

▪**American Rivers** ▪**Pacific Rivers Council**▪  
▪**Native Fish Society**▪**The Steamboaters**▪

8 February 2010

Low Impact Hydropower Institute  
34 Providence Street  
Portland, ME 04103

*Sent via email: [info@lowimpacthydro.org](mailto:info@lowimpacthydro.org)*

**Re: Low Impact Certification for the North Umpqua Hydroelectric Project**

Dear LIHI:

On December 7, 2009, the Low Impact Hydropower Institute (LIHI) announced receipt of an application for low impact certification from PacifiCorp for the North Umpqua Hydropower Project and established Sunday, February 7, 2010 as the deadline for receipt of comments. Telephone communications with LIHI staff have since established that comments will be received thru Monday, February 8.

The undersigned have reviewed the application and respectfully request that LIHI deny low impact certification for the North Umpqua Hydroelectric Project. In sum, the project should not be certified because even if it complies with the terms of the governing settlement agreement, the adverse impacts of Soda Springs dam and its reservoir will remain ecologically significant.

***Ecological Significance of the North Umpqua***

The North Umpqua's riverine ecosystem is of exceedingly high natural value and is world-renowned for its anadromous fish resources, which are adversely affected by the North Umpqua Hydroelectric Project. Any impact that degrades these values is likely to be ecologically significant. Further, because the river's fishery and associated water quality is highly valued by local communities, including Native Americans, these values have profound economic and social significance.

Originating on the western slope of the central Cascade Mountains in southwest Oregon, the North Umpqua drains about 1,350 square miles before joining the South Umpqua River west of Roseburg. The North Umpqua is one of the most revered steelhead trout streams in the world, and home to one of the largest remaining populations of wild spring Chinook salmon in the lower 48 states. Below the hydroelectric project, it is designated as a Wild and Scenic River for its outstanding water quality and quantity, recreational opportunities, and fisheries.

### ***The North Umpqua Hydroelectric Project***

The North Umpqua Hydroelectric Project was constructed between 1947 and 1956 near the headwaters of the North Umpqua River. The project is located almost entirely within the Umpqua National Forest on the North Umpqua River, Fish Creek, and the Clearwater River. The 185-megawatt hydroelectric project consists of eight hydroelectric developments – Lemolo No.1, Lemolo No.2, Clearwater No.1, Clearwater No.2, Toketee, Fish Creek, Slide Creek, and Soda Springs – each of which consist of a dam, penstock, and powerhouse. Additionally, the Project has created three reservoirs (Lemolo, Toketee and Soda Springs), an impoundment at Stump Lake, four forebays (Lemolo No.2, Clearwater Nos.1 and 2, and Fish Creek), 21.7 miles of open canal, 9.8 miles of flume, and 5.8 miles of penstock and tunnels (total waterway length of 37.3 miles), 117.5 miles of transmission lines and 100 miles of project-related roads. The Project is operated to maximize peak power production.

Due to the extent of project features across the landscape, for more than 50 years the North Umpqua Hydroelectric Project has adversely affected a variety of aquatic and terrestrial ecosystems. Alteration of ecosystem functions has been substantial. Impacts to the ecosystem include:

- 1) Drastically reduced streamflows in bypassed reaches of streams;
- 2) Fluctuating flows and reservoir elevations;
- 3) Blockage of upstream passage for both anadromous and resident fish;
- 4) Entrainment of fish, amphibians, and terrestrial animals at unscreened diversions;
- 5) Interruption of downstream transport of gravel and large woody material;
- 6) Increased erosion and sedimentation from construction, Project facilities, and roads;
- 7) Stranding and killing of fish downstream of the Project due to rapid changes in the river levels during low summer flows;
- 8) Disruption of terrestrial habitat connectivity;
- 9) Disruption of aquatic and riparian habitat and connectivity in small tributaries and headwater streams;
- 10) Inundation of unique stillwater, wetland, and riverine riparian habitats by reservoirs and forebays;
- 11) Reduction in water quality and progressive eutrophication of the North Umpqua River.

During the relicensing process, a settlement agreement was reached among PacifiCorp and federal and state agencies that formed the basis of the agencies' terms, conditions, and recommendations, and the subsequent license issued by the Federal Energy Regulatory Commission. The settlement agreement resulted in some minor improvements to project operations and impacts, but it falls far short in addressing the most significant impact of the project – the Soda Springs dam and reservoir.

