

Sport Fishing: increased participation requires increased vigilance

“While commercial fisheries and aquaculture have a well-established market value, the value of recreational and First Nations subsistence fisheries have no market value.... [Howe Sound provides] a total value of approximately \$95,073 per year in non-market food provisioning. This value is likely an underestimate as the data represent only what has been reported and recorded from 2001 to 2010.”

**FROM SOUND INVESTMENT: MEASURING THE RETURN ON HOWE SOUND’S ECOSYSTEM ASSETS
(MICHELLE MOLNAR, 2015, DAVID SUZUKI FOUNDATION)**

AUTHORS

Cortney Brown, Trout Country Fishing Guides

Stephanie Linguard, Instream Fisheries Research

CONTRIBUTORS

Members of a discussion table at the Howe Sound Aquatic Forum, June 17, 2016 workshop¹

REVIEWER

Dave Brown, Squamish-Lillooet Sportfish Advisory Committee Vice-Chair, and Sea-to-Sky Fisheries Roundtable Member

What’s happening with sport fishing in Howe Sound and its tributaries?

In recent years, an increase in visitors to Howe Sound, as well as large returns of pink salmon in 2013 and 2015, has attracted unprecedented numbers of anglers to the northern end of Howe Sound and the Squamish River watershed. Fishing has long been a popular pastime in Howe Sound (see Salmon Derby inset). Currently, recreational or sport fishing activities include salmon and trout fishing and prawn and crab trapping. In the past lingcod and rockfish were also targeted in Howe Sound, but fishing for these species has been closed since 2002.

While there are many salmon bearing tributaries in Howe Sound ([see Salmon article](#)), the Squamish River watershed is by far the largest and most important. Historically, the Squamish system provided ample angling opportunities for Chinook salmon up to 45 kg as well as retention of up to two wild steelhead per day.² Prior to the late 1980s, retention of all salmon species was permitted in the Squamish River.³ Declines in the salmon populations of Howe Sound in the last few decades are likely due to a combination of factors including habitat loss, fish farm and hatch-

ery production, climate change, and overfishing,^{4,5} although, in the last decade, hatchery production has also been instrumental in restoring some populations to the Squamish River. Anglers in the Squamish River and tributaries are now limited to catch and release only for steelhead, Chinook, wild coho, chum, rainbow trout, cutthroat trout and char. The only species sports anglers are currently able to retain in the Squamish River watershed are pink salmon, and hatchery coho salmon.

Why is sport fishing important to Howe Sound?

Sport fishing is important both economically as well as socially to communities around Howe Sound, providing an essential link to place for communities and a connection to the natural environment. In 2012 the sport fishery contributed \$325.7 million to the provincial economy and employed 8,400 people.⁶ The last economic valuation of the sport fishery in Howe Sound,

in 1980, estimated a total of 151,875 angler days with a value of between \$7.9 million and \$15 million.⁷ Participants at the 2016 workshop¹ also highlighted the important economic contribution of the businesses that support recreational fishing in the Howe Sound region – outfitters, guiding operations and bait and tackle shops.



