



Sports Fish Spawning Surveys 2024

*Results of sports fish spawning surveys, May - June 2024 in the
West Coast Fish & Game Region*

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A salmon spawning in MacDonalds Creek, Lake Mapourika, May 2024.



Summary

Fish & Game undertake spawning surveys as a tool to monitor adult sports fish populations and provide information for management purposes. Quinnat salmon were introduced to the West Coast in the early 1900's and spawning counts have been undertaken intermittently since 1966. This season counts of 'Peak' salmon spawning numbers were undertaken at lakes Mapourika and Paringa, the Taramakau and Hokitika rivers were also counted to monitor previous liberations of salmon. At Lake Mapourika 10 live salmon were observed during the peak count at MacDonalds Creek, below the long-term average of 169 fish. At Lake Paringa 22 live salmon were observed during the peak count in the Windbag Stream, below the long-term average of 163 fish. No live salmon were observed in the Taramakau, and Hokitika rivers by staff. Staff recommendations are to; Continue monitoring spawning tributaries MacDonalds Creek and Windbag Stream with enough frequency to ensure the peak count is measured. Continue to survey catchments where salmon enhancement has occurred. Continue stocking Lake Ianthe with salmon.

Introduction

Fish & Game West Coast has a statutory responsibility under section 26Q of the Conservation Act 1987 to: manage, maintain, and enhance the West Coast sports fish and game resource in the recreational interests of anglers and hunters. To honour this responsibility, Fish & Game gathers information on the resource it manages in several ways. This report presents the data collected during sports fish spawning surveys.

Spawning surveys are an effective means for evaluating sports fish populations as they provide an index of the adult population that can be compared between years. This information helps guide management decisions which can influence the adult population ie. changing the fishing regulations to alter harvest rates or enhancing a limited wild population by the release of hatchery reared fish.

Enhancement releases of fish on the West Coast are guided by the West Coast Fish & Game Council's 'Strategy for sports fishery enhancement' adopted in 2010 and revised in 2013. The strategy states that; with limited resources comes the need to select priorities for enhancements. West Coast Fish & Game will give priority to those waters and species where;

- a viable population already exists or has existed in the past,
- the fish will benefit a wider number or range of anglers,
- it has been determined that the liberation will have a reasonable probability of success,
- there is a means of monitoring the success or failure of the release,
- it is a special purpose situation e.g. put and take (take a kid fishing).

This report presents the results from this season's Quinnat salmon (*Oncorhynchus tshawytscha*) spawning surveys in the main spawning tributaries of lakes Mapourika and Paringa along with the

Taramakau and Hokitika rivers. Comparison is made with the long-term dataset from these catchments in context of measuring the success of enhancements undertaken (Appendices 1, 2 and 3). These enhancements were possible due to the availability of hatchery reared fish from North Canterbury Fish & Game (NCFG). However, in 2020 NCFG ceased all hatchery operations and now fish are sourced from alternative hatcheries (Appendix 4).

Method

Spawning surveys are generally undertaken on foot, by walking slowly along the stream bank spotting fish with the aid of polaroid sunglasses. The lower section of Windbag Stream is counted while kayaking. Counts of live salmon, dead salmon and trout are recorded. If a sports fish cannot be positively identified to species, it is recorded as 'unidentified sports fish.' Weather conditions and stream clarity must be sufficient for accurate counting. Generally, surveys are 'spot checks' during the known spawning seasons. 'Peak' counts are different to spot checks as a series of counts are undertaken at more regular intervals during the spawn and the peak count is the highest live count from that year. The observed counts presented in this report do not represent the total number of salmon that spawned for any spawning season.

Survey Results

Lake Mapourika

Lake Mapourika has five in-flowing streams that have been identified as suitable spawning habitat for Quinnat salmon. Of these, only MacDonalds Creek was monitored during this season. MacDonalds Creek is the largest and most utilised spawning area for Lake Mapourika.

