Community-based stream conservation initiatives in British Columbia, Canada

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Abstract British Columbia is a diverse province, with ecosystems ranging from semi-arid deserts to valley glaciers and vast ice fields. By world standards, BC has an abundance of fresh water in its lakes and rivers. However, rivers have been exploited for social and industrial purposes, often to the detriment of the natural values. Community groups and non-government organizations have been active in rehabilitating and restoring waterways.

The Outdoor Recreation Council of BC is a provincial non-government organization that has been instrumental in river conservation issues in BC. Three key initiatives have been established by the Council since its formation in 1975. BC Rivers Day has grown into the largest river celebration of its kind in North America, and there is a move to establish a national Rivers Day in Canada based on the model established in BC. Second is the annual Endangered Rivers List compiled by the Council and released each spring. The third initiative is the River Recovery Project in which dams and impoundment structures were evaluated against a set of criteria. A short list of candidates was generated by the project that will be further studied to determine what actions should be taken to alter the management of the structures to restore ecological values of the rivers and streams on which they are built.

The three initiatives described rely on local community support. The Outdoor Recreation Council of BC provides coordination, promotion, and publicity as well as some resource materials while local groups and communities take on stewardship roles for their local streams. This model may be useful for other jurisdictions.

Keywords BC Rivers Day; community; conservation; Endangered Rivers List; river restoration; streams

Introduction
British Columbia is a very diverse province from an ecological perspective. In an area of 92.5 million hectares, it has 112 distinct ecosystems, 12 of which have a marine component. The ecosystems range from cool coastal rain forests through semi-arid deserts to alpine and subarctic climates. This diversity is due, in part, to the several mountain ranges, running approximately parallel to the coast of the province (Prov of BC, 1994).

Canada has a high proportion of the fresh water on the planet, and British Columbia has 25% of the flowing fresh water in Canada (Prov of BC, 2000). The rivers and streams are as varied as the ecosystems, and range from very large rivers to small ephemeral trickles. The Fraser River is BC’s largest at 1,368 kilometres long and draining one-fourth of the area of the province (Haig-Brown, 1996). Equally important to the many plants, animals, fish, and communities along their banks are the thousands of smaller rivers and streams.

Rivers and streams in BC have provided many benefits. They served as transportation routes for First Nations people, exploration routes through the mountains when Europeans first arrived from eastern Canada, and water highways for hopeful miners heading for the gold fields of the Cariboo. Many species of Pacific salmon also migrate up the rivers to their birth streams to spawn, and are caught for food along the way. Industrial uses include power generation, diversions for use in processing, and receiving effluent discharge from smelters and treatment plants. Urban encroachment onto small coastal streams has led to filling and placing in culverts in many places.
In many instances, industrial and urban use of rivers has exceeded their capacity to absorb the impacts. British Columbians have recognized the need to conserve some rivers that are still in their natural state and to return others to a healthier state through recovery projects.

Reversing the trend
Conservation and outdoor recreation groups banded together to form the Outdoor Recreation Council of BC in 1975. The primary concerns were the lack of provincial policy to conserve and manage the recreational resources of the province, and no ability for the coordinated voice of the resource users to be communicated to governments, industry and the public. There are currently over 40 member groups, together representing over 120,000 individuals.

One of the early concerns to be addressed by the Outdoor Recreation Council was the health of rivers and shorelines, and it has remained a strong concern of the members. In many instances, industrial uses of rivers and urban encroachment were recognized by members as having negative influences on the quality of recreational experiences. The intent of the initiatives described below was to find ways to improve the health of rivers and streams while maintaining the economic benefits provided by them.

BC Rivers Day is a provincially coordinated series of community events held at the end of September. Each community plans the event that is most appropriate for its local circumstances. The only criterion for inclusion as a BC Rivers Day event is that there is some connection to rivers.

The Endangered Rivers List is compiled and released by the Outdoor Recreation Council of BC, and the rivers on the list are selected from community nominations. The nominated rivers are evaluated against criteria by a committee of experts.

The River Recovery Project is the most recent initiative, and involves reviewing dams and impoundment structures that are providing marginal or no benefit with a view to removing or modifying them to restore the health of the river. Dams were evaluated against criteria to determine the most suitable actions.