Moreover, the settlement agreement does not include critical stakeholders that participated in the relicensing for approximately 10 years.

The key reasons the Project should not be certified as low impact are:

- (1) The project's impacts are not adequately addressed by the agency terms, conditions, and recommendations, in particular the impact of Soda Springs dam and its reservoir which stands as the single greatest barrier to restoration of the native salmon and steelhead of the North Umpqua basin;
- (2) The settlement agreement was not supported by critical stakeholders in the relicensing process;
- (3) The extensive impacts of the Project on the entire watershed, including terrestrial resources, are not adequately considered by the LIHI criteria. While we support comprehensive settlement agreements for the relicensing of hydropower projects -- American Rivers is party to many of them -- the agreement for the North Umpqua Hydroelectric Project does not reflect what is ultimately needed to protect the unique resources of the North Umpqua river, and, as such, does not merit LIHI certification.

***Impacts from Soda Springs dam not adequately addressed: As a matter of demonstrable biological fact, the Project's impact on native fishes and their historic spawning ground is currently high, and will remain so even if all promised mitigation measures are taken.***

As described above, the North Umpqua project, which occupies over 3,000 acres of mostly Forest Service land on the North Umpqua and two of its tributaries, Fish Creek and the Clearwater River, has an extensive footprint in the watershed. The project actually encompasses eight "facilities" as defined by LIHI: a system of eight dams and associated powerhouses, three reservoirs, more than 30 miles of diversion flumes and canals, six miles of penstocks and tunnels, and approximately 100 miles of project-related roads.

The original project design gave little forethought to maintaining natural river processes such as sediment and large woody debris transport, or to minimizing impacts from project operations such as flow fluctuations. As a result, the project significantly harms sensitive aquatic and terrestrial species and habitats. In addition to Oregon coast coho salmon, which have severely declined and are listed under the ESA, the project impacts steelhead (a regionally significant strong population), Chinook salmon (also a regionally significant strong population) and sea-run cutthroat trout (a run in severe decline) and Pacific lamprey.

Specifically, this project should not be considered potentially certifiable as "low

impact” without the removal of Soda Springs Dam. This dam is the lowermost of eight project dams. At 77 feet, it is the second highest dam in the system, but generates only around 6% percent of the project’s total power output. It is primarily used for reregulation, i.e. to maintain a relatively steady flow in the North Umpqua River below the project.

Soda Springs dam significantly degrades one of the most important salmonid spawning areas in the world. It inundates over four miles of the most historically productive main river salmon and steelhead spawning areas, blocks upstream and downstream passage of fish, blocks steelhead access to a major tributary, Fish Creek, reduces the supply of sediment and gravels crucial for spawning to downstream habitat, harms downstream water quality and clarity, and provides artificial habitat for a large number of brown trout, an introduced species that preys upon native fish.

The watershed analysis prepared in connection with the relicensing of the North Umpqua Hydroelectric Project, and the more recent findings of an independent council of science and economic advisors convened by Pacific Rivers and The North Umpqua Foundation<sup>1</sup>, conclude that removing the Soda Springs dam is the highest priority action to improve the inter-connection of fish habitat and restore the natural hydrological integrity of the North Umpqua River. This is the same conclusion that led the Forest Service, the U.S. Fish and Wildlife Service (USFWS), and the conservation groups involved in the relicensing initially to recommend that the dam be removed as a condition of relicensing the project.

Understandably, the LIHI criteria emphasize the terms, conditions, and recommendations developed and submitted by the resource agencies in the relicensing process. In this case, however, the terms, conditions, and recommendations related to Soda Springs dam do not reflect what several agencies initially deemed the preferred alternative after intensive scientific analysis. LIHI should consider that the final Settlement Agreement and subsequent terms, conditions, and recommendations for Soda Springs do not comport with the original recommendations of Forest Service and USFWS scientists. The Agreement is viewed by many community leaders as resting on a blatantly political decision to change position on the dam in response to PacifiCorp's