MacDonalds Creek

The spawning area for MacDonalds Creek starts approximately 100m upstream of where the Creek enters Lake Mapourika and extends 3 km upstream to where the river forks. This is the limit of the area surveyed, although spawning has been observed on occasion up each branch, none further than 200m upstream.

Spawning surveys were conducted on four occasions between the May 8th and June 12th, 2024, at MacDonalds Creek with the peak live count of ten salmon occurring on May 21st. The average peak count considering all years surveyed is 169 salmon (Figure 1).

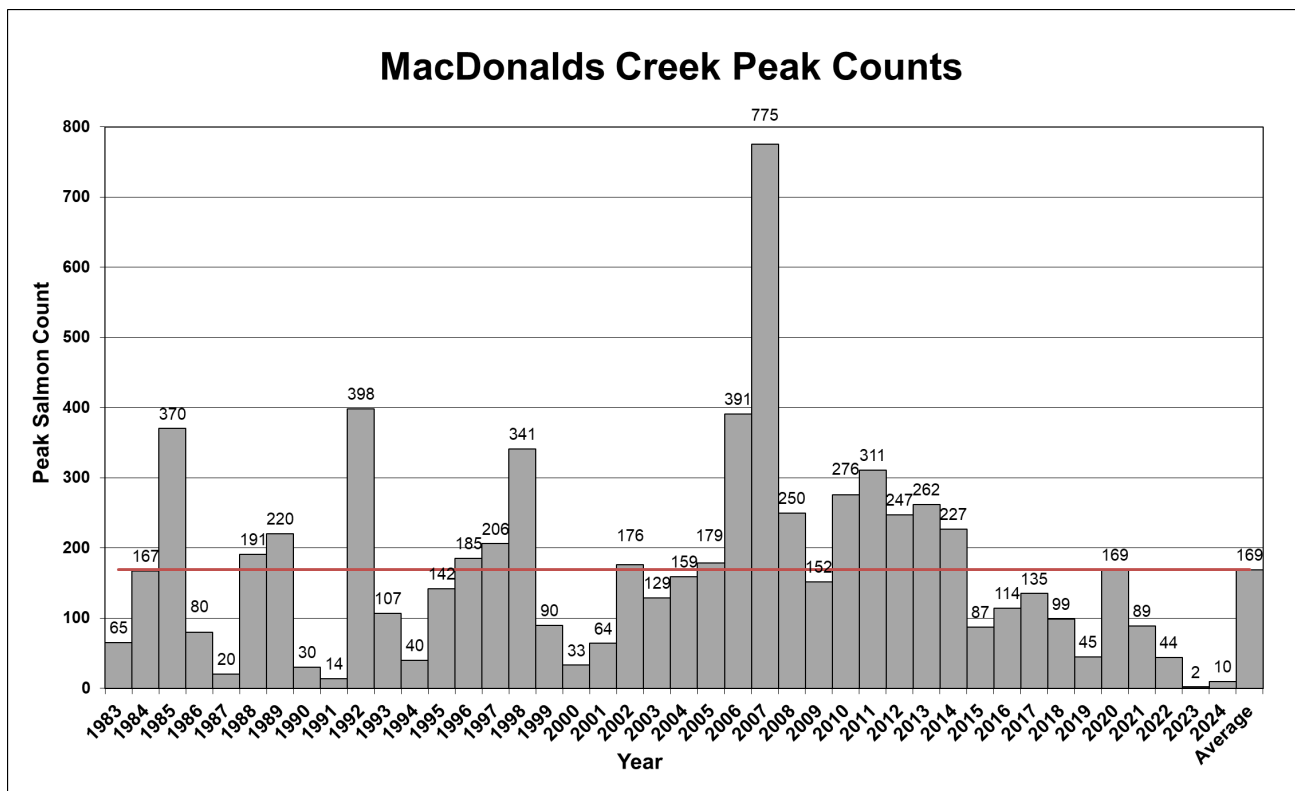


Figure 1: Peak live salmon counts for MacDonalds Creek, Lake Mapourika. 1983 – 2024

Lake Paringa (Windbag Stream)

Lake Paringa has one major spawning area, Windbag Stream, which is the main inflowing tributary of the lake. Windbag Stream has several tributaries that also provide limited spawning areas. These were not surveyed in addition to the main stem of Windbag Stream. The spawning grounds extend from approximately the Rata Creek - Windbag Stream confluence, upstream to where Quad Creek joins the Windbag, a total of 6.5km. The majority of spawning occurs around and upstream of the old Salmon trap site at Dawn Creek.