Photo: Jenn Burt

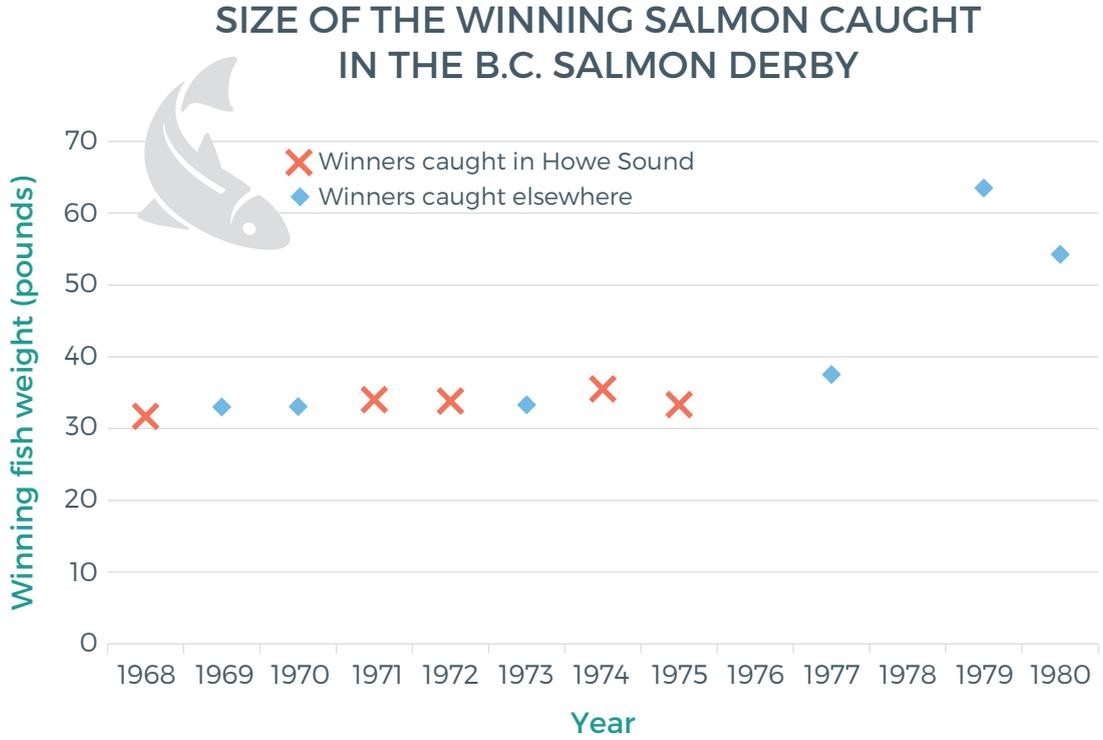


Figure 1. Size of the winning salmon (pounds) caught in the B.C. Salmon Derby (1968 – 1980).

The B.C. Salmon Derby 1968-1980

The "World's Largest Sport Fishing Competition"

VANCOUVER, BRITISH COLUMBIA, MONDAY, AUGUST 16, 1971

STARS IN THEIR EYES, MONEY IN THEIR POCKETS

Neighbors' winning catch a Derby

By LEE STEIGHT

Two anglers with stars in their eyes caught the largest salmon of their lives early Sunday and won the \$25,000 first prize in the fourth annual B.C. Salmon Derby in Burrard Inlet and Howe Sound.

Marine salesman Walter Lacy, 49, Kevan, Coquitlam, combed by know-how with that of a neighbor who had a boat. They caught a 31-pound chinook salmon on Lacy's rod about 8 a.m. near Gibson's to establish a new record for the Derby.

The boat-owner partner was Kenneth F. Holland, 304 Kee-Wee, Coquitlam, a safety equipment salesman. Both are in their early thirties.

Their win was a bit of a saga among fishing outings. They started with plugs — the trout-and-ace Lucy Lays — at a spot rated a good chance for a winner — the mouth of McNab Creek.

They saw little action there so moved south to Port Mellon, then in Gibson's gas, where they saw anglers taking in three chinooks — the heavy variety that was darkies. They'd been taken at the little bay just out from the small boat harbor.

They got a nine-pounder on Lacy's rod. It wasn't large enough to rate a prize. They persisted and hooked the 31-pounder, again on Lacy's rod. Both were yelling the Louie blues and 42 success.

Walter Lacy (left) and Ken Holland, both clutching the 31-pound chinook salmon that landed them \$25,000.

Contributed by Karin Bodtker, based on Vancouver Sun and Province newspaper clippings

The B.C. Salmon Derby,⁸ also called the Sun Derby or the Export 'A' Kings Derby in different years, was billed as the world's largest sport fishing competition. The Derby started on Labour Day weekend 1968, was initially limited to 200 square miles of Howe Sound, and ran for 13 years. Each year the event took place over a weekend in August or early September. 11,000 participants were reported in the first year alone. Newspaper reports from several years documented 10,000 fishermen including 200 from Japan and 13 other countries. The winning salmon, ranging between 31 and 38 pounds (14 to 17 kilograms) until the last years when even larger fish were caught off the eastern shores of Vancouver Island (Figure 1), garnered \$25,000 (reportedly in silver) for the lucky fisherman. In the second year of the Derby, a 15 year old won the prize with a 33 pound (15 kilogram) 'red spring' off Hutt Island in Central Howe Sound. Over 4,200 boats⁹ were involved that year, all fishing within Howe Sound over one weekend! The boundaries of the Derby were expanded several times over the years, but the winning fish often came from Howe Sound. The Derby was finally cancelled in 1981 due to federal restrictions on salmon harvest. In February of 1981, all Fraser River salmon fishing was closed until June 21, downriggers were banned, and the Chinook bag limit was reduce to one fish per day, due to concerns about salmon stocks.