BC Rivers Day
BC Rivers Day, held annually on the last Sunday in September, began as a modest effort in the late 1970s to draw attention to the plight of some of BC’s rivers. It has now grown to be the largest celebration of rivers in North America, involving nearly 40,000 people in communities across BC. The focus has changed from highlighting the problems to celebrating successes and encouraging local conservation action. Local groups and communities plan and organize activities that are most appropriate to the circumstances of their stream. Event organizers register their activity by submitting a summary to the Council. Examples of events include showcasing a hatchery, riparian plantings on a rehabilitated section of stream bank, and daylighting streams that have been forced into culverts. Recently several groups have joined several events into large multi-activity festivals. There have also been activities such as poetry contests, library displays, and photo contests that draw attention to rivers. BC Rivers Day has also been used by the provincial government to make river- or water-related policy and legislative announcements. Table 1 shows the trend in numbers of community hosts and events over the past few years, as well as numbers of groups and participants involved.

The Outdoor Recreation Council of BC provides provincial coordination for these events, and ensures that media and members of the public are aware of the events in their community, and how to participate. The Council often provides ideas and suggestions for events, and helps groups with communications. The Council also provides resources to
local groups such as banners, posters on which to advertise their events, temporary tattoos, and stickers. All registered events are posted on the Council’s web site to make information easy to obtain.

Since the passing of former Prime Minister Pierre Elliot Trudeau on September 28 2000, there has been a quest for a suitable national legacy project. Because of Trudeau’s passion for the outdoors, and rivers in particular, establishing a national Rivers Day is one of the suggestions that is gathering support. At the national rivers conference in New Brunswick earlier this summer, the concept was endorsed by the participants. The success of BC Rivers Day is frequently cited, and the BC model was endorsed as the template from which to develop a national model.

Some of the preparatory work was done by the Outdoor Recreation Council several years ago. With support from the Canadian Heritage Rivers System, the Council did a feasibility study for a national Rivers Day. Key groups and agencies were contacted in all provinces and territories to review opportunities and challenges in each. The Council produced a manual titled “How to Organize a Rivers Day Event” as well as a feasibility study report, both of which will be useful in continuing to develop a national River Day.

There are several key points that have led to the success of BC Rivers Day.

- The founder, Mark Angelo, is still a devoted and charismatic proponent. Angelo was a founding member of the Outdoor Recreation Council of BC, and recognized early the need for this type of initiative. He regularly gives interviews and appears on radio and in print, and is a sought-after speaker at events and conferences. His passion and advocacy are supported by his academic credibility as head of the Fish, Wildlife and Recreation Program at British Columbia Institute of Technology. Adding to his many awards, Angelo was recently awarded the Order of Canada.

- BC Rivers Day is an inclusive event for which the only criterion is a connection to rivers. Fishing, boating and strict conservation groups have clear interests in rivers and in hosting events. However, hikers, cyclists, industries, and governments also have obvious interests in rivers, and BC Rivers Day provides an opportunity for their involvement.

- Communities design and host the events that are appropriate to their circumstances. While there has been a trend in urban centres to cooperate on multi-activity events, small communities’ events are equally important. All events that are registered with the Council are posted on the web site and publicized equally. Community initiative and ownership of events are key components of the BC Rivers Day success.

### Table 1 Trends in BC Rivers Day 1994–2000

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<td>Total number of events held</td>
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<td>Approximate number of participating groups</td>
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<td>400</td>
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<tr>
<td>Number of waterways celebrated</td>
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<td>69</td>
<td>50</td>
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<td>50</td>
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<tr>
<td>Approximate number of participants (registered events only)</td>
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Endangered Rivers List

The BC Endangered Rivers List was initiated by the Outdoor Recreation Council about 10 years ago. It was modelled on the successful initiative of American Rivers, a 25-year-old US advocacy organization. The List receives considerable media attention, and is referenced throughout the year in river-related stories. On the release date, it is often front page news and is on local newscasts. However, it continues to be in magazines several months
later, such as the recent article in Beautiful British Columbia (2001). Removal of a river from the list is frequently news, and also appears in magazines such as Canadian Geographic (2001).

