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Final Draft Report

Prepared for

Island Marine Aquatic Working Group
IMAWG

and

A-Tlegay Fisheries Society

Prepared by

LGL Limited
environmental research associates

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EXECUTIVE SUMMARY

The A-Tlegay Member Nations consist of the We Wai Kai Nation, Wei Wai Kum First Nation, Kwiakah First Nation, Tlowitsis Nation, and K'ómoks First Nation who are all proud stewards of marine areas and waterbodies of the northern Strait of Georgia and Johnstone Strait regions. Pacific salmon are foundational to the spiritual, cultural, subsistence, and economic practices of Indigenous peoples throughout the Pacific coastal region of British Columbia (Garibaldi and Turner 2004; Chalifour et al. 2022). The watersheds within the Mainland Inlet region support all five key Pacific salmon species, Chinook (*Oncorhynchus tshawytscha*), Coho (*O. kisutch*), Chum (*O. keta*), Pink (*O. gorbuscha*), and Sockeye (*O. nerka*) salmon. Maintaining these important salmon populations is crucial for the continued health of the ecosystems that support them and for A-Tlegay Member Nations culture and well-being.

The Department of Fisheries and Oceans Canada is responsible for Pacific salmon enumeration and conservation of natural populations as well as the management of fisheries targeting or intercepting these same salmon populations. Population abundance estimates for the Mainland Inlet region began as early as 1953 for some waterbodies; however, records prior to 1995 are incomplete and often missing methodological information. In 1995, the responsibility for enumeration of Pacific salmon species and assessment of ecosystem health formally became part of DFO Science as the Stock Assessment Division and more systematic approaches were applied. Ten years later, in 2005, Canada's Policy for the Conservation of Wild Pacific Salmon was introduced (herein referred to as the Wild Salmon Policy). Within the policy, management areas are divided into conservation units (CUs) meant to recognize genetically distinct salmonid populations that, if lost, would be unlikely to recover. The Wild Salmon Policy has three core themes: Assessment, Accountability and Maintaining, and Rebuilding Stocks, with Assessment being the initial and crucial first step that is meant to underpin management decisions and support the remaining two themes.

However, monitoring of all five species in the A-Tlegay Member Nation Mainland Inlet region is at a historic low. There are 25 unique conservation units that overlay the Mainland Inlet region and all of those CUs show a significant decrease in escapement monitoring. There have been notable declines in the percentage of waterbodies with reported escapement data since 1995. This represents a decrease in spatial and temporal monitoring coverage across the entire region. Within the region there are several CUs that are no longer reporting any escapement monitoring and therefore their population status is unknown. For other CUs, spatial monitoring has been reduced to the point where indicator streams are no longer monitored and there are only one or two waterbodies with data. This is particularly concerning in cases such as Klinaklini River which had consistent and robust escapement data for several Pacific salmon species up to the introduction of the Wild Salmon Policy and then monitoring stopped completely.

In addition, there are several Chinook and Coho salmon CUs within the A-Tlegay Member Nation Mainland Inlet region that have populations that are subject to exploitation by Mark Selective Fisheries (MSFs) in the Bute, Toba, and Knight inlets. Many of those populations lack monitoring records, historical or recent, such that there is no way to evaluate the impacts of those MSFs on the local Mainland Inlet region populations. The results of this report indicate that immediate action needs to be taken within the Mainland Inlet region in order to accurately assess the state of Pacific salmon stocks. Targeted escapement monitoring of key waterbodies (i.e., Klinaklini River) should begin immediately while caution should be taken on any policy changes that may unknowingly have adverse affects on these stocks. In addition, further assessments of external factors should be undertaken to help inform ongoing and future restoration plans.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

The following abbreviations are used in this report:

BC	British Columbia
BCSRIF	British Columbia Salmon Restoration and Innovation Fund
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CU	conservation unit
DFO	Fisheries and Oceans Canada
FISS	Fisheries Information Summary System
IMAWG	Island Marine Aquatic Working Group
LGL	LGL Limited
MSF	Mark Selective Fishery
NuSEDS	New Salmon Escapement Database System
PSF	Pacific Salmon Foundation
VISC	Vancouver Island Salmon Committee
WSP	Wild Salmon Policy

1 Introduction

Pacific salmon are foundational to the spiritual, cultural, subsistence, and economic practices of Indigenous peoples throughout the Pacific coastal region of British Columbia (Garibaldi and Turner 2004; Chalifour et al. 2022). They support commercial and recreational salmon fisheries that underpin coastal communities (Chalifour et al. 2022). Despite this, in recent decades the overall abundance and fisheries catch of Pacific salmon in British Columbia have declined, putting these ecosystems and Indigenous cultures at risk alongside the salmon themselves (Chalifour et al. 2022; Reid et al. 2022). Population diversity has also been declining (Price et al. 2021). Conditions leading to the decline and repressed recovery of Pacific salmon are complex with multiple interacting factors (Cohen 2012a; Chalifour et al. 2022).

Department of Fisheries and Oceans Canada (DFO) is the federal management body charged with Pacific salmon governance and responsible for salmon enumeration since 1995. Effective Pacific salmon management relies on timely information on the status and trends of salmon populations (PSF 2023). To that end, in 2005, the DFO introduced Canada's Policy for Conservation of Wild Pacific Salmon (herein referred to as the Wild Salmon Policy) for Chinook (*Oncorhynchus tshawytscha*), Coho (*O. kisutch*), Chum (*O. keta*), Pink (*O. gorbuscha*), and Sockeye salmon (*O. nerka*) with the goals of restoring and maintaining healthy salmon populations along with safeguarding genetic diversity (DFO 2005). The Wild Salmon Policy is divided into six strategies broadly grouped into three categories: Assessment (Standardized monitoring of wild salmon status, Assessment of habitat status, and Inclusion of ecosystem values and monitoring), Maintaining and Rebuilding Stock (Integrated strategic planning and Annual program delivery), and Accountability (Performance review) (DFO 2005; DFO 2018).

Management of Pacific salmon throughout the Pacific coastal region of British Columbia requires a suite of information that is reliable, accurate, and current. This may include information on harvest (catch and release), productivity, trends in spawner abundance, assessments of biological status, and other data (PSF 2023). In order to help quantify genetically distinct subpopulations and allow for a more accurate assessment, salmon are separated into conservation units (CUs) under the Wild Salmon Policy (DFO 2005). A CU is defined as … "a group of wild salmon sufficiently isolated from other groups that, **if lost**, is very unlikely to recolonize naturally within an acceptable timeframe (e.g., a human lifetime or a specified number of salmon generations)". It is therefore concerning that available data within the A-Tlegay Member Nations Mainland Inlet Territory suggests that several Pacific salmon populations and CUs are now at historic lows (LeBoeuf et al. 2022; PSF 2023).

The A-Tlegay Member Nations Mainland Inlet Territory encompasses the series of interconnected islands in Johnston Strait between Vancouver Island and the mainland of British Columbia. Previous preliminary investigations suggest that many species-specific populations and CUs are data deficient (A-Tlegay Fisheries Society 2021; PSF 2023). The Mainland Inlet regions geographic size and remoteness proposes challenges in collecting reliable, accurate, and current information to manage Pacific salmon. Differences in management priorities between Indigenous, commercial, and recreational groups also impart a different set of challenges in setting shared goals for monitoring priorities in the territory. Within the umbrella of Pacific salmon governance, the DFO are also responsible for handling recovery initiatives, and supporting harvest interests. This conflict has contributed to the slow reaction of DFO to address harvest pressures while also protecting fish habitat in marine ecosystems and coastal watersheds (Cohen 2012b; Chalifour et al. 2022).

The watersheds within this territory support all five Pacific salmon species and a diversity of species-specific CUs. Despite this, and the relative lack of accurate escapement data for most of the territory, DFO has recently opened pilot recreational Chinook Salmon (*Oncorhynchus tshawytscha*) fisheries within Toba, Bute, and Knight mainland inlets (Figure 1). The 2022 Island Marine Aquatic Working Group (IMAWG) review of the pilot fishery identified several concerns on A-Tlegay Member Nation Mainland Inlet Territory Chinook

Salmon populations and CUs (Island Marine Aquatic Working Group 2022). These concerns included, but were not limited to, fishery effects focused on Fraser River stocks of concern, majority of catch comprised of data deficient A-Tlegay Member Nation Mainland Inlet Territory stocks, high catch of wild populations from the territory, no recent creel estimates of catch, no current coded wire tag indicators for A-Tlegay Member Nation Mainland Inlet Territory populations, and no DNA baseline for several A-Tlegay Member Nation Mainland Inlet Territory Chinook Salmon populations to determine the proportion of catch from the territory. As a result, DFO's Pacific salmon management and governance priorities for the A-Tlegay Member Nation Mainland Inlet Territory are not in alignment with priorities for local Indigenous groups who rely upon Pacific salmon for spiritual, cultural, and subsistence purposes.

All these fishery uncertainties highlight the need for a fulsome gap analysis in the A-Tlegay Member Nations Mainland Inlets Territory. The purpose of this study is to:

1) Create a snapshot of the current state of escapement monitoring for all Pacific salmon species across the A-Tlegay Member Nations Mainland Inlets Territory;
2) Help address the above-mentioned Pacific salmon fisheries management concerns by highlighting key areas of concern and opportunities for improved escapement monitoring within the A-Tlegay Member Nations Mainland Inlet Territory;
3) Investigate the success of Wild Salmon Policy management on species, stock, and conservation unit within A-Tlegay Member Nations Mainland Inlet Territory and summarize key findings.

1.1 Objectives

The specific objectives of this study are to

1) Increase our understanding of Pacific salmon escapement monitoring in the territory and identify key waterbodies, species and run timing stocks of concern;
2) Determine if the current DFO escapement monitoring structure aligns with A-Tlegay Member Nations priorities and expectations; and
3) Determine if DFO's federal management policy is being adhered to in the conservation units the A-Tlegay Member Nations Mainland Inlet Territory encompasses.

2 Methods

2.1 NuSEDS Overview

Fisheries and Oceans Canada maintains the Salmon Escapement Database (NuSEDS). This is the Pacific Region's central database that stores individual spawner survey data records and spawner abundance estimates. When survey data is received, the methodology is reviewed, and the data is given a classification based on reliability and accuracy (Appendix A1). The highest scoring data (1) is considered high resolution and a good measure of true abundance whereas the lowest scoring data (6) is a measure of presence or absence (NuSEDS; DFO 2024).

Part of the NuSEDS metadata is a listing of recognized populations with population characteristics such as run type, species, and location (Table 1) (NuSEDS; DFO 2024). Prior to 1995, a standardized form was used to estimate the spawning population size, however, the form lacked the resolution to capture individual counts or methods. Therefore, this data is often labelled 'Unspecified returns' and there is a certain level of ambiguity around the robustness of the data. When the methodology for the data is unknown, the data is treated as a historical presence or absence for the purpose of tracking populations. After DFO Science took over salmon enumeration in 1995, the new database had the capacity to include descriptive information on abundance estimates including the number of observations, individual counts, and methodology (DFO 2005).

Within the database, annual abundances estimates are maintained by population (defined by freshwater locations and run timing) and is referenced to stream mouth location. To help address instances where maximum sustainable yield can't be used because historical data on spawner and progeny production is unknown for a population, indicator streams are selected. Indicator streams are streams or stream systems identified by stock assessment programs for intensive monitoring in order to be representative, reflecting expected trends in production across the CU (DFO 2005). Information collected includes trends in spawners over time, estimated exploitation rates in fisheries, and/or juvenile production to habitat type relationships. For some CUs, however, indicator streams may not be representative in which case additional monitoring would be combined with less rigorous surveys of other streams (DFO 2005).

2.2 Biological Status Assessment

Under the Wild Salmon Policy, the biological status (degree of conservation concern) of a CU is based on the abundance and distribution of all spawners (or spawner populations) within the CU (DFO 2005; PSF 2022). Broadly, a higher and lower benchmark are defined on a species and CU basis which delimit three zones: green, amber and red. The lower benchmark sits between the Amber and Red zones and represents the level of abundance required to ensure the species is not considered at risk for extinction by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The higher benchmark denotes the maximum expected harvest potential, given the CUs current environmental conditions. The Wild Salmon Policy (WSP) gives management guidance based on these zones. CUs in the Red zone cannot sustain further mortalities and species conservation should be the primary management focus. The Amber zone indicates a CU should ensure its population is 'safe' before social and economic use are considered, while a Green zone is considered ecologically safe and management can consider more social and economic users.

The Pacific Salmon Foundation (PSF) developed a standardized assessment for the NuSEDS data based off the tenets of the Wild Salmon Policy with the inclusion of hatchery-production salmon. Generally, the available data is compared against one of two benchmarks broadly dependant on the quality of the data and the time scale it encompasses. Where multi-year, high quality CU-level spawner-recruitment data exists, it is compared to calculated expected spawner-recruitment upper and lower benchmarks. Where spawner-recruitment relationships are not available, the CU is assessed as data deficient unless the following is met; there is over 20 years of data, at least one CU-level spawner abundance estimate, and the CU is not experiencing low production or high exploitation. When these conditions are met, the CU is compared against high and low benchmarks calculated based on percentiles of historical spawner abundance. Based on either of these two benchmarks, a CU is designated as Good, Fair, Poor, or Data Deficient for spawner abundance and catch (PSF 2022).

The final organization to score biological status for CU is the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). COSEWIC is the organisation that assess the national status of designatable units that are considered at risk in Canada. Less than 10% of CUs in BC have status assessments by COSEWIC and these assessments primarily focus on economically significant Chinook, Sockeye, and Coho CUs (COSEWIC 2017, 2018). COSEWIC, therefore, scores as Not at Risk, Threatened, Endangered, Data Deficient, and Not Assessed. These scores can be useful indicators for an overview of current surveillance levels and assumed risk within a CU, however, it is difficult to gain and change a COSEWIC assessment compared to DFO WSP assessment or a PSF assessment.

2.3 Anadromous Length Data

While NuSEDS lists Pacific salmon species and run timing stocks for specific recognized streams, it does not capture all known streams with Pacific salmon present in the A-Tlegay Member Nation Mainland Inlet Territory. To address this data gap, the Fisheries Information Summary System (FISS), was queried for Pacific salmon presence. FISS is a provincial fisheries database with a comprehensive overview that is frequently updated and easily accessible through two tools: a map-based tool HabitatWizard[1] and a query-based tool, Fisheries Inventory Data Queries[2]. These tools allow users to spatially and non-spatially access detailed fish presence and habitat data that is linked to standardized provincial waterbody identifiers and combines stream/lake information into one system. NuSEDS identified streams were then compared to the streams with known Pacific salmon presence identified from the provincial FISS database. Watershed area (ha) was calculated for each stream. If a listed watershed also had a listed sub-watershed, then the reported watershed area excluded the sub-watershed area.

Potential habitat availability was defined as anadromous stream length (km) and analyzed under two scenarios for each listed stream based on Coho as Coho salmon are known to occur in higher gradient habitats compared to other Pacific salmon species. Scenario 1 included waters connected to saltwater and extending upstream (mainstem and tributaries) to a sustained 10% gradient or a permanent natural barrier, whichever comes first. Scenario 2 included waters connected to saltwater and extending upstream (mainstem and tributaries) to a sustained 7% gradient or a permanent natural barrier, whichever comes first. Sustained in this definition means the maximum gradient that is maintained over the stream segment of a reach. For the purposes of this analysis, permanent natural barrier follows the definition of a 'falls'. The provincial Freshwater Atlas was used to support this analysis in GIS environment as it is a standardized dataset for mapping British Columbia's hydrological features. For each listed stream, the stream network was separated into 100 m stream segments and assigned a gradient, which is embedded in Freshwater Atlas stream network. Where lakes were present within the stream network, the length of center lines connecting accessible lake streams to the lake outlet was included in the total length calculation. Anadromous stream length (km) was calculated for each listed stream. If a listed stream also had a listed sub-watershed, then the reported stream length excluded the sub-watershed stream length.

3 Results: Escapement Review and Analysis

3.1 NuSEDS Overview

Within the A-Tlegay Member Nations Mainland Inlet Territory, NuSEDS listed 63 waterbodies hosting 275 unique salmon runs (Table 1) across Chinook, Coho, Chum, Pink, and Sockeye salmon with historic population data starting in the 1950s for some rivers. Despite this, the availability of data and the robustness of the available data for any one of those waterbodies or runs varies drastically. Less than half of the 275 unique runs in the A-Tlegay Member Nations Mainland Inlet Territory have some form of reported escapement data. Twenty-one of the 275 runs (7.6%) have escapement estimates in 50% or more of the years since the release of the Wild Salmon Policy (DFO 2005). Eight of the 275 runs (2.9%) have relatively intact time series of escapement with estimates in 85% or more of the years (Table 1, Table 3).

Across all 5 species, these runs fall within 25 conservation units. Twenty-three of the 25 CUs that intersected the Mainland Inlet region had reported biological status data. Two of the Sockeye Salmon CUs, Village Bay (SEL-11-10) and (N)Glendale (SEL-11-12), however, appear to be no longer active. The DFO, for the Wild Salmon Policy, has currently assessed 39.1% of all CUs in the A-Tlegay Member Nations Mainland Inlet Territory, with eight deemed Data Deficient and one Chinook Salmon CU – East Vancouver Island-North (CK-29) assessed as Red. Biological assessments were conducted for the five Pink Salmon CUs however, the statuses are not official under the WSP as some disagreement still remains within the department (Irvine et al. 2014). The CUs were assessed as the following: Georgia Strait PKE-1 (Green/Amber), Southern Fjords PKE-3 (Green/Red), Georgia Strait PKO-3 (Green), Southern Fjords PKO-7 (Green/Amber), Homathko-Klinaklini-Smith-Rivers-Bella Coola-Dean PKO-8 (Green/Amber). These

[1] www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/ecosystems/habitatwizard
[2] https://a100.gov.bc.ca/pub/fidq/viewWatershedDictionary.do

assessments were based off increasing abundance trends observed in odd year Pink Salmon runs (Irvine et al. 2014). The Pacific Salmon Foundation was able to provide a slightly more detailed assessment of the A-Tlegay Member Nations Mainland Inlet Territory with all but two CUs having been assessed. Roughly half of those CUs were again Data Deficient, of the remaining seven, five were the Pink Salmon CUs, and two were Chum Salmon, Georgia Strait (Green) and Loughborough (Red). It is worth noting that the PSF assessments were based on percentages of historical spawner abundance which required over 20 years of data, at least one CU-level spawner abundance estimate, and no known low production or high exploitation (PSF 2022). Finally, COSEWIC reported 39.1% of the CUs to be Data Deficient, 56.5% were not assessed, and one, Chinook East Vancouver Island North was assessed as Not at risk.

3.2 Escapement Reporting by Species

Not all recognized spawning populations have escapement records available, especially within the last 20 years for waterbodies within the A-Tlegay Member Nations Mainland Inlet Territory (Table 1). There are very few reported or potential Chinook Salmon spawning sites recognized by DFO at 31 and less than half those runs had reported escapement. DFO recognizes twice as many Coho (61) and Chum (62) spawning sites and of those sites both have higher overall escapement reporting at 52% and 58%. There were fewer recognized Pink Salmon spawning sites than Coho or Chum at 50 runs, however, 68% had reported escapement data. Sockeye Salmon was the only species with both fewer recognized runs (29) and lower overall escapement monitoring (29%).

3.3 Escapement Spatial Monitoring

Escapement records in the last 20 years (i.e., 2001−2020) have also shown a decline relative to historical records (i.e., 1934−1993) with all species showing a precipitous reduction in the number of sites actively monitored (Figure 2a), the percentage of recognized spawning sites with coverage (Figure 2b), and the average yearly monitoring effort (Figure 2c). Across all three metrics, Chinook Salmon fared poorly, especially in the last 20 years. Only a third of Chinook Salmon spawning sites have any type of monitoring coverage as compared to the historical period where there was some type of reporting occurring in 86% of the spawning sites. Total monitoring effort dedicated to Chinook Salmon was also very low with on average only 2.7 sites monitored each year, as compared to 17.2 for Pink Salmon and a historical peak of 26.9 sites per year for Chum Salmon. This is concerning, as historically Chinook Salmon had similar monitoring coverage to Coho, Chum, and Pink salmon, but in more recent years, Chinook Salmon monitoring has undergone the largest decline in terms of monitoring coverage.

3.4 Escapement Monitoring Method Distribution

In addition to spatial coverage, effective monitoring programs also require consistent reporting over time with high quality methods. The percentage of recent years (i.e., 2005−2021) with escapement records varied greatly by site and species (Figure 3 and Table 1). Chinook and Sockeye salmon generally showed a poor year-over-year coverage, with a lower percentage of years with escapement records. For Chinook Salmon, only the Phillips River run had reported escapement every year in the last 20 years but consisted of a relative abundance measure (Table 1). For Chinook Salmon, only escapement in the Phillips River involved true abundance estimates (see Appendix A1 for definitions) with good year-to-year coverage (Table 1). The sections that follow detail the current monitoring and resultant known escapement estimates for Chinook, Coho, Chum, Pink, and Sockeye salmon within the A-Tlegay Member Nations Mainland Inlet Territory, providing a more detailed analysis how monitoring efforts have evolved for each species over time within the Mainland Inlet region.

4 Species Specific Breakdown

4.1 Chinook Salmon

Within the A-Tlegay Member Nations Mainland Inlet Territory, there are 31 distinct Chinook Salmon runs recognized by DFO that occur in the five designated Chinook Salmon conservation units that intersect with the territory (Holtby and Ciruna. 2007). The conservation units include the Southern Mainland-Georgia Strait (fall-run; CK-20), Southern Mainland-Southern Fjords (fall-run; CK-28), East Vancouver Island-North (fall-run; CK-29), Homathko (summer-run; CK-34), and Klinaklini (summer-run; CK-35; Figure 4). In addition to the 31 runs recognized by DFO, there were also an additional four incidental Chinook Salmon observations within the territory that may represent either straying or potentially additional runs not currently considered by DFO.

For the five conservation units' assessments within the Mainland Inlet Territory, there was typically insufficient information to determine the biological status, an important component of the Wild Salmon Policy (i.e., Strategy 1 under the Assessment umbrella). Official assessments of CU status under the Wild Salmon Policy (WSP) determined that two were Data Deficient and one, East Vancouver Island-North (CK-29), was assessed as Poor (DFO 2016; Table 2). The remaining two CUs were not assessed. Interestingly, COSEWIC determined that four of five CUs were Data Deficient, but assessed East Vancouver Island-North as Not at Risk. Alternatively, the Pacific Salmon Foundation found all five CUs to be Data Deficient (Table 2). Broken down into the run monitoring coverage that feeds the biological assessments, a downward trend in total run monitoring coverage was observed across all five CUs (Table 2). For Chinook Salmon within the Mainland Inlet Territory, historical escapement reporting (i.e., 1953−1994) stood at 33%. Starting in 1995, the DFO Science section took over official oversite of salmon enumeration within DFO, assumingly adding more rigour to the enumeration process. Shortly afterward, the Wild Salmon Policy was released in 2005 providing an official federal policy on salmon monitoring, management, and restoration (DFO 2005). During this transition period (i.e., 1995−2004), area wide escapement monitoring coverage continued to decline dropping by a little over half to 15% of all runs and years having an estimate of escapement. In the recent years since the release of the Wild Salmon Policy (i.e., 2005−2021), reporting has continued to drop further falling by nearly half again to just 8%, with monitoring coverage for some the CU having fallen to zero (e.g., Klinaklini; Table 2).

Reviewing monitoring history of individual runs reveals further issues with an often-patchy nature of monitoring in the territory (Figure 6). Except for a few key systems (e.g., Phillips River) the majority of runs only had intermittent monitoring or had relatively continuous monitoring that was interrupted prior to salmon enumeration moving to DFO Science (e.g., Southgate River, Stafford River, and Teaquahan River), or just after the transition (e.g., Homathko River and Klinaklini River [Run 1]), with only one in recent years (e.g., Apple River). The breaking of long-term monitoring time series is concerning from a management perspective as it inhibits assessment of long-term trends which can be a critical component of status assessments. Breaking time series within conservation units is especially concerning as limits or removes the ability to assess the biological status of the conservation unit. Each conservation unit represents a genetically distinct unit that under the Wild Salmon Policy should be considered when determining the course of management actions. This is especially concerning in conservation units where termination in run monitoring occurs for the only consistently monitored run in that conservation unit which effectively removes the ability to assess the biological status of that conservation unit (i.e., Klinaklini River [CK-35] and Homathko River [CK-34]). In both cases, all runs within the conservation units occur within the A-Tlegay Member Nations Mainland Inlet Territory, raising conservation implications for both DFO management and for A-Tlegay Member Nations given the proximity of these conservation units to Mark Selective Fisheries (MSFs; Figure 5).

Concurrent with these general declines in monitoring, the spatial scope of escapement monitoring within the A-Tlegay Member Nations Mainland Inlet Territory has also undergone a substantive contraction with a primary focus on the Phillips River (Figure 5 and Figure 6). While historically there were continuous monitoring efforts in both Klinaklini (CK-35) and Homathko (CK-34), these monitoring efforts have been terminated in favour of a focused effort on the central portion of the Southern Fjords (Figure 6). The refocusing of monitoring efforts within the territory can also be seen in the near complete cessation of monitoring in Southern Mainland-Georgia Strait (CK-20) and the reduction of monitoring along the Toba Inlet in Southern Mainland-Georgia Strait (CK-28; Figure 5 and Table 2). As a result, within the A-Tlegay Member Nations Mainland Inlet Territory, almost all remaining monitoring effort has been focused on the Phillips River with only a spattering of estimates in other systems in recent years (Figure 6 and Table 2).

