes' proposed dam if no further comments are received from ECC members by Wednesday, April 25 (see Attachment 1 – Colyer's draft letter to FERC regarding Twin Lake's proposed dam).
- Fund 2007 projects as recommended by the funding proposal subcommittee (see ranking table, included in notes), with Snyder Creek cancelled and scaling Whiskey Creek/Trout Creek back to exclude ponds but offering to match other habitat improvement projects.

### **ECC Members Present**

Warren Colyer, Trout Unlimited  
Marv Hoyt, Greater Yellowstone Coalition  
Kevin Lewis, Idaho Rivers United  
Jim Capurso, U. S. Forest Service  
Dave Teuscher, Idaho Department of Fish and Game  
Mark Stenberg, PacifiCorp  
Charlie Vincent, American Whitewater  
Lynn Van Every, Idaho Department of Environmental Quality  
Jim Mende, Idaho Department of Fish and Game (afternoon)

### **Others Present**

Eve Davies, PacifiCorp  
Buffi Morris, PacifiCorp  
Glen Pond, PacifiCorp  
Kelly Holt, PacifiCorp  
Tom Lucia, Sagebrush-Steppe Land Trust (late morning)  
Brent Nichols, Sagebrush-Steppe Land Trust (late morning)  
Greg Mladenka, Idaho Department of Environmental Quality (afternoon)  
Miriam Hugentobler, Project Coordinator

### **Participating by Phone**

Mary Lucachick, Idaho Department of Parks and Recreation  
Susan Rosebrough – National Park Service (late afternoon)

### **Recap and Review**

Review of Commitments – Teuscher will forward Matt Campbell’s BCT genetics study report (rather than his Powerpoint presentation) to Stenberg, who will provide to Frank Shrier. Teuscher will forward the Georgetown Management Plan to Davies.

### **Funded Grant Projects**

**Mickelson EQUIP** – Stenberg said he is continuing work on this project with Mr. Mickelson.

**Cub River** – Colyer said this recently completed project is working very well and is moving cutthroat trout for the first time in 20 years. Colyer said he has a press tour of the Cub River site tomorrow with a reporter from Ogden. He said other ECC members are welcome to join them.

**Ovid Fish Screen** – Colyer said he received a call from irrigators who wanted him to come take a look at the screen. He said it is working well and irrigators are getting plenty of water. Colyer noted 12 small trout on the fish screen, which appears to be functioning well.

**Cove Decommissioning Site** – Davies said reclamation at the decommissioning site looks good. Grass seed is sprouting. Stenberg said the shrubs that were planted look good, too. Capurso asked Davies to forward the seed mix to him.

**Skinner Creek** – Capurso said design is complete on the Skinner Creek screens and diversions are on schedule to be installed in July. **Nounan Bridge** is also scheduled for installation by Bear Lake County Road Crew in July.

**Irrigation Diversion Study** – Teuscher said the FREMA portion of the grant has been received and he is working with Colyer and (graduate student) Ryan Hillyard to refine methods. He is also in the process of hiring one other person to assist with the project. Teuscher said Trout Unlimited may also provide personnel, and Forest Service Fisheries Biologist Corey Lyman is assisting with Georgetown Creek. Teuscher said he has prepared a summary of the information he will be collecting. Landowner contact has been initiated by Hillyard. Inventory will start in some segments very soon. Capurso said he can also provide additional personnel if needed. Capurso said he believes it is very important that everyone follow the same protocol. Colyer said he would like to arrange a meeting with those who will be collecting the data to work through methods. Capurso said this task is some of the most important BCT restoration planning information that the ECC will collect. Teuscher suggested scheduling a meeting on Wednesday, April 25, at 10 a.m. at the offices of Idaho Department of Fish and Game in Pocatello. Colyer, Capurso, and Teuscher agreed to attend.