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<sup>1</sup> The PRC and TNUF Independent Science Council for the North Umpqua consists of well-known, seasoned fishery experts and economists including: Dr. Jack Stanford, Dr. Robert Wissmar, Dr. Terry Roelofs, Dr. Wayne Minshall, and economist John Duffield, who first convened in summer of 2009 on the North Umpqua. Jim Lichatowich and Dr. Gordie Reeves have since been added to the Council. See [www.pacificrivers.org](http://www.pacificrivers.org).

withdrawal from negotiations. The final agreement was forged after the Forest Service changed its position as to the dam's potential compliance with its aquatic conservation direction under the Northwest Forest Plan. U.S. Fish and Wildlife Service Briefing Statement (June 2, 2000). As noted below, all NGO community and conservation stakeholders that were party to the negotiations subsequently withdrew from negotiations rather than support an agreement that locked in place for 35 years inadequate environmental measures.

Analysis conducted subsequent to the relicensing of the Project confirms the importance of removing Soda Springs dam and undermines the premise that the North Umpqua Hydro Project is having a low impact on the North Umpqua watershed. Pacific Rivers Council and The North Umpqua Foundation convened an expert science panel to consider the benefits of removal Soda Springs dam, and the consensus is that this habitat would recover quickly after dam removal, and would with high certainty be rapidly colonized by fish that presently spawn in less desirable habitat downstream of the project. Benefits would be expressed as substantial expansion in fishery and recreational use of the river, improved biological status of native fish species of concern that currently limit other uses in the river, greatly reduced likelihood of undesirable brown trout taking over the river ecosystem in the future, and improved water clarity and quality for downstream users. Removal of Soda Springs dam would not only benefit the North Umpqua environment and public trust values, but would also alleviate a large (and growing) financial responsibility for PacifiCorp. Fish passage, operations and maintenance, and other downstream mitigation costs could be dramatically reduced.

Economic information that has emerged subsequent to the relicensing of the project also reinforces the argument for removal of Soda Springs dam. Rather than remove the dams, the agencies and the FERC license ultimately called for PacifiCorp to implement fish passage at Soda Springs. At relicensing, the estimated cost for this structure was \$20 million. Since then, the cost of passage has risen dramatically (in part because of dramatic inflation in the cost of concrete and other materials since initial cost estimates were made) and it is rumored to have grown to nearly \$100 million, making the 3-5% projected return highly questionable today.

Even if LIHI were to consider only the agency terms, conditions, and recommendations regarding fish passage at Soda Springs dam, recent activities undermine PacifiCorp's request for low impact certification because the company seems to be looking for ways to avoid implementing even this inadequate mitigation requirement. In the summer of 2008, PacifiCorp hosted two public meeting purportedly to discuss the question of "whether fish passage at Soda Springs Dam is the most effective means of mitigating for salmonids and ecological values in the North Umpqua." *See e.g.* PacifiCorp "Proposed Workshop," (July 14, 2008). The consensus of the Resource Coordinating Committee and the many community members who attended the meetings was that there is inadequate new information to

justify consideration of alternatives to the fish ladder unless dam removal is being offered as an alternative to passage. No further public meetings on the subject of alternatives to fish passage have been held.

Even under the best scenario, fish passage at Soda Springs cannot begin to mitigate for the impacts of the dam on spawning habitat availability and the gravel regime, and will be far more beneficial to steelhead than to Chinook salmon. It is widely believed that the habitat inundated by the reservoir was among the most valuable spawning habitat for Chinook salmon in the world, but passage will do nothing to restore this reach. Further, uncertainties exist about the workability of the design for the fish ladder: the proposed design is quite unique and “nontraditional,” which reflects engineering challenges posed by the shifting, unstable geology, the constrained reach and the fluctuating water flows. (Mary Scurlock, PRC, Personal Communication with Monte Garrett and Rich Grost, PacifiCorp, July 28, 2009).

In sum, the current licensing agreement for Soda Springs dam should not provide the basis for a low impact certification because: 1) it reflects agency terms, conditions, and recommendations that are weaker than what was initially identified as necessary for relicensing and is not based on the best available science, (2) it obligates the expenditure of a very large sum on a fish ladder of novel design that has not yet been built and is not certain to have the desired results; 3) it fails to restore key river habitat that lies dormant under Soda Springs pool, leaving little habitat for salmon and steelhead to find even if they do negotiate the ladder.