Over the same period reported, abundances have also shown a general decline relative to historically reported escapement (Figure 7). That said, there have been exceptions such as Phillips River (Run 1) and Klinaklini River (Run 1) which both showed increases at the end of the time series. For Phillips River, abundances where highest in the most recent years, while for Klinaklini River, monitoring ended in the transition period (i.e., before the release of the Wild Salmon Policy) so it is unclear whether this trend continued to present. For most other runs, there has generally been a decline in Chinook Salmon abundances which likely corresponds to regional declines in Chinook Salmon (Riddell et al. 2013). There also has been a change in enumeration methodologies over this time (i.e., see Figure 6), which can confound estimates of temporal trends, making it difficult to track true changes in productivity over time.

The shift in DFO monitoring priorities, either intended or unintended, to systems in the Southern Fjords (i.e., primarily Phillips River) has put DFO in a compromised position when it comes to assessing the impacts of the fishery activity in the MSF areas. From a management perspective, the intact and relatively high quality escapement data (i.e., see Appendix A1 for rating details) available for the Phillips River makes it a useful indicator of the surrounding area, which is likely why DFO has indicated this run as an indicator run (i.e., see Table 4). While the Phillips River may be a useful indicator for the Southern Fjords, the impacts from MSF areas on the Southern Fjords runs be expected to be lower than other areas where MSF areas act as terminal fisheries. In terminal fisheries a stock or run of salmon are forced to go through the fishery during the adult migration due to the positioning of a fishery within an inlet that is the terminal marine inlet along the migration pathway. This allows the fishery to directly target a specific stock or run, while largely avoiding interceptions of other runs or stocks. Selectively harvesting specific runs or stocks can be an effective management strategy if the stocks or runs harvested are productive and healthy and stocks that are not productive or are in danger of being over fished are avoided. However, there is insufficient information to assess most runs, so it is unclear if the current MSF areas are logical from a conservation perspective.

The lack of recent monitoring data for most runs in the mainland inlet territory means that the impact of the MSF areas cannot be adequately assessed. The Bute Inlet MSF and Knight Inlet MSF act as terminal fisheries for comparison the Homathko (CK-34) and Klinaklini (CK-35) conservation units and yet escapement monitoring in both conservation units has been sporadic with no intact time series for either area in recent years. Given the critical importance of conservation units in the Wild Salmon Policy, directly targeting two conservation units without anyway to monitor potential impacts of these fisheries on those conservation units would appear to be a critical oversight from a management perspective. For these conservation units DFO cannot fulfill Strategy 1 under the Wild Salmon Policy (i.e., standardized monitoring) let alone ensure that Bute Inlet MSF and Knight Inlet MSF are not having an undue burden on either conservation unit. Adding further to the conservation concern both conservation units are summer-run Chinook, represent a small proportion of the total runs in the territory (i.e., four of 31 Chinook total runs in the area are summer-run; Table 2). Generally, from a conservation perspective it is important to ensure that undue pressure is not placed on rarer run timing groups. If used judiciously terminal fisheries present an opportunity to fine tune these sorts of impacts. However, this does not appear to be the case as there the lack of escapement data in both conservation units implies that the impact of these terminal fisheries cannot be assess largely defeating the primary purpose of employing terminal fisheries (i.e., the ability to exclusively target stocks or runs that are known to be productive and healthy). Without adequate monitoring data any statements on the lack of impacts on these conservation units must be taken on faith alone. Similarly, the Toba Inlet MSF acts as a terminal fishery for all the A-Tlegay runs in the Southern-Mainland-Georgia Strait [CK-20] (see Table 3). The conservation is lower as there are other runs in this conservation unit not being considered in this analysis (see Table 3), but still represents a serious concern for A-Tlegay Member Nations as there is no consistent monitoring data for any of these territory runs being directly targeted by that the Toba Inlet MSF (Figure 6).

Currently, within the territory the only Phillips River has consistent escapement records allowing for an assessment of potential impacts from fishery activity, but no MSF area acts as a terminal fishery to the Phillips River implying that any impact will be reduced relative to other runs or conservation units being currently targeted. Interception rates of Phillips River Chinook will be lower than other runs (e.g., Homathko or Klinaklini) as the Phillips River population will only be targeted through straying of the run into the MSF areas (e.g., Knight Inlet MSF and Bute Inlet) which could potentially happen during migration. This does not, however, mean that significant straying will occur, rather that the only way for these MSF areas to impact Phillips River Chinook is through and indirect process. As such any impacts for from MSF areas will be greatly reduced relative to other runs. This highlights the critical gap that has emerged in DFO's monitoring program within the territory and indicates the immediate need to expand monitoring in some of the areas that will be critically impacted by the MSF areas.

4.2 Coho Salmon

Within the A-Tlegay Member Nations Mainland Inlet Territory, there are 63 distinct Coho Salmon runs recognized by DFO that occur in the four designated Coho Salmon conservation units that intersect the territory (Holtby and Ciruna 2007; Figure 8). The conservation units include the Georgia Strait Mainland (CO-11), Southern Coastal Streams − Queen Charlotte Strait − Johnstone Strait − Southern Fjords (CO-12), East Vancouver Island − Georgia Strait (CO-13), and Homathko−Klinaklini rivers (CO-19) (Table 4).

None of the four CUs were assessed by either the WSP or by COSEWIC. The Pacific Salmon Foundation (PSF) found all four CUs to be Data Deficient (Table 4). Again, when the run monitoring coverage is broken down, all four CUs have shown decline across the historic, transition, and modern reporting periods in the same pattern as Chinook Salmon. For Coho Salmon within the Mainland Inlet Territory, historical escapement reporting stood at 49% which was slightly higher than for Chinook Salmon (33%). During this transition period, area wide escapement monitoring coverage had dropped by nearly in half to 30% (Chinook 15%). In the recent years, reporting has dropped by nearly half again to just 17%. (Chinook 10%). Unlike Chinook Salmon, however, all of the CUs maintain some run monitoring coverage. Further, the East Vancouver Island-Georgia Strait CU has shown a relatively small decline, going from 87% run monitoring coverage over the historic period to 70% during the recent period (Table 4, Figure 9).

Most the reported escapement data from the transitional and modern periods use relative abundance measures with some true abundance and presence/absence reporting. Although there are some runs with relatively intact data time series in most CUs, reporting across the runs in general is patchy – with multi-year gaps in data observed (Figure 10, Table 5). Conservation unit, CO-19 Homathko−Klinaklini, is particularly concerning as there appears to be no data from the 2010s until present with the exception of one recent data point of no escapement. To add to the confusion, reported relative escapement data for Klinaklini River (run 1) was high and in fact showed an increasing trend in relative abundance during the transitional period until all monitoring stopped after the implementation of the WSP (Figure 11). For nearly all the remaining Coho runs and CUs within the A-Tlegay Member Nations Mainland Inlet Territory, the relative abundance shows clear decline over time. Several of the Coho Salmon runs across CUs also have the potential to interact via bycatch with the mark selective fisheries in Bute, Toba, and Knight inlets. This includes the Homathko−Klinaklini conservation unit and indicator stream Klinaklini River (run 1) which no longer has escapement monitoring (Table 5).

4.3 Chum Salmon

Within the A-Tlegay Member Nations Mainland Inlet Territory, there are 62 distinct Chum Salmon runs recognized by DFO that occur in the four designated Chum Salmon CUs that intersect with the territory (Holtby and Ciruna 2007; Figure 12). The conservation units include Georgia Strait (CM-4), Loughborough (CM-6) Bute Inlet (CM-7) and Upper Knight (CM-9). In addition to the 62 recognized runs, there were an additional 9 incidental Chum Salmon observations within the territory.

As with Coho Salmon, none of the four CUs were assessed by either WSP or by COSEWIC. The Pacific Salmon Foundation, however, found two of the CUs to be data deficient (Bute Inlet and Upper Knight) while Georgia Strait was assessed as good, and Loughborough was assessed as poor (Table 6). Georgia Strait and Loughborough were both assessed using percentiles of historical spawner abundance benchmarks.

All four CUs show decline across the historic, transition and modern reporting periods. Historical escapement reporting stood at 50% across all runs over the period, the highest amongst all the Pacific salmon species. Despite this, reported escapement coverage dropped to 33% during the transitional period and now sits at 21%. Bute Inlet and Upper Knight conservation units displayed the sharpest declines in escapement reporting coverage. Bute Inlet (CM-7) has seven officially recognized runs within the A-Tlegay Member Nations Mainland Inlet Territory, during the historical period reporting coverage was 54% and has dropped to 17% during the modern period. Upper Knight (CM-9) has two runs that intersect the territory with reporting coverage across those runs at 63% during the historical period, escapement reporting coverage is currently 0% (Table 7, Figure 13).

Compared to other Pacific salmon species, a relatively intact time series for Chum escapement data exists (Figure 14). The majority of the reported data for the transitional and modern reporting periods uses relative abundance measures with some true abundance and presence/absence reporting. Despite the robustness in terms of methodology, or perhaps because of it, most runs show lower reported abundances over time. This is especially evident during the modern reporting period (Figure 15). There is, however, also evidence that some systems may be rebounding such as Granit Bay Creek in CU CM-6 Loughborough. From what is presented in this report, it appears that there is sufficient data for DFO to preform status assessments on several Chum Salmon CUs for the Wild Salmon Policy.

4.4 Pink Salmon

Within the A-Tlegay Member Nations Mainland Inlet Territory, there are 92 distinct Pink Salmon runs recognized by DFO that occur in the five designated Pink Salmon CUs that intersect with the territory (Holtby and Ciruna 2007; Figure 16, Figure 17). Pink Salmon CUs are designated based on even and odd year runs, with even year CUs including Georgia Strait (PKE-1) and Southern Fjords (PKE-4) and odd year CUs including Georgia Strait (PKO-3), Southern Fjords (PKO-7) as well as Homathko-Klinaklini-Smith-Rivers-Bella Coola-Dean (PKO-8). In addition to the 92 recognized runs, there were an additional 7 incidental Pink Salmon observations within the territory.

None of the five CUs were assessed by either WSP or by COSEWIC. The Pacific Salmon Policy, however, found even year Georgia Strait CU as Good while the odd year Georgia Strait CU has been assessed as Fair. Similarly, the even year Southern Fjords were found to be Fair while the odd year Southern Fjord CU was assessed as Poor. The final conservation unit, Homathko-Klinaklini-Smith-Rivers-Bella Coola-Dean, was assessed as poor as well (Table 8). All Pink Salmon CUs were assessed by PSF using benchmarks based on spawner-recruitment relationships rather than percentiles of historical spawner abundance benchmarks. Pink Salmon were the only Pacific salmon species with enough robust and reliable spawner-recruitment data to use this method.

Perhaps more evidently with Pink, than with the other species, is the reduction in spatial monitoring efforts (Figures 18 and 19). Monitoring along the inlets has stopped across coastal length of the A-Tlegay Member Nations Mainland Inlet Territory (Table 9). The majority of the reported data for the transitional and modern reporting periods again use relative abundance measures with some true abundance and presence/absence reporting across both ocean and river type CUs (Figures 20 and 21). Overall, river type CUs had higher levels of relative abundance and higher levels of escapement monitoring (Figures 22 and 23).

4.5 Sockeye Salmon

Within the A-Tlegay Member Nations Mainland Inlet Territory, there are 29 distinct Sockeye Salmon runs recognized by DFO that occur in the five designated Sockey Salmon CUs that intersect with the territory (Holtby and Ciruna 2007; Figures 24 and 25). The conservation units include lake type Fulmore (SEL-11-01), lake type Heydon (SEL-11-02), lake type Phillips (SEL-11-06), river type East Vancouver Island and Georgia Strait (SER-08) and the Southern Fjords (SER-09). There are an additional two CUs listed, lake types Village Bay (Sel-11-10) and Glendale (SEL-11-12), however, there is no biological status data available for those CUs and there is question as to their active status. In addition to the 29 recognized runs there were an additional 3 incidental Sockeye Salmon observations within the territory.

None of the five CUs were assessed by either WSP or by COSEWIC. The Pacific Salmon Foundation, however, found all CUs to be data deficient (Table 10). Escapement monitoring for Sockeye Salmon reflects a slightly different narrative than that of other Pacific salmon species. Historical escapement reporting stood at 16% across all runs within the territory which equates to 14 runs with monitoring data. There was a significant increase in the number of runs with reported escapement data during the transition period. Runs monitored increased to 27 with an overall percentage increase to 20%. Unfortunately, those numbers declined again after the introduction of the WSP and have fallen to a record low of 10% (Table 10, Figures 26 and 27).

With the exception of one or two waterbodies within lake type Sockeye CUs that have relatively intact time series, reporting for Pink Salmon is almost non-existent after the introduction of the WSP. This is especially evident in ocean type Sockeye Salmon CUs (Figure 28). Unsurprisingly, the same trend is reflected in relative reported abundance with a spike of high escapement numbers during the increased monitoring followed by a sharp decline (Figure 29). Only three systems have reported high returns since 2005, Clearwater Creek in SEL-11-06 and Orford River and Read Creek in SER-09 with the last high returns occurring in the early 2010s.

5 Key Findings

The WSP was presented as the federal governments strategy to meet its' obligations to protect and conserve natural Pacific salmon populations (DFO 2005; Cohen 2012a). The WSP has three stated objectives 1) Safeguard the genetic diversity of wild Pacific salmon; 2) Maintain habitat and ecosystem integrity; and 3) Manage fisheries for sustainable benefits. As part of the policy there are key strategies put forth to meet these objectives, the first being standardized monitoring of wild salmon status (DFO 2005). Within this strategy, provisions are made for wild salmon in BC due to the complex nature of these populations. The policy would therefore use three levels of annual monitoring programs reducing in complexity, resolution, and robustness. Extensive data collection from Indicator streams would be used to indicate CU-wide production. Intensive monitoring annually of a small subset of geographically significant systems would be used to pinpoint habitat and inter-annual trends and broad Extensive monitoring would be done for presence/absence estimates. For each CU, a monitoring plan would be designed through local partnerships to assess annual abundance and distribution of spawners (DFO 2005).

Across the A-Tlegay Member Nations Mainland Inlet Territory there is an overall lack of data and a steep decline in escapement monitoring effort. This decline is reflected in reduced spatial and temporal reporting for all Pacific Salmon species in the region. This has led to the current state of unclear population abundances, unquantifiable populations, and population fluctuations as well as a serious risk for unseen and unmitigated Pacific salmon decline. There are 23 active Pacific salmon CUs that intersect the Mainland Inlet Territory each supposedly, with its own management plan. The data, however, would suggest an over reliance on one or two key multi-species systems to give an overall indication of CU production and health in the region. As a result, across the territory, there are pockets of waterbodies with high resolution abundance data (i.e., Phillips River) providing the basis for fisheries management decisions while there is a clear massive reduction in northern monitoring evident. This includes cessation of monitoring within a CU altogether for some Pacific salmon species.

Due in part to the paucity of data, the majority of CUs that intersect the Mainland Inlet region have not been assessed for biological status. There have been no official DFO assessments for the Wild Salmon Policy for all Coho, Chum, Pink, and Sockeye salmon conservation units. Three of the five intersecting Chinook Salmon conservation units were, however, assessed. Homathko and Klinaklini CUs were found data deficient and East Vancouver Island North, was assessed to be poor. Chinook Salmon was also the only species assessed by COSEWIC. In that instance, four of the five CUS were found data deficient and interestingly East Vancouver Island North was found "Not at risk". Although promising that there is some assessment occurring within the region, physically speaking, Homathko, Klinaklini, and East Vancouver Island North CUs cover relatively small proportions of the A-Tlegay Member Nations Mainland Inlet Territory (Figure 4). The outcome of these assessment, therefore, cannot be broadly applied to the Mainland Inlets region nor do they give an accurate representation of specific stocks within the region such as COSEWIC's Not at-risk status for East Vancouver Island North.

5.1.1 Chinook Salmon Key Findings

Compared to historical efforts, Chinook Salmon escapement monitoring has undergone substantial declines over time to the point that only one current Chinook run (i.e., Phillips River) has an intact time series that can be used to monitor long-term changes in escapement. This raises both serious conservation and management issues especially when determining the impact of proposed MSF areas. Currently the Phillips River run is positioned roughly in the core of the Southern Fjords and will not be directly targeted by any of the proposed MSF areas. This implies that the only Chinook Salmon run with the territory that has an intact monitoring timeseries will also be expected to experience the lowest fishery impact from proposed MSF areas. In contrast, runs and conservation units that can be expected to experience the largest impacts from the proposed MSF areas currently have the least monitoring effort, including two Chinook Salmon conservation units that will be directly targeted by the proposed Bute Inlet and Toba Inlet MSF areas. Without monitoring data there will be no way to adequately assess the impact of these proposed fisheries and suggests a strong discordance between stated policy (i.e., the Wild Salmon Policy) and how fishery programs such as escapement monitoring are being implemented in the A-Tlegay Member Nations Mainland Inlet Territory. At the current level of analysis, there appears to be very little connection between these two components suggesting that the impacts of proposed MSF areas were either viewed to be negligible by DFO or that conservation concerns relative to these proposed fisheries was not fully considered.

Currently, it is not clear whether, from a conservation perspective, the Bute Inlet, Knight Inlet, and Toba Inlet MSF areas are compatible with the current DFO monitoring scheme. Both the Bute Inlet and Knight Inlet MSF areas will be terminal fisheries to two conservation units, which could represent a disproportionate impact in the territory, yet there will be no way to assess this potential impact. Even if escapement monitoring was immediately started within both conservation units, the lack escapement data prior to the start of the fisheries would severely hamper the ability to make any assessments due to an unknown the before period. Adding further concern, both effected conservation units (i.e., Homathko and Klinaklini) represent a unique run timing (i.e., summer-run) with potential impacts from the fisheries representing a more significant conservation concern. Of the two conservation units, Homathko appeared to have runs of moderate abundance that appears to have declined (Table 3), which would suggest additional conservation concerns associated with the Bute Inlet MSF. Finally, similar to the Bute Inlet and Knight Inlet MSF areas the Toba Inlet MSF also acts as a terminal fishery for runs that have very little monitoring data suggesting the impact on these runs cannot be directly assessed either. Taken together all MSF areas within the territory appear to directly target runs where there is insufficient monitoring data to allow for an assessment of the impact of these fisheries.

6 Recommendations

The assessment of Pacific salmon escapement monitoring has also highlighted some concerns but also opportunities across the A-Tlegay Member Nations Mainland Inlet Territory:

- There should be no further degradation of the escapement monitoring currently occurring in the Mainland Inlet Area.
- DFO and the A-Tlegay Nations should work to develop a comprehensive escapement monitoring program that meets the interests and priorities of both DFO and the A-Tlegay Nations. This could be discussed at a future workshop after the report has been finalized.
- **Implications of Mark Selective Fisheries on Chinook Salmon: Chinook Salmon stocks** terminal to the Bute, Knight, and Toba inlet MSFs should have monitoring programs, including escapement as well as enhanced monitoring of fisheries (including DNA for stock composition), put in place to begin to evaluate the potential effects, not only to targeted Chinook Salmon, but also to potential by-catch species such as Coho Salmon.
- **Genetic Baseline**: The absence of the genetic baseline for most of the Mainland Inlet salmon needs to be addressed as it handicaps understanding the potential impacts to these stocks from fisheries.
- **Accessible Stream Length:** Potential stream length accessible to Pacific salmon was defined as anadromous stream length (km) with a 7% gradient limit to represent more productive habitats (using Coho Salmon accessibility). A key unknown is the presence and condition of both natural and human caused barriers. For the following systems (see Table 1) that have significant accessible

stream length (>25 km) and limited escapement enumeration data, we suggest a project to investigate barriers and confirm the accessible length for salmon and habitat suitability: Cumsack Creek (Chinook, Chum, Coho, and Pink), Filler Creek (Chum), Franklin River (Chinook, Chum, and Coho), Hemming Bay Creek (Chum, Coho, and Pink), Homathko River (Chinook, Chum, Coho, Pink, and Sockeye), Klinaklini River (Chinook, Chum, Coho, Pink, and Sockeye), Little Toba River (Chinook, Chum, Coho, and Pink odd-run), Southgate River (Chinook, Chum fall-run, Coho, Pink, and Sockeye), Toba River (Chinook, Chum, Coho, and Pink) and Village Bay Breek (Chum, Coho, Pink, and Sockeye).

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TABLES

Table 1. List of species, run timing stocks and potential Anadromous habitat by water bodies, in the A-Tlegay Member Nations Mainland Inlet Territory currently recognized in NuSEDS since the commencement of the Wild Salmon Policy (i.e., recent reporting). Percentage indicates the proportion of years with reported escapement values, with corresponding colour shading indicating the typical enumeration methodology used (see Appendix A1). Grey shading indicates salmon runs recognized by DFO, but without any recent escapement information. Slope 10 represents the upper gradient limit for Coho with Slope 7 as the mean Coho gradient.

Water Body	Run Type	Chinook	Chum	Coho	Pink (even)	Pink (odd)	Sockeye	Total Runs	Anadromous KMs 10%	Anadromous KMs 7%
Apple River	1	33%	28%	39%	17%	22%	6%	6	33.71	30.70
Bachus Creek	1							1	1.20	1.10
Bird Cove Creek	1		61%	33%				2	2.75	2.75
	2							1		
Blind Creek	1							2	12.33	11.73
	2							1		
Bond River No. 1	1							2	0.10	0.10
Boughey Creek	1							4	6.96	0.90
Brem River	1		50%	22%	6%	11%		5	2.62	2.13
Brem River Tributary	1							5	--	--
Call Creek	1		33%	11%	22%	11%		4	1.30	0.70
Cameleon Harbour	1							4	2.17	2.17
Chonat Creek	1							3	0.10	0.10
Clearwater Creek	1	50%	50%	39%	33%	44%	78%	6	6.50	6.05
Cracroft Creek	1							2	4.40	4.40
Cumsack Creek	1			11%				5	30.74	29.73
Deepwater Bay Creek	1							1	4.23	0.50

Water Body	Run Type	Chinook	Chum	Coho	Pink (even)	Pink (odd)	Sockeye	Total Runs	Anadromous KMs 10%	Anadromous KMs 7%
Elephant Creek	1							1	0.30	0.30
Estero Creek	1							2	2.60	2.30
Fanny Bay Creek	1							6	1.40	1.00
Filer Creek	1							1	57.55	55.95
Franklin River	1							3	45.19	39.64
Frazer Creek	1	6%	61%	17%	33%	39%	11%	6	1.74	0.84
Frederick Arm Creek	1							3	2.70	2.70
Fulmore River	1		72%	33%		6%	11%	6	1.09	0.89
	2							1		
George Creek	1							1	3.30	0.20
Glendale Creek	1	6%	11%	6%	33%	39%		6	0.10	0.10
	2							1		
Granite Bay Creek	1		94%	94%				6	0.10	0.10
	2							1		
Grassy Creek	1		28%	6%	17%	6%		5	14.86	3.00
Gray Creek	1		44%	17%	39%	33%		5	2.41	2.41
Hemming Bay Creek	1							4	37.95	25.04
Heydon Creek	1	17%	39%	39%	17%	17%	61%	6	39.17	1.80
Homathko River	1	11%	11%	33%				6	1,212.64	354.14
Hyacinthe/McKercher Creek	1							6	7.55	5.20
Jack Creek								2	1.20	0.30

Water Body	Run Type	Chinook	Chum	Coho	Pink (even)	Pink (odd)	Sockeye	Total Runs	Anadromous KMs 10%	Anadromous KMs 7%
Kamano Bay Creek	1							4	3.11	2.52
Kanish Creek	1							5	0.03	0.03
Klinaklini River	1							6	335.08	329.17
	2							2		
Klite River	1	11%	39%	22%	6%	6%		6	20.46	7.33
Knox Bay Creek	1							5	13.70	1.10
Little Toba River	1							4	57.32	34.41
New Vancouver Creek	1							4	4.48	4.38
Open Bay Creek	1		94%	39%		11%		4	7.26	6.40
Orford River	1	22%	94%	89%	33%	39%	11%	6	19.00	16.10
	2		6%					1		
Owen Creek	1							2	5.32	3.30
Phillips River	1	94%	67%	89%	44%	44%	78%	6	87.52	73.65
	2							2		
Port Harvey Lagoon Creeks	1							1	0.20	0.10
Potts Lagoon Creek	1							2	4.78	3.98
Protection Point Creek	1							4	9.62	7.58
Protection Point Creek	2							1		
Quatam River	1	22%	67%	94%	22%	44%	6%	6	10.29	9.49
Read Creek	1	17%	83%	56%	44%	39%	11%	6	25.08	1.60
Robbers Knob Creek	1							6	3.80	3.00

Water Body	Run Type	Chinook	Chum	Coho	Pink (even)	Pink (odd)	Sockeye	Total Runs	Anadromous KMs 10%	Anadromous KMs 7%
Shoal Creek	1							4	4.40	2.80
Southgate River	1	6%		6%				5	182.80	173.48
	FALL							1		
			6%					1		
St. Aubyn Creek	1							3	0.57	0.57
Stafford River	1							6	1.10	1.10
Tahumming River	1							4	0.69	0.69
								1	0.69	0.69
Teaquahan River	1			6%				5	13.24	12.94
Thurston Bay Creek	1							4	0.30	0.30
Toba River	1	6%	22%	6%				5	144.55	139.58
Tuna River	1							5	12.60	12.60
	2							1		
Village Bay Creek	1							5	33.77	27.65
Waiatt Bay Creek	1		11%	6%				2	0.02	0.02
Whiterock Pass Creek	1							2	3.28	3.28
	2							1		
Wortley Creek	1		67%	33%	39%	11%	6%	5	0.70	0.70
							Total	275		

Table 2. **Summary of Chinook Salmon conservation unit biological status and escapement monitoring over biological status.** Runs represent unique Chinook Salmon population recognized within NuSEDS. Coverage indicates the percentage of years across all runs where escapement estimates were available. Biological status came from three sources: WSP = Wild Salmon Policy; PSF = Pacific Salmon Foundation; COSEWIC = Committee on the Status of Endangered Wildlife in Canada. Biological status codes include: NA = Not Assessed; DD = Data Deficient; RED = Poor Status. Historical = 1954−1995; Transition = 1995−2004; Recent = 2005−2022.