### **Letter to FERC from the ECC Regarding Twin Lakes**

Colyer said the letter from the ECC to FERC was not finalized in time for FERC's public comment period on the proposed dam. Colyer said that he received comments on the letter from Capurso, Teuscher and Stenberg. Colyer said the edits were incorporated and sent to Stenberg. Stenberg provided additional comments. Colyer said he believes it is still worthwhile to send an ECC letter to FERC, even though the submission will be received outside of FERC's official public comment period. Colyer made the following proposal:

Proposal – ECC members should review the draft letter, and within 5 business days, let Colyer know of any additional comments. If no substantive comments are received, Stenberg will submit the letter. It will be submitted as a memo to FERC from the ECC, with no signatures. All agreed. Comments are due April 25, by close of business. Stenberg will then file the memo with FERC.

### **Bear River Conservation Easements – Brent Nichols, Sagebrush-Steppe Land Trust**

Nichols updated ECC members on the Bear River conservation easements in the Cove Bypass area. Nichols said that originally there were to be five easements and one fee purchase. Now there are two proposed fee purchases. He said SSLT is about to close on six of the parcels, and is working through title issues on the seventh.

Morris said there was a life estate on one of the parcels which is being taken off (i.e., parents of the landowner had died but were still on the deed).

Capurso asked whether PacifiCorp realty people had reviewed the easements and fee purchases. Stenberg said yes, and added that ECC members were welcome to review them as well.

Stenberg said PacifiCorp has reviewed the packets, and recommends that the ECC accept. Based on PacifiCorp's review of the packets, he asked for ECC consensus for SSLT to proceed with the purchase of conservation easements (using 2006 land and water acquisition funds) on all but one parcel. The ECC voted unanimous to proceed.

Nichols said that SSLT will proceed.

### **Other Project Issues**

Stenberg asked ECC members about visioning for work with the land trust over the next 24 months. He asked ECC members whether, in general, they would prefer to pursue conservation easements over fee purchases, without eliminating fee purchases. ECC members agreed.

Stenberg mentioned the Mickelson project. He said he would like to try and identify areas where landowners are already fencing the river and are willing participants. He said he is working with Natural Resources Conservation Service on this.

Colyer suggested using thermal imaging to help identify areas, and offered to help. Hoyt said habitat value should be considered in prioritizing projects. Colyer said there is a need to import irrigation diversions and thermal imaging data into Arcview. Stenberg said NRCS told him they don't track their projects in GIS.

Van Every said that the bearriverinfo website webmaster does not know what to do with the ECC's thermal imaging photos. He said it is a huge data set and not usable from the website. Teuscher noted that the photos are not georeferenced, so users don't know where they are when viewing them. Teuscher said he would like to transfer the photos to video format. Teuscher asked that Van Every contact the bearriverinfo webmaster about organization of information derived from ECC studies. He asked that ECC information be consolidated/tagged as such.

Stenberg informed the ECC of a PacifiCorp grant for land trust fundraising and startup. Lucia said the land trust is conducting a search for an executive director.

Stenberg noted that SSLT had applied for and received a FWS grant for weed control on the Kackley Parcel.

## Subcommittee Recommendations for 2007 Funding Proposals – Stenberg

Stenberg reviewed the Funding Proposal subcommittee's 2007 recommendations for funding (see ranking table, below).

Bear River ECC Funding Proposal Subcommittee Initial Ranking of Funding Proposals – Spring 2007				
Name	Amount Requested from the ECC	Total Estimated Project Cost	Ranking (Points)	In/Out of Action Area?
<b>Land and Water Acquisition Funding</b>				
<b>Subtotal</b>				
<b>Habitat Enhancement Funding</b>				
Laurie Harris Spring	\$20,000	\$49,820	150	In
Fish Screen on Hoop Creek	\$1,500	\$6,000	149	In
Trout Creek Restoration (Veg Planning)	\$3,500	\$110,000	145	In
Snyder Creek Livestock Exclusion	\$13,512	\$63,142	145	In
Whiskey Creek/Trout Creek	\$40,000	\$153,500	140	In
Dingle CAFO	\$25,000	\$100,000	136	Out
Mathews Bear River Restoration	\$40,000	\$422,789	136	In
Georgetown Creek Enhancement	\$24,000	\$30,000	129	In
Eightmile Road and Trail Closure	\$14,500	\$20,500	120	In
Midland Trail Renovation	\$5,000	\$15,000	110	In
North Canyon Riparian Protection	\$1,500	\$5,500	110	In
	\$188,512.00			
Clegg BCT Rearing Tanks	\$8,000	\$15,000	65	In

### Updates to Projects

**Laurie Harris Springs** - Davies said tweaks may be needed to the Laurie Harris Spring project. Stenberg proposed that if ECC cost changes more than 5-10 percent, the project will come back to ECC for reauthorization. Changes, if needed, will go to the ECC by email.