Is there a connection between sport fishing and First Nations?

The Squamish First Nation has harvested salmon, crab, eulachon, herring and other species in the Howe Sound and tributaries for centuries. The culture of the First Nations in the Howe Sound area is closely entwined with the health and runs of salmon and steelhead and many First Nations participate in sport fishing as well as harvesting for food.

Today fishing continues to be a vital part of life in the Squamish Nation, although salmon stocks have been depleted and the economy of the Nation has been adversely affected.¹¹

“When the tide goes out, the table is set.”

SQUAMISH ELDER, AUTHOR UNKNOWN¹⁰



Squamish fishers Shawn Baker and Xwelápełtxw (Ned Lewis) gillnetting salmon on the Squamish River. (Photo: Gary Fiegehen)

What is the current state of sport fishing in Howe Sound?

Since 2009, local guide outfits have reported an increase in fishing pressure in the Howe Sound tributaries. These increases are especially evident during the pink salmon and steelhead runs. The Squamish River Watershed and Furry Creek, in particular, are becoming hotspots for young families and youth looking to forage, re-connect with nature and participate in outdoor recreation. Local stakeholders in the fishing community are seeing significant surges in pressure on the salmon fishery as well as increases in poor angling techniques. The recent large pink salmon returns have attracted many new and uneducated fishers. It is common to see hundreds of people lining the shores of Furry Creek and the banks of the Squamish River during the pink salmon run.¹²

In total there are up to 25 species (or groupings) of finfish open to retention by saltwater anglers the recreational fishery in Howe Sound,¹⁶ however many of these will never be fished in Howe Sound as they don't occur there (e.g., albacore tuna). The main species of finfish targeted and retained in Howe Sound are five salmon species (Chinook, coho, pink, chum, steelhead) and Pacific cod.¹⁷ Currently fishing for lingcod and rockfish is not permitted year round in Howe Sound for conservation reasons. In addition to fin fish, there are 13 invertebrate species or groupings

of invertebrate species (e.g. squid, clam, other) open to retention in Howe Sound. Bivalve fisheries (clams, mussels, oysters) are closed in Howe Sound due to sanitary contamination. The main invertebrate species harvested in the Howe Sound recreational fishery are: crab, shrimp, prawns, octopus, sea cucumber and squid.

In a search of DFO publications, stock assessments were found for less than 25 percent of the species open to retention in Howe Sound. The lack of stock assessment data is a major concern to the sport fish community as there is no knowledge of trends in populations and what effect increased participation, harvesting and industry may have on the resource. For example, the Sportfish Advisory Committee expressed concern over the opening of a 2015 seine fishery for pink salmon due to inadequate scientific justification to open a commercial fishery.¹⁸ Further, a commercial chum fishery in Johnstone Strait continues an annual harvest of fish which include Howe Sound chum, while numbers of spawners returning have been fluctuating three-fold in recent years ([see Salmon article](#)) and the most recent chum salmon stock status report is dated 1999.¹⁹ Overall, there is simply not enough data available to evaluate the health of fish and invertebrate populations in the Howe Sound region.

Main Observations reported at a June 2016 workshop¹³

1. Returning coho, both wild and hatchery, are more abundant and notably larger. **“The coho are as big as I have ever seen for this time of year...”** – J. Tonelli, email prior to workshop
2. Chinook are more abundant.¹⁴ **“2015 was easily the best summer of Chinook fishing that I have seen in more than 30 years of guiding in these local waters... best sustained winter action [Chinook] in at least 20 years. Many over 20 pounds.”** – Dave Korsch
3. Pacific cod catches are increasing and cod is being observed in the bellies of harvested Chinook.
4. Unprecedented amounts of anchovy have been observed in the last two years, with much greater abundance in 2016 compared to 2015.
5. More herring is being observed. Fishers follow the bait fish (or forage fish) and fish in the areas where they are observed.
6. Surf smelt has been observed in the Squamish Estuary.
7. Fishers observe that Howe Sound is increasingly being used as a nursery area (e.g., seeing more juvenile Chinook and coho, while juvenile Harrison sockeye are caught in DFO small mesh surveys¹⁵).
8. Increasing recreational fishing effort in Howe Sound including people and boats harvesting shellfish (i.e., trapping spots are full), more saltwater and freshwater anglers, and more non-licensed “guides” on the saltwater. **“[I counted] 40 boats fishing off Cape Roger Curtis on the weekend, catching coho and Chinook like crazy.”** – Jason Tonelli, email prior to workshop

