

Burbot Restoration in the Kootenai River Basin: Using Agency, Tribal, and Community Collaboration to Develop and Implement a Conservation Strategy

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ABSTRACT.—Native burbot *Lota lota* in the transboundary Kootenai basin (spelled Kootenay in Canada) were once abundant and provided an important subsistence, social, sport, and commercial fishery for people in the states of Idaho and Montana, USA and the province of British Columbia, Canada. However, due to changes in the ecosystem over the last half century (dam and levee construction, habitat alteration, nutrient loss, and fish community composition shift), the burbot population in the Kootenai basin collapsed. Through the Kootenai Valley Resource Initiative, the Kootenai Tribe of Idaho facilitated a collaborative process to prepare and implement a conservation strategy to restore the burbot population. The Kootenai Valley Resource Initiative includes representation from the county, municipal, and tribal governments, as well as a diverse group of individuals representing business, agricultural, social, cultural, and conservation interests and federal and state agency participants. By building consensus through the development of the conservation strategy, actions have been identified and agreed upon that will guide rehabilitation of the burbot population and the habitat upon which it depends, while maintaining a strong level of community support.

The Kootenai River and Kootenay Lake once provided popular and important sport, subsistence, and commercial burbot *Lota lota* fisheries and may have provided one of the most robust burbot fisheries in North America (Paragamian and Hoyle 2003). Kootenai tribal elders report that burbot (also known as ling) were extremely abundant in the Kootenai River and were a main staple in the late winter/early spring months. Tribes and First Nations relied heavily upon this important subsistence fishery.

Burbot in the Idaho, USA and British Columbia, Canada, portion of the Kootenai River drainage are at risk of becoming extinct (Paragamian et al. 1996; KVRI Burbot

Committee 2005). Overexploitation of burbot in Kootenay Lake and Kootenai River was a concern for fish managers when it became evident that the fishery was at risk of failing. Measures were taken to reduce exploitation by reduction in creel limits and fishery closures, but none of these measures restored the fishery (Paragamian 2000; Ahrens and Korman 2002). Examples of burbot stock recovery in overexploited populations have been documented with fishery restrictions or closures, although habitat was generally intact in such cases (Paragamian et al. 2000). The Idaho Department of Fish and Game (IDFG) has been monitoring the movement, habitat use, and spawning behavior of burbot since 1993 and has not found evidence of successful spawning or recruitment in Idaho.

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Native burbot in the Kootenai River in Idaho have been petitioned for Endangered Species Act listing, are red listed in British Columbia, and are a designated species of special concern in Idaho. In Montana, bur-

bot are listed as a species of special concern (KVRI Burbot Committee 2005; Figure 1).

Operation of Libby Dam for hydropower (including power peaking) and flood control during the winter months has resulted in cr-