**Snyder Creek** – Colyer said that three phases were originally proposed for the Snyder Creek Project. The first phase was of interest to the ECC (fencing). He said the applicant has since cancelled the NRCS portion. Colyer said the project could be downgraded to a fencing project but the applicant may wait to work out problems on the other portions of the project.

**Whiskey Creek/Trout Creek** – Hoyt suggested not granting \$40,000 for the ponds, and including an explanation of why the project was turned down. Colyer said he's not in a position to say what the project would do for fish. He said he believed additional studies

or modeling would be needed to make an informed decision. He suggested asking Clegg for that, then suggesting he come back once that is done. Teuscher agreed that it is not known what effect the project would have on fish. Teuscher noted that turbidity and temperatures are currently a limiting factor there. He suggested that ponds are not needed to correct problems in the area, but a flushing event. Teuscher suggested matching NRCS funds for downstream habitat work, but not ponds – which could be detrimental. Van Every agreed. Stenberg will communicate with Clegg. Capurso suggested offering to help with other habitat improvement, but not ponds.

**Dingle (Bunderson Property)** – Stenberg noted that this project is located outside the action area. It was approved by the funding proposal subcommittee and Stenberg took the proposal back to PacifiCorp management. He said PacifiCorp has agreed to fund the project, but with the condition that Bunderson donate a conservation easement in the area that is fenced off on Paris Creek. Colyer, the project sponsor, will communicate this to Bunderson.

### **Funding Vote**

Stenberg reviewed available funding with the ECC. He said there is approximately \$245,000 in the habitat enhancement funding account, with older projects (Williams Creek and Mickelson) still outstanding. Therefore, approximately \$202,000 is available for habitat enhancement projects.

Stenberg said the projects the subcommittee agreed to fund total \$188,512. With Snyder Creek out, the amount will be closer to \$175,000, he said. An amount is also anticipated to be removed from Whiskey/Trout Creeks to reflect not funding the ponds. Stenberg said this will leave some funds in the bank. Stenberg invited suggestions from ECC members. Colyer said he would be in favor of leaving unappropriated funds in the bank.

Proposal – Fund projects as recommended by the funding proposal subcommittee (see ranking table) with Snyder Creek cancelled and ECC participation in Whiskey Creek/Trout Creek scaled down to exclude ponds, but offering to match on other habitat improvements.

The ECC voted unanimously to accept the proposal.

Davies mentioned conservation easements on the Harris property. Stenberg noted that the ECC will entertain land and water proposals year-round. Capurso asked whether the land trust has visited with them. Stenberg said yes.

### **USGS Flow Data and PacifiCorp's Operations and Compliance Plan – Connely Baldwin**

Baldwin briefed ECC members on a proposed change to flow data collection. He said that PacifiCorp will no longer be submitting flow data to the U.S. Geological Survey. He said there is no FERC requirement for PacifiCorp to submit flow data to USGS for review, but PacifiCorp has been paying the USGS to archive the data and make it

available to the public, as well as providing a final review. Baldwin said he will modify Operations and Compliance Plan to reflect this change. Baldwin will circulate the plan to the ECC for review before it is submitted to FERC. Capurso asked whether the same data are available to USGS via the website. Baldwin said yes. Teuscher noted that hourly flow data are available online, and can be collected if downloaded on a regular basis. Teuscher asked whether he can get historic data if he misses a download. Van Every asked when data are finalized. Baldwin said he would like to follow what USGS is doing. They finalize yearly, but are moving toward every four months. Vincent expressed concern that data are not available to the public if USGS no longer archives them, other than requesting it from PacifiCorp. Baldwin said it will be available in the Bear River Commission's reports and it could also be added to the ECC's annual report. Stenberg suggested providing it in the annual operations report, and also adding instructions on how to obtain historic data to the website.

### **Black Canyon Study Results – John Gangemi**

Gangemi presented the results from the 2006 monitoring in Black Canyon to the ECC via a Powerpoint presentation. A copy of his presentation will be provided to Stenberg for the record.

