

Alberta's Proposed Approach to Protecting Fish during Periods of Low Flow and High Temperatures

Background

Southern Alberta is host to some of Alberta's most popular flowing water fisheries, such as the Bow River and numerous other East Slopes Zone 1 (ES1) fisheries including the Oldman, Highwood, Crowsnest and Elbow rivers. The Bow River contains introduced, but naturally self-sustaining wild populations of cold-water trout species, including rainbow and brown trout, as well as native mountain whitefish and Northern pike. Across other portions of the eastern slopes, our fisheries are similarly supported by wild populations of introduced trout but also include native populations of westslope cutthroat trout, bull trout and mountain whitefish.

Southern Alberta commonly experiences periods of high summer temperatures combined with little precipitation. This often results in decreased stream flows and increased water temperatures, and these environmental conditions may persist for extended periods of time from the spring into the late summer or fall. When these conditions are combined with high angling effort, as is common on southern Alberta rivers, fish can experience periods of sustained stress, which can lead to some mortality in fish populations.

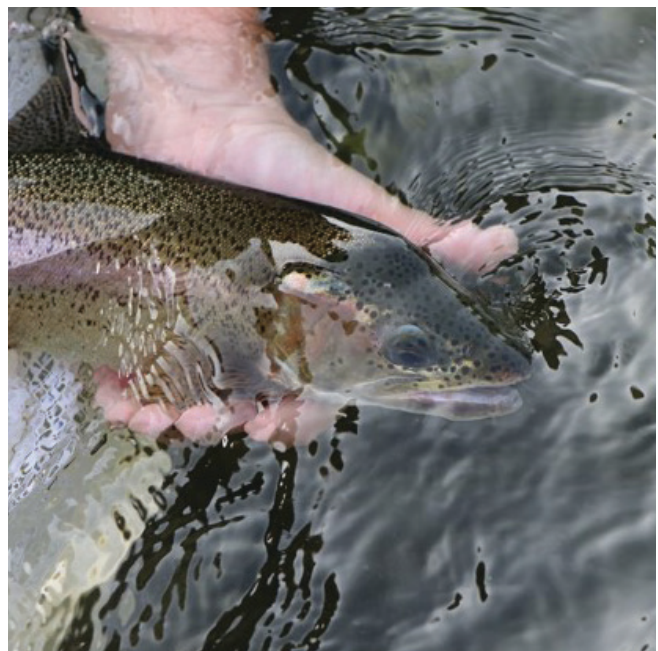
Alberta undertakes routine monitoring to better understand fish populations and activities that might affect those populations. We further support our monitoring and management decisions by creating models to help us assess cumulative effects and predict the outcomes of current and future management actions.

Time-of-day angling closures have been implemented in other jurisdictions (Montana, Oregon, and British Columbia) primarily to reduce angling-related stress on fish during times of hot weather and low flow. Although there are other potential benefits to fish health, the primary goal when implementing time-of-day angling closures is to use partial closures to curb angling effort and thus have a positive effect on reducing fish hooking and handling mortality.

As is the case with many management options, there are also uncertainties with implementing time-of-day angling closures. In this case, we are unsure if this approach will have the desired effect of reducing angling effort during warm and low flow conditions and instead direct that effort to other waterbodies or times of year. It will be important to characterize these uncertainties so that we can monitor and test the performance of our objectives, where necessary.

Current Sportfishing Regulations in Applicable Areas

- Bow River, Banff to Bassano
 - Open all year, bait ban, catch and release all species
- ES1 General regulations:
 - Open June 16 to October 31, bait ban, zero bull trout, zero Arctic grayling, trout limit of two, cutthroat and rainbow over 35 cm, mountain whitefish limit of five over 30 cm, walleye limit of three over 50 cm, Northern pike limit of three, yellow perch limit of 15, lake whitefish limit of 10, burbot limit of 10, bait ban
 - Open September 1 to October 31, zero bull trout, zero Arctic grayling, zero trout and mountain whitefish, walleye limit of three over 50 cm, yellow perch limit of 15, lake whitefish limit of 10, burbot limit of 10, bait ban
 - Closed November 1-June 15
- The department currently manages risk to fish during low and warm flow conditions through voluntary angling advisories. These advisories notify anglers of low flows and high temperature conditions and provide guidance on best practices for fishing and how to handle fish during these conditions. This approach relies on anglers to “do the right thing” to voluntarily restrict or otherwise manage their angling activities during summer months.



Fisheries Management Considerations

Bow River

- Rainbow trout populations in the Bow River declined almost 50% from 2003 to 2013. Environment and Parks does not believe that populations have recovered to previous levels of abundance and management actions are likely needed to recover populations to previous levels.
- The vast majority of angling effort occurs during the months of July and August, coinciding with periods of low flows and high temperatures.
- One management action that may be helpful during periods of low stream flow and high temperatures is a time-of-day closure during July and August.

East slopes flowing waters

- Both westslope cutthroat trout and bull trout are listed as Threatened in Alberta under the *Wildlife Act* and under the federal *Species at Risk Act*.
- All trout streams within ES1 are considered “high effort fisheries”, experiencing the very similar high levels of relative angling effort during July and August as on the Bow River.
- The vast majority of angling effort on these fisheries occurs during the months of July and August, coinciding with periods of low flows and high temperatures.
- One management action that may be helpful during periods of low stream flow and high temperatures is a time-of-day closure during July and August.

Provide your Feedback

As part of our [annual fisheries engagement program](#), an online survey is open until February 7. Please provide your feedback about changes to the 2022-2023 sportfishing regulations, including the options presented here. The options presented below are intended to mitigate the stress to fish and fisheries during periods of low flows, high temperatures and high angling pressure and are not intended to reduce angling effort as a broader management tool.

Option 1: Time-of-Day Angling Closures – Fixed Period

- Bow River from Banff to Bassano, and portions of ES1 flowing waters to be closed to all angling daily between 2:00 p.m. and 12:00 a.m. from July 1 to August 31.

Option 1 is intended to reduce effort when low flows, high temperatures and angling have the potential to result in fish mortality. It ensures that substantial angling effort from the Bow River does not shift to other ES1 fisheries during time of day closures. This option is precautionary in that annual time of day closures occur regardless of temperature and flow conditions in a given year.

Option 2: Time-of-Day Angling Closures – Semi-Fixed Period

Starting on July 1 in any given year and potentially ending with an “in-season” opening of a fishery, based upon evaluations of observed flow and temperature conditions.

- Bow River from Banff to Bassano, and portions of ES1 flowing waters to be closed to all angling daily between 2:00 p.m. and 12:00 a.m. from July 1 to August 31.
- Monitoring of hydrograph in three week intervals (or whatever appropriate interval); if low flows and high temperature conditions subside, fishery can reopen by varying regulations within season; fishery will not be re-closed even if high temperature and low flow conditions return.

Option 2 is finer scale management and requires staff to monitor temperatures and flows to potentially make a one-time decision to remove a closure and allow angling to re-commence if cooler temperatures and wetter periods persist. This is a one-time decision to remove closures and as such, the fishery would not return to a closed state for the remainder of that season regardless of changing conditions.

Option 3: Status Quo – continue to issue voluntary angling advisories during periods of high temperature low flow conditions.

This option provides anglers with the most flexibility for managing their own fishing activities and has been the approach used for the last several years. This approach requires minimal response from government, which includes the need for biologists to monitor and adjust to changing conditions and enforce any additional regulatory changes.