Written Testimony
Submitted to the
Water and Power Subcommittee
Committee on Natural Resources
U.S. House of Representatives

Oversight Hearing on "Hydropower: Providing 75% of America's Current Renewable Energy. Exploring its Role as a Continued Source of Clean, Renewable Energy for the Future"

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Kevin Colburn, National Stewardship Director
and
Thomas O'Keefe, PhD, Pacific Northwest Stewardship Director

American Whitewater
Steering Committee Member, Hydropower Reform Coalition

1. Introduction

American Whitewater wishes to offer this written testimony to the Committee for the hearing record, and appreciates the interest of the Committee in examining the future role of hydropower in the United States. American Whitewater is a national non-profit 501(c)(3) river conservation organization founded in 1954. We have over 6,500 members and 100 local-based affiliate clubs, representing approximately 80,000 whitewater paddlers across the nation. American Whitewater's mission is to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely. As an organization representing those who enjoy rivers, we witness first hand the impacts of rivers developed for hydropower. The same high gradient rivers that are attractive for hydropower development are the same rivers that provide outstanding opportunities for whitewater recreation.[1] Since our founding in the dam building era of the 1950's and 1960's we have worked hard to prevent or mitigate the impacts of hydropower development on rivers.

American Whitewater was a founding member of the Hydropower Reform Coalition and over the past several years we have participated in dozens of proceedings before the Federal Energy Regulatory Commission (FERC). We have worked collaboratively with the hydropower industry, federal and state agencies, local communities, and other non-profits to negotiate new agreements for federally-licensed hydropower projects that improve water quality, fisheries, recreational opportunities, and the general environmental health of our nation's rivers.

While hydropower represents our nation's oldest low-emission technology, American Whitewater believes that it will continue to be an important component of our nation's energy portfolio for many years to come. We have signed dozens of settlement agreements for 30-50 year terms that result in continued operation of hydropower facilities with operating plans that balance environmental and recreational concerns with electricity generation. At projects like Pacific Gas and Electric's Feather River projects in California and Portland General Electric's project on the Clackamas River we are able to enjoy the benefits hydropower provides while restoring environmental and recreational resources. In most cases relatively simple modifications to project operations and modernization of facilities produce significant benefits to rivers with only a 1.6% reduction in generation capacity.[2]

[1] See Figure 1 which illustrates the overlap between federally licensed hydropower projects and our nation's approximately 5000 whitewater runs.
[2] This based on a study by FERC of 240 non-federal projects brought up to modern environmental standards through the federal relicensing process.

Other members of our coalition have provided detailed testimony to the Committee on the future of hydropower development. We wish to provide a few additional thoughts regarding the impacts of hydropower development on those who enjoy the recreational opportunities rivers provide.

2. Comments

A. A need exists for a more honest review of undeveloped hydropower potential.

In contrast to emerging renewable technologies, hydropower represents old technology that has been used for hydroelectricity generation for over a century. Because of this the best hydropower sites were developed decades ago. In recent years we have observed interest in development of small hydropower, projects of 1-30 MW in generating capacity. Resource assessments conducted over the past decade have attempted to determine the nation's untapped hydropower potential,[3] but our review has demonstrated that several of the sites are not viable.

- On Washington's White Salmon River, a top whitewater destination and a river specifically protected from future hydropower development by the Wild and Scenic Rivers Act, a series of projects totaling 195 MW are identified.

- A 5 MW project is identified on the Middle Fork Nooksack River in northwest Washington on a diversion dam scheduled for removal to restore access to salmon habitat in the basin.

- The 20 MW project known as Cispus 4 on the Cispus River in Washington was found inconsistent with state water quality standards and formally rejected for instream flow needs for whitewater recreation.[4] Since this ruling, utilities with projects downstream on the Cowlitz River have further invested in restoration efforts on the Cispus River making this site even more valuable for both salmon habitat and recreation.

These projects represent just a few examples of sites identified in past reports of potential hydropower capacity that are clearly not viable. In addition to the examples above we have carefully reviewed other projects identified in these project reports. For projects in the Pacific Northwest, the majority are on small tributary streams, use small amounts of water to produce energy, and can provide only small energy benefits. Many small streams provide maximum flows

[3] We primarily refer to the Department of Energy's Idaho National Engineering and Environmental Laboratory (INEL) Hydropower Resource Assessment conducted in 1998 which is most often cited when reference is made to undeveloped hydropower potential.
[4] Barrish and Sorenson Hydroelectric Company v. State of Washington Department of Ecology. Pollution Control Hearings Board, State of Washington 94-193.

for only weeks following storms or during periods of spring snow melt, and may produce almost no power for much of the year. During these times these creeks represent a highly valued resource for whitewater recreation. As one example the project on Clearwater Creek, a tributary on Washington's Nooksack River was identified as a 9.7 MW project. The project was ultimately scrapped when it was estimated that the high water season ran for only six weeks per year. While this is enough to provide a regionally significant recreational resource, hydropower potential is limited. So, while energy production potential is small at these sites, even the predictions are suspect and are usually far less than the potential stated. Rivers are the highest in the winter and the spring, when the demand for power is at its lowest. During summer months, when there is high demand, small hydropower projects have no method of producing the power needed. If these projects are located in colder climates or at higher elevations, where rivers freeze during much of the winter months, they cannot produce power consistently.