CU Index	CU Name	Biological Status			CU Runs		A-Tlegay Runs		Runs Monitored (Coverage)					
		WSP	PSF	COSEWIC	Total	Indicator	Runs	Indicator	Historical		Transition		Recent	
CK-20	SOUTHERN MAINLAND-GEORGIA STRAIT_FA_0.x	NA	DD	DD	39	0	7	0	6	(35%)	1	(3%)	3	(6%)
CK-28	SOUTHERN MAINLAND-SOUTHERN FJORDS_FA_0.x	NA	DD	DD	28	6	18	2	14	(29%)	9	(17%)	9	(14%)
CK-29	EAST VANCOUVER ISLAND-NORTH_FA_0.x	RED	DD	Not at Risk	19	4	2	0	1	(2%)	2	(10%)	1	(3%)
CK-34	HOMATHKO_SU_x.x	DD	DD	DD	2	0	2	0	2	(62%)	1	(15%)	1	(6%)
CK-35	KLINAKLINI_SU_1.3	DD	DD	DD	2	1	2	1	2	(48%)	1	(45%)	0	(0%)
				Area Wide:	90	11	31	3	25	(32%)	14	(15%)	14	(10%)

Table 3. **Summary of Chinook Salmon escapement monitoring coverage and escapement values by water body, conservation unit, and monitoring period in the A-Tlegay Member Nations Mainland Inlet Territory.** Values indicate percentage of years with escapement values, average escapement within a period and range of escapement is indicated in parentheses. Cell shading within epoch columns indicates class of estimator (see Appendix A1), grey shading indicates unknown methods. Indicator populations have bolded text with a light blue background. Ind. = Indicator run.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CK-20: Southern Mainland-Georgia Strait_FA_0.X				35% / 4,956 (1–25,000)	3% / 9 (3–15)	6% / 12 (0–40)	
50508	Brem River	Run 1	N	21% / 947 (2–2,000)			Terminal to Toba Inlet MSF.
50518	Brem River Tributary	Run 1	N	2% / 1			Terminal to Toba Inlet MSF.
50468	Klite River	Run 1	N	67% / 1,229 (2–7,500)		12% / 24 (7–40)	Terminal to Toba Inlet MSF.
50478	Little Toba River	Run 1	N	62% / 1,365 (5–8,000)			Terminal to Toba Inlet MSF.
50528	Quatam River	Run 1	N	29% / 196 (25–1,500)	20% / 9 (3–15)	24% / 3 (0–7)	Terminal to Toba Inlet MSF.
50498	Tahumming River		N				Terminal to Toba Inlet MSF.
49802	Toba River	Run 1	N	67% / 3,310 (32–12,000)		6% / 0	Terminal to Toba Inlet MSF.
CK-28: Southern Mainland-Southern Fjords_FA_0.X				29% / 4,649 (122–11,300)	17% / 365 (55–1,175)	15% / 1,670 (137–3,520)	
50658	**Apple River**	**Run 1**	**Y**	**52% / 462 (50–1,500)**	**50% / 54 (4–200)**	**35% / 30 (6–130)**	
50618	Clearwater Creek	Run 1	N			53% / 16 (1–78)	
50628	Fanny Bay Creek	Run 1	N		10% / 2		
50868	Franklin River	Run 1	N	33% / 596 (75–1,500)			Terminal to Knight Inlet MSF.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50678	Frazer Creek	Run 1	N	7% / 17 (1–25)		6% / 0	
50738	Fulmore River	Run 1	N	14% / 121 (25–200)			
50848	Glendale Creek	Run 1	N	10% / 16 (2–25)	10% / 50	6% / 0	
50688	Heydon Creek	Run 1	N	5% / 25 (25–25)	50% / 5 (1–10)	18% / 1 (1–2)	
50538	Orford River	Run 1	N	79% / 360 (10–1,500)	10% / 50	24% / 10 (0–25)	3 (Recent) broodstock removals. Terminal to Bute Inlet MSF.
50618	**Phillips River**	**Run 1**	**Y**	**100% / 678 (100–3,000)**	**100% / 218 (20–411)**	**100% / 1,649 (134–3,520)**	**876 (Recent) and 47 (Transition) broodstock removals.**
50619	Phillips River	Run 2	N		20% / 110 (70–150)		
50708	Read Creek	Run 1	N			18% / 2 (0–4)	
50748	Robbers Knob Creek	Run 1	N	2% / 25			
50728	Shoal Creek	Run 1	N	2% / 25			
50548	Southgate River	Run 1	N	83% / 3,607 (500–7,500)	10% / 500	6% / 0	Terminal to Bute Inlet MSF.
50668	Stafford River	Run 1	N	74% / 65 (2–200)	50% / 71 (10–225)		
50558	Teaquahan River	Run 1	N	67% / 254 (75–750)			Terminal to Bute Inlet MSF.
50718	Tuna River	Run 1	N	2% / 5			

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CK-29: East Vancouver Island-North_FA_0.X				2% / 25 (25–25)	10% / 4 (3–4)	3% / 1	
52868	Granite Bay Creek	Run 1	N		10% / 3		
52848	Hyacinthe Creek/ McKercher Creek	Run 1	N	5% / 25 (25–25)	10% / 4	6% / 1	
CK-34: Homathko_SU_x.x				62% / 4,003 (200–9,700)	15% / 1,100 (500–2,000)	6% / 134 (0–267)	
50578	Cumsack Creek	Run 1	N	36% / 253 (25–750)			Terminal to Bute Inlet MSF.
50568	Homathko River	Run 1	N	88% / 3,900 (200–9,700)	30% / 1,100 (500–2,000)	12% / 134 (0–267)	Terminal to Bute Inlet MSF.
CK-35: Klinaklini_SU_1.3				48% / 5,059 (250–15,000)	45% / 9,458 (2,600–17,202)	0% / —	
50878	Klinaklini River	Run 1	Y	93% / 5,041 (250–15,000)	90% / 9,458 (2,600–17,202)		Terminal to Knight Inlet MSF.
50879	Klinaklini River	Run 2	N	2% / 700			Terminal to Knight Inlet MSF.

Table 4. Summary of Coho Salmon conservation unit biological status and escapement monitoring over biological status. Biological status came from three sources: WSP = Wild Salmon Policy; PSF = Pacific Salmon Foundation; COSEWIC = Committee on the Status of Endangered Wildlife in Canada. Biological status codes include: DD = Data Deficient; NA = Not Assessed. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

CU		Biological Status			CU Runs		A-Tlegay Runs		Runs Monitored (Coverage)					
Index	CU Name	WSP	PSF	COSEWIC	Total	Indicator	Runs	Indicator	Historical		Transition		Recent	
CO-11	GEORGIA STRAIT MAINLAND	NA	DD	NA	57	4	11	0	9	(46%)	9	(27%)	5	(16%)
CO-12	SOUTHERN COASTAL STREAMS-QUEEN CHARLOTTE STRAIT-JOHNSTONE STRAIT-SOUTHERN FJORDS	NA	DD	NA	118	17	43	2	37	(46%)	28	(25%)	17	(14%)
CO-13	EAST VANCOUVER ISLAND-GEORGIA STRAIT	NA	DD	NA	108	32	3	3	3	(87%)	3	(83%)	3	(70%)
CO-19	HOMATHKO-KLINAKLINI RIVERS	NA	DD	NA	4	1	4	1	4	(61%)	3	(48%)	2	(11%)
				Area Wide:	287	54	61	6	53	(49%)	43	(30%)	27	(17%)

Table 5. **Summary of Coho Salmon escapement monitoring coverage and escapement values by water body, conservation unit, and monitoring period in the A-Tlegay Member Nations Mainland Inlet Territory.** Values indicate percentage of years with escapement values, average escapement within a period and range of escapement is indicated in parentheses. Cell shading within epoch columns indicates class of estimator (see Appendix A1). Indicator populations have bolded text with a light blue background. Ind. = Indicator. Historical period was from 1954−1993; Transition period was from 1994−2004; Recent period was from 2001−2022.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CO-11: Georgia Strait Mainland				46% / 13,664 (30−44,350)	27% / 512 (17−2,633)	17% / 1,020 (193−2,816)	
52792	Bird Cove Creek	Run 1	N	71% / 87 (6−200)	60% / 30 (15−50)	35% / 8 (1−18)	
52793	Bird Cove Creek	Run 2	N		10% / 20		
50502	Brem River	Run 1	N	55% / 2,725 (25−10,000)	60% / 23 (3−85)	24% / 108 (30−214)	Terminal to Toba Inlet MSF.
50512	Brem River Tributary	Run 1	N	14% / 326 (3−750)	10% / 13		Terminal to Toba Inlet MSF.
50462	Klite River	Run 1	N	69% / 2,478 (1−7,500)	20% / 104 (8−200)	24% / 169 (36−402)	Terminal to Toba Inlet MSF.
50472	Little Toba River	Run 1	N	64% / 2,930 (50−10,000)	10% / 53		Terminal to Toba Inlet MSF.
50522	Quatam River	Run 1	N	95% / 1,088 (20−5,000)	60% / 647 (24−2,500)	100% / 951 (193−2,542)	Terminal to Toba Inlet MSF.
50492	Tahumming River	Run 1	N	29% / 158 (25−750)			Terminal to Toba Inlet MSF.
49796	Toba River	Run 1	N	64% / 10,911 (100−35,000)		6% / 0	Terminal to Toba Inlet MSF.
52802	Whiterock Pass Creek	Run 1	N	40% / 116 (25−400)	60% / 17 (5−30)		
52803	Whiterock Pass Creek	Run 2	N		10% / 10		

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CO-12: Southern Coastal Streams-Queen Charlotte Strait-Johnstone Strait-Southern Fjords				46% / 13,010 (202–33,625)	25% / 4,322 (241–13,160)	14% / 2,839 (425–17,161)	
50652	Apple River	Run 1	N	76% / 1,085 (75–3,500)	70% / 806 (150–2,300)	41% / 1,339 (7–5,489)	
45410	Blind Creek	Run 2	N		10% / 100		
45909	Bond River No. 1	Run 1	N		10% / 1		
50752	Boughey Creek	Run 1	N	38% / 165 (2–750)	10% / 12		
50802	Call Creek	Run 1	N	45% / 241 (25–750)	10% / 15	12% / 2 (2–3)	
52772	Cameleon Harbour Creek	Run 1	N	67% / 143 (20–750)	40% / 11 (5–20)		
52882	Chonat Creek	Run 1	N	55% / 78 (24–200)			
50612	Clearwater Creek	Run 1	N			41% / 136 (1–410)	
50762	Cracroft Creek	Run 1	N	10% / 256 (25–400)			
50622	Fanny Bay Creek	Run 1	N	33% / 120 (25–400)			
50862	Franklin River	Run 1	N	45% / 1,068 (1–3,500)			Terminal to Knight Inlet MSF.
50672	Frazer Creek	Run 1	N	55% / 76 (2–200)	40% / 10 (4–20)	18% / 1 (0–2)	
50582	Frederick Arm Creek	Run 1	N	26% / 214 (25–750)			
50732	Fulmore River	Run 1	N	79% / 1,439 (25–6,000)	30% / 700 (100–1,750)	35% / 119 (0–571)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50842	Glendale Creek	Run 1	N	79% / 1,565 (10–7,500)	40% / 119 (32–250)	6% / 25	
52862	**Granite Bay Creek**	**Run 1**	**Y**	**71% / 70 (18–400)**	**100% / 50 (12–150)**	**100% / 22 (0–77)**	
50632	Grassy Creek	Run 1	N	76% / 236 (4–1,200)	50% / 18 (9–50)	6% / 0	
50642	Gray Creek	Run 1	N	74% / 164 (10–750)	60% / 24 (9–50)	18% / 2 (0–3)	
50592	Hemming Bay Creek	Run 1	N	81% / 378 (3–1,500)	40% / 26 (10–50)		
50682	**Heydon Creek**	**Run 1**	**Y**	**83% / 581 (4–3,500)**	70% / 633 (100–1,514)	41% / 690 (138–1,256)	
3067	Jack Creek		N				
50812	Kamano Bay Creek	Run 1	N	14% / 42 (25–75)			
52872	Kanish Creek	Run 1	N	64% / 42 (20–200)			
50602	Knox Bay Creek	Run 1	N	50% / 154 (25–400)			
50822	New Vancouver Creek	Run 1	N	7% / 25 (25–25)			
50532	Orford River	Run 1	N	86% / 1,101 (50–3,500)	100% / 1,404 (35–8,922)	94% / 1,460 (82–9,419)	146 (Recent) broodstock removals. Terminal to Bute Inlet MSF.
52752	Owen Creek	Run 1	N	5% / 762 (24–1,500)			
50612	Phillips River	Run 1	N	93% / 1,424 (50–7,500)	80% / 789 (200–1,500)	94% / 526 (0–1,950)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50782	Potts Lagoon Creek	Run 1	N	19% / 88 (25–200)			
50832	Protection Point Creek	Run 1	N	40% / 291 (5–1,500)	30% / 108 (4–260)		
50833	Protection Point Creek	Run 2	N		10% / 30		
50702	Read Creek	Run 1	N	88% / 1,122 (50–3,500)	20% / 14 (8–20)	59% / 15 (0–53)	
50742	Robbers Knob Creek	Run 1	N	19% / 156 (25–400)	10% / 50		
50722	Shoal Creek	Run 1	N	19% / 53 (25–200)	10% / 8		
50542	Southgate River	Run 1	N	86% / 2,812 (50–7,500)	70% / 921 (52–2,801)	6% / 0	Terminal to Bute Inlet MSF.
52762	St. Aubyn Creek	Run 1	N	62% / 579 (10–3,500)			
50662	Stafford River	Run 1	N	69% / 280 (25–750)	40% / 76 (10–173)		
50552	Teaquahan River	Run 1	N	69% / 422 (25–750)	40% / 142 (100–225)	6% / 50	Terminal to Bute Inlet MSF.
52782	Thurston Bay Creek	Run 1	N	48% / 72 (25–200)	20% / 25 (25–25)		
50712	Tuna River	Run 1	N	67% / 1,119 (20–8,000)	20% / 330 (10–650)		
50713	Tuna River	Run 2	N		10% / 650		
52812	Waiatt Bay Creek	Run 1	N	2% / 25		6% / 0	
50692	Wortley Creek	Run 1	N	76% / 151 (20–500)	40% / 11 (8–15)	35% / 2 (0–5)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CO-13: East Vancouver Island-Georgia Strait				87% / 1,790 (8–7,650)	83% / 1,000 (22–3,655)	75% / 517 (8–1,422)	
52842	Hyacinthe Creek/ McKercher Creek	Run 1	Y	90% / 252 (8–750)	100% / 73 (2–150)	88% / 35 (1–148)	
52832	Open Bay Creek	Run 1	Y	79% / 170 (4–400)	50% / 41 (5–110)	41% / 7 (0–30)	
52822	Village Bay Creek/ Clear Creek	Run 1	Y	90% / 1,531 (65–7,500)	100% / 906 (10–3,500)	94% / 514 (8–1,387)	174 (Transition) broodstock removals.
CO-19: Homathko-Klinaklini Rivers				61% / 6,615 (10–18,700)	48% / 15,420 (498–29,447)	12% / 310 (0–610)	
50572	Cumsack Creek	Run 1	N	69% / 667 (10–2,500)	20% / 438 (200–675)	12% / 22 (0–43)	Terminal to Bute Inlet MSF.
50562	Homathko River	Run 1	N	86% / 3,342 (150–10,000)	80% / 928 (229–2,596)	35% / 303 (0–592)	Terminal to Bute Inlet MSF.
50872	Klinaklini River	Run 1	N	83% / 3,944 (50–15,000)	90% / 16,212 (1,455–29,447)		Terminal to Knight Inlet MSF.
50873	Klinaklini River	Run 2	Y	5% / 80 (60–100)			Terminal to Knight Inlet MSF.

Table 6. Summary of Chum Salmon conservation unit biological status and escapement monitoring over biological status. Runs represent unique Chum Salmon population recognized within NuSEDS. Coverage indicates the percentage of years across all runs where escapement estimates were available. Biological status came from three sources: WSP = Wild Salmon Policy; PSF = Pacific Salmon Foundation; COSEWIC = Committee on the Status of Endangered Wildlife in Canada. Biological status codes include: DD = Data Deficient; NA = Not Assessed. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

CU Index	CU Name	Biological Status			CU Runs		A-Tlegay Runs		Runs Monitored (Coverage)					
		WSP	PSF	COSEWIC	Total	Indicator	Runs	Indicator	Historical		Transition		Recent	
CM-4	GEORGIA STRAIT	NA	GOOD	NA	160	22	12	3	12	(65%)	9	(46%)	7	(35%)
CM-6	LOUGHBOROUGH	NA	POOR	NA	41	6	41	6	37	(48%)	27	(32%)	15	(19%)
CM-7	BUTE INLET	NA	DD	NA	7	3	7	3	5	(54%)	6	(49%)	4	(17%)
CM-9	UPPER KNIGHT	NA	DD	NA	6	1	2	0	2	(63%)	1	(40%)	0	(0%)
				Area Wide:	214	32	62	12	56	(50%)	43	(33%)	26	(21%)

Table 7. Summary of Chum Salmon escapement monitoring coverage and escapement values by water body, conservation unit, and monitoring period in the A-Tlegay Member Nations Mainland Inlet Territory. Values indicate percentage of years with escapement values, average escapement within a period and range of escapement is indicated in parentheses. Cell shading within epoch columns indicates class of estimator (see Appendix A1). Indicator populations have bolded text with a light blue background. Ind. = Indicator. Historical period was from 1954−1993; Transition period was from 1994−2004; Recent period was from 2001−2022.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
CM-4: Georgia Strait				65% / 16,817 (10−64,300)	46% / 2,217 (447−4,485)	37% / 5,821 (1,316−14,874)	
52796	**Bird Cove Creek**	**Run 1**	**Y**	**81% / 639 (25−3,500)**	**70% / 153 (9−300)**	**65% / 126 (4−483)**	
50506	Brem River	Run 1	N	76% / 1,621 (5−7,500)	70% / 113 (1−361)	53% / 191 (14−562)	
50516	Brem River Tributary	Run 1	N	17% / 23 (10−25)	10% / 12		
50486	Filer Creek	Run 1	N	2% / 25			
52846	**Hyacinthe Creek/ McKercher Creek**	**Run 1**	**Y**	**98% / 2,360 (202−7,500)**	**100% / 1,094 (294−2,650)**	**88% / 2,157 (479−8,062)**	
50466	Klite River	Run 1	N	71% / 1,855 (100−10,000)	50% / 89 (2−324)	41% / 1,687 (100−7,202)	
50476	Little Toba River	Run 1	N	62% / 2,162 (75−15,000)			
52836	**Open Bay Creek**	**Run 1**	**Y**	**93% / 1,168 (25−6,000)**	**100% / 721 (94−1,732)**	**100% / 2,853 (247−10,444)**	
50526	Quatam River	Run 1	N	86% / 2,080 (6−10,000)	80% / 112 (13−326)	71% / 158 (3−823)	
50496	Tahumming River	Run 1	N	43% / 139 (25−400)			
49800	Toba River	Run 1	N	71% / 9,843 (200−35,000)	10% / 600	24% / 329 (0−945)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
52806	Whiterock Pass Creek	Run 1	N	86% / 156 (6–400)	60% / 34 (8–77)		
CM-6: Loughborough				48% / 36,811 (5,025–142,100)	32% / 16,352 (3,172–39,242)	20% / 9,804 (1,609–51,952)	
50656	Apple River	Run 1	Y	83% / 3,589 (25–20,000)	50% / 207 (100–284)	29% / 850 (21–3,242)	
45893	Bachus Creek	Run 1	N	5% / 32 (20–45)			
45413	Blind Creek	Run 1	N		10% / 2		
50756	Boughey Creek	Run 1	N	29% / 129 (20–400)			
50806	Call Creek	Run 1	N	86% / 923 (15–4,500)	20% / 104 (83–125)	35% / 32 (1–100)	
52776	Cameleon Harbour Creek	Run 1	N	74% / 127 (6–750)	50% / 22 (4–44)		
52886	Chonat Creek	Run 1	N	19% / 25 (25–25)			
50616	Clearwater Creek	Run 1	N			53% / 59 (2–173)	
50766	Cracroft Creek	Run 1	N	2% / 25			
45949	Elephant Creek	Run 1	N	5% / 175 (50–300)			
50626	Fanny Bay Creek	Run 1	N	21% / 96 (10–400)	20% / 38 (25–50)		
50676	Frazer Creek	Run 1	N	76% / 209 (4–1,500)	50% / 23 (10–51)	65% / 63 (0–245)	
50586	Frederick Arm Creek	Run 1	N	29% / 246 (25–750)			

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50736	Fulmore River	Run 1	N	83% / 2,159 (200–8,000)	60% / 2,250 (1,000–4,000)	76% / 565 (36–2,222)	
50737	Fulmore River	Run 2	N		10% / 100		
50846	Glendale Creek	Run 1	N	98% / 8,763 (50–75,000)	70% / 2,666 (15–6,667)	12% / 644 (28–1,259)	
52866	Granite Bay Creek	Run 1	N	98% / 545 (25–2,000)	100% / 233 (92–471)	100% / 604 (77–1,713)	
52867	**Granite Bay Creek**	**Run 2**	**Y**		**10% / 100**		
50636	Grassy Creek	Run 1	N	52% / 177 (25–1,500)	70% / 185 (7–500)	29% / 6 (0–16)	
50646	**Gray Creek**	**Run 1**	**Y**	**48% / 237 (20–3,000)**	**80% / 51 (8–150)**	**47% / 32 (0–60)**	
50596	Hemming Bay Creek	Run 1	N	50% / 146 (1–750)	50% / 98 (50–166)		
50686	**Heydon Creek**	**Run 1**	**Y**	**100% / 12,014 (400–75,000)**	**70% / 12,892 (915–28,746)**	41% / 13,934 (2,226–36,161)	
50816	Kamano Bay Creek	Run 1	N	12% / 280 (25–750)			
52876	Kanish Creek	Run 1	N	93% / 541 (25–2,700)	50% / 78 (40–200)		
50606	Knox Bay Creek	Run 1	N	36% / 80 (25–200)	10% / 20		
50826	New Vancouver Creek	Run 1	N	10% / 25 (25–25)			
52756	Owen Creek	Run 1	N	5% / 38 (25–50)			
50616	Phillips River	Run 1	N	100% / 2,733 (4–15,000)	100% / 1,566 (200–4,889)	71% / 1,642 (0–8,235)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50796	Port Harvey Lagoon Creeks	Run 1	N	19% / 75 (25–200)			
50786	Potts Lagoon Creek	Run 1	N	19% / 37 (20–75)			
50836	Protection Point Creek	Run 1	N	21% / 67 (25–200)			
50706	Read Creek	Run 1	N	88% / 670 (3–3,500)	60% / 40 (10–87)	88% / 103 (0–312)	
50746	Robbers Knob Creek	Run 1	N	24% / 30 (25–75)			
50726	Shoal Creek	Run 1	N	17% / 129 (25–750)	10% / 18		
52766	St. Aubyn Creek	Run 1	N	90% / 404 (12–3,500)	30% / 88 (30–200)		
50666	Stafford River	Run 1	N	81% / 2,585 (25–55,000)	30% / 68 (50–100)		
52786	Thurston Bay Creek	Run 1	N	86% / 244 (6–1,000)	40% / 54 (4–100)		
50716	Tuna River	Run 1	N	57% / 374 (50–1,500)	30% / 180 (40–300)		
52826	**Village Bay Creek/Clear Creek**	**Run 1**	**Y**	**90% / 1,875 (150–7,500)**	**100% / 763 (80–2,010)**	**94% / 787 (59–2,195)**	**304 (Recent) broodstock removals.**
52816	Waiatt Bay Creek	Run 1	N	90% / 133 (23–350)	30% / 88 (25–200)	12% / 46 (3–90)	
50696	**Wortley Creek**	**Run 1**	**Y**	**90% / 886 (25–11,000)**	**100% / 941 (121–2,866)**	**71% / 863 (0–2,386)**	
CM-7: Bute Inlet				54% / 89,950 (5,750–378,000)	49% / 48,131 (15,000–97,923)	18% / 9,517 (1,440–44,300)	
50576	Cumsack Creek	Run 1	N	33% / 957 (25–3,500)			

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50566	**Homathko River**	**Run 1**	**Y**	**100% / 13,239 (200–75,000)**	**50% / 2,847 (236–7,000)**	**12% / 48 (0–96)**	
50536	Orford River	Run 1	N	98% / 29,409 (750–137,000)	100% / 21,701 (2,300–71,023)	100% / 9,505 (1,440–44,300)	425 (Recent) broodstock removals.
50537	**Orford River**	**Run 2**	**Y**		**70% / 1,375 (200–3,000)**	**6% / 107**	
50546	Southgate River		N	98% / 48,476 (1,500–250,000)	60% / 28,576 (8,000–50,000)	6% / 0	
50547	**Southgate River**		**Y**		**30% / 22,562 (16,000–26,685)**		
50556	Teaquahan River	Run 1	N	50% / 724 (25–3,500)	30% / 433 (150–1,000)		
CM-9: Upper Knight				63% / 11,093 (2–38,500)	40% / 2,720 (89–9,543)	0% / —	
50866	Franklin River	Run 1	N	50% / 1,045 (200–3,500)			
50876	Klinaklini River	Run 1	N	76% / 10,407 (2–35,000)	80% / 2,720 (89–9,543)		

