

## Recreational Fishery Catch Monitoring in British Columbia

The recreational fishery in the Pacific Region is very diverse with a wide variety of species caught using many different gear types and fishing techniques. There are also many participants in the fishery with an average of 320,000 tidal water sport fishing licences issued each year (2013-2022). Salmon fishing is a major component of the recreational fishery with 70% of tidal water licence holders also purchasing a salmon conservation stamp (required for the retention of any salmon species). Consistent with Fisheries and Oceans Canada's (DFO) [Fishery Monitoring Policy](#), there are several catch monitoring programs in place for the recreational fishery which have been designed to work together to collect fishery information in a cost-effective and practical way consistent with the risk and complexity of the fishery.

### Creel Surveys

*What is a "creel"? Why is it called a "creel" survey?*



A creel is a wicker basket anglers use for carrying fish. Although creels are rarely used today by recreational harvesters in the Pacific Region, the survey collects information on catch that is figuratively placed in recreational harvester's "creel".

Creel surveys have been the primary source of catch data from the recreational fishery for many years. Creel surveys have two key components: **effort counts** and angler **interviews**. Effort is the amount of fishing activity and is often measured by the number of harvesters fishing or amount of gear deployed (e.g., angler-hours, vessel-hours, boat-days, rod-hours). Effort counts are typically performed from aircraft to cover large areas relatively quickly but may also be completed by boat or other methods.



Fisher interviews are performed by DFO staff or by staff from partner organizations at access points like marinas or boat ramps. The number of fish kept and released, the amount of time fished and the areas fished is the typical information that is collected by interviewing recreational harvesters. The average catch per unit effort (CPUE) is estimated from the interviews and multiplied by effort estimates to calculate the total catch for each species by area:

$$\text{Effort} \times \text{CPUE} = \text{Catch}.$$

However, creel surveys are relatively costly and weather dependent, therefore only used during months and areas where significant recreational fishing occurs. DFO also partners with Indigenous organizations to implement creel surveys in more remote areas of the Region.

## **Internet Recreational Effort and Catch Reporting Program**

The internet Recreational Effort and Catch (iREC) reporting program is an online program that has been collecting effort and catch information since July 2012. All adult British Columbia Tidal Waters Sport Fishing license holders are selected to report their catch and effort for a randomly assigned month (or shorter period for term licenses [1, 3, or 5 day licenses]). Adult license holders are also required to report catch and effort data for juvenile fishers under their care. Similar to marine creel survey interviews, it is mandatory for marine license holders to report their catch when selected through the iREC program. Monthly recreational catch and effort estimates for all species in all tidal waters of British Columbia are generated from the iREC program. The iREC survey is a cost effective program that has coast-wide coverage and runs year-round, covering areas and times that are not covered by creel programs. The results from the iREC survey can be used to produce stand-alone catch estimates and can also be used to in-fill data gaps or uncertainties in creel surveys.

## **Logbook Programs**

Many lodges and fishing guides participate in a voluntary logbook program for marine recreational fisheries. Catch and effort information is recorded in logbooks that are submitted to DFO. In some remote areas of the Pacific Region, logbook information is the primary source of recreational catch information and in other places logbook information is used to provide supplementary data to creel survey programs.



## **Avid Angler Program**



In the South Coast Area, there is an Avid Angler's program that salmon anglers can volunteer to participate in. In 2023, there were 196 participants in the program. While participating in the recreational fishery, volunteers record catch and effort information in a logbook and also collect biological samples from their catch. Program volunteers are trained to follow sampling protocols to collect quality samples and release fish in the least harmful manner. The logbooks and biological samples are subsequently submitted to DFO for analysis. These biological data are used to provide more precise information on stock compositions in the recreational fishery. The program supplies roughly half the Chinook and Coho DNA samples within the Strait of Georgia; around 5,000 samples in 2022.

## **Coastwide Annual Estimates of Catch and Effort**

DFO uses these recreational catch monitoring programs to develop marine recreational catch and effort estimates for all species. Separate estimates by area and month are generated from both creel survey programs and the iREC program. This means it is important for recreational fishers to participate in both programs if selected. In most cases, where there is an estimate from a creel survey and an estimate from the iREC program the creel estimate is used. iREC estimates are used where there is no creel survey.

### **Why a survey and not a census approach to monitor the recreational fishery?**

The diversity and number of participants in British Columbia's recreational fishery creates unique monitoring challenges. These programs are designed to collect representative samples of fishing activity and catch from anglers each year. This sample-based approach produces accurate and precise estimates in a cost-effective way. Other fisheries that have fewer participants or that use higher efficiency fishing gear often require a different monitoring approach to produce equivalent catch estimates. For the recreational fishery, the benefits of implementing a census-based monitoring program, where all anglers would be required to report all their catch, is likely to be outweighed by the increased costs and regulatory oversight that would be required to implement such a program.

### **Pacific Salmon Strategy Initiative (PSSI) Improvements**

Improvements to recreational catch monitoring are being supported through the PSSI Harvest Transformation Pillar. Some of these improvements include increased creel survey coverage, modernized data analytics and reporting, funding to support new studies on the survival of salmon released from the recreational fishery, and increased resources for enforcement by DFO Fishery Officers. DFO also collaborates with the Sport Fishing Advisory Board and others to explore additional improvements to recreational fishery monitoring such as enhanced catch monitoring requirements for fishing guides, collecting independent at-sea information to support mark-selective fisheries, and other similar improvements.



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