Gangemi reported a sudden appearance of New Zealand mud snail in a monitoring reach, with community biomass increasing from 0 to 80% in between annual samples. Capurso expressed concern about the sudden appearance and dominance of the invasive species and suggested installing signs in the reach to discourage its spread.

In regard to the statistical analysis presented, Davies asked whether the person who ran the statistics could meet with ECC members by phone to answer questions about the statistics. Van Every said he is very interested in continuing this discussion outside the regular ECC meeting. Those interested can meet by phone. Stenberg will arrange the call. Capurso expressed concerns about the assumptions being made regarding fisheries sampling. For example, a single backpack shocker is insufficient to sample the river effectively.

Stenberg noted that there is extra money (escalation of funds) for the Black Canyon monitoring task if the ECC would like to re-examine. Gangemi also invited ECC members to join Oasis during monitoring, providing in-kind labor.

### **Black Canyon Boater Flow Ramp Rate Discussion – Stenberg/Gangemi/Others**

Stenberg said he has reviewed Settlement Agreement and License language regarding boater flow ramp rates, and some points in the language are not clear. He asked what people who were present during negotiations remembered.

Hoyt said the boatable range was 700-1500 cfs, and if flows exceeded 1500 cfs, PacifiCorp could use the excess for power generation.

Davies said only expert boaters use the Black Canyon. Flows of 700 cfs are used by less experienced boaters, while flows over 1000 cfs are used by extreme experts only.

Davies said she remembered the ramping discussion being relative to downramping only, not upramping. She said that assumption appeared to have been lost as language was simplified.

Hoyt said he remembered lots of discussion on the number of days of whitewater flows and cost to PacifiCorp. When discussions were taking place during 2000-2002, Hoyt said most thought there might be about 20 opportunities per year, rather than 8-10. Also, that boaters wanted to releases on weekends (as noted) and on holidays (apparently that language was lost).

Van Every said he remembers “punting” on the ramp rates during negotiations. But he said now there are data that were not available during negotiations and it can be figured out.

Gangemi said he was not sure why the Settlement Agreement language states “scheduled release,” as releases are opportunistic rather than scheduled.

Stenberg said in regard to ramp rates, the company will bear complete cost after 6 hours. He said that obviously the company wants to get the plant back online as soon as possible after boater flows are done.

Stenberg said valves are being replaced at Grace and for the redesign, there is a need to know what limits would be needed with ramping to include in the engineering scope. He also asked about ECC members’ concerns in regard to ramping.

Davies said that during internal discussions, it has been assumed that effects would be in reach 2. She said that might help people formulate their concerns (i.e., what they care about). Also, she said, focus on downramp.

Mladenka said he was concerned about what is behind the gate in the reservoir and what would be released. Holt said there is nothing much behind it. Stenberg added more about how the system works, and also said that not much sediment would be released.

Hoyt asked about the cost of a gate valve versus a needle valve. He asked that if modulation is needed, wouldn’t it be better to install a needle valve?

Davies offered to discuss the fish stranding plan. Van Every noted that there is a lot of habitat that it is not possible to reach in order to address stranding.

Stenberg said it likely won’t be possible to test ramp rates before April 2008. He said some modeling and verifying could be done. He asked Gangemi to show ECC members possibilities of what can be looked at.



## **Bear River Ramp Rate Study Discussion**

Stenberg said the Settlement Agreement says the ECC will determine ramp rates in consultation with PacifiCorp. He said that the group needs to figure out how to do that. He said that PacifiCorp is funding Gangemi to put some study ideas together and find a few relevant studies for reference. He said it was also needed in time to design the right equipment.

Mladenka suggested narrowing study to reach 2 because of attenuation of effects with distance from the source.

Capurso suggested giving ECC members a month to get back up to speed on this issue, then discuss it further. Capurso asked Vincent to talk with American Whitewater about the timeframe for whitewater releases (i.e., blocking up several days of releases for boaters, not necessarily on the weekends) for normative river flows. This would be a change from the Settlement Agreement. Vincent said he can discuss it, but can't authorize it.