Table 8. Summary of monitoring for Pink Salmon conservation units within the A-Tlegay Member Nations Mainland Inlet Territory. Biological status came from three sources: WSP = Wild Salmon Policy; PSF = Pacific Salmon Foundation; COSEWIC = Committee on the Status of Endangered Wildlife in Canada. Biological status codes include: NA = Not Assessed. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

CU Index	CU Name	Biological Status			CU Runs		A-Tlegay Runs		Runs Monitored (Coverage)					
		WSP	PSF	COSEWIC	Total	Indicator	Runs	Indicator	Historical		Transition		Recent	
PKE-1	GEORGIA STRAIT	NA	GOOD	NA	68	4	9	0	8	(16%)	4	(11%)	3	(8%)
PKE-4	SOUTHERN FJORDS	NA	FAIR	NA	103	21	40	10	34	(47%)	25	(36%)	12	(21%)
PKO-3	GEORGIA STRAIT	NA	FAIR	NA	78	4	10	0	10	(49%)	4	(22%)	5	(17%)
PKO-7	SOUTHERN FJORDS	NA	POOR	NA	49	8	30	3	27	(38%)	16	(23%)	13	(23%)
PKO-8	HOMATHKO-KLINAKLINI-SMITH-RIVERS-BELLA COOLA-DEAN	NA	POOR	NA	69	15	3	1	3	(40%)	2	(40%)	0	(0%)
				Area Wide:	**367**	**52**	**51**	**10**	**82**	**(41%)**	**51**	**(28%)**	**33**	**(19%)**

Table 9. **Summary of Pink Salmon escapement monitoring coverage and escapement values by water body, conservation unit, and monitoring period in the A-Tlegay Member Nations Mainland Inlet Territory.** Values indicate percentage of years with escapement values, average escapement within a period and range of escapement is indicated in parentheses. Cell shading within epoch columns indicates class of estimator (see Appendix A1) Indicator populations have bolded text with a light blue background. Ind. = Indicator. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
PKE-1: Georgia Strait				16% / 479 (25–2,005)	11% / 226 (50–401)	8% / 266 (6–834)	
50504	Brem River	Run 1	N	14% / 50 (25–75)	20% / 1	12% / 600	
50514	Brem River Tributary	Run 1	N	5% / 5			
52844	Hyacinthe Creek	Run 1	N				
52844	Hyacinthe Creek/ McKercher Creek	Run 1	N	48% / 236 (6–750)	20% / 100		
50464	Klite River	Run 1	N	5% / 25		12% / 67	
52834	Open Bay Creek	Run 1	N	10% / 212 (75–350)	20% / 150		
50524	Quatam River	Run 1	N	43% / 431 (6–2,000)	40% / 100 (50–150)	50% / 99 (6–200)	
50494	Tahumming River	Run 1	N				
49798	Toba River	Run 1	N	10% / 112 (25–200)			
52824	Village Bay Creek	Run 1	N				
52824	Village Bay Creek/Clear Creek	Run 1	N	14% / 42 (25–75)			

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
PKE-4: Southern Fjords				47% / 341,117 (38,625–1,121,010)	36% / 730,171 (275,183–1,335,580)	21% / 249,108 (9,857–687,867)	
50654	**Apple River**	**Run 1**	**Y**	**81% / 2,431 (25–15,000)**	**80% / 3,358 (30–6,000)**	**38% / 789 (25–2,165)**	
45411	Blind Creek	Run 1	N		20% / 8		
45911	Bond River No. 1	Run 1	N		40% / 66 (33–100)		
50754	Boughey Creek	Run 1	N	86% / 322 (1–2,000)	40% / 48 (35–60)		
50804	Call Creek	Run 1	N	33% / 660 (8–3,000)	40% / 70 (15–125)	50% / 3 (1–6)	
52774	Cameleon Harbour Creek	Run 1	N	95% / 4,185 (25–15,000)	60% / 17 (5–30)		
50614	Clearwater Creek	Run 1	N			75% / 20,392 (1,065–54,762)	
50574	Cumsack Creek	Run 1	N	24% / 60 (25–200)			
45937	Deepwater Bay Creek	Run 1	N	5% / 4			
50624	Fanny Bay Creek	Run 1	N	57% / 1,410 (25–7,000)	20% / 300		
50674	**Frazer Creek**	**Run 1**	**Y**	**86% / 1,469 (25–7,500)**	**100% / 644 (279–1,240)**	**75% / 476 (5–1,255)**	
50584	Frederick Arm Creek	Run 1	N	5% / 125			
50734	Fulmore River	Run 1	N	38% / 872 (25–1,500)	20% / 30		
45401	George Creek	Run 1	N		40% / 297 (175–419)		

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50844	**Glendale Creek**	**Run 1**	**Y**	**100% / 176,857 (9,500–700,000)**	**100% / 473,953 (18,209–760,000)**	**75% / 120,868 (12,561–334,021)**	
52864	Granite Bay Creek	Run 1	N	57% / 4,426 (10–15,000)			
50634	**Grassy Creek**	**Run 1**	**Y**	**100% / 37,124 (1,000–200,000)**	**100% / 1,716 (75–2,500)**	**38% / 1,257 (37–3,680)**	
50644	**Gray Creek**	**Run 1**	**Y**	**100% / 3,012 (200–15,000)**	**100% / 3,071 (75–10,000)**	**88% / 1,157 (10–6,000)**	
50594	Hemming Bay Creek	Run 1	N	14% / 158 (75–200)	20% / 10		
50684	**Heydon Creek**	**Run 1**	**Y**	**100% / 7,457 (200–35,000)**	**80% / 5,960 (5,000–7,000)**	**38% / 2,530 (89–7,179)**	
50564	Homathko River	Run 1	N	43% / 1,006 (200–1,500)			
3068	Jack Creek		N				
50814	Kamano Bay Creek	Run 1	N	81% / 3,103 (3–15,000)			
52874	Kanish Creek	Run 1	N	52% / 3,475 (75–7,500)			
50874	**Klinaklini River**	**Run 1**	**Y**	**67% / 2,459 (75–7,500)**	**80% / 29,851 (25–72,126)**		
50604	Knox Bay Creek	Run 1	N	24% / 325 (75–750)			
50824	New Vancouver Creek	Run 1	N	33% / 129 (25–400)			
50534	Orford River	Run 1	N	33% / 125 (25–300)	20% / 200	75% / 69 (11–126)	
50614	**Phillips River**	**Run 1**	**Y**	**100% / 60,421 (200–335,000)**	**100% / 205,917 (21,749–500,000)**	**100% / 131,886 (5,695–286,973)**	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50834	Protection Point Creek	Run 1	N	48% / 166 (25–750)	20% / 55		
50704	**Read Creek**	**Run 1**	**Y**	**100% / 11,017 (400–45,000)**	**100% / 3,043 (1,200–8,000)**	**100% / 7,394 (1,084–24,070)**	
50744	Robbers Knob Creek	Run 1	N	19% / 125 (75–200)	40% / 38 (10–65)		
50724	Shoal Creek	Run 1	N		20% / 23		
50544	Southgate River	Run 1	N	24% / 12,810 (75–60,000)			
52764	St. Aubyn Creek	Run 1	N	10% / 412 (75–750)			
50664	Stafford River	Run 1	N	76% / 4,794 (200–35,000)	60% / 1,336 (150–3,000)		
50554	Teaquahan River	Run 1	N	19% / 175 (25–400)			
52784	Thurston Bay Creek	Run 1	N	38% / 186 (10–750)			
50714	Tuna River	Run 1	N	19% / 34 (10–100)	20% / 75		
50694	**Wortley Creek**	**Run 1**	**Y**	**100% / 20,290 (200–75,000)**	**100% / 9,333 (2,117–15,000)**	**88% / 851 (16–2,888)**	
PKO-3: Georgia Strait				49% / 36,923 (300–145,775)	22% / 832 (26–3,298)	17% / 7,866 (174–40,583)	
50504	Brem River	Run 1	N	81% / 5,892 (50–35,000)	60% / 65 (4–144)	22% / 834 (463–1,206)	
50514	Brem River Tributary	Run 1	N	14% / 3,690 (70–7,500)	20% / 12		
52844	Hyacinthe Creek	Run 1	N				

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
52844	Hyacinthe Creek/ McKercher Creek	Run 1	N	29% / 82 (20–200)		22% / 168 (2–335)	
50464	Klite River	Run 1	N	86% / 7,992 (50–35,000)	40% / 1,604 (107–3,100)	11% / 1,515	
50474	Little Toba River	Run 1	N	81% / 6,662 (100–35,000)			
52834	Open Bay Creek	Run 1	N	10% / 512 (25–1,000)		22% / 4 (0–7)	
50524	Quatam River	Run 1	N	100% / 8,024 (200–75,000)	100% / 149 (10–500)	89% / 7,425 (174–40,241)	
50494	Tahumming River	Run 1	N	5% / 500			
49798	Toba River	Run 1	N	57% / 19,625 (3,500–75,000)			
52824	Village Bay Creek	Run 1	N				
52824	Village Bay Creek/Clear Creek	Run 1	N	24% / 208 (25–750)			
PKO-7: Southern Fjords				38% / 180,275 (27,310–495,899)	23% / 497,517 (85,000–1,368,057)	23% / 162,235 (2,646–496,215)	
50654	**Apple River**	**Run 1**	**Y**	**100% / 17,339 (25–50,000)**	**60% / 1,806 (171–4,747)**	**44% / 490 (22–947)**	
50754	Boughey Creek	Run 1	N	48% / 215 (25–750)			
50804	Call Creek	Run 1	N	29% / 176 (4–750)		22% / 115 (19–211)	
52774	Cameleon Harbour Creek	Run 1	N	10% / 12 (10–15)			
50614	Clearwater Creek	Run 1	N		20% / 200	89% / 796 (65–1,879)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
48398	Estero Creek	Run 1	N		20% / 10		
50624	Fanny Bay Creek	Run 1	N	29% / 231 (10–750)			
50674	Frazer Creek	Run 1	N	95% / 2,665 (24–20,000)	60% / 208 (20–559)	78% / 260 (5–712)	
50734	Fulmore River	Run 1	N	19% / 756 (25–1,500)		11% / 0	
50844	**Glendale Creek**	**Run 1**	**Y**	**100% / 92,286 (6,000–300,000)**	**100% / 492,375 (80,000–1,350,000)**	**78% / 196,358 (657–489,023)**	
52864	Granite Bay Creek	Run 1	N	29% / 49 (1–200)	20% / 10		
50634	Grassy Creek	Run 1	N	19% / 44 (25–100)	20% / 10	11% / 0	
50644	Gray Creek	Run 1	N	52% / 430 (25–1,500)	20% / 342	67% / 32 (2–100)	
50594	Hemming Bay Creek	Run 1	N	14% / 25 (25–25)			
50684	Heydon Creek	Run 1	N	81% / 2,089 (5–20,000)	80% / 1,878 (200–5,966)	33% / 2,017 (18–3,437)	
50814	Kamano Bay Creek	Run 1	N	29% / 76 (25–200)			
52874	Kanish Creek	Run 1	N	10% / 25 (25–25)			
50604	Knox Bay Creek	Run 1	N		20% / 20		
50824	New Vancouver Creek	Run 1	N	10% / 112 (25–200)			
50534	Orford River	Run 1	N	90% / 18,011 (1,000–100,000)	60% / 1,279 (138–3,500)	78% / 5,927 (97–27,030)	

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50614	**Phillips River**	**Run 1**	**Y**	**100% / 42,738 (3,500–175,000)**	**80% / 1,338 (100–4,000)**	**89% / 3,232 (0–14,007)**	
50834	Protection Point Creek	Run 1	N	29% / 39 (10–75)	20% / 15		
50704	Read Creek	Run 1	N	76% / 137 (25–200)	60% / 63 (10–145)	78% / 234 (0–667)	
50744	Robbers Knob Creek	Run 1	N	10% / 25 (25–25)			
50544	Southgate River	Run 1	N	33% / 5,429 (1,500–7,500)			
50664	Stafford River	Run 1	N	86% / 5,153 (250–20,000)	20% / 2,160		
50554	Teaquahan River	Run 1	N	24% / 1,530 (400–3,500)			
52784	Thurston Bay Creek	Run 1	N	10% / 125 (50–200)			
50714	Tuna River	Run 1	N	10% / 55 (10–100)			
50694	Wortley Creek	Run 1	N	14% / 88 (25–200)	20% / 10	22% / 2 (0–4)	
PKO-8: Homathko-Klinaklini-Smith-Rivers-Bella Coola-Dean				40% / 3,767 (20–18,500)	40% / 4,750 (253–16,538)	0% / —	
50574	Cumsack Creek	Run 1	N	19% / 1,025 (200–3,500)			
50564	Homathko River	Run 1	N	24% / 3,795 (75–7,500)	20% / 100		
50874	**Klinaklini River**	**Run 1**	**Y**	**76% / 2,325 (20–7,500)**	**100% / 4,730 (253–16,538)**		

Table 10. Summary of monitoring for Sockeye Salmon conservation units within the A-Tlegay Member Nations Mainland Inlet Territory. Biological status came from three sources: WSP = Wild Salmon Policy; PSF = Pacific Salmon Foundation; COSEWIC = Committee on the Status of Endangered Wildlife in Canada. Biological status codes include DD = Data Deficient; NA = Not Assessed; — = No Data Available. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

CU Index	CU Name	Rear Type	Biological Status			CU Runs		A-Tlegay Runs		Runs Monitored (Coverage)					
			WSP	PSF	COSEWIC	Total	Indicator	Runs	Indicator	Historical		Transition		Recent	
SEL-11-01	FULMORE	Lake	NA	DD	NA	1	0	1	0	1	(81%)	1	(10%)	1	(11%)
SEL-11-02	HEYDON	Lake	NA	DD	NA	1	1	1	1	1	(79%)	1	(70%)	1	(61%)
SEL-11-06	PHILLIPS	Lake	NA	DD	NA	3	1	3	1	1	(33%)	3	(33%)	2	(52%)
SEL-11-10	VILLAGE BAY	Lake	—	—	—	1	0	1	0	1	(36%)	1	(60%)	1	(17%)
SEL-11-12	(N)GLENDALE	Lake	—	—	—	2	0	2	0	1	(27%)	2	(15%)	0	(0%)
SER-08	EAST VANCOUVER ISLAND AND GEORGIA STRAIT	River	NA	DD	NA	48	0	3	0	2	(2%)	3	(10%)	1	(2%)
SER-09	SOUTHERN FJORDS	River	NA	DD	NA	30	0	18	0	7	(6%)	16	(16%)	5	(2%)
					Area Wide:	86	2	29	2	14	(16%)	27	(20%)	11	(10%)

Table 11. Summary of Sockeye Salmon escapement monitoring coverage and escapement values by water body, conservation unit, and monitoring period in the A-Tlegay Member Nations Mainland Inlet Territory. Values indicate percentage of years with escapement values, average escapement within a period and range of escapement is indicated in parentheses. Cell shading within epoch columns indicates class of estimator (see Appendix A1). Indicator populations have bolded text with a light blue background. Ind. = Indicator. Historical period was from 1954–1993; Transition period was from 1994–2004; Recent period was from 2001–2022.

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
SEL-11-01: Fulmore				81% / 2,699 (100–10,000)	10% / 400	12% / 1,256 (0–2,513)	
50730	Fulmore River	Run 1	N	81% / 2,699 (100–10,000)	10% / 400	12% / 1,256 (0–2,513)	
SEL-11-02: Heydon				79% / 2,427 (2–7,500)	70% / 2,203 (11–5,208)	65% / 3,738 (1,442–10,110)	
50680	**Heydon Creek**	**Run 1**	**Y**	**79% / 2,427 (2–7,500)**	**70% / 2,203 (11–5,208)**	**65% / 3,738 (1,442–10,110)**	
SEL-11-06: Phillips				33% / 3,868 (400–15,000)	33% / 3,852 (600–17,400)	55% / 2,003 (14–4,237)	
50610	Clearwater Creek	Run 1	N		20% / 1,866 (1,122–2,610)	82% / 1,686 (14–3,586)	
50610	**Phillips River**	**Run 1**	**Y**	**100% / 3,868 (400–15,000)**	**70% / 4,827 (600–17,400)**	**82% / 747 (0–2,733)**	
50611	Phillips River	Run 2	N		10% / 1,000		
SEL-11-10: Village Bay				36% / 1,163 (200–3,100)	60% / 141 (25–500)	18% / 2 (0–5)	
52820	Village Bay Creek/Clear Creek	Run 1	N	36% / 1,163 (200–3,100)	60% / 141 (25–500)	18% / 2 (0–5)	
SEL-11-12: (N)Glendale				27% / 741 (1–3,500)	15% / 145 (10–300)	0% / —	
50840	Glendale Creek	Run 1	N	55% / 741 (1–3,500)	20% / 68 (10–125)		

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
50841	Glendale Creek	Run 2	N		10% / 300		
SER-08: East Vancouver Island and Georgia Strait				3% / 14 (4–25)	11% / 8 (1–20)	6% / 4	
52840	Hyacinthe Creek	Run 1	N				
52840	Hyacinthe Creek/ McKercher Creek	Run 1	N	3% / 4	11% / 20		
50460	Klite River	Run 1	N		11% / 1		
50520	Quatam River	Run 1	N	6% / 18 (12–25)	11% / 2	17% / 4	
SER-09: Southern Fjords				7% / 2,070 (4–7,500)	17% / 6,652 (211–18,457)	7% / 11 (0–30)	
50650	Apple River	Run 1	N	19% / 405 (10–2,500)	11% / 10	17% / 21	
52880	Chonat Creek	Run 1	N		11% / 6		
48394	Estero Creek	Run 1	N		11% / 100		
50620	Fanny Bay Creek	Run 1	N		11% / 6		
50670	Frazer Creek	Run 1	N	8% / 12 (2–25)	22% / 53 (6–100)	33% / 1 (0–2)	
52860	Granite Bay Creek	Run 1	N		11% / 486		
50630	Grassy Creek	Run 1	N		11% / 25		
50640	Gray Creek	Run 1	N		11% / 30		
50560	Homathko River	Run 1	N	3% / 50	11% / 100		

POP_ID	Water Body	Run Type	Ind.	Historical	Transition	Recent	Notes
52870	Kanish Creek	Run 1	N		11% / 20		
50870	Klinaklini River	Run 1	N	92% / 2,106 (10–7,500)	100% / 6,537 (200–18,451)		
50600	Knox Bay Creek	Run 1	N		11% / 30		
50530	Orford River	Run 1	N	6% / 14 (2–25)	33% / 15 (1–25)	33% / 10 (1–20)	
50700	Read Creek	Run 1	N		11% / 2	33% / 5 (0–10)	
50740	Robbers Knob Creek	Run 1	N	3% / 20			
50540	Southgate River	Run 1	N	3% / 1			
50660	Stafford River	Run 1	N		11% / 25		
50690	Wortley Creek	Run 1	N		22% / 21 (2–40)	17% / 0	

FIGURES

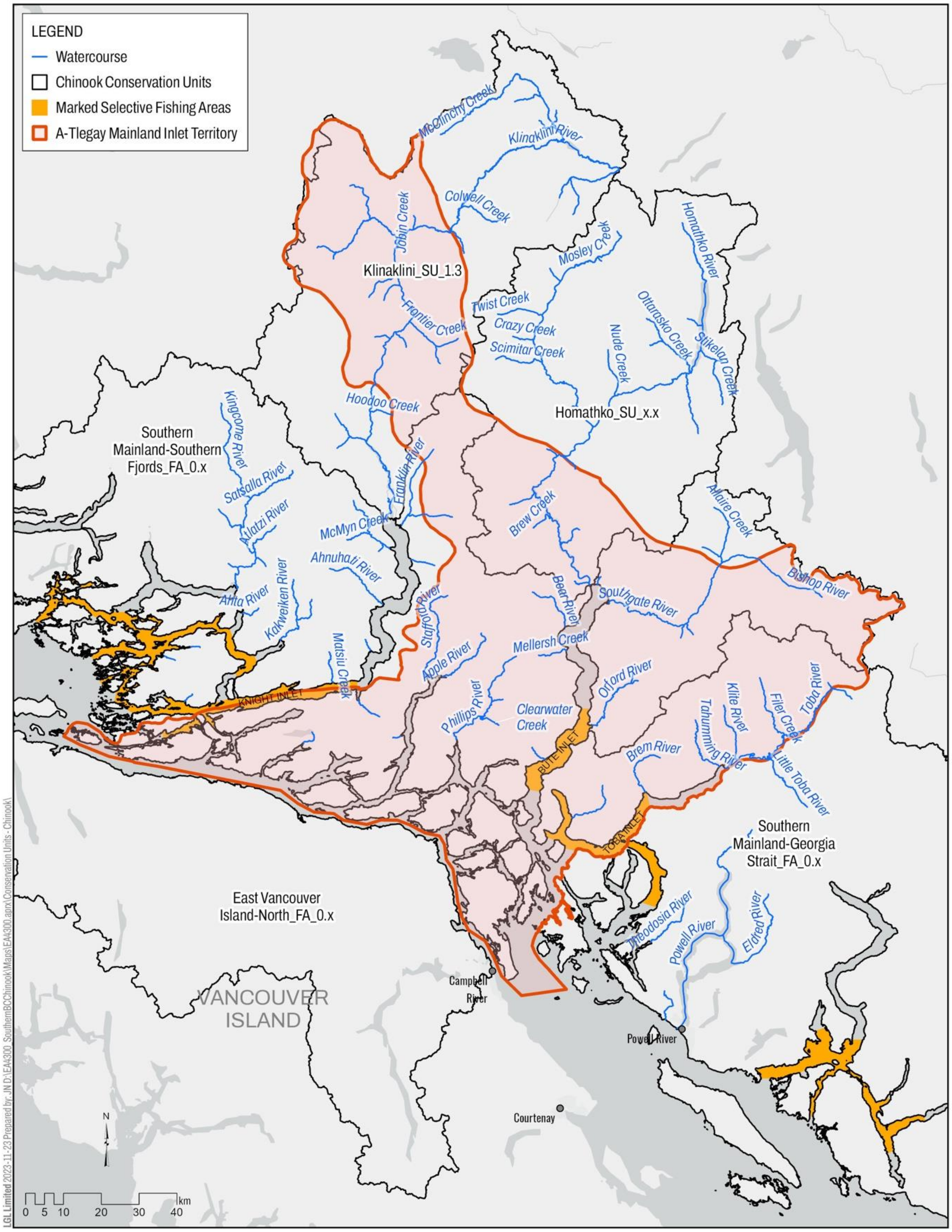

Figure 1. Overview of A-Tlegay Member Nations Mainland Inlet Territory, major river bodies, Chinook Salmon Conservation Units, and marked selective fishing areas.

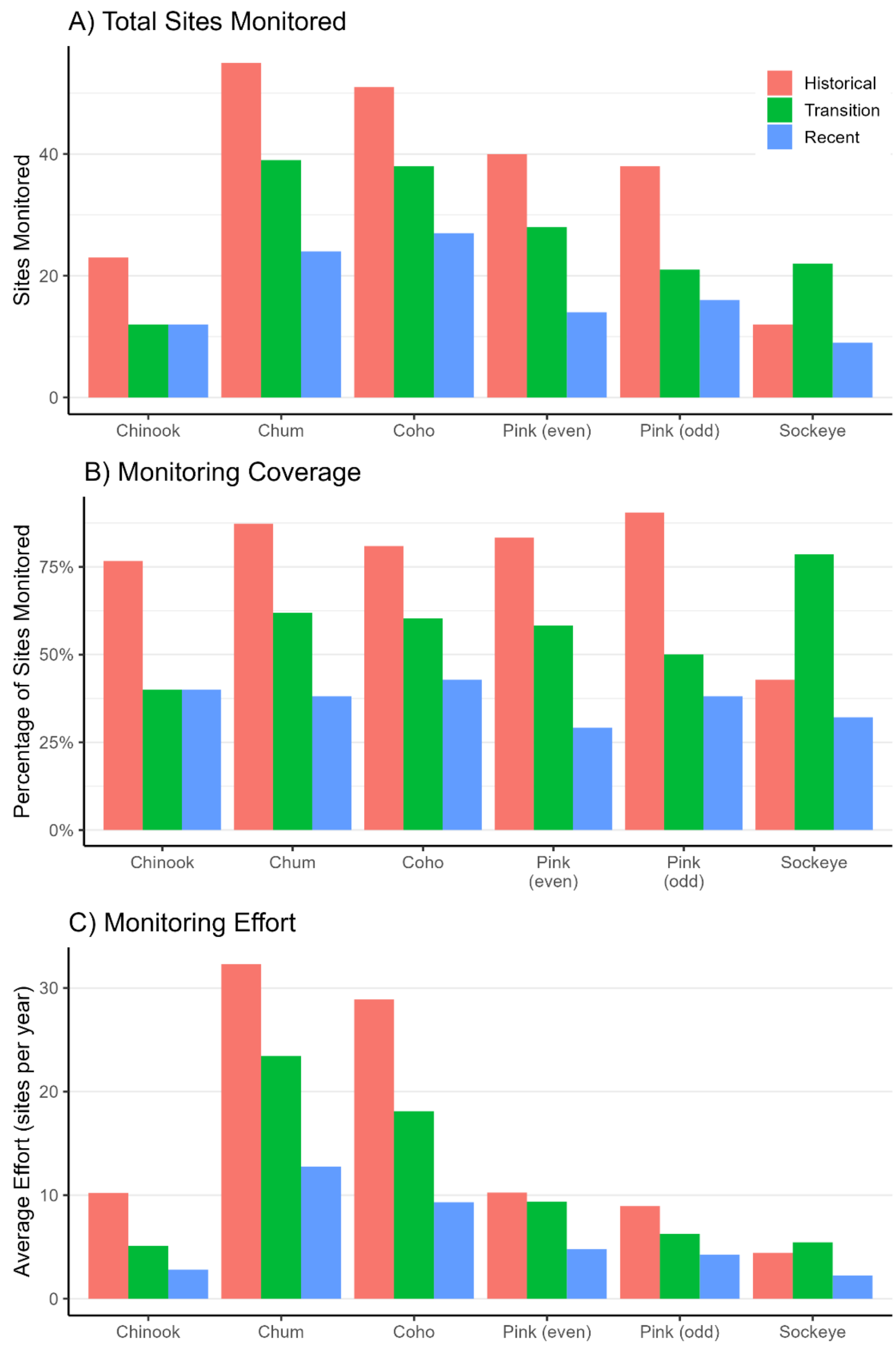

Figure 2. Summary of number of sites monitored historically and recently (A), percentage of recognized sites with escapement data (B), and total monitoring effort (C).