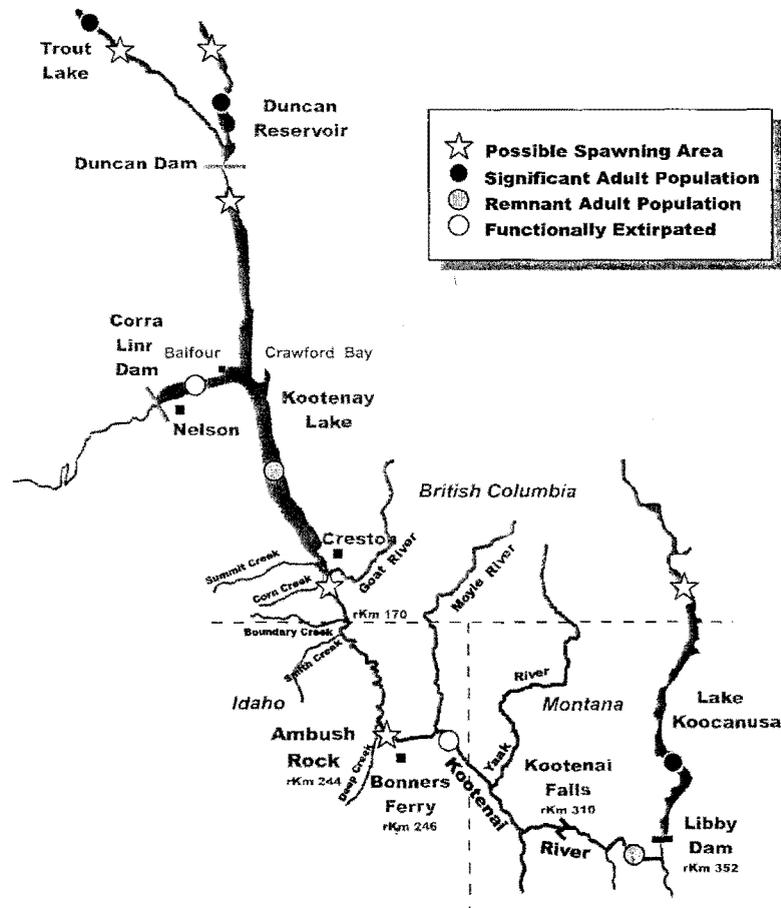


FIGURE 1. Distribution of burbot in the Kootenai River/Kootenay Lake basin. Symbols indicate general locations and status of existing burbot populations (KVRI Burbot Committee 2005).

atic flows that are up to threefold higher than predam conditions and warmer winter water temperatures. In addition, Lake Koocanusa, the impoundment created by Libby Dam, acts as a nutrient sink and has reduced productivity of the river (Richards 1996; Snyder and Minshall 1996). Potential threats to the population include current winter flow management, power peaking, changes in river temperature, loss of slough and side-channel habitat from diking, nutrient loss, spring lowering of Kootenay Lake, *Mysis relicta* transport, and fish community composition shift (Paragamian et al. 2000; Paragamian 2002; KTOI and MFWP 2004; KVRI Burbot Committee 2005).

In 1999, the IDFG convened a team of scientists from agencies in the Kootenai drainage to identify conservation strategies to help alleviate threats to the burbot population in the Kootenai River (IDFG 1999). The effort was stalled by the reluctance of the federal agencies to agree to provide substantive changes to Libby Dam operations during the winter. In February 2000, the Idaho Conservation League and American Wildlands filed a petition for emergency listing of the burbot population in the Kootenai River. In August 2001, the Department of Interior and conservation groups reached an agreement in principle that the U.S. Fish and Wildlife Service (USFWS) would initiate a status review of the burbot population to determine whether or not the population listing was warranted. In September 2001, the USFWS published a notice of petition finding and initiation of status review for lower Kootenai River burbot in the Federal Register with a 90-d comment period (USFWS 2001). In a November 2001 comment letter to the USFWS, the Kootenai Tribe (Tribe) proposed to develop, with the USFWS and additional committed stakeholders, an integrated and innovative approach to recovery of lower Kootenai River burbot. The Tribe believed that a collaborative approach

to develop a conservation strategy for burbot restoration would provide a foundation for protection and restoration of burbot regardless of the outcome of the listing decision. In February 2002, the Idaho Conservation League and American Wildlands again filed suit against the USFWS for not yet deciding whether to list the burbot population as endangered. In March 2003, the USFWS found that the petitioned action was not warranted because the burbot in the Kootenai River did not meet the criteria for a distinct population segment and, therefore, was not a listable entity (USFWS 2003a).

During the same time period that the Idaho Conservation League and American Wildlands filed the lawsuit against the USFWS, the Kootenai Valley Resource Initiative (KVRI) was formed under a joint powers agreement (JPA) between the Kootenai Tribe of Idaho, the city of Bonners Ferry, and Boundary County, Idaho (October 2001). This partnership was developed out of a realization that working together to develop a community approach for addressing natural resource issues could potentially help recover both the ecosystem and the rural economy, while allowing for more local input and participation in recovery of species and habitats at risk. Under the JPA, the KVRI is empowered to foster community involvement and development to restore and enhance the resources of the Kootenai Valley. The mission of the KVRI is to act as a locally based effort to improve coordination, integration, and implementation of existing local, state, and federal programs that can effectively maintain, enhance, and restore the social, cultural, and natural resource bases in the community.

The KVRI membership and its partners include the Tribe; federal, state, and provincial fisheries and water regulatory agencies; regional city and county governments; private citizens; landowners; environmental advocacy groups; and regional representatives

of business and industry. The KVRI Burbot Subcommittee was formed as a subset of the KVRI to pursue coordinated burbot conservation and management. Congressional appropriations in 2003 and 2005 have helped fund the coordination and development of the burbot conservation strategy. The KVRI is also used as the forum for local input and stakeholder involvement for other natural resource issues (e.g., forest management, grizzly bear *Ursus horribilis* recovery, subbasin planning, and water management).