The problem with the site assessments that have been conducted is they only consider variables of hydrologic potential for hydropower development and do not give weight to other variables such as economic viability, legal requirements, and other beneficial uses of the waterway including recreation, ecosystem services, and fisheries. In regions like the Pacific Northwest the best sites have been developed and any assessment of future hydropower development potential has to consider these other beneficial uses and values of rivers, our investment in river restoration, and the cumulative impacts of existing hydropower.

B. Consider development of a periodic review process for federal hydropower facilities that builds and improves upon the comprehensive process for licensing non-federal dams.

While opportunities for hydropower development at new sites are limited, opportunities do exist for capacity improvements and addition of hydropower at non-hydro dams managed by federal agencies. These are dams currently operated for flood control, navigation, and water supply where hydropower could potentially be developed without harmful changes to river flows.

At existing federal hydropower projects, as well as those considered for addition of hydropower, federal operators should be encouraged to examine modifications to their operating plans. Unlike non-federal projects which have operating plans of a fixed time period that are periodically reviewed on a 30-50 term through the FERC relicensing process, federal projects have demonstrated a limited willingness to open their plans and consider possible modifications.

A periodic review process for federal hydropower facilities would improve electricity generation and enhance other public benefits including downstream recreation, an issue of particular interest to our organization. Across the country we have directly witnessed a direct contrast between federal and non-federal projects and the significant opportunity that exists with a review of

comprehensive development plans for the waterway. We provide the following example comparisons:

- Ocoee River and Nantahala River: In the Southeast flows on the Nantahala River are regulated by a non-federal hydropower project. In addition to hydropower generation the project also provides flows that support a vibrant river-based recreation economy including the Nantahala Outdoor Center, one of the largest whitewater businesses in the country. On the nearby Ocoee River, the site of the whitewater competitions for the 1996 Olympics, the situation is much different on a river regulated by the Tennessee Valley Authority. We have faced significant challenges in encouraging the agency to develop a comprehensive development plan for the waterways impacted by the federal hydropower projects. The significant investment in facilities for Olympic competition have remained largely underutilized.

- West River and Deerfield River: In the Northeast the Deerfield River is a non-federal hydropower project with a comprehensive development plan that maximizes generation capacity while supporting a recreation-based economy and one of the largest river festivals in the region. On the West River, a project operated by the Army Corps of Engineers has failed to recognize opportunities for downstream recreation. This is consistent with many projects operated by the agency across the country where reservoir recreation is encouraged and enhanced but downstream river-based recreation is ignored.[5] If comprehensive development plans were examined it would offer an opportunity to consider both opportunities to improve hydropower generation while enhancing recreation and community benefits.

- Crooked River and Feather River: Early in the 20th century Plumas County, California through which the Feather River flows was considered a top recreation destination. The river supported a productive fishery that attracted sportsmen from throughout the region and several lodges along the river catered to visitors who came to enjoy the river. With the construction of a series of hydropower projects that dewatered much of the river in the middle of the 20th century these recreational benefits disappeared. New license agreements negotiated over the past decade are restoring the recreational assets of this river, both fishing and whitewater recreation, while hydropower continues to be produced. The Crooked River flows through central Oregon and flows are modified by federal irrigation projects managed by the Bureau of Reclamation. Flows are greatly reduced on the river for much of the year when water is

[5] A notable exception is the Gauley River in West Virginia where a whitewater recreation industry downstream of an Army Corps of Engineers project, made possible through direct Congressional action, provides a more than $20 million contribution to the local economy. *Source: National Park Service, 1995.*

> diverted for irrigation, but releases from the dam do occur and the potential for hydropower generation is being explored. Coordinating these releases to provide recreational opportunities on one of the most spectacular whitewater rivers in the West should also be explored.

We believe significant opportunity exists to examine operating plans for federal facilities that could produce benefits for hydropower efficiency improvements or capacity additions. At the same time this review must consider other beneficial uses of rivers including recreation. We place many demands on our nation's rivers and we have a responsibility to continually evaluate the many services they provide.

3. Conclusion

Hydropower will continue to be an important component of our nation's energy portfolio and there may be opportunities for expansion of this technology through efficiency upgrades at existing facilities and installation of turbines at federal dams that do not currently have hydropower. The growth potential for hydropower however has generally been overstated by including sites that are clearly not viable in resource assessments. In addition it is important for Congress to consider the fact that while hydropower is a low emission source of electricity it comes with impacts to rivers which provide important ecosystem services and valued recreational opportunities that are in ever increasing demand. A process for a comprehensive review of operating plans for federal facilities that includes hydropower and other beneficial uses including recreation should be explored.

Figure 1: American Whitewater National Whitewater Inventory (approximately 5000 whitewater runs) indicated by blue circles. Hydropower Dams Licensed by the Federal Energy Regulatory Commission (FERC) indicated by green circles (FERC regulates approximately 1415 dams with 1011 hydropower licenses).