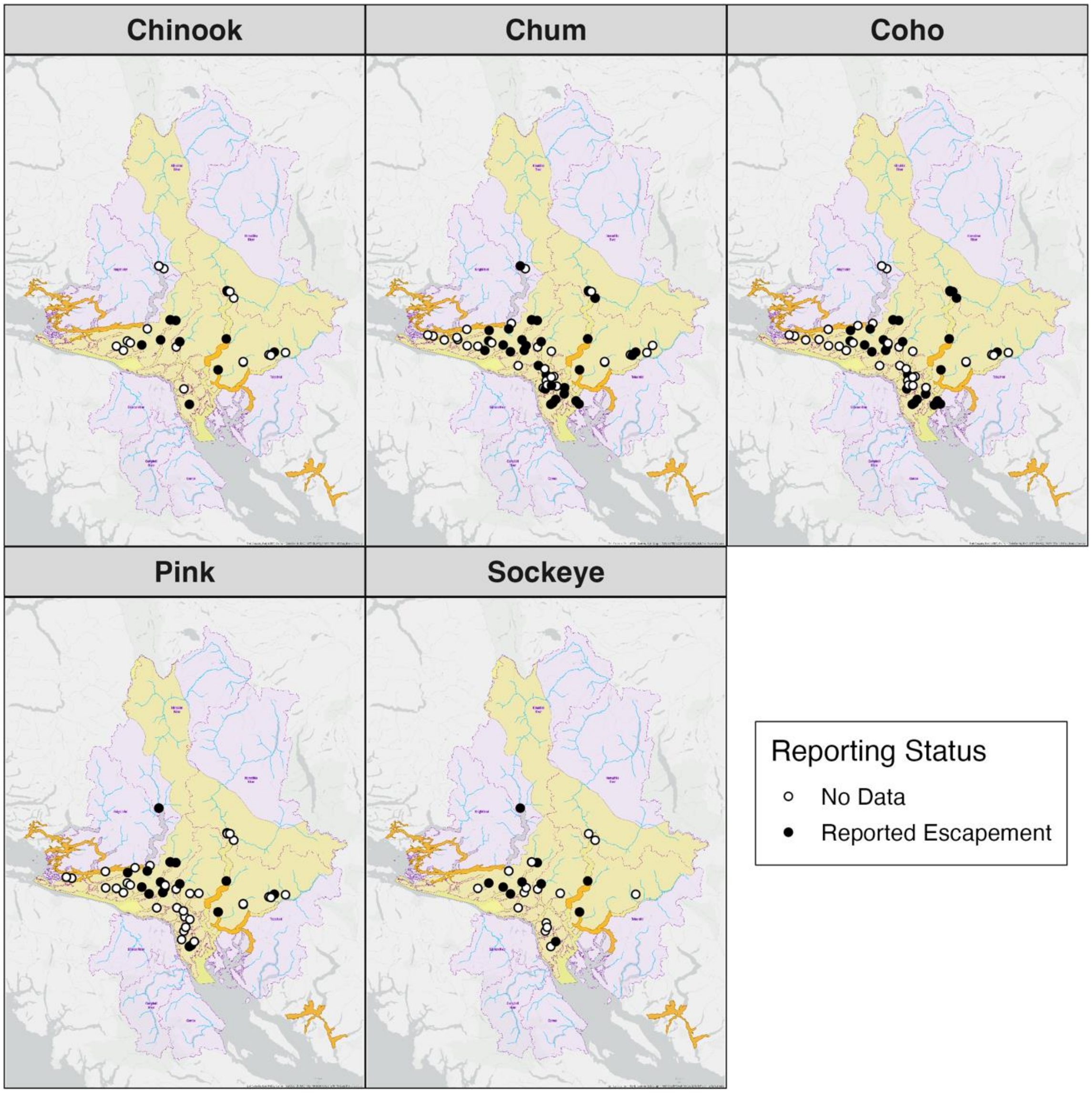

Figure 3. **Summary of mainland salmon spawning sites recognized in Fisheries and Oceans Canada NuSEDS database and whether or not sites had any corresponding escapement records within the last 20 years.** Orange shading represents proposed Mark Selective Fishery area.

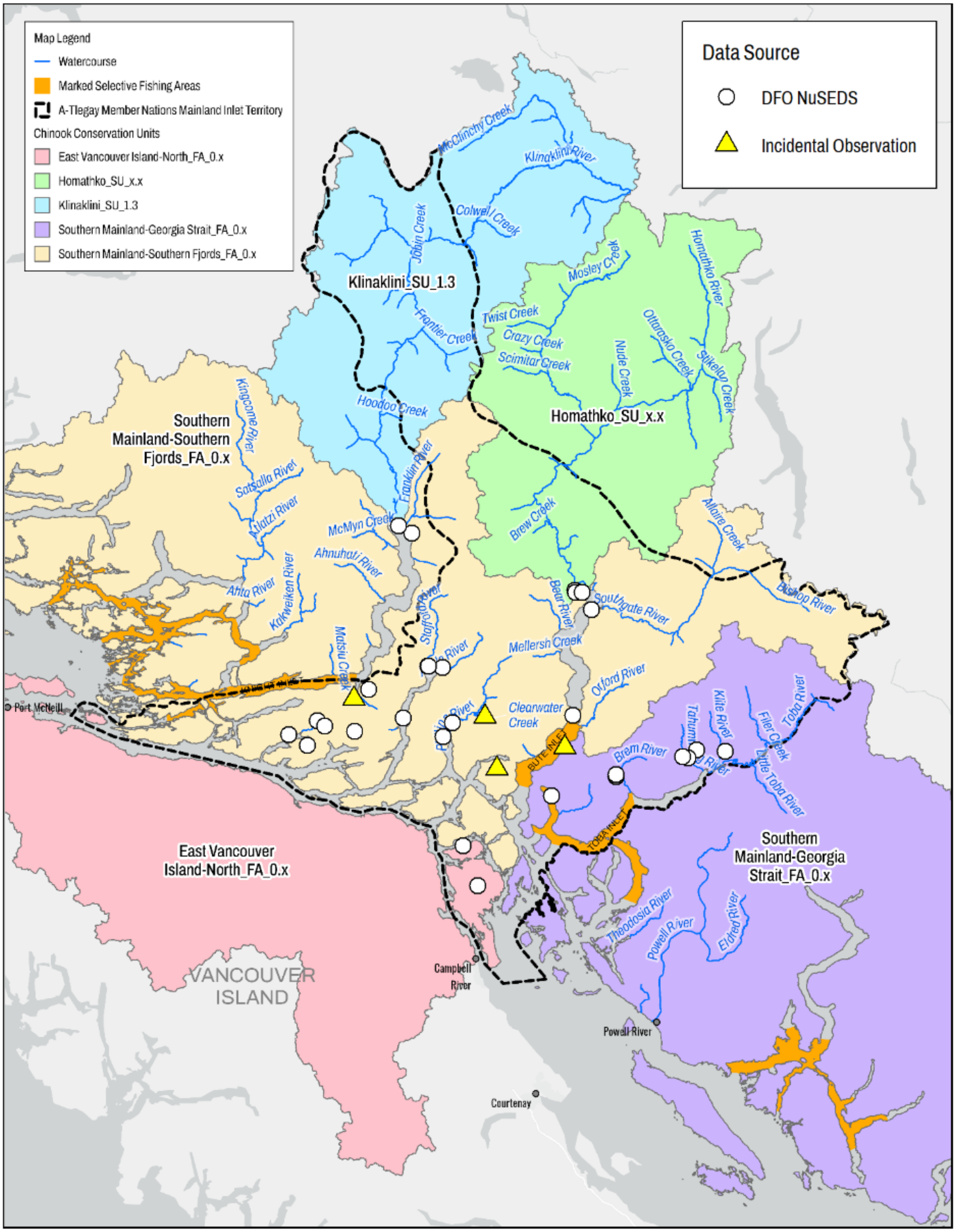

Figure 4. **Overview of Chinook Salmon conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory with known run locations.** Conservation units are highlighted using different colours, with marine MSF areas highlighted dark orange. Symbols represent whether run locations are currently recognized by DFO or from incidental observations.

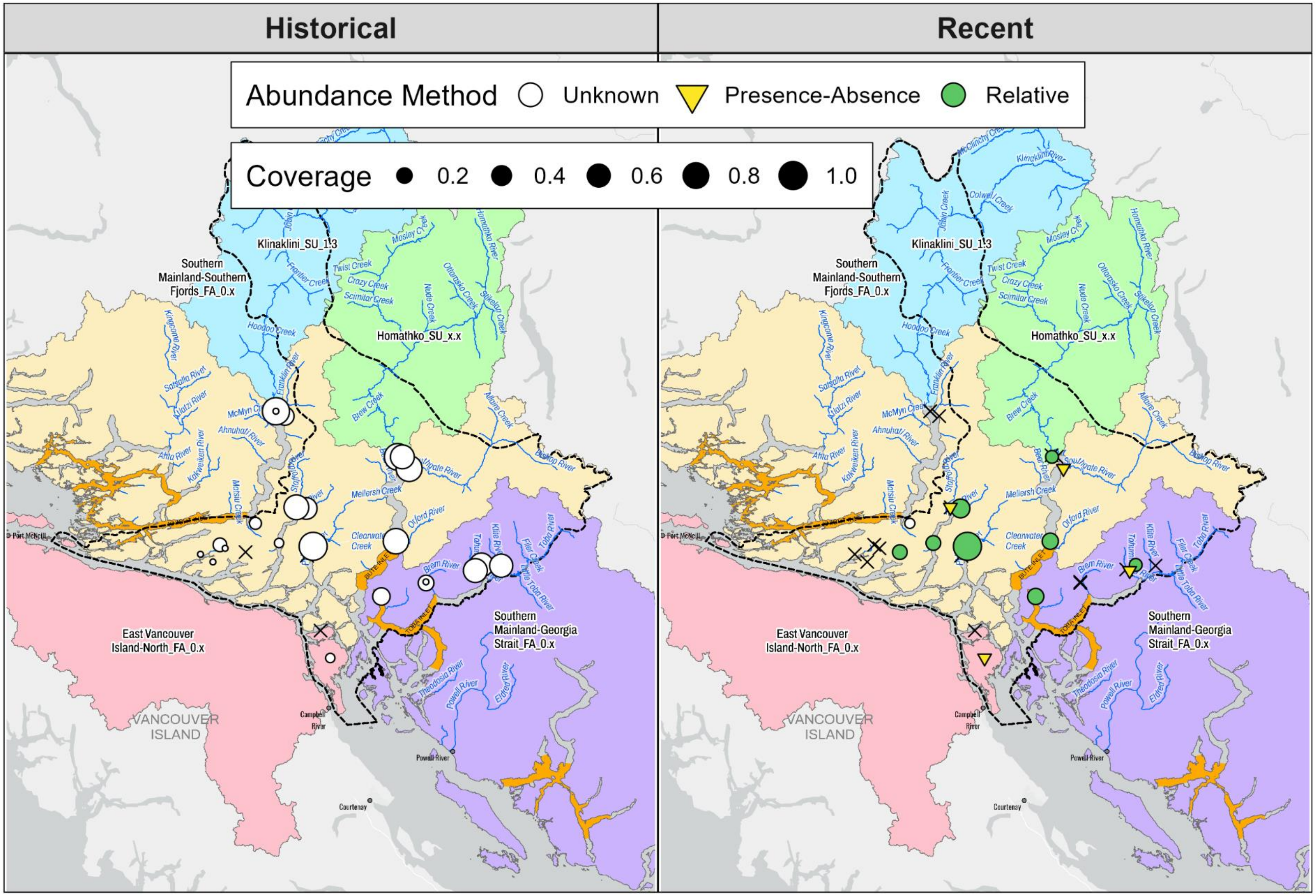

Figure 5. Comparison of reported Chinook Salmon escapement monitoring coverage and enumeration methods from historical (i.e., 1953−1994) to recent (2005−2021) period. Symbol shape and colour represents enumeration method, with size representing the proportion of years with reported escapement. Darker orange shading indicates proposed Mark Selective Fishery areas. The 'x' symbol indicates no data.

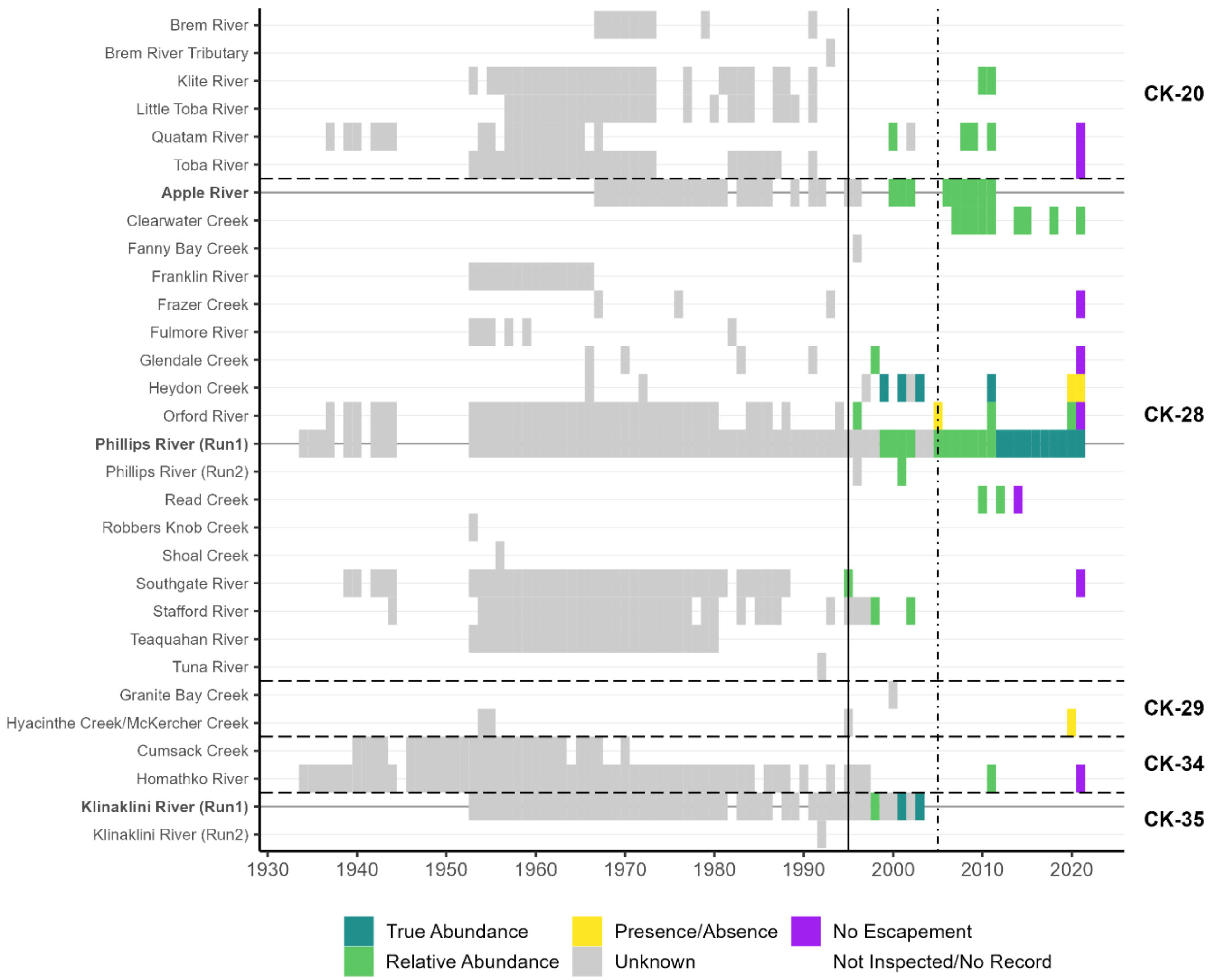

Figure 6. Summary of escapement surveys and survey methodologies for Chinook Salmon runs within the A-Tlegay Member Nations Mainland Inlet Territory. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 3). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method, when known (see Appendix A1).

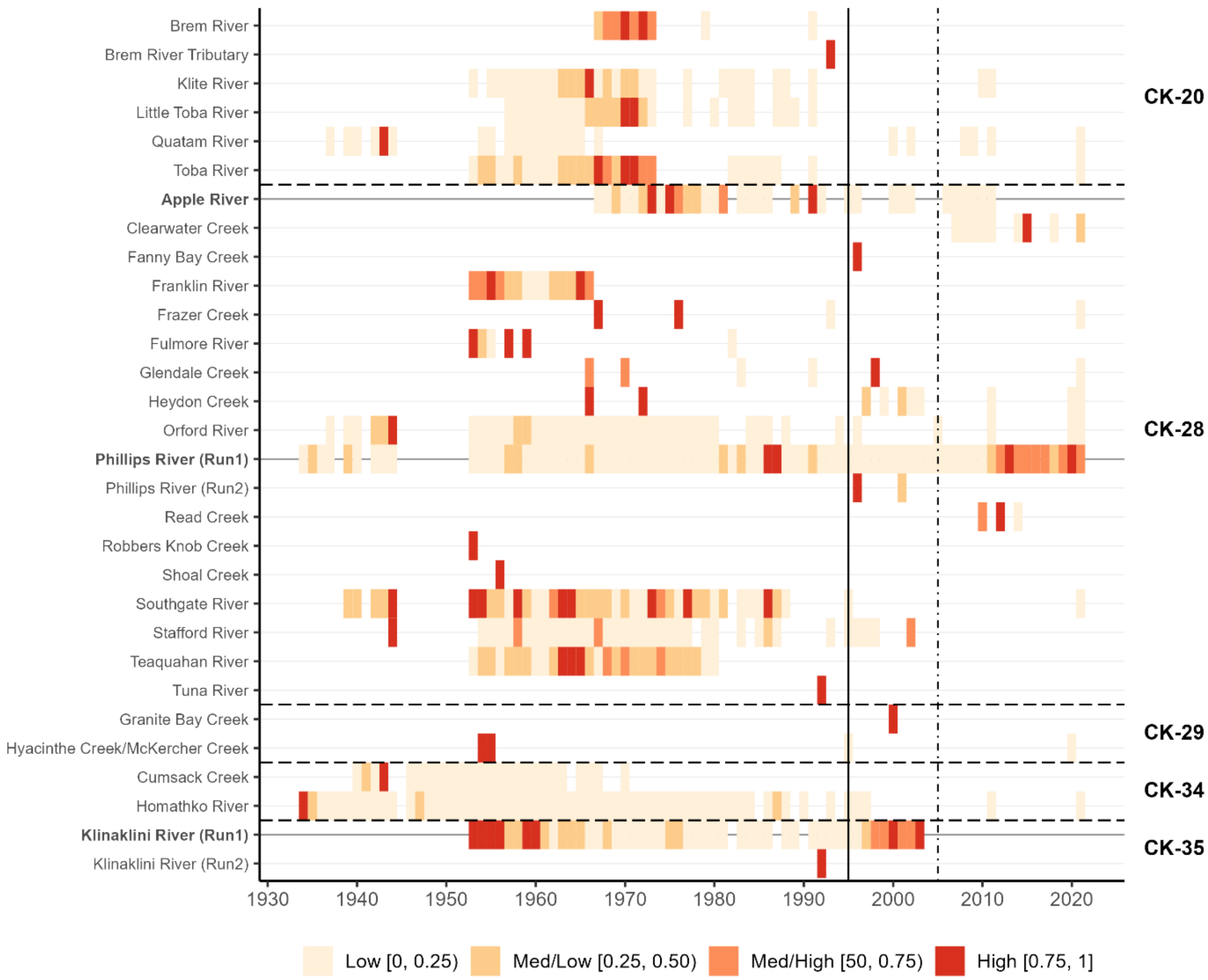

Figure 7. **Yearly escapement as a percentage of maximum escapement within NuSEDS recognized Chinook Salmon runs.** Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 3). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates level of escapement as a percentage of the historical maximum.

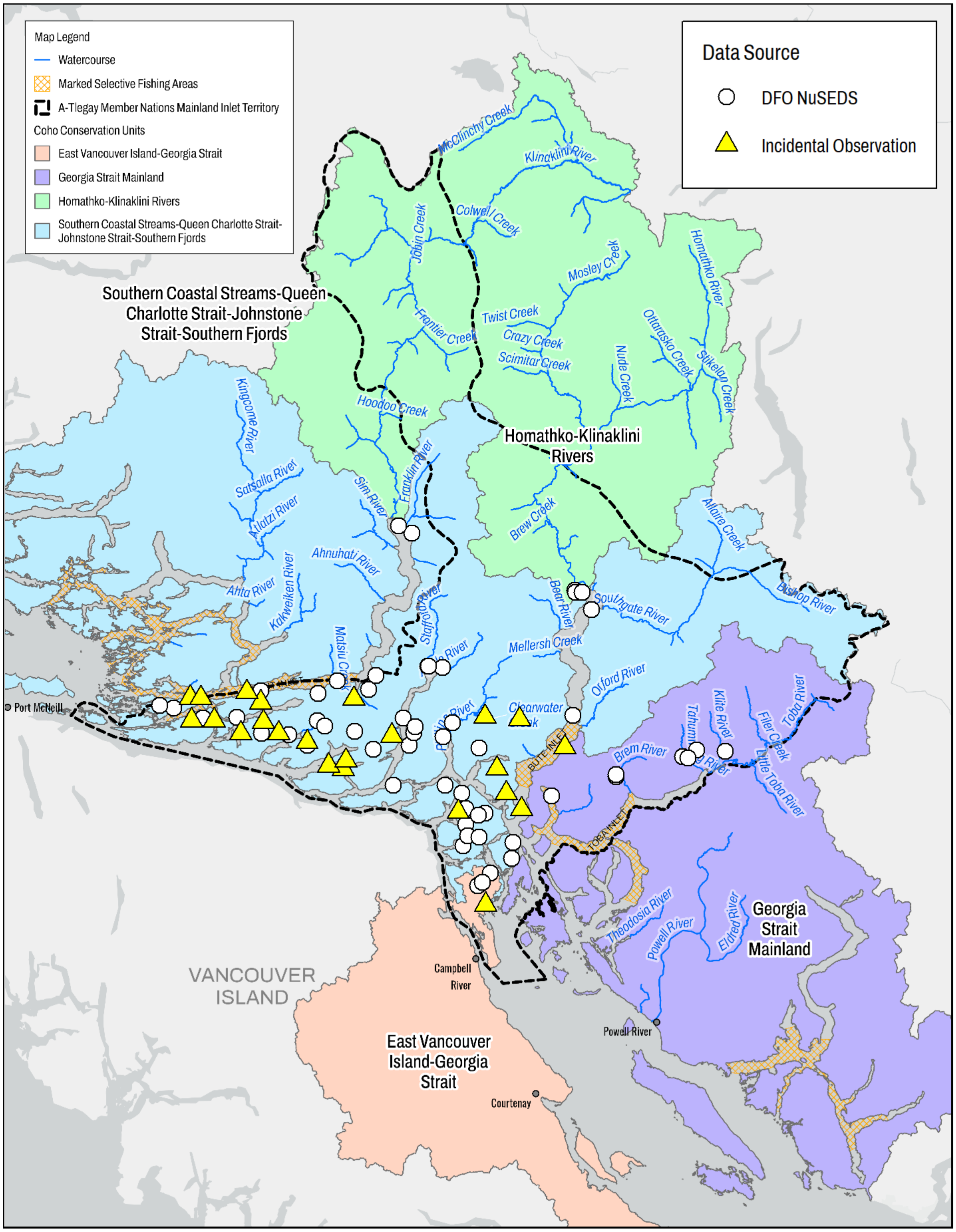

Figure 8. **Overview of Coho Salmon conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory.** Conservation units are highlighted using different colours, with Chinook Salmon marine MSF areas highlighted in orange cross hatching. Symbols represent whether run locations are currently recognized by DFO or from incidental observations.

