

Key Assumptions

The Run-of-River Decision Support Tool is intended to provide coarse-scale, non-regulatory information on the trade-offs between fish and wildlife conservation and potential Run-of-River development at the scale of British Columbia and over long time horizons (30-50 years).

- 1) **No current Run-of-River projects (existing, pending approval, or in the investigative stage) are included in this tool.** This tool relies on a dataset of potential Run of River development sites identified through a decade-long process detailed in BC Hydro's Resource Options Report. We have evaluated the methods underlying the identification, capacity, and costs associated with those sites, but were not involved in their development.
- 2) **Run-of-River hydropower will continue to be a growing component of the renewable energy portfolio of British Columbia.** Users are asked to choose among four future energy development goals for Run-of-River hydropower (1000, 3000, 5000, 7000 GWh), and this assumes that users value additional Run-of-River development locations.
- 3) **The tool minimizes spatial overlap with single or multi-species occurrence as a proxy for minimizing impacts.** Few peer-reviewed studies exist on the impact of Run-of-River hydropower to particular species and ecosystem processes. Until our understanding of impacts (positive, negative, or neutral) and mitigation measures improves, we assume that minimizing overlap between Run-of-River development and single or multiple species or ecosystem attributes will minimize potential impacts.
- 4) **The spatial extent of the analysis is Province-wide.** This assumption means that only those datasets with Province-wide coverage, meeting minimum standards, were included in the tool.
- 5) **Some important species are missing.** High profile species, including caribou, moose, grizzly bear, and black bear, are missing from the tool because the publically available data for these species did not meet our minimum standards for inclusion. In the case of excluded species, datasets had limited spatial coverage (i.e., caribou habitat suitability data), very coarse resolution information, or high uncertainties in estimates (i.e., grizzly bear density aggregated to Wildlife Management Units). Thus, direct comparisons of trade-offs between these species and Run-of-River development would be misleading.
- 6) **Province-wide species distributions are not substitutes for local and regional assessments.** We estimated the distributions of non-fish species using between 100 and >10,000 documented occurrences per species. Where possible, we evaluated the accuracy of species distributions using regional habitat assessments conducted by BC Government biologists or independent consultants, and our predictions were similar. However, uncertainties exist, and areas predicted to have high uncertainty were given lower weight in our models.
- 7) **The tool is focused on the aggregate consequences of developing Run-of-River sites.** The prioritization models underlying the tool yield sets of 'best-solution' sites ranked by their ability to meet user's stated development values (e.g. cost, energy, footprint) and ecological values (single or multi-species, existing disturbance). While we provide users the ability to download the data for individual sites selected by the tool, we advise users to focus on the aggregate summaries of the set of selected sites (total new roads, powerlines, costs, power production) in order to identify the trade-offs between multiple scenarios.