

## **Project 199602100**

### **Gas bubble disease research and monitoring of juvenile salmonids**

*Sponsor:* USGS, CRRL

*PI:* Alec G. Maule (509-538-2299 x 239; alec\_maule@usgs.gov)

*General response:* Most of the ISRP's questions and concerns are directed at policy or management decisions over which we have no control. This project offers technical assistance to people in the Smolt Monitoring Program (SMP) who conduct the actual monitoring for signs of GBD. This monitoring is done because the Oregon and Washington state water quality agencies require it as a condition of granting a waiver of the TDGS standard. The waiver is needed because the NMFS Biological Opinion calls for voluntary spill at hydropower dams to provide an alternative passage route for juvenile salmonid migrants.

*“Could this proposal be combined with another larger program for efficiency and programmatic review?”*

We provide equipment, training, and QA/QC support because we have equipment and facilities that are not readily available to the SMP. Two options for consolidation are: (1) Add these tasks to the SMP budget and have USGS subcontract with them. This would increase the total costs by adding an administrative layer and overhead costs. (2) Consolidate this project with another BPA-funded project at CRRL. There are two possibilities to do this. If proposal 35013 (Species- and Site-specific impacts of gas supersaturation on aquatic animals) is funded, it would be easy and reasonable to add these tasks. Alternatively, project 198740100 (Assessment of smolt condition: biological and environmental interactions) is the project from which 199602100 evolved and is currently up for renewal in this province.

*“Also, there were and remain questions about the design of the sampling.”*

Although we helped develop the fish collection and handling procedures and GBD examination protocol, the current sampling design is determined by others in the region.

*“If the Council calls for an independent review, here are some of the topics and questions that it could address regarding GBD monitoring and associated TDG causes.”*

I have forwarded the ISRP comments to Mark Schneider, NMFS and Co-Chair of the Water Quality Team, Bill Maslen, BPA CoTR, and Jerry McCann, Fish Passage Center.

Although this list of questions and suggestions addresses policy and management issues of which we are not involved, I would like to offer some information about points 4 & 5:

(4) While I agree that virtually all of the research conducted to date suggests that TDGS  $\leq$  120% is not detrimental to juvenile salmonids, the TDGS standard considers possible impacts on all aquatic life. Proposal 35013—which we submitted at the request of the

Water Quality Team—hopes to address these other impacts to provide the state water quality agencies with additional information.

(5) In 2000 and 2001, as part of our USGS- and BOR-funded project (Effects of gas supersaturated water on resident fish below Grand Coulee Dam) we had a similar “GAS SWAT Team” based on standard fish kill investigation protocols. We were prepared to respond within 24 h to elevated TDGS, or observed fish kills in the reach between Grand Coulee and Chief Joseph dams. During those years, however, there were no high TDGS events and no fish kills.