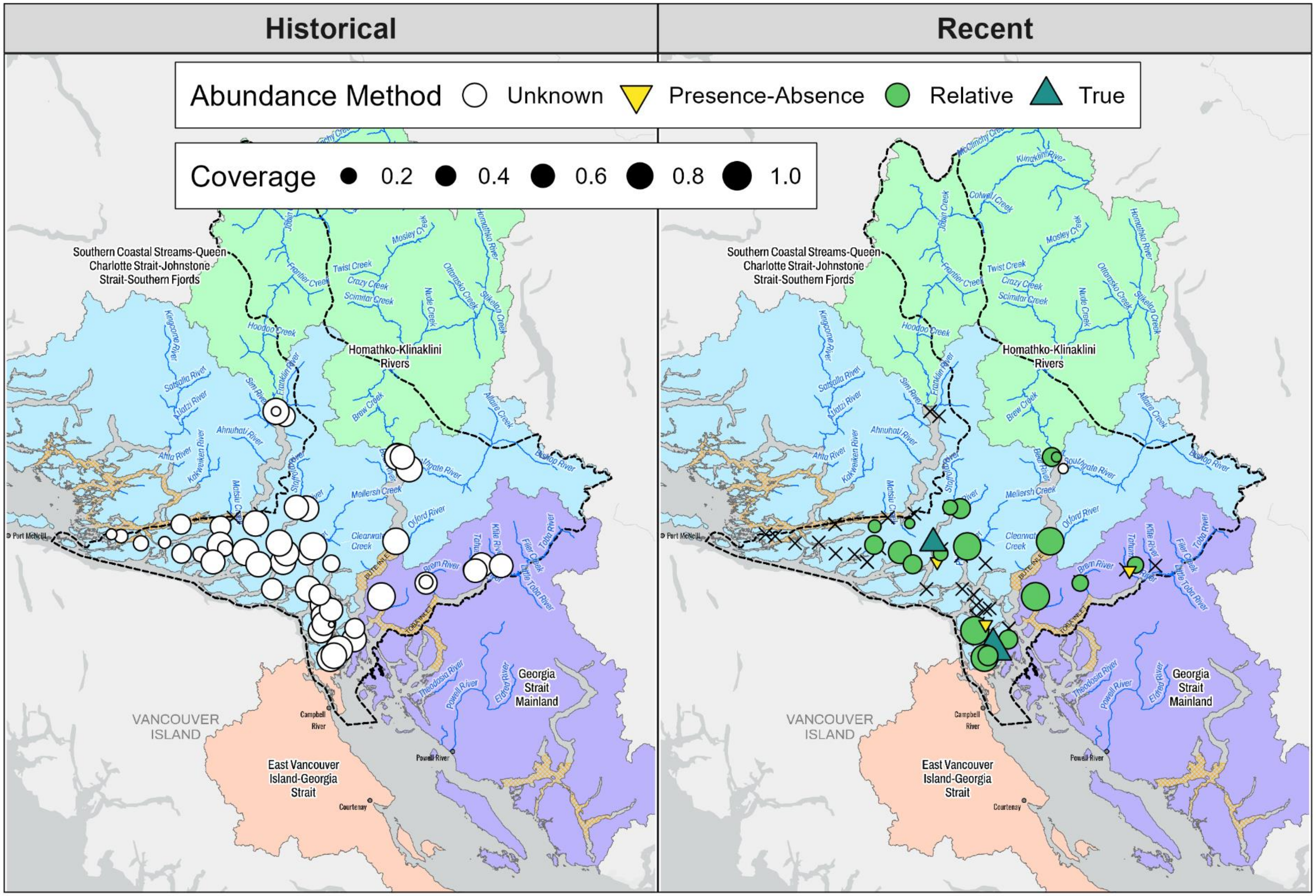

Figure 9. Comparison of reported Coho Salmon escapement reporting coverage from historical (i.e., 1953–1994) to recent (2005–2021) period. Symbol shape and colour represents enumeration methods, while symbol size represents the proportion of years with reported escapement. Orange cross-hatch represents proposed Mark Selective Fishery areas. The ‘x’ symbol indicates no data within the period.

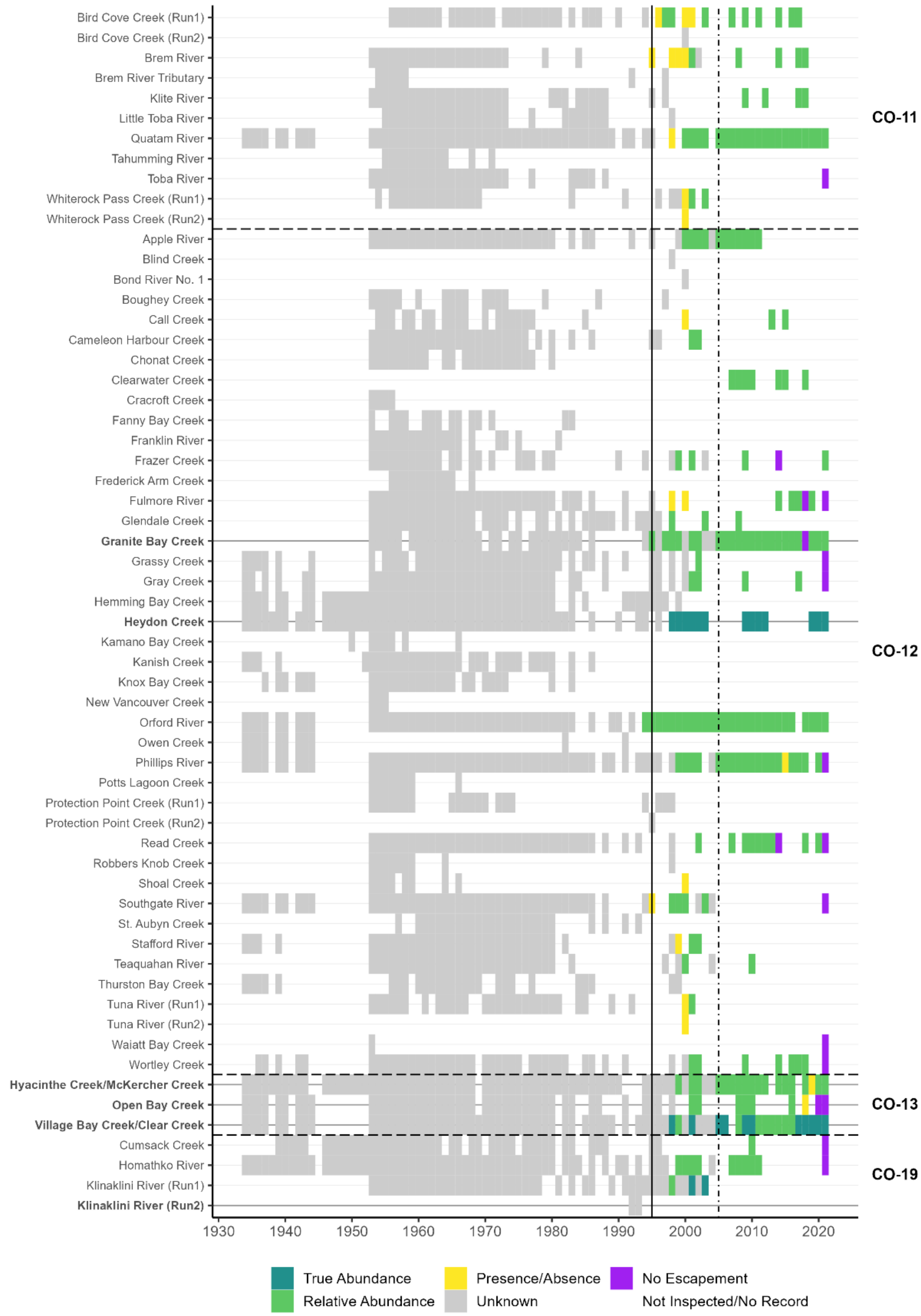

Figure 10. Summary of escapement surveys and survey methodologies for Coho Salmon runs within the A-Tlegay Member Nations Mainland Inlet Territory. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 5). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method, when known (see Appendix A1).

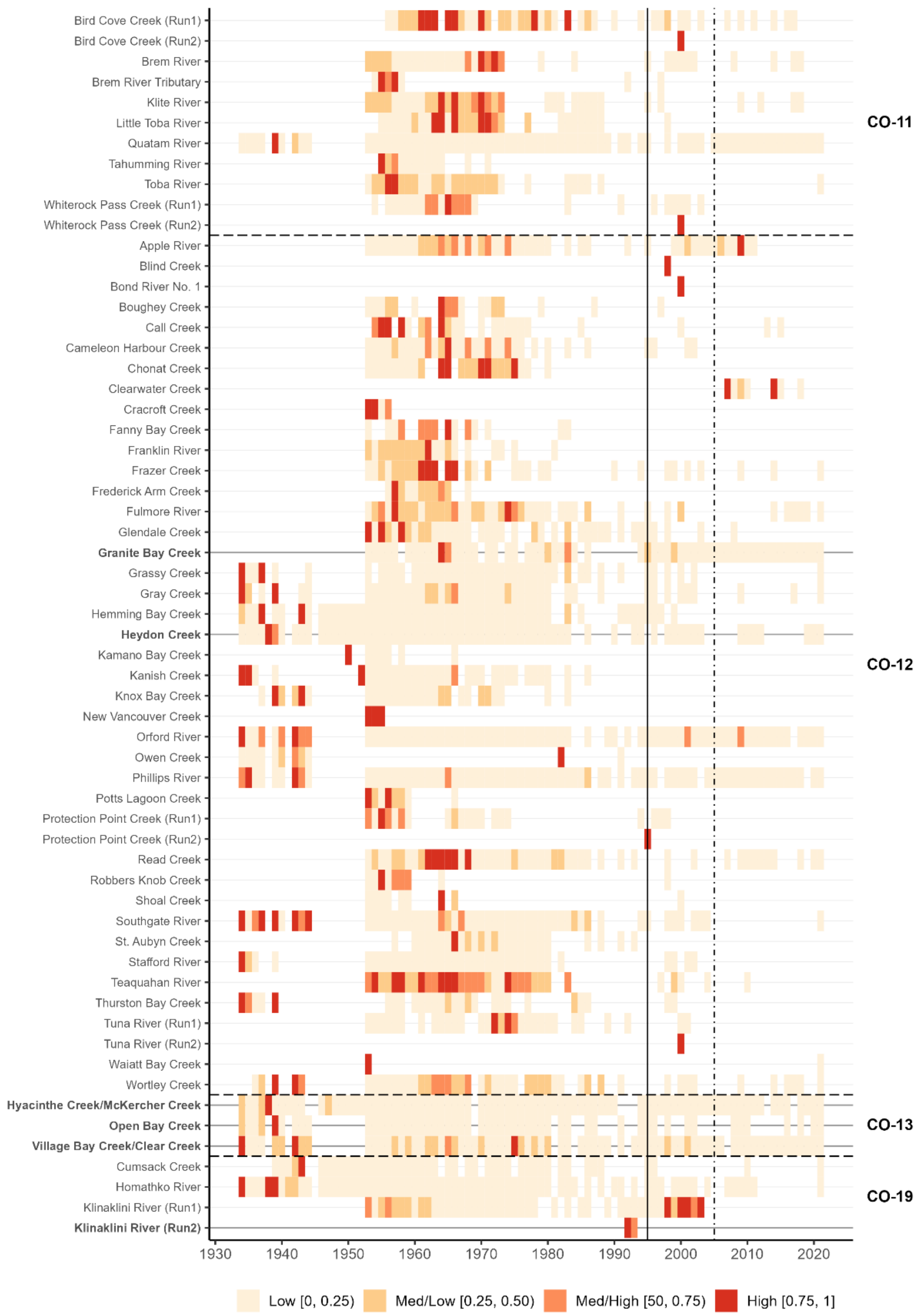

Figure 11. Yearly escapement as a percentage of maximum escapement within NuSEDS recognized Coho Salmon runs. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 5). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates escapement as a percentage of the maximum recorded value.

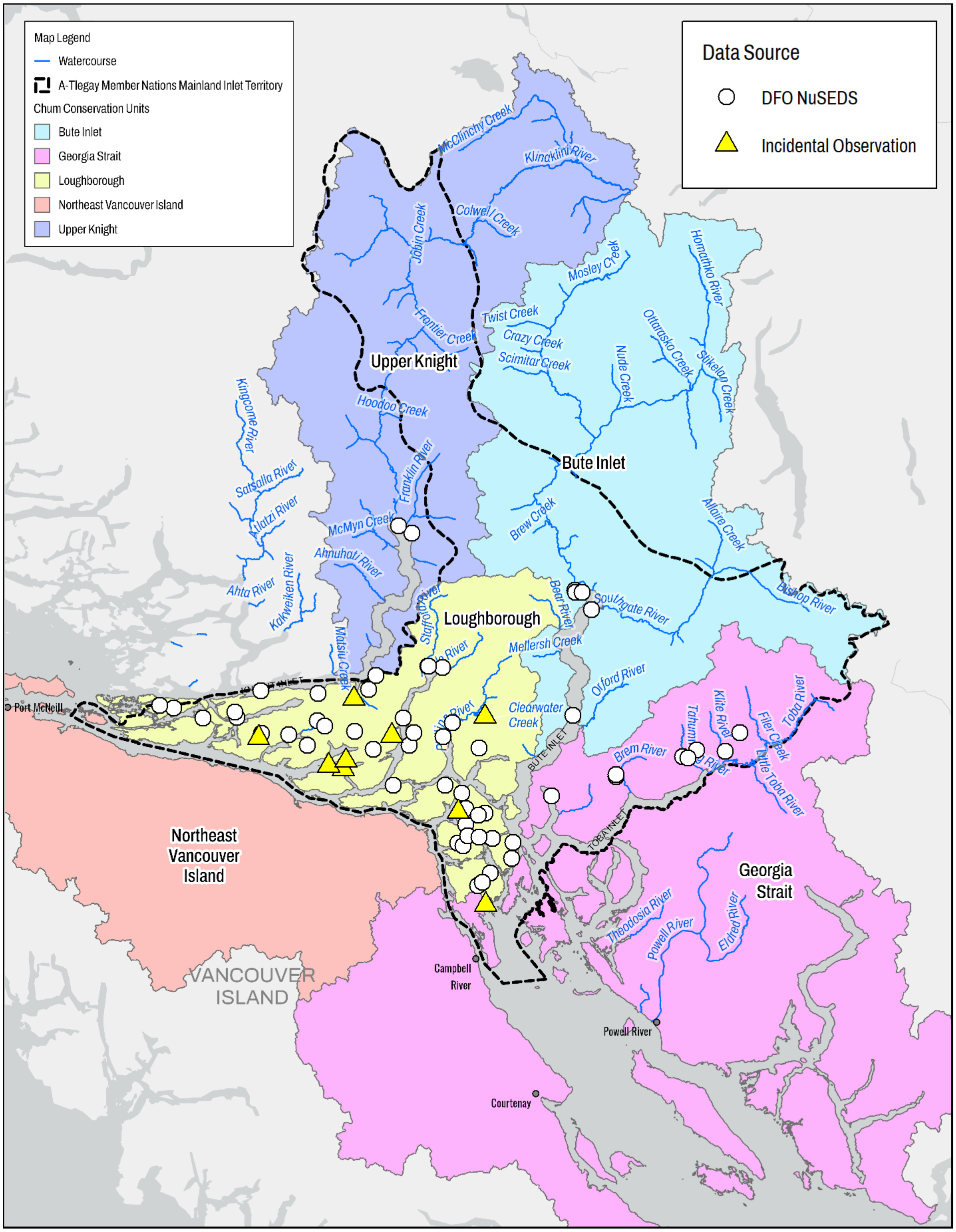

Figure 12. **Overview of Chum Salmon conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory.** Conservation units are highlighted using different colours.

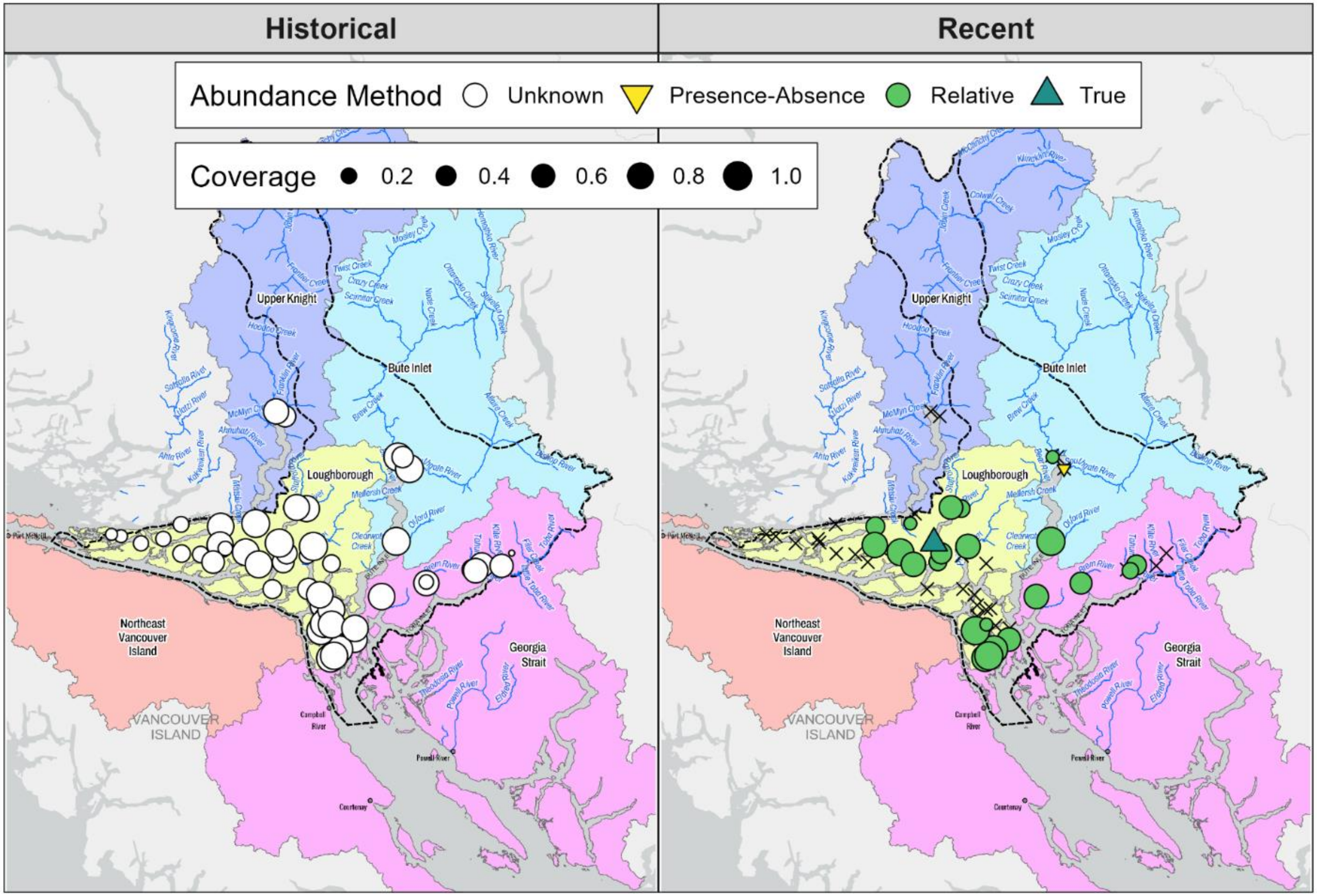

Figure 13. **Comparison of reported Chum Salmon escapement reporting coverage from historical (i.e., 1953−1994) to recent (2005−2021) period.** Symbol shape and colour represents enumeration methods, while symbol size represent the proportion of years with reported escapement. The 'x' symbol indicates no data within the period.

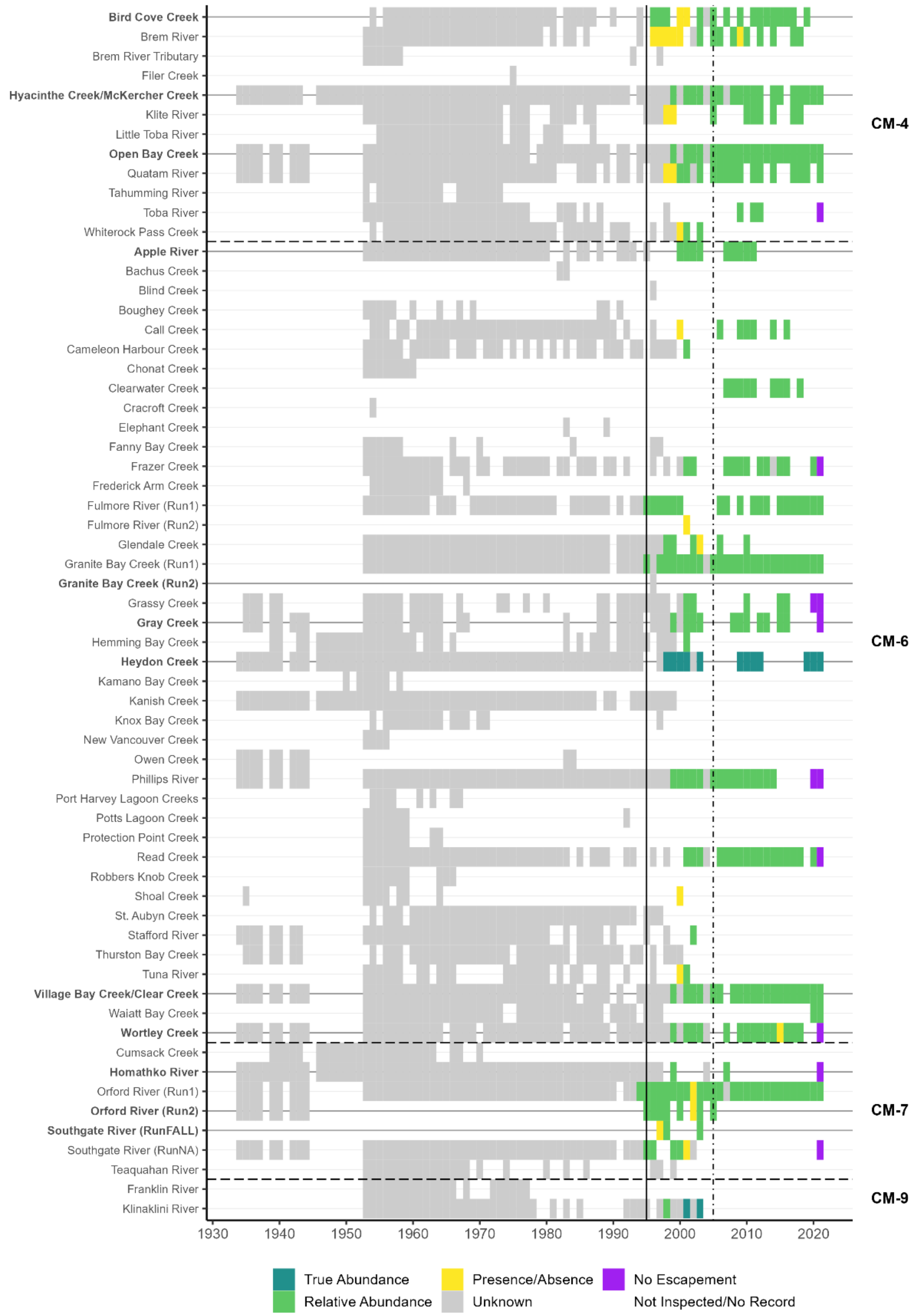

Figure 14. Summary of escapement surveys and survey methodologies for Chum Salmon runs within the A-Tlegay Member Nations Mainland Inlet Territory. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 7). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method, when known (see Appendix A1).

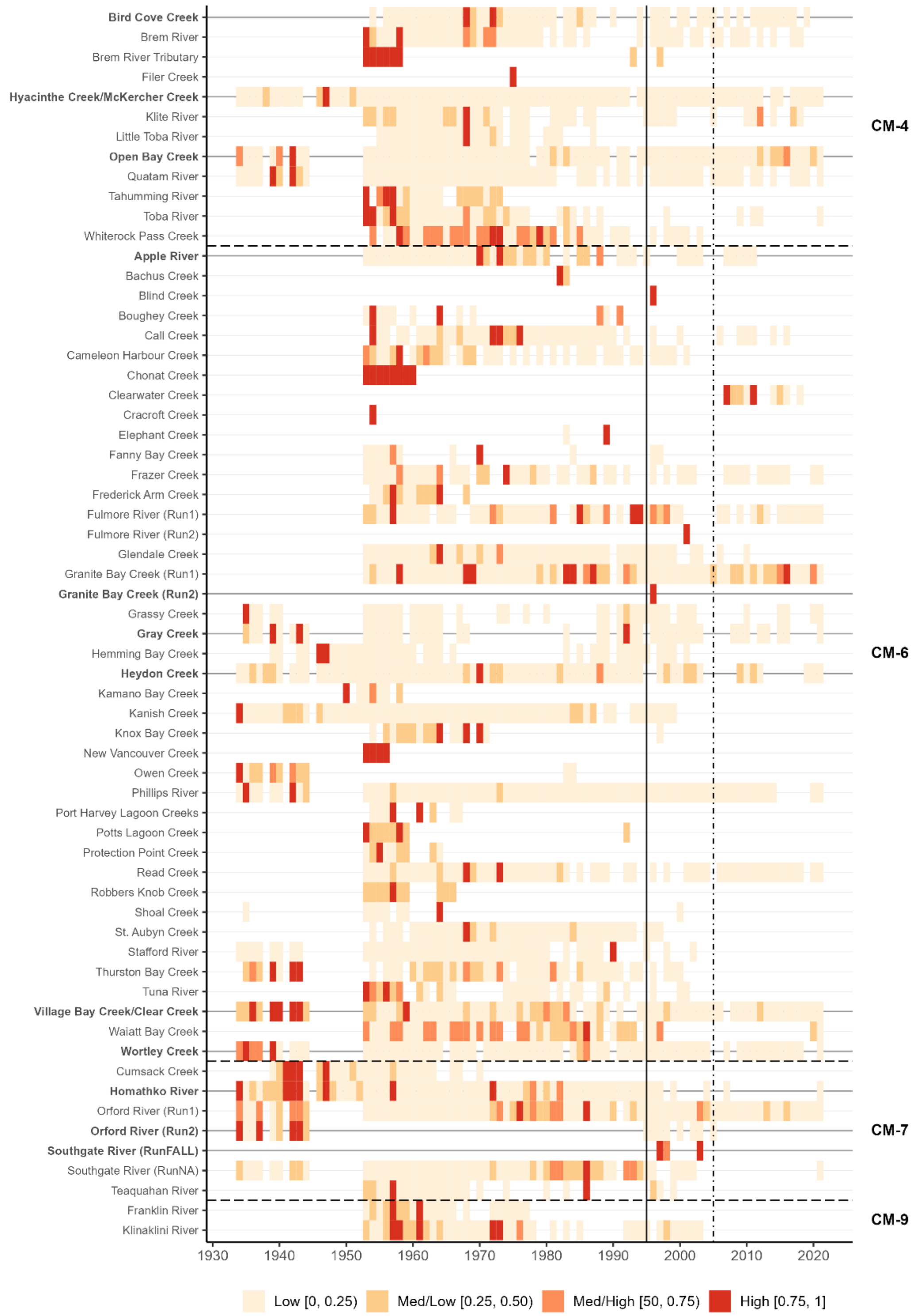

Figure 15. Yearly escapement as a percentage of maximum escapement within NuSEDS recognized Chum Salmon runs. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 7). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates level escapement percentage value.