Spawning surveys were conducted on three occasions between May 7th and June 3rd, 2024, with the peak live count of five salmon occurring on June 3rd. The average ‘peak’ live count considering all years surveyed is 163 salmon (Figure 2).

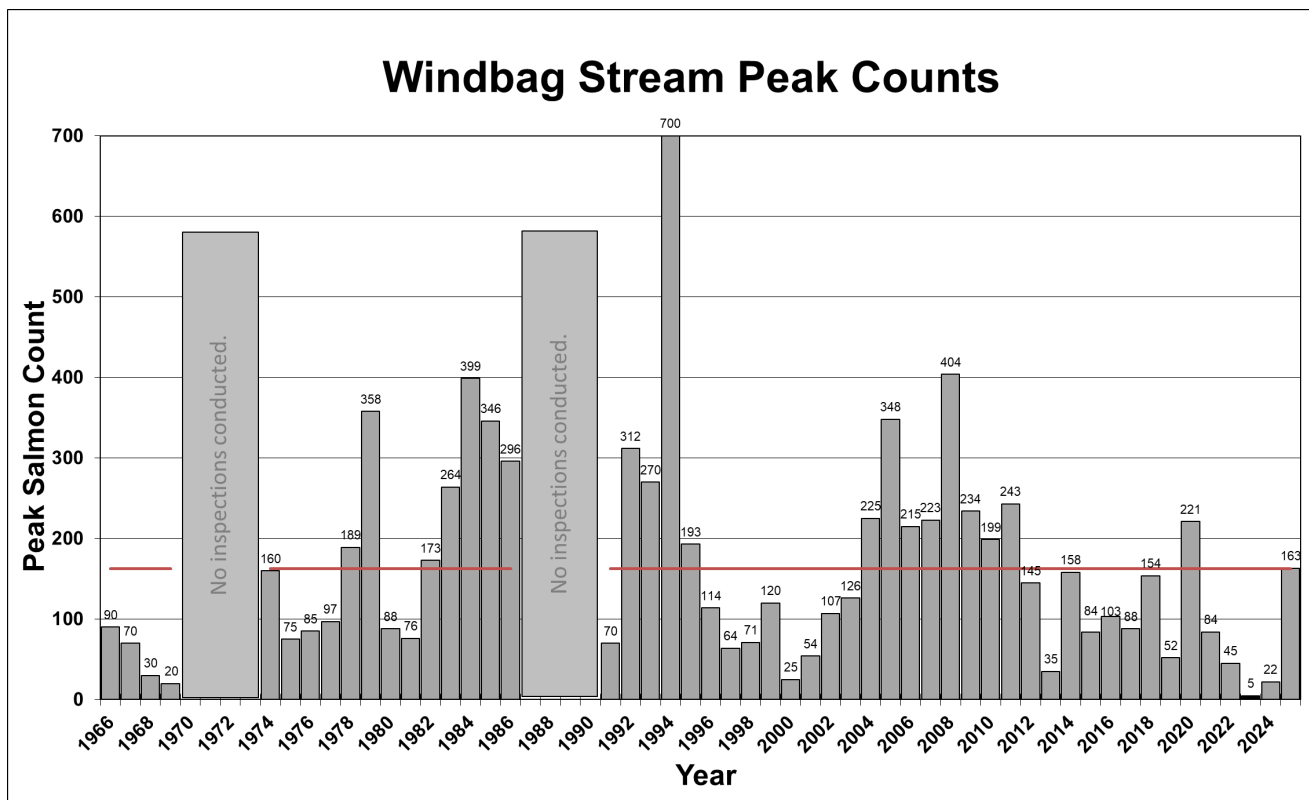


Figure 2: Peak live salmon counts for the Windbag Stream, Lake Paringa. 1966 – 2024.