***2. The Settlement Agreement, which endorses fish passage over removal of Soda Springs Dam, is not supported by key community stakeholders.***

We urge the LIHI to look outside the four corners of the Settlement Agreement and the narrow question of whether PacifiCorp colorably complies with its terms. While the criteria do not explicitly consider the views of stakeholders other than federal, state, and tribal resource agencies, we urge LIHI to consider the lack of support for the settlement by the extensive number of key stakeholders in its evaluation of the certification application.

Many environmental organizations were actively involved throughout the relicensing process, starting with the initial study phase and continuing through the negotiation process. The key stakeholders represented a range of interests in the basin from anadromous fish to river health and terrestrial species, and brought a wealth of critical knowledge to the process. Umpqua Watersheds, Umpqua Valley Audubon Society, Steamboaters, Oregon Trout, Pacific Rivers Council, American Rivers, WaterWatch of Oregon and Oregon Natural Resources Council (now Oregon Wild) all committed significant resources to the licensing process in an effort to ensure that the Project's impact were adequately addressed.

The settlement discussions went through several phases, with the final settlement

ultimately supported by only a subset of parties involved in the relicensing. As noted above, the Agreement does not comport with the original recommendations of Forest Service and USFWS scientists regarding Soda Springs Dam. All NGO community and conservation stakeholders that were party to the negotiations subsequently withdrew from negotiations, and the seven conservation groups challenged the final agreement in court. LIHI should consider this lack of support by the conservation community when reviewing PacifiCorp's application for low impact certification.

For further details about the settlement negotiations, see: Dose, J. The Osprey, Issue No. 41, pp. 14-15, "Recovery or Status Quo? The North Umpqua Settlement (January 2002); J. Dose, "North Umpqua Hydropower Relicensing: Rhetoric or Reality?" Unpublished manuscript, 6 pp. (available upon request).

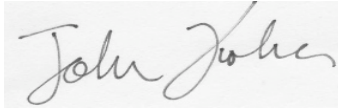
***3. The watershed-level impacts of the Project are not adequately addressed in the new license.***

As described above, the North Umpqua Hydroelectric Project has an extensive footprint in the watershed. In addition to eight dams, the Project includes three reservoirs (Lemolo, Toketee and Soda Springs), an impoundment at Stump Lake, four forebays (Lemolo No.2, Clearwater Nos.1 and 2, and Fish Creek), 21.7 miles of canal, 9.8 miles of flume, 5.8 miles of penstock and tunnels (total waterway length of 37.3 miles), 117.5 miles of transmission lines and 100 miles of project-related roads, all of which have significant adverse impacts on terrestrial habitat connectivity and habitat fragmentation in the Project area. This habitat fragmentation affects a number of at risk species. Species such as amphibians and small mammals that have patchy population structures are affected to the greatest degree. Terrestrial species also are subject to entrapment and resulting mortality in project waterways. Although the effect of entrapment on population viability is not clear, species with long generation times, limited dispersal abilities, and patchy distributions are adversely impacted and are likely to have decreased wildlife population persistence and reduced biological diversity when considering cumulative effects of all activities in the upper North Umpqua watershed. During the relicensing process, a range of alternatives to minimize the impact of the canals was discussed, but ultimately, the license fails to include measures that adequately address them.

The LIHI criteria focus on either the establishment of a riparian buffer or a mitigation fund as adequate to ensure that a Project's impacts on fish and wildlife habitat, water quality, and aesthetics, are minimal. Given the unique and extensive characteristics of the North Umpqua Hydro project, any analysis of whether it is low impact must include a rigorous analysis of how well the impacts are addressed and not just whether there are minimal buffers or a fund. For example, have any projects been implemented that are designed to ensure that the canals do not pose problems for habitat connectivity? Only 621 of the 3000 acres occupied by the project are contained in a 200 foot buffer of water and marsh around the impoundments.

Thank you for your consideration of these comments in your evaluation of the application for certification of the North Umpqua Hydroelectric Project.

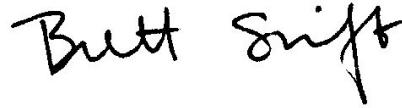
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