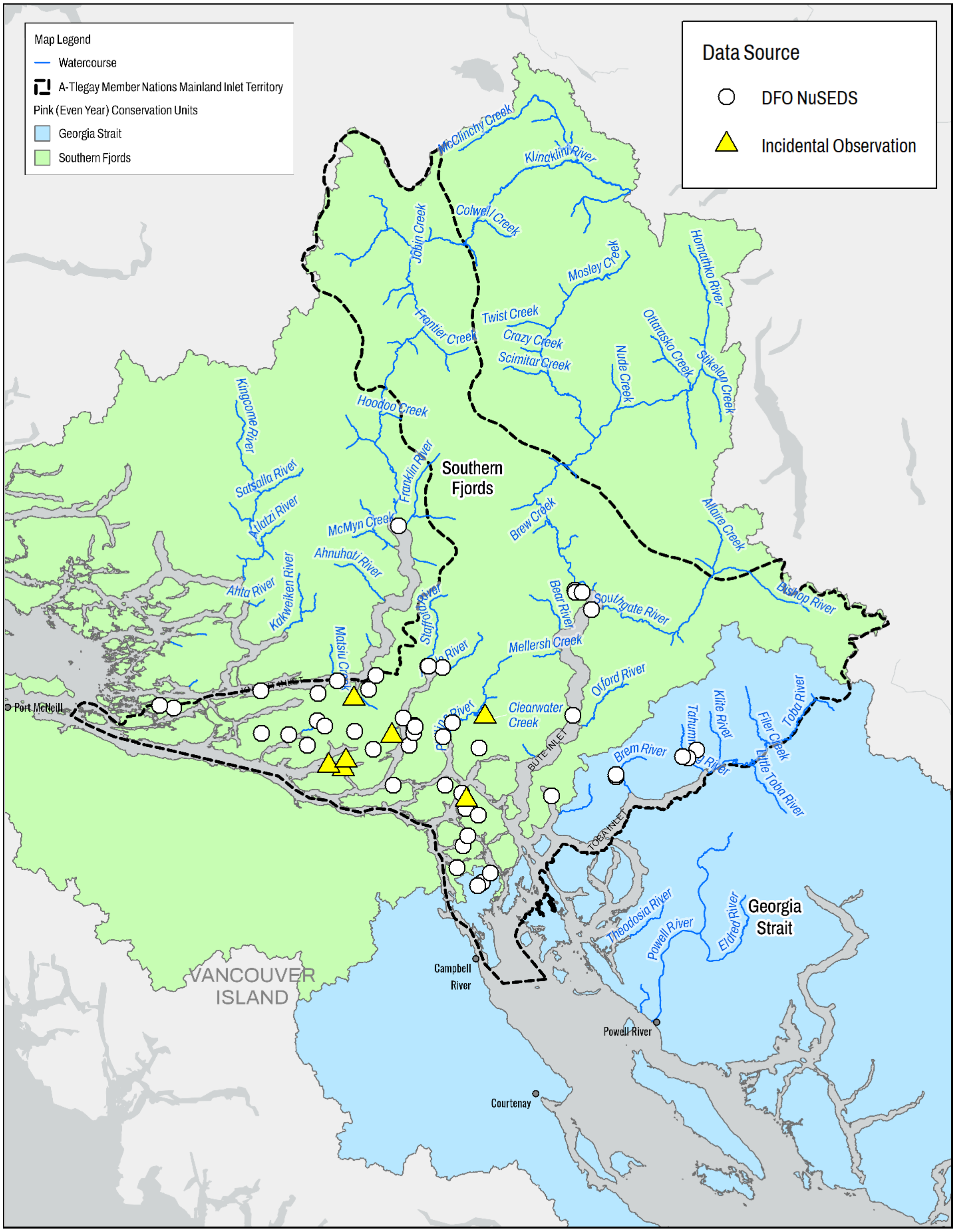

Figure 16. **Overview of Pink Salmon (even year) conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory.** Conservation units are highlighted using different colours.

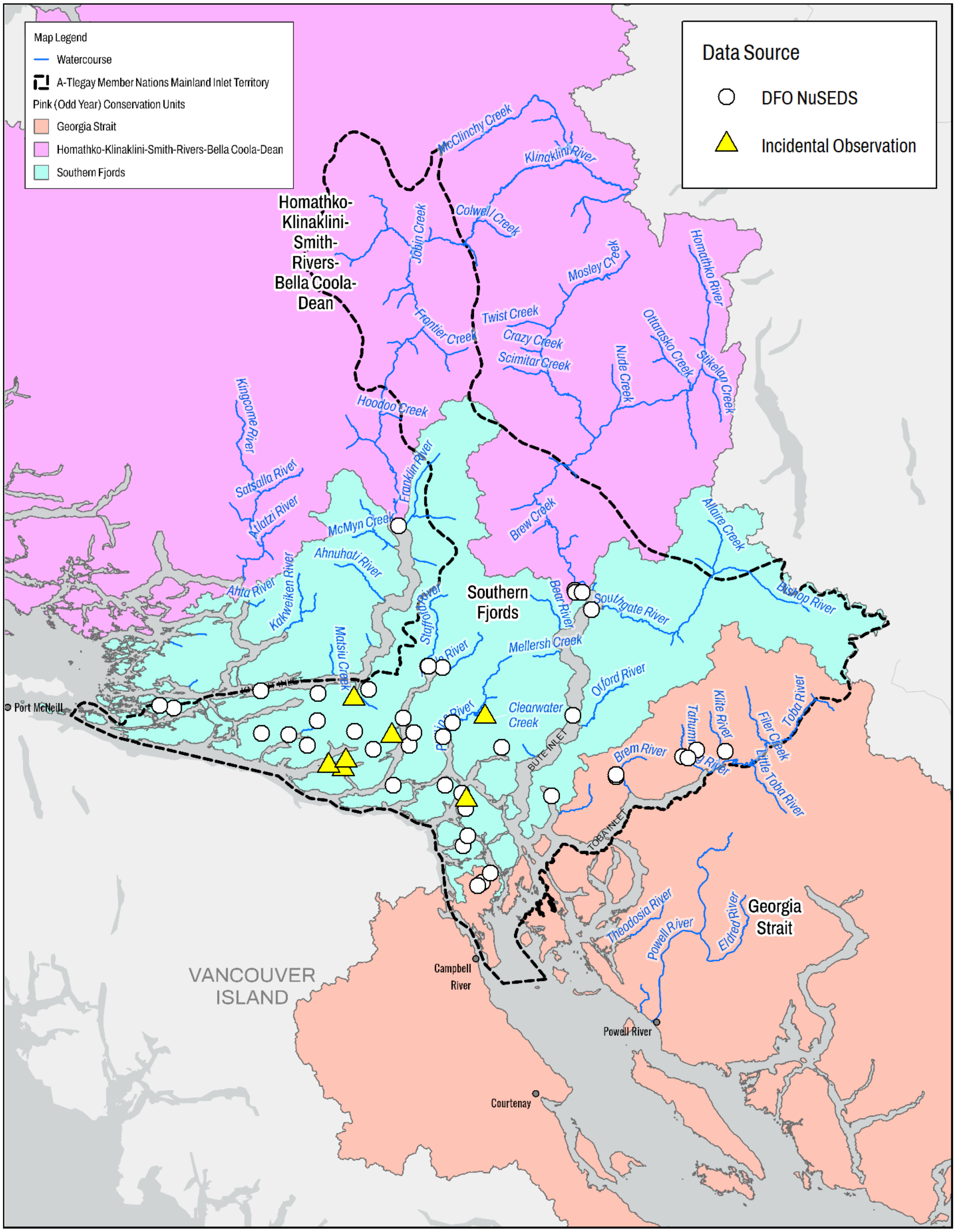

Figure 17. Overview of Pink Salmon (odd year) conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory. Conservation units are highlighted using different colours, with marine MSF areas highlighted dark orange.

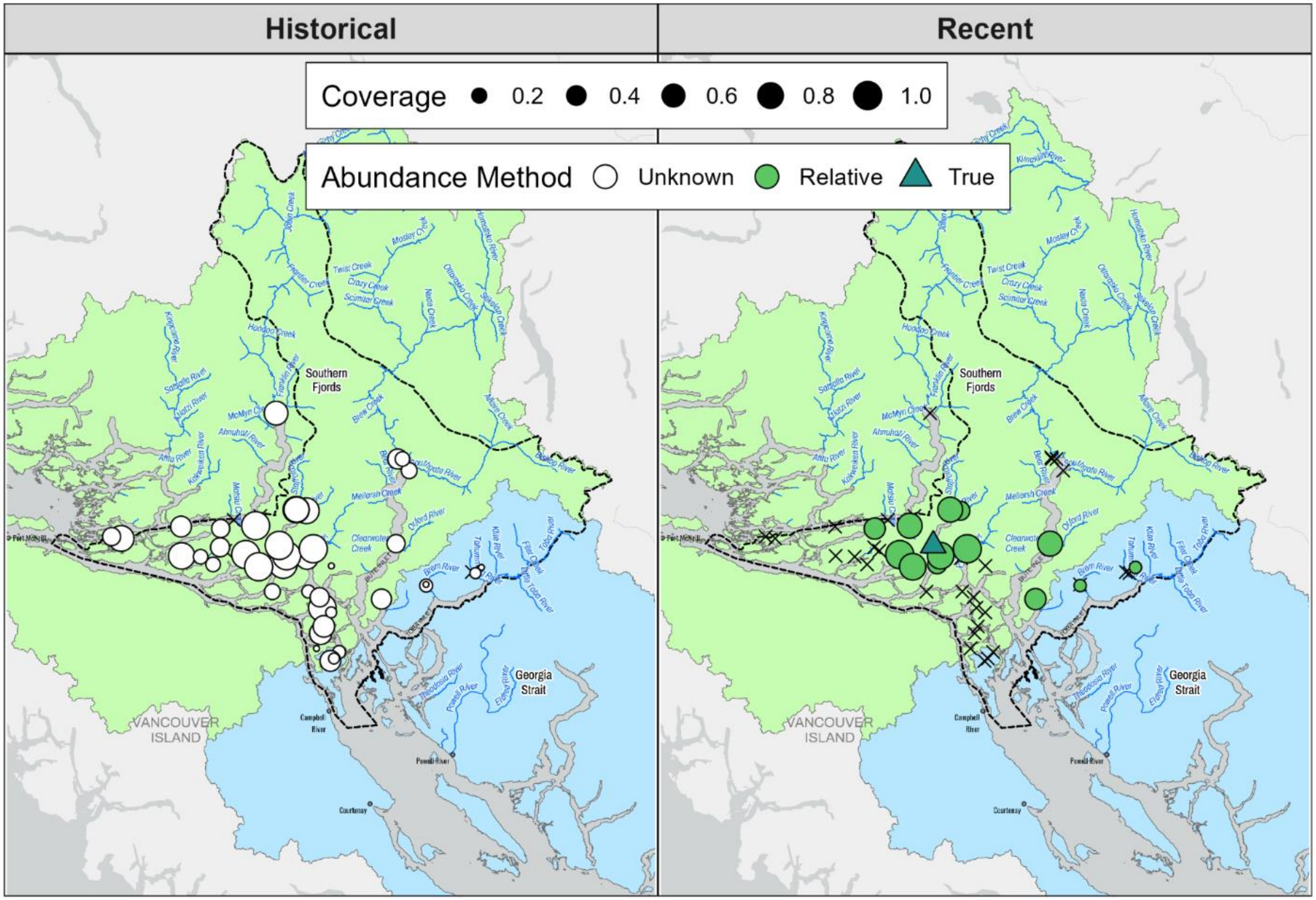

Figure 18. **Comparison of reported Pink Salmon (even year) escapement reporting coverage from historical (i.e., 1953−1994) to recent (2005−2021) period.** Symbol shape and colour represents enumeration methods, while symbol size represent the proportion of years with reported escapement. The ‘x’ symbol indicates no data within the period.

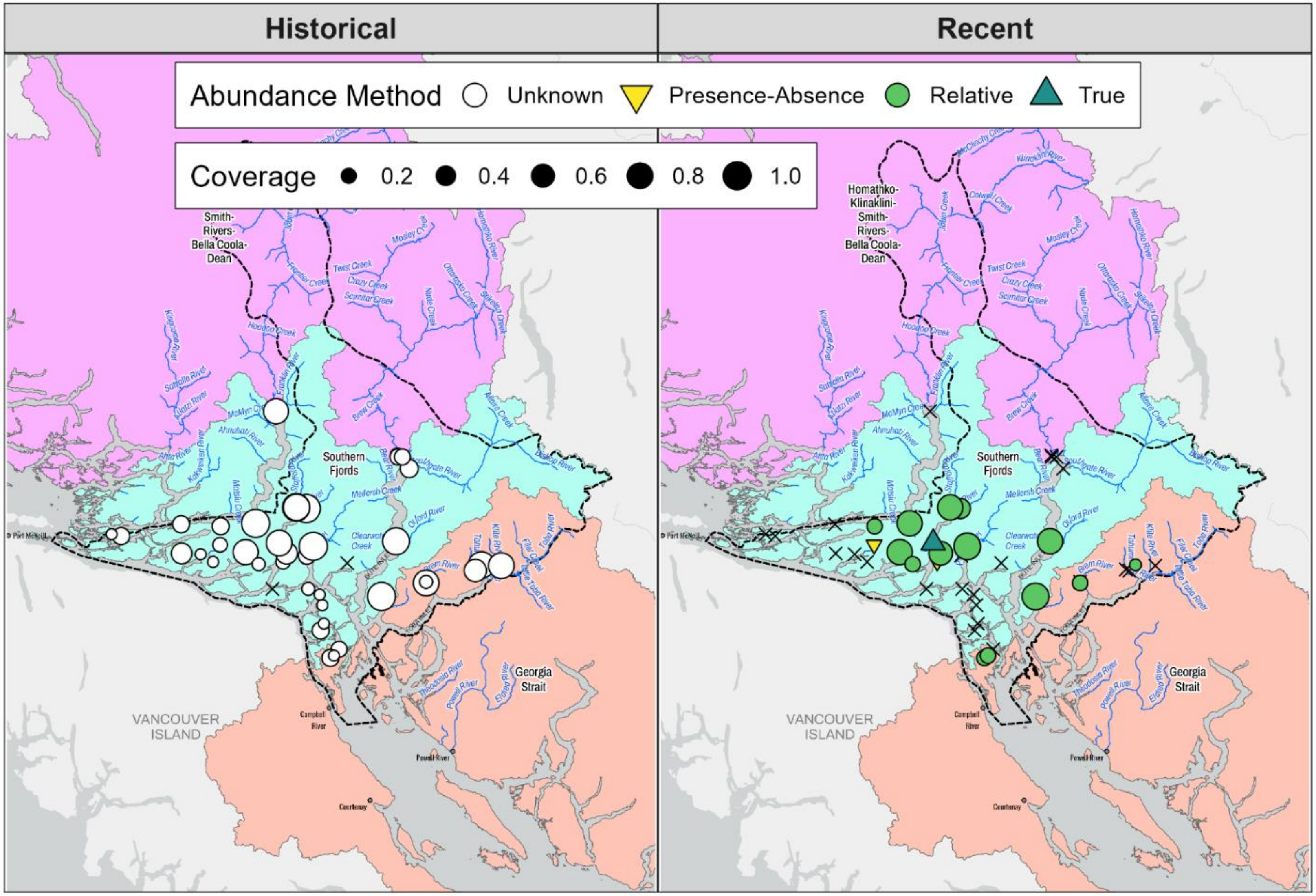

Figure 19. **Comparison of reported Pink Salmon (odd year) escapement reporting coverage from historical (i.e., 1953−1994) to recent (2005−2021) period.** Symbol shape and colour represents enumeration methods, while symbol size represent the proportion of years with reported escapement. The 'x' symbol indicates no data within the period.

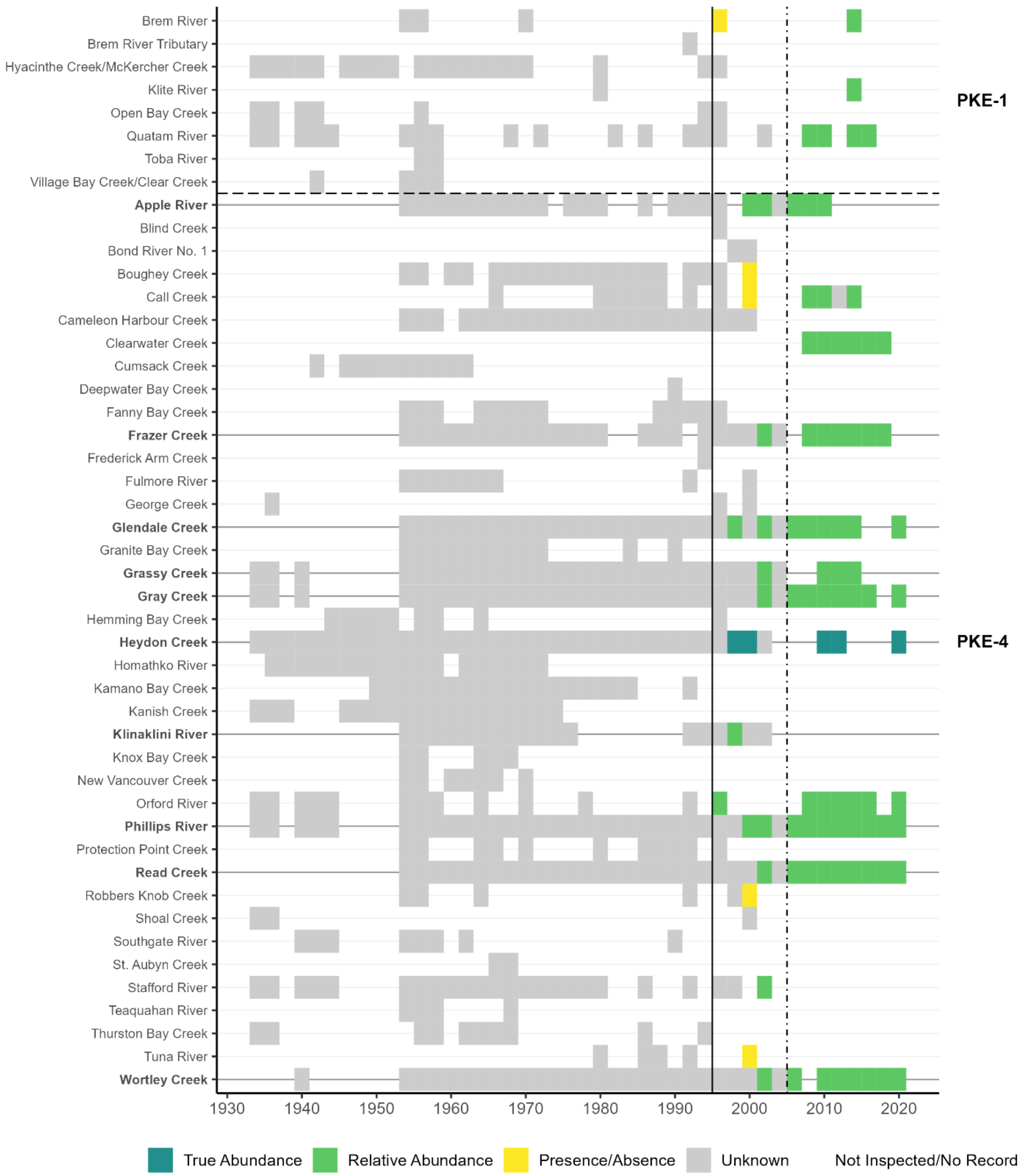

Figure 20. Summary of escapement surveys and survey methodologies for Pink Salmon even year runs within the A-Tlegay Member Nations Mainland Inlet Territory. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science. Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 9). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method, when known (Appendix A1).

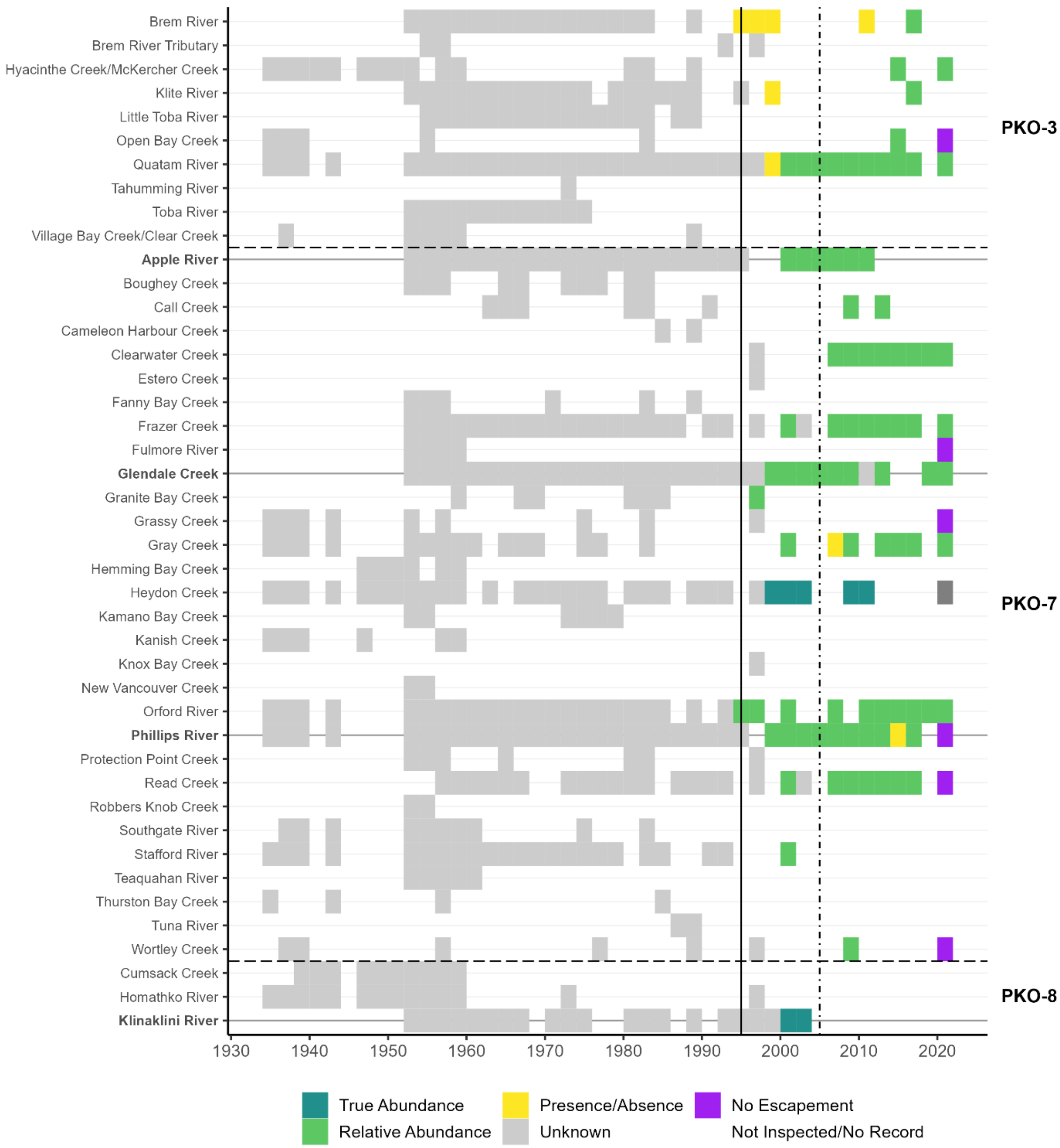

Figure 21. **Summary of escapement surveys and survey methodologies for Pink Salmon odd year runs within the A-Tlegay Member Nations Mainland Inlet Territory.** Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science . Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 9). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method, when known (Appendix A1).

Figure 22. Yearly escapement as a percentage of maximum escapement within NuSEDS recognized even year Pink Salmon runs. Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science . Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 9). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates level escapement percentage value.

Figure 23. **Yearly escapement as a percentage of maximum escapement within NuSEDS recognized odd year Pink Salmon runs.** Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science . Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 9). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates level escapement percentage value.