Key Issues and Concerns reported at a June 2016 workshop²⁰

1. DFO has a lack of capacity to enforce fishery regulations and guidelines. Two officers only, at the Squamish office, patrol a vast area that includes watersheds from Burrard Inlet to Lillooet and little time allocated to actual patrol versus administration.
2. There are a lack of data and information available on the recreational fishery and the fish stocks that support the fishery, specific to Howe Sound watersheds. (E.g., The last economic valuation of the sport fishery in Howe Sound is from 1980.)
3. An increase in unlicensed and inexperienced saltwater guides is detrimental to the fishery; these guides are “bad ambassadors.”
4. Low angler awareness is resulting in poaching and poor practices.
5. Commercial fisheries for pink and chum salmon, although very minimal recently, have a large and negative impact on a fishery resource that is vital to the watershed ecosystems. (E.g., In the cold glacial systems there is a lack of insect life, and abundant pink and chum salmon provide nutrients for the system, and are vital to the health of game fish (Chinook, coho, steelhead and trout) as well as provide flesh and eggs to trout and char through the winter.)
6. Managing agencies don't consult or engage enough with the sport fish industry and participants when species retention, commercial openings and industrial projects are being considered. (Further, DFO is attempting to replace biannual in-person advisory meetings with webinar-style meetings.²¹)

How does sport fishing benefit society and impact stream and ocean ecosystems?

The guide companies are important economic generators in communities surrounding Howe Sound, such as Squamish, Vancouver and the Sunshine Coast. Sport fishing not only benefits local businesses near docks and river access points but the purchase of fishing licenses and conservation tags generates revenue for conservation.

Currently there are nine freshwater guide outfits operating year round on the Howe Sound tributaries and in local lakes. Ministry of Forests, Lands and Natural Resource Operations reported 10 licensed freshwater guides who reported guiding in the area between 2011 and 2015.²² It is estimated that roughly 20 to 25 assistant guide licenses were issued. Between the years 2011 and 2015 there was a total of 1,268 reported angling days,²³ which roughly translates to \$507,200 in revenue for guide service alone.²⁴ The most commonly caught species were pink salmon and rainbow trout with total estimated catches of 1,192 and 1,315 respectively.²⁵

Approximately 20 to 30 saltwater guide operators out of Vancouver, Horseshoe Bay, Richmond and Gibsons fish Howe Sound year round. Outfits target Chinook, pink, coho and chum salmon and sometimes trap Dungeness crab. The number of two- to four-year-old Chinook using Howe Sound has increased dramatic-

ally in the last few years, and often sub-legal Chinook, less than 62 centimetres in length, are caught and released.²⁶ In addition, coho caught in 2016 have been twice the normal size. Fishers speculate that efforts to restore the herring in the Squamish harbour have likely added significant food sources for salmon and observe that anchovies have exploded in numbers in the outer reaches of Howe Sound as well.²⁷

While sport fishing is an important economic generator in the Howe Sound region, the fishery also has negative impacts on ecosystems in both Howe Sound and tributaries. Lack of DFO enforcement capacity, minimal conservation officer presence, and lack of education in the fishery have all resulted in a number of bad habits by people entering the recreational fishery. Littering, overfishing, retention of prohibited species and increased pressure are a few of the problems associated with the recreational fishery in Howe Sound and tributaries. Allowing only catch and release as well as prohibiting removal of fish from the water when landing would be good solutions to curb poor behaviours and protect dwindling fish stocks.

What is being done?

Sport fisheries in Howe Sound are managed by the Department of Fisheries and Oceans. Fisheries for trout in the tributaries of Howe Sound fall under the jurisdiction of the Government of British Columbia under the ministry of Forests, Lands and Natural Resources. Changes to the Federal Fisheries Act introduced in 2012 and significant cuts to DFO habitat staff resulting in reduced assessment and monitoring of development projects have led to fish habitat degradation and loss.

Perhaps an unintended consequence of on-line purchase of fishing licenses is the lack of interaction between vendors and purchasers which often included angler education in the past. However, many grassroots interest groups have stepped up their education efforts on proper angling techniques, fish identification and rules and regulations. Some have organized river steward programs for years with pink salmon returns to show community support of proper angling and trash clean up.

What can you do?