The Endangered Rivers List is normally released at a well attended media conference in early April each year. Several months before, the Council advertises that a new list is being generated and solicits nominations. Nomination forms are distributed through member groups’ newsletters and community organizations, and are posted on the Council’s web site. Nomination information generally consists of the name of the river, the threats, and suggested actions to address the threats. Nominations are received from a wide range of interest groups, including youth, recreation and conservation organizations, and agencies. The number of rivers on the List has traditionally been ten. Recently there have been five as a number of rivers fit into a group, and one was selected as a representative.

An expert committee of scientists and river activists reviews the nominations against a set of criteria, and selects the rivers to be on the List. The criteria are acknowledged as primarily subjective, and evaluation relies heavily on expert opinion.

The criteria employed are listed below.
1. Immediacy and magnitude of threat.
2. Type and significance of resources threatened, including (but not limited to) wilderness, recreation, fish and wildlife habitat, aesthetics, human uses, rare / unique / endangered ecosystems.
3. Feasibility of effecting change, considering technology, cost, political will and other factors as appropriate.
4. Likelihood that appearing on the Endangered Rivers List will have a positive impact on required actions.

The Endangered Rivers expert committee meets four or five times to review and evaluate the nominations, to consider information gathered between meetings, to rank nominated rivers, and finally to establish those that will be on the List and to complete the suggested actions for each one. Several committee members usually attend the media conference to provide detailed information where needed, and broadcast quality video footage of the top one or two rivers on the list is available for TV media. Current and previous lists are posted on the Council’s web site.

The success of the Endangered Rivers List in generating attention for river issues is linked to its community support. Local stewardship is supported by the List. Nominations come from local communities and interest groups and the List is useful to them in advocating for needed changes to improve the condition of rivers in their communities. Because the List highlights suggested solutions to some of the problems, it has generally been well received and has resulted in positive action.

River Recovery Project

There is a growing awareness around the world of the need to review dams. The World Commission on Dams (2000) documented the building momentum for restoring rivers by removing or modifying dams in many countries. Canada, and particularly British Columbia, are part of this momentum.

British Columbia has about 2200 licensed dams in operation, nearly 300 of which are higher than 9 metres. The largest is Mica Dam on the Columbia River owned by BC Hydro, and is 242 metres high. While many of the dams, especially smaller ones, were built before 1950, the most aggressive period of dam building in BC took place from the 1950s to the 1970s. Public opposition to dams began to mount as fish stocks declined, valley-bottom farmland was drowned, and social problems due to displaced communities came to the fore (Wilson, 1973). As many of the dams constructed in the ’50s and ’60s reach the age when
maintenance and repair costs start to increase, owners and the public are looking to other options. Candidates for evaluation were solicited from regulatory agencies, consultants, interests groups, and communities. The River Recovery Project’s request for candidates was distributed through newsletters, media interviews, and web sites. The Project systematically reviewed over 100 submitted dams against the following three basic criteria.

1. Operational significance: values or benefits associated with the continued existence of operation of the structure.
2. Institutional concerns: agency or owner concerns about viability, potential for abandonment, safety, social or environmental concerns.
3. Social or biological improvement potential: opportunities to improve the health of the river through restoration or to improve social values in the community.

If a dam met a minimum of 2 criteria, it was further evaluated against more detailed criteria for recommended actions. There were 36 dams reviewed in more detail. Finally, a short list was generated, with 6 dams recommended for removal and 6 dams recommended for modification or detailed water use planning or both (Outdoor Recreation Council of BC, 2001).

This phase of the River Recovery Project was completed in early summer. Working closely with community stewardship groups, detailed studies on several candidates will likely begin later this year.

River Recovery is a relatively new initiative in BC, and has not had the same level of media attention as the previously described two initiatives of the Council. Communities, agencies, and interest groups have responded well to the project as shown by the number of dam candidates that were suggested for evaluation.

Conclusion
The three community-based, stream conservation initiatives coordinated by the Outdoor Recreation Council of BC include BC Rivers Day, BC’s Endangered Rivers List, and the River Recovery Project. The Council provides provincial coordination, communication, and resources while empowering local stewardship groups. While local groups and communities retain ownership of their issues, being part of a provincial initiative brings greater media attention and opportunities to share problems and solutions. The success of the initiatives highlighted in this article is a direct result of local stewardship and provincial coordination. Other groups and agencies may well find it useful to review this model for application in their jurisdictions.

References