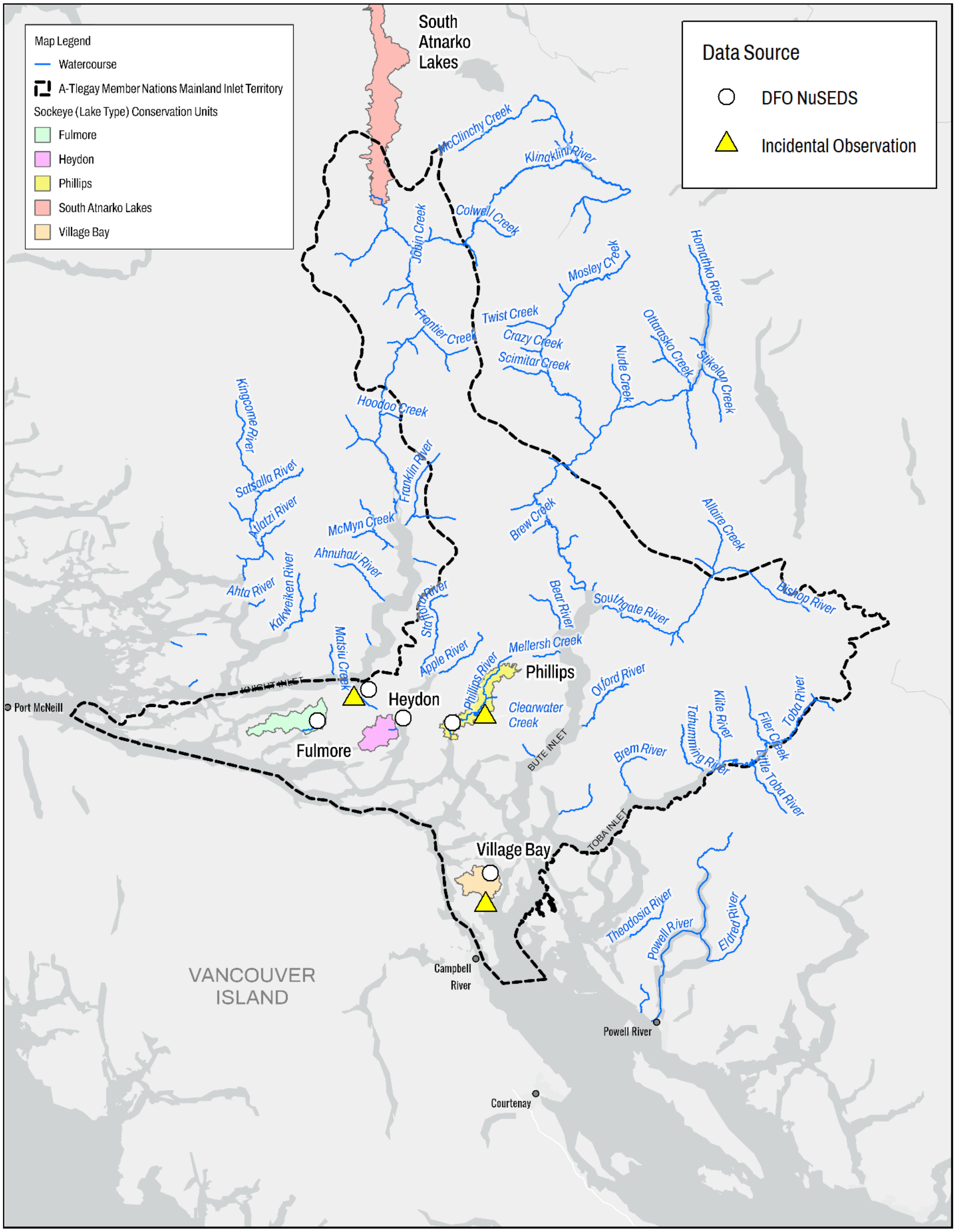

Figure 24. **Overview of Sockeye Salmon (lake-type) conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory.** Conservation units are indicated by shading colour.

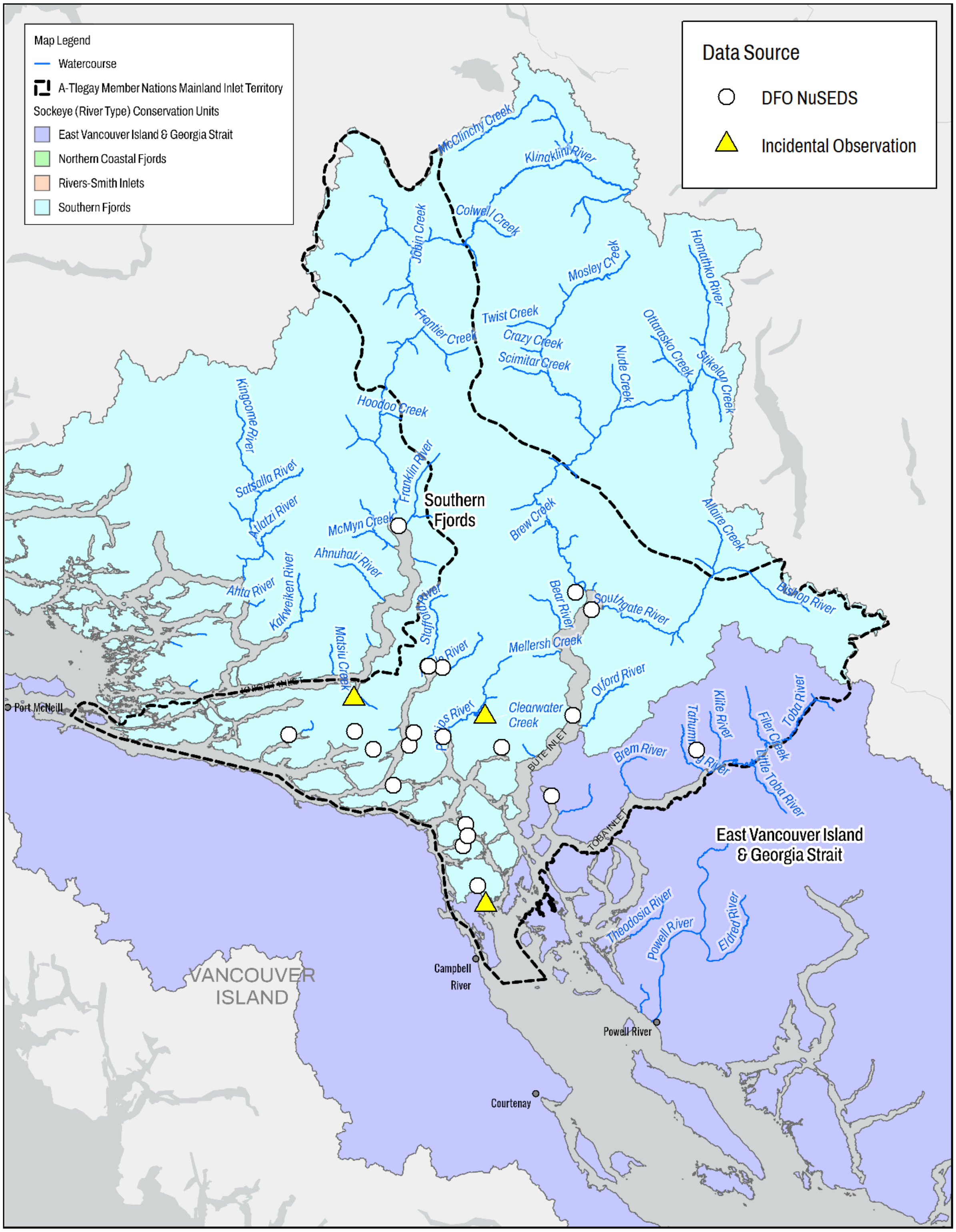

Figure 25. **Overview of Sockeye Salmon (river-type) conservation units that intersect with the A-Tlegay Member Nations Mainland Inlet Territory.** Conservation units are indicated by shading colour.

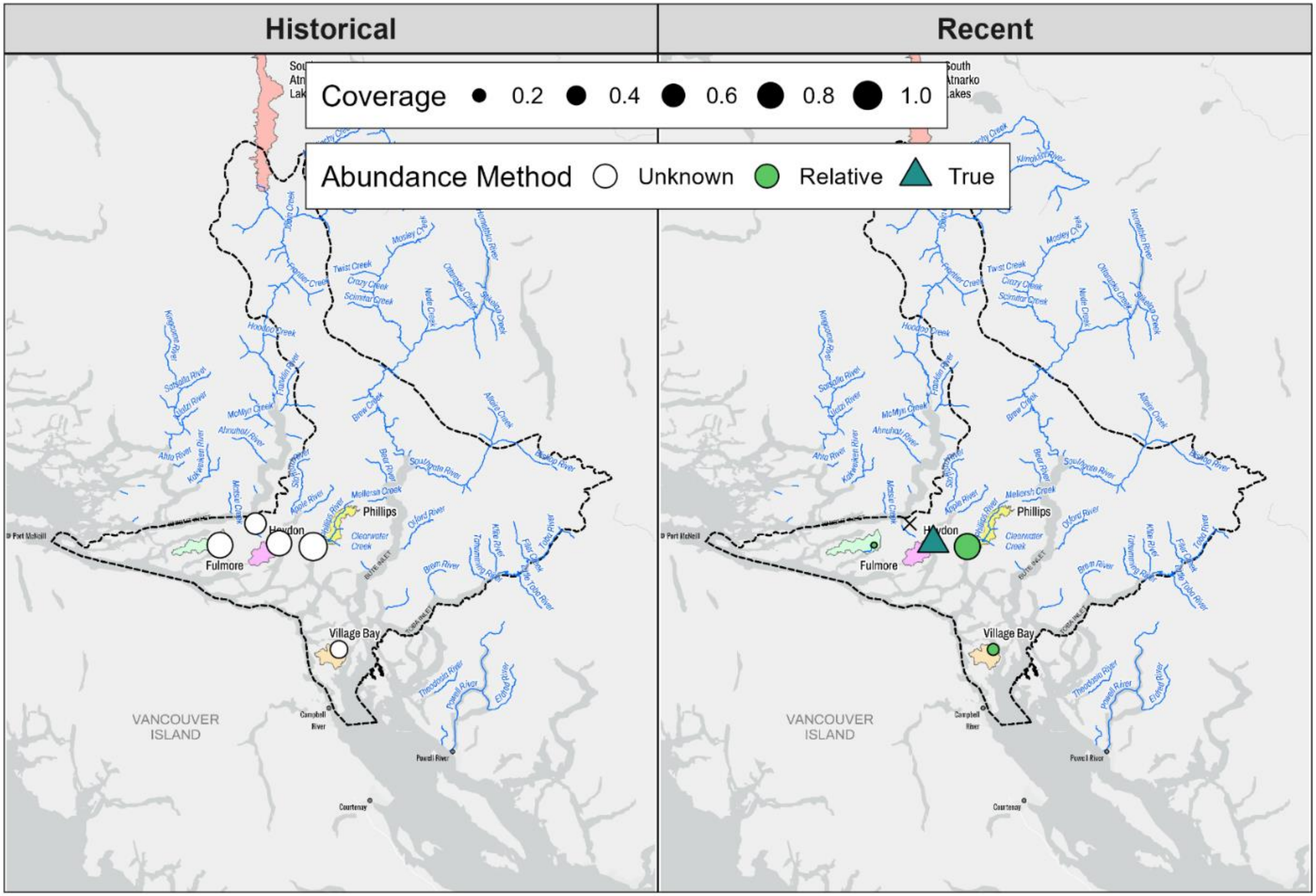

Figure 26. Comparison of reported Sockeye Salmon (lake-type) escapement reporting coverage from historical (i.e., 1953–1994) to recent (2005–2021) period. Symbol shape and colour represents enumeration method, with size representing the proportion of years with reported escapement. The 'x' symbol indicates no data available within the period.

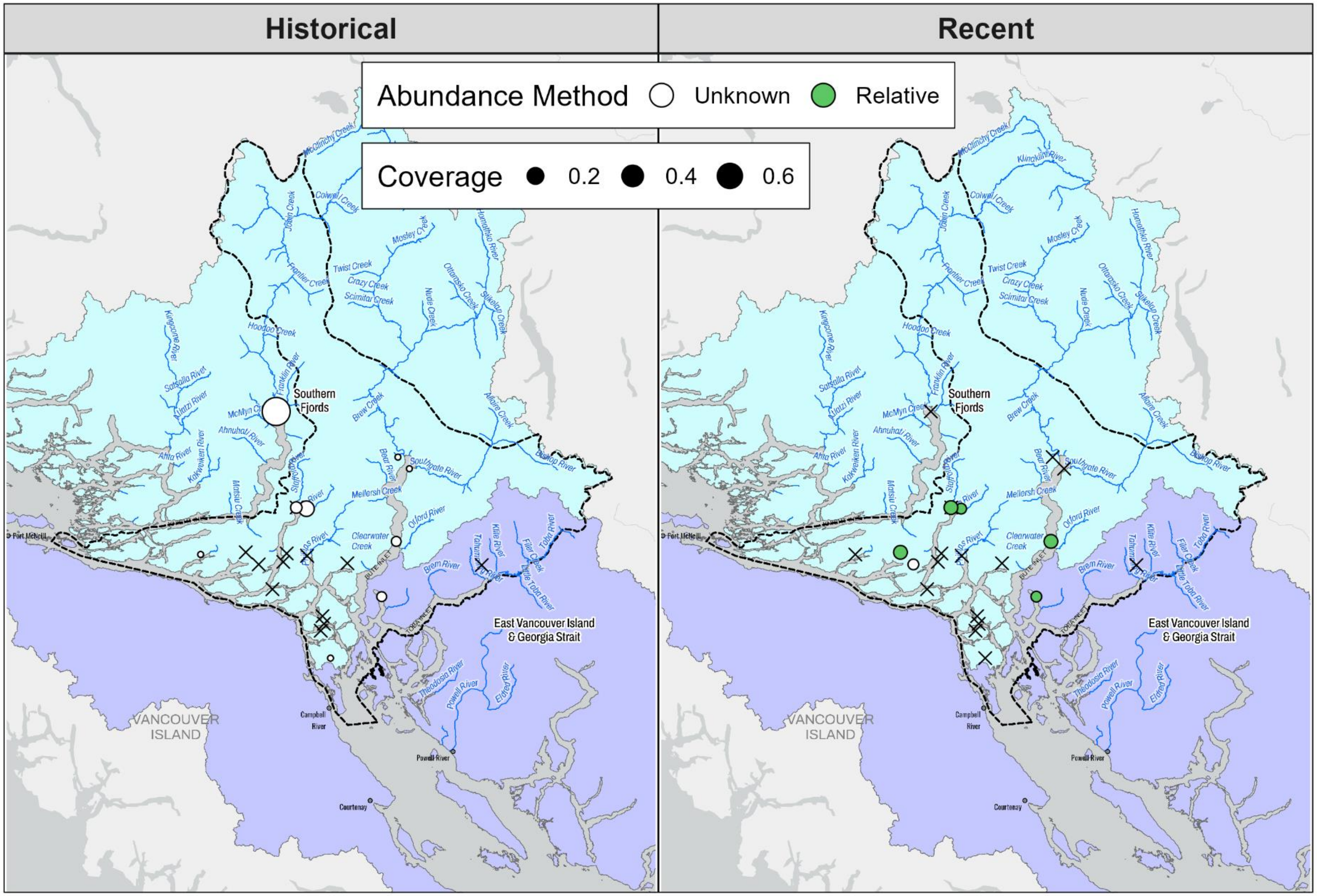

Figure 27. Comparison of reported Sockeye Salmon (river-type) escapement reporting coverage from historical (i.e., 1953–1994) to recent (2005–2021) period. Symbol shape and colour represents enumeration method, with size representing the proportion of years with reported escapement. The 'x' symbol indicates no data available within the period.

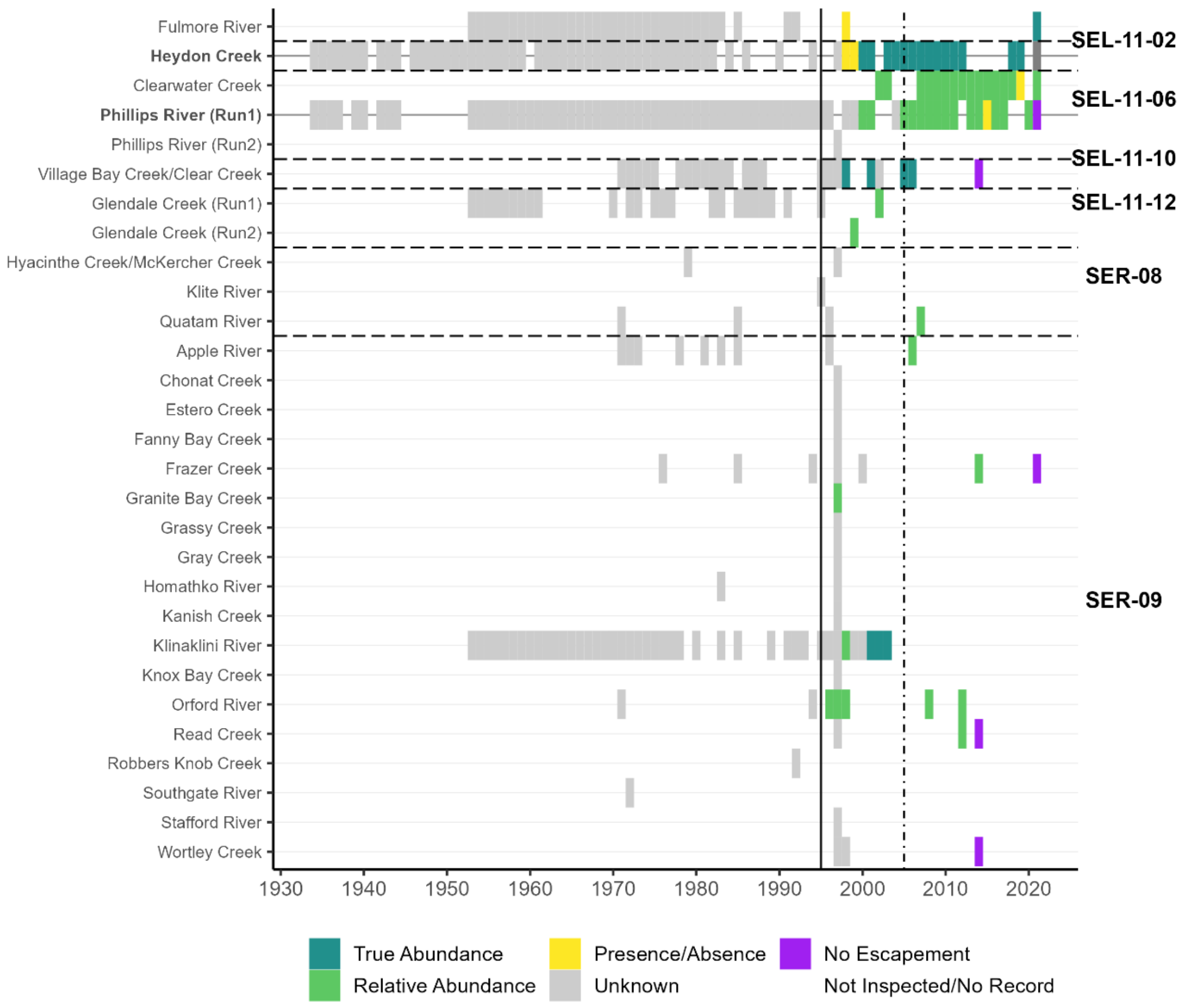

Figure 28. **Summary of escapement surveys and survey methodologies for Sockeye Salmon runs within the A-Tlegay Member Nations Mainland Inlet Territory.** Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science . Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 11). DFO indicator streams are indicated with bolded text and darker grid lines. Shading indicates survey method used, when known (Appendix A1).

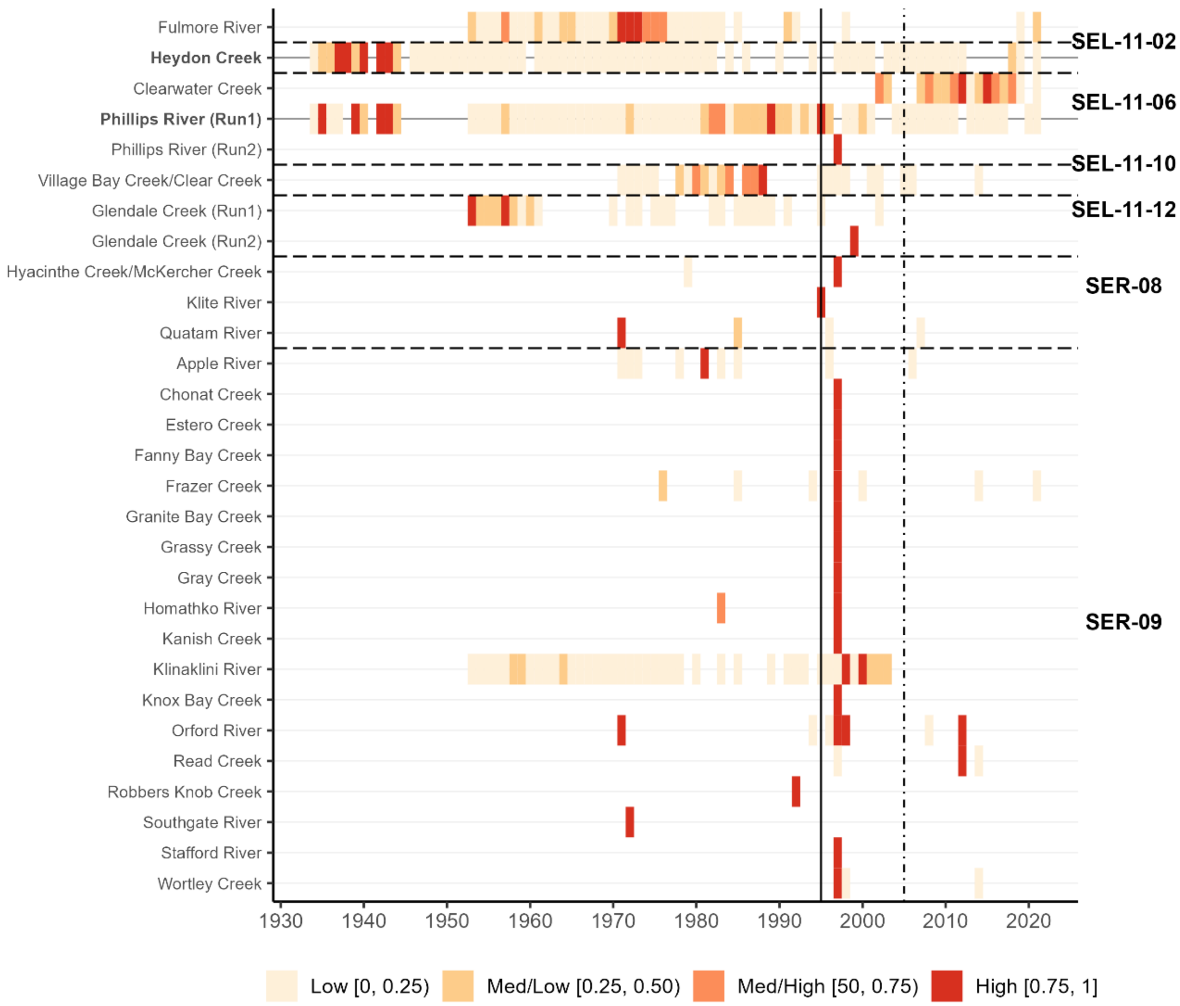

Figure 29. **Yearly escapement as a percentage of maximum escapement within NuSEDS recognized Sockeye Salmon runs.** Vertical solid line indicates the year when salmon enumeration was transferred to DFO Science . Vertical dashed line indicates the public release of the Wild Salmon Policy. Horizontal dashed line and right margin text indicates conservation unit membership (see Table 11). DFO indicator streams are indicated with bolded text and darker grid lines. Tile colour shading indicates level escapement percentage value.

APPENDICES

APPENDIX A
NUSEDS METHOD SUMMARY

Appendix A1. Summary of escapement method types used within NuSEDS and corresponding colour coding used within this report.

Class Type	Description	Survey Methods	Analytical Method	Reliability Within Stock Comparisons	Units	Accuracy
1	True Abundance, high resolution	Total, seasonal counts through fence or fishway; virtually no bypass	Simple, often single step	Reliable resolution of between year differences >10% (in absolute units)	Absolute abundance	Actual, very high
2	True Abundance, medium resolution	High effort (5 or more trips), standard methods (e.g., mark-recapture, serial counts for area under curve)	Simple to complex multi-step, but always rigorous	Reliable resolution of between year differences >25% (in absolute units)	Absolute abundance	Actual or assigned estimate and high
3	Relative Abundance, high resolution	High effort (5 or more trips), standard methods (e.g., equal effort surveys executed by walk, swim, overflight)	Simple to complex multi-step, but always rigorous	Reliable resolution of between year differences >25% (in absolute units)	Relative abundance linked to method	Assigned range and medium to high
4	Relative Abundance, medium resolution	Low to moderate effort (1–4 trips), known survey method	Simple analysis by known methods	Reliable resolution of between year differences >200% (in relative units)	Relative abundance linked to method	Unknown assumed fairly constant
5	Relative Abundance, low resolution	Low effort (e.g., 1 trip), use of vaguely defined, inconsistent or poorly executed methods	Unknown to ill defined; inconsistent or poorly executed	Uncertain numeric comparisons, but high reliability for presence or absence	Relative abundance, but vague or no i.d. on method	Unknown assumed highly variable
6	Presence or absence	Any of the above	Not required	Moderate to high reliability	(+) or (-)	Medium to high