In February 2002, the newly formed KVRI Burbot Subcommittee was charged with development of a conservation strategy to help restore the burbot population (KVRI Burbot Committee 2005). People dedicated their time and energy to this process, including federal agencies, state agencies, local governments, Tribal government, Canadian federal and provincial governments, congressional delegation staff, Idaho Governor's Office of Species Conservation, and KVRI board members and participants. In the burbot recovery subcommittee meetings, the group reviewed the science, discussing issues and building consensus among the agencies and stakeholders. This process allowed the participants to learn about the biology and habitat needs of the burbot so that the burbot conservation strategy would meet the needs of the burbot population while taking into account social and economic issues. Interviews of local community members with life long familiarity of the historic burbot fishery provided valuable information to the committee during the preparation of the conservation strategy.

The conservation strategy was developed to address the elements required by the USFWS in their policy for evaluating conservation efforts when making listing decisions (USFWS 2003b). This was done so that the participants could provide the USFWS certainty that the conservation efforts would be

implemented and effective. The conservation strategy includes sections on the biology and status of the population, nature and extent of threats, existing conservation measures, the conservation goal, performance objective and priorities, and schedule and responsibilities of each agency. Most importantly, the conservation strategy outlines a suite of adaptive recovery measures to implement for rehabilitation of the burbot population, including physical habitat restoration, the development and implementation of a conservation aquaculture program and hydro operations plan, research, monitoring and evaluation, and education and outreach.

In August 2004, the KVRI Burbot Subcommittee completed the conservation strategy and began the process of developing a memorandum of understanding (MOU). Policy representatives prepared an agreement that formalized their commitment to implement measures in the conservation strategy with their respective authorities and responsibilities. The MOU was signed in spring 2005 by 16 agencies and entities (Table 1). It is the agreement attained through the MOU, along with the multifaceted international focus and commitment and consistency with federal conservation policy (USFWS 2003b), that empowers this conservation strategy.

The KVRI Burbot Subcommittee serves as the coordinating body for implementation of the conservation strategy. The subcommittee meets at least annually to discuss progress during the past year and be updated on priorities and funding needs for future years. Annual project updates and reports provided by the management agencies are the primary sources of resource information used in discussions by the committee regarding ongoing and future burbot research, conservation, and management. The participants of the MOU have committed to participation in these meetings and to exchange information, provide project updates, and discuss the course

TABLE 1. Signatories to the Memorandum of Understanding concerning the Burbot Conservation Strategy.

Gary Aitken, Sr. (Kootenai Tribe of Idaho) Co-Chair Kootenai Valley Resource Initiative	Charles E. Corsi Regional Supervisor Idaho Department of Fish & Game
Darrell Kerby (City of Bonners Ferry) Co-Chair Kootenai Valley Resource Initiative	James L. Caswell Administrator Idaho Office of Species Conservation
Dan Dinning (Boundary County) Co-chair Kootenai Valley Resource Initiative	Gary Aitken, Sr. Tribal Chairman Kootenai Tribe of Idaho
Steven J. Wright Administrator and CEO Bonneville Power Administration	Chris Hunter Chief of Fisheries Montana Fish, Wildlife and Parks
Cam Matheson Manager, Generator Operations British Columbia Hydro	David J. Wesley Deputy Regional Director U.S. Fish and Wildlife Service
Wayne L. Stetski Regional Manager, Kootenays British Columbia Ministry of Water, Land, and Air Protection	William T. Grisoli Brigadier General, USA Division Engineer U.S. Army Corps of Engineers
Darrell Kerby Mayor City of Bonners Ferry, State of Idaho	Kathy D. Peter Director, Idaho Science Water Center United States Geological Survey
Ronald R. Smith Chairman, Boundary County Commissioners Boundary County, State of Idaho	Barry Rosenberger Area Director of BC Interior Department of Fisheries and Oceans of Canada

of future burbot research, conservation, and management. By building consensus through the development of the conservation strategy and MOU, actions that have been identified and agreed upon by the participants guide rehabilitation of the burbot population and the habitat upon which it depends, while maintaining a strong level of community support.

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