Stenberg said that in regard to timeframe, design plans need to go to FERC in July. So input for engineering is needed in May.

Interested ECC members agreed to meet to discuss ramp rates at 9 a.m., Tuesday, May 15 at PacifiCorp's Grace facility. A conference call line will be available.

## **Next Regular ECC Meeting**

Next regular ECC meeting will be 9 a.m., Wednesday, June 27 at PacifiCorp's Grace facility.

## **Agenda Items**

Project updates

Cove site tour

Draft BCT restoration plan

**Attachment 1: Draft Letter to FERC regarding Twin Lakes' Proposed Bear River Narrows Hydroelectric Project**

**Attachment 2: Bear River Ramp Rate Study Discussion**

## MEMORANDUM

**To:** Federal Energy Regulatory Commission

**From:** Environmental Coordination Committee, Bear River License Implementation (Committee members include PacifiCorp, U.S. Fish & Wildlife Service, U.S. Bureau of Land Management, U.S. National Park Service, USDA Forest Service, Shoshone-Bannock Tribes, Idaho Department of Environmental Quality, Idaho Department of Fish & Game, Idaho Department of Parks and Recreation, Idaho Council of Trout Unlimited, Idaho Rivers United, Greater Yellowstone Coalition, American Whitewater)

**Re:** Project No. 12486-001, Bear River Narrows Hydroelectric Project Preliminary Application Document

**Date:** TBD

---

On May 3, 2004, the Environmental Coordination Committee (ECC) for Bear River License Implementation filed a memorandum with the Federal Energy Regulatory Commission (FERC) outlining our concerns regarding the Twin Lakes Canal Company (TLCC) proposal to construct a new hydroelectric project in Oneida Narrows Canyon on the Bear River (Project No. 12486-000). The ECC comprises the 16 signatories of the Settlement Agreement for the issuance of a New License for the continued operation and maintenance of FERC Project No. 20 that includes the Soda Project, Grace Project, and Oneida Project. This license was issued on December 22, 2003.

It is our understanding that a requirement of the preliminary permit as granted to TLCC by the FERC was to work with the ECC to address this group's concerns regarding the potential impacts of the Twin Lakes proposal on the existing Bear River Settlement Agreement and New License. As stated in the preliminary permit, "The applicant is fully aware of the conflicts surrounding a potential new license and has informed the Commission that it understands that these conflicts must be resolved before the Commission could entertain any application for a license. The applicant also states that it is fully aware that PacifiCorp and the ECC will be key parties in discussions seeking resolutions." At this time the ECC would like to reiterate that our concerns have yet to be addressed adequately by the TLCC. The ECC continues to believe that the TLCC proposal could interfere with the successful implementation of Bonneville cutthroat trout (BCT) restoration activities required by provisions of the Bear River Settlement Agreement. As with the previous memorandum, this correspondence is not intended to state a formal position for any of the ECC members or signatories to the Settlement

Agreement Concerning the Relicensing of the Bear River Hydroelectric Projects (Soda, Grace/Cove, and Oneida).

The ECC is extremely concerned regarding the Preliminary Application Document (Project No. 12486-001) filed by the Twin Lakes Canal Company for the Bear River Narrows Hydroelectric Project. The ECC has met regularly for the past three years to develop and implement multiple projects for BCT restoration and other environmental and recreational improvements associated with the Settlement Agreement and New License. The bulk of that effort has focused on reconnecting mainstem and tributary habitats and improving instream conditions for BCT and other native fishes and aquatic organisms. To date, the ECC has spent over \$400,000 on radio telemetry studies, genetic analyses, and extensive temperature and aerial photography surveys to inform the development of a watershed-scale BCT Recovery plan as required by the New License and Settlement Agreement (Article 403). The Committee has also contributed over \$300,000 in funding for specific habitat improvement and fish passage projects to directly benefit BCT in mainstem and tributary habitats throughout the Bear River Action Area. These efforts represent a significant investment, in both time and financial resources, and the ECC wishes to protect that investment by preserving the Settlement Agreement and New License and all of the provisions therein as they were originally negotiated.

