

# The State of Rivers in British Columbia

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State of Environment reporting provides a snapshot of the condition of a particular ecosystem or resource. It also captures trends that are useful for helping us understand what has taken place in the past and what may arise in the future. British Columbia's first State of Environment report was produced in 1993 and has been followed, generally every two years, by a series of benchmark reports presenting information on key indicators. To date, a thematic State of Environment report focused on the freshwater ecosystems of British Columbia has not been compiled.

The Living Rivers section of the Biodiversity Branch in the BC Ministry of Water, Land and Air Protection initiated work on a State of Rivers report in September 2002 and anticipates releasing a first draft in the summer of 2003. The report will give British Columbians a picture of the condition of the province's freshwaters and, wherever possible, an indication of how they have changed from the past. The report will also set a benchmark against which to measure the future health of the province's freshwater ecosystems.

Our target audience includes the general public, educators, students, aquatic stewardship groups, non-governmental organizations, policy- and decision-makers, and the media. Since this will be the first State of Rivers report for British Columbia, we intend to include background information on freshwater ecosystems

| Category                      | Indicator/Information to be presented  |
|-------------------------------|--|
| Introductory Section          | Land use (urban, agricultural, forested, protected, etc.)<br>Population and population growth  |
| Water quality                 | Water-quality index based on chemical measurements<br>Water-quality index based on biological measurements<br>Groundwater quality<br>Volume of waste permitted for discharge into water bodies<br>Land use in watersheds   |
| Water quantity                | Average annual discharge for selected rivers<br>Documented and projected hydrograph changes for selected rivers<br>Glacier retreat<br>Streams designated as flow-sensitive for salmon<br>Annual rate of water licensed for withdrawal<br>Number of surface water sources fully allocated for water withdrawal<br>Land use in watersheds<br>Groundwater levels  |
| Aquatic and Riparian Species  | Number of red- and blue-listed fish, amphibians, reptiles, mammals, and birds<br>Known provincial distribution of red- and blue-listed species<br>Number of known exotic fish, amphibians, reptiles, mammals, and birds<br>Conservation risk to steelhead stocks<br>Kokanee in Kootenay and Okanagan Lakes<br>Age distribution of sturgeon in selected rivers<br>Overlap of fish biodiversity hotspots with protected areas<br>Overlap of pristine lakes for amphibian biodiversity with protected areas |
| Aquatic and Riparian Habitats | Number and type of dams<br>Road-stream crossing density<br>Density of roads on steep slopes (>60% gradient)<br>Percentage of stream length logged on steep slopes (>60% gradient)<br>Area of wetlands<br>Percentage of natural channel and riparian habitat along Okanagan River<br>Number of threatened streams in the lower Fraser Valley<br>Amount of fish habitat in selected Vancouver Island streams   |
| Concluding Section            | Stewardship of freshwater ecosystems   |

Figure 1. Freshwater indicators for assessing the state of rivers in British Columbia.

and how they function. We will also include present specific indicators of ecosystem health. Environmental indicators synthesize data in a way that helps us better understand an environment's condition, the pressures on it, and the responses being made to alleviate those pressures. In the State of Rivers report, indicators and background information will be presented in four categories:

1. Water quality
2. Water quantity
3. Aquatic and riparian species
4. Aquatic and riparian habitats

We are currently gathering data and other information to develop the freshwater indicators listed in the accompanying table (Figure 1). This list is far from comprehensive, as data is frequently non-existent for potential indicators. In other cases, databases are under construction and

unavailable for use in this version of the State of Rivers report.

We welcome all comments on these indicators, both now as we develop the report, and after the first draft version is released. We want to know how useful the indicators are, how they can be improved in the future, and, most importantly, what is missing. We envisage that the State of Rivers report will be the first in a series that will evaluate, through ongoing monitoring of key indicators, the current state of, and changes in, the province's freshwater ecosystems.

Please address comments to:

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