Taramakau River Catchment Salmon Spawning

Black Creek (tributary of Taipo River) and Clear Creek (Aickens) have been surveyed occasionally from 1996 to 2024 during the salmon spawning season. Both creeks have received salmon smolt releases in this period, Clear Creek in 2010, and Black Creek in 2011. Other small creeks that have been checked in recent years for spawning salmon are Humphries, Debenham, Aickens Spring Creek and the Little Orangipuku.

Black Creek

A spawning survey was conducted on one occasion, May 13th, 2024, at Black Creek but no salmon were observed. Historic counts of live spawning salmon in Black Creek range from 25 fish in 2007 to 0 in 2012.

Clear Creek

A spawning survey was conducted on one occasion, May 13th, 2024, at Clear Creek but no salmon were observed. Historic counts of live spawning salmon in Clear Creek range from 64 fish in 1999 to 0 fish in 2002.

Additional salmon spawning surveys in the Taramakau Catchment

Humphries Creek, Debenham Creek and Aickens Spring Creek were surveyed on one occasion, May 13th, 2024, but no salmon were observed.

Hokitika River Catchment Salmon Spawning

Three known Hokitika River salmon spawning tributaries; Minnow, Doctors and Diedrichs Creeks have been surveyed occasionally from 2003 to 2024 during the salmon spawning season. Doctors Creek has received releases of salmon smolt previously in: 2013, 2014, 2016, 2017, 2018 and 2019.

Doctors Creek

A spawning survey was conducted on one occasion, May 16th, 2024, at Doctors Creek but no salmon were observed.

Minnow Creek

One spawning survey was conducted at Minnow Creek on May 16th, 2024. No live salmon were observed.

Diedrichs Creek

One spawning survey was conducted at Diedrichs Creek on May 16^h, 2024. No live salmon were observed.

Discussion

Long-term monitoring of 'peak' salmon spawning at MacDonald's Creek allows comparison of salmon returns over 41 continuous years. This season, the count was the second lowest on record.

Long-term monitoring of 'peak' salmon spawning at Windbag Stream allows comparison of salmon returns over 57 years, although there are two gaps in the dataset. Similar to MacDonald's Creek, the count was significantly down, marking the third lowest recorded count.

Angler reports indicated a challenging season despite favourable fishing conditions. Low numbers of salmon, believed to be small sea-run salmon, were caught in both lakes Mapourika and Paringa. Anglers did report catching and releasing a good number of undersize salmon, which is promising for the fishery, but their capture is undesirable due to potential casualties. During spawning surveys, smaller lake resident fish were again observed contributing to spawning, helping to maintain population stability during weaker years.

The Hokitika and Taramakau rivers' runs were reported as very weak, with only rumours of one or two salmon being caught. Despite river fishing conditions being favourable, the weak run meant many dedicated anglers went without bagging a salmon this season. No salmon were observed spawning by staff in neither catchment.

Lake Ianthe was again a discussion point among anglers this season, with salmon regularly caught above the 450mm minimum size. Anglers reported high success, especially early in the season before water temperatures warmed up and pushed salmon deep. This catch-and-release practice should continue, as it creates additional angling opportunities while keeping the rudd population at depressed levels through salmon predation, as confirmed by recent captures.

Staff Recommendations

Staff recommendations are to:

- Continue monitoring spawning tributaries MacDonalds Creek and Windbag Stream with enough frequency to ensure the peak count is measured.
- Continue to survey catchments where salmon enhancement has occurred.
- Continue stocking Lake Ianthe with salmon.

References

Fish & Game West Coast internal policy. *Strategy for sports fishery enhancement through liberations in the West Coast Fish & Game region.*