As we stated in our previous memorandum, “the Agreement and New License contain environmental protection, enhancement, and mitigation measures that could be limited or eliminated by the Twin Lakes Canal Company proposal.” The proposed project appears inconsistent with provisions of the New License that were negotiated to recover Bonneville cutthroat trout populations, restore and protect riparian and aquatic habitats, and improve recreation access downstream from PacifiCorp’s Oneida Project No. 472. Specifically, Article 403 of the FERC “Order Approving Settlement Agreement and Issuing New License” states that PacifiCorp will work in consultation with the ECC to prepare a comprehensive Bonneville Cutthroat Trout Restoration Plan that “is consistent with the Range-wide Conservation Agreement and Strategy for Bonneville cutthroat trout.” That Conservation Agreement and Strategy calls for the reconnection, restoration, and protection of BCT and their habitat throughout the native range of the species. **The Twin Lakes proposal is not consistent with those objectives, as it inundates and further disconnects over five miles of mainstem habitat.** PacifiCorp is also required by the New License to provide funds to target restoration of BCT populations throughout the Project Area (Article 405). To date, PacifiCorp and the ECC have spent roughly \$100,000 to benefit BCT populations in the Cub River and mainstem Bear River below the Oneida Project—efforts to reconnect tributary and mainstem habitats that could be compromised by the Twin Lakes proposal to inundate additional mainstem habitat. The New License also contains specific operational provisions to improve aquatic habitat below the Oneida Project by providing instream flows (Article 408) and ramping rates (Article 412), and by minimizing flow fluctuations (Article 420). New License provisions will also improve riparian habitats by providing shoreline buffers (Article 425) and a land management plan to protect riparian corridors (Article 424). To improve recreation resources and access the new License contains specific provisions that

PacifiCorp improve and maintain recreational access facilities (License Article 416), expand the project boundary downstream in Oneida Narrows Canyon to ensure recreation access (Article 427), and develop a traffic safety plan to manage travel along the Oneida Narrows Road (Article 417). All of the above referenced License provisions will be compromised or require amendment if the Twin Lakes Proposal is implemented. These provisions represent the fruits of intense and difficult negotiations between PacifiCorp and the 16 signatories to the New License (i.e. the ECC). Again, the ECC strongly desires to protect its significant investment in time and resources by preserving the New License and its specific provisions.

The ECC appreciates the opportunity to comment regarding the Preliminary Application Document for Twin Lakes Canal Company's Bear River Narrows Hydroelectric Project. This memo is written to advise the FERC and the applicant of potential significant conflicts between the long-term mitigation in PacifiCorp's licenses for the Bear River hydroelectric projects and the applicant's proposal to construct the Bear River Narrows Project. Please feel free to contact any of the ECC's participating organizations regarding the issues detailed above.

## **Bear River Ramp Rate Study Discussion**

Section 3.4.4 in the Bear River Settlement Agreement directs the ECC to determine feasible ramping rates associated with whitewater releases. PacifiCorp proposes to study ramp rates through a combination of empirical and professional judgement based study. The latter approach engages settlement stakeholders to observe ramp rates in the Bear River. These studies are designed to measure the instantaneous effects of ramp rates on the Bear River. The cumulative effects of variable flows are being measured via the Black Canyon Monitoring Study.

### **Potential Empirical Studies for Consideration**

#### **Physical**

- Hydrology—Measure stage height changes over time
- Hydraulic modeling—HEC-RAS modeling using existing survey data
- Channel Shape—measured annually in reaches 2 and 3 as part of Black Canyon monitoring effort
- Varial zone width—quantify width between baseflow and maximum discharge as well as rate of change
- Bedload movement, scour and shear stress—measures movement specific to highest discharge but not necessarily under different ramp rate scenarios (measure of cumulative effect of flows rather than instantaneous effect associated with ramp rate)

#### **Chemical**

- Turbidity—measure change over time congruent with ramping
- Dissolved Oxygen—measure change over time congruent with ramping
- Temperature—longitudinal measure of change over time congruent with ramping

#### **Biological**

- Fish stranding—receding limb of hydrograph; area specific
- Benthos drift—sequential sampling before, during and after
- Benthos density—Black Canyon monitoring effort
- Periphyton/algae—Black Canyon monitoring effort

## Professional Judgement Approach

### Demonstration Flow Assessment Method

*Demonstration Flow Assessment: Procedures for Judgement-based Instream Flow Studies, EPRI, Palo Alto, CA: 2003. TR-1005389.*

#### Advantages

- Structured Assessment based on management objectives
- Key metrics identified for evaluation
- Facilitated
- Engage stakeholder participants in decision process and outcome
- Efficient—view multiple sites in single day
- Approach uncertainty and subjectivity up front in evaluation form

#### Disadvantages

- Based on professional judgement
- Potential for stronger personalities to drive the outcome
- Lacks empirical data

#### DFA Procedure

The procedures for DFA studies use a “habitat quantification” approach: specific types of important habitat are identified and then quantified in the field via visual estimation. For the Bear River Ramp Rate study we can develop metrics appropriate for assessing the effects of ramping. Five major steps are recommended.

**1. Decision framing:** The fundamental assumptions, constraints, and expectations of the instream flow assessment are established. Especially important are identifying target resources and management objectives for them, and deciding how the assessment fits into a determination of overall instream flow requirements for all resources, seasons, and hydrologic conditions.

**2. Conceptual modeling:** The most important effects of flow on the target resources are identified. Three kinds of conceptual models are considered. *Mechanistic* approaches examine how flow affects fish by affecting food production, feeding, mortality risks, and reproduction; these approaches are especially useful when valid empirical information is unavailable. *Empirical* approaches use observed habitat selection (“preference”) to identify habitat types believed to be beneficial to the target fish. *Theoretical* approaches are useful for assessing flow effects on communities; they assume community integrity depends on habitat diversity, which varies with flow.

**3. Metric selection:** The conceptual models are used to identify specific habitat types to be quantified during the demonstration flows. This step includes identifying appropriate spatial and biological resolutions, and determining an appropriate level of precision, for the field observations.

**4. Field observations:** Methods for quantifying the habitat type metrics are designed, base maps are prepared, and then observations are made during each demonstration flow. The assessment team delineates the area of each habitat type on a map of the study site. If desired, additional data can be collected to allow estimation of the uncertainty in the habitat quantification.

**5. Analysis:** The area of each habitat type is summed for each demonstration flow, and the flows are ranked according to their habitat benefits. Rankings often require tradeoffs among habitat for different resources, which are made using judgement and the conceptual models.

### **Potential Indicators for DFA Field Observation**

#### **Physical**

- Varial zone width and identification of threshold discharge levels for ramping
- Bedload movement and sediment transport

#### **Chemical/Water Quality**

- Turbidity odor and color

#### **Biological**

##### Fisheries

- Stranding

##### Benthos

- Stranding



### **Empirical Studies**

Imbert, J.B. and J.A. Perry. 2000. Drift and benthic invertebrate responses to stepwise and abrupt increases in non-scouring flow. *Hydrobiologia* 436: 191-208.

Irvine, J.R. 1985. Effects of successive flow perturbations on stream invertebrates. *Can. J. Fish. Aquat. Sci.*, Vol. 42, p. 1922-1927.

Whitewater boating feasibility study: 2005 ramping rate, fish stranding, and water temperature evaluation. Bigfork Hydroelectric Project, FERC Project No. 2652. PacifiCorp, Portland, OR, December, 2005.

Recreation flow biological evaluation: Stranding and displacement studies year 3 – 2004. Rock Creek-Cresta Hydropower Project, No. 1962. Ecological Resource Committee. Pacific Gas And Electric, San Francisco, CA. July 2005.

Radio telemetry study on flow-related movements, spawning, and seasonal movements of salmonids below harris station on the Kennebec River, Maine. Indian Pond Hydropower Project, FERC No. 2142, FPL Energy Maine Hydro, LLC, Portland, Maine 04101

### **Synthesis of Existing Literature**

Effects of pulse type flows on benthic macroinvertebrates and fish: A review and synthesis of information. Rock Creek-Cresta Hydropower Project, No. 1962. Ecological Resource Committee. Pacific Gas and Electric, San Francisco, CA. April 2005.

Turbidity and suspended sediment effects on salmonids and aquatic biota in flowing systems. Rock Creek-Cresta Hydropower Project, No. 1962. Ecological Resource Committee. Pacific Gas and Electric, San Francisco, CA. December 2005.