SOME ACTIONS CONTRIBUTED BY CORI



Individual and Organization Actions:

- Ensure you are familiar with the current regulations before you fish.
- Take fishing lessons to learn proper fish handling techniques.
- Take your garbage and used fishing line with you when you leave your fishing spot.
- Avoid unwanted and illegal rockfish by fishing away from rocky reef areas, key habitat for these fish.
- Sport fishing organisations and guides/outfitters can collect data on participants and catch and share the data to aid in quantifying the value of the activity to Howe Sound.
- Fish and purchase sustainable seafood.
- Participate in shoreline cleanup.
- Report any poaching and poor angling techniques you witness:
DFO Observe Record Report Line: 1-800-465-4336
Report All Poachers and Polluters (RAPP): 1-877-952-7277



Government Actions and Policy:

- Require angler education through the licensing process.
- Make angler awareness programs available in multiple languages.
- Undertake baseline data studies to better determine fish populations, behaviours, and returns so that conservation projects can be implemented and retention, commercial harvests and industrial projects allowed only when supported by sufficient data.
- Allocate more resources toward monitoring and enforcement of recreational fishing regulations. Ensure salt-water “guides” are licensed.
- Increase levels of protection for forage fish species such as herring, eulachon and anchovy as they are main food sources for Pacific salmon and some marine mammals in Howe Sound.
- Support grassroots stewardship programs.
- Require saltwater guides to be licensed and test their knowledge regularly.
- Require baseline information on species populations that are targeted by sport fisheries prior to approving development projects that may impact these populations.
- Unlink the allocation of DFO Conservation Officer enforcement funds with volume of reported infractions and increase enforcement capacity especially in heavily fished areas.

Acknowledgements

We would like to acknowledge contributions made at a Howe Sound Socio-Economic Knowledge Workshop held June 17, 2016 at the Vancouver Aquarium. Participants at a “Recreational Fisheries” discussion table shared knowledge which has been incorporated into this article. Participants included the author Cortney

Brown, Trout Country Fishing Guides, Scott Sutherland, Mongoose Striker Charters, Dave Loop, Fisheries and Oceans Canada, Jason Assonites, Bonchovy Fishing Charters, Randall Lewis, Squamish Nation, and David Fiero with Squamish Nation.

Resources

DFO Observe Record Report Line

1-800-465-4336

Report All Poachers and Polluters (RAPP)

1-877-952-7277

Learn about fishing in British Columbia at Go Fish BC

gofishbc.ca

Footnotes

¹ Please see acknowledgements for list of participants.

² Mehan, Ken, long-time angler. Personal communication with author C. Brown, October 2016.

³ We can not be certain about the date but this estimate was provided to K. Bodtker by John Wright, retired DFO stock assessment biologist, on the phone, Nov 15, 2016.

⁴ Miller K.M., A. Teffer, S. Tucker, S. Li, A.D. Schulze, M. Trudel, F. Juanes, A. Tabata, K.H. Kaukinen, N.G. Ginther, T.J. Ming, S.J. Cook, M. Hipfner, D.A. Patterson, S.G. Hinch. 2014. Infection disease, shifting climates, and opportunistic predators: cumulative factors potentially impacting wild salmon declines. *Evolutionary Applications*. 7(7): 812–855.

⁵ Noakes D.J., R.J. Beamish, M.L. Kent. 2000. On the decline of Pacific salmon and speculative links to salmon farming in British Columbia. *Aquaculture*. 183(3-4): 363–386.

⁶ Stroomer C, and M. Wilson. 2013. *British Columbia Fisheries and Aquaculture Sector*, 2012 edition. Prepared for the Department of Fisheries and Oceans Canada by BC Stats. 104 p.

⁷ Province of British Columbia. 1980. *Howe Sound an Overview Study*. Environment and Land Use Secretariat Committee. 50 p.

⁸ Information compiled by Karin Bodtker, Sept 2016, from newspaper clippings (Vancouver Sun and Province newspapers) held at the Vancouver Public Library.

⁹ This number is corroborated in Hoos, L.M., and C.L. Vold. 1975. *The Squamish River Estuary: Status of Environmental Knowledge to 1974: Report of the Estuary Working Group*, Department of the Environment, Regional Board, Pacific Region. No. 2. Environment Canada. The report says, “over 40% of British Columbian sport vessels concentrate in the southern Gulf Islands, Saanich Inlet, and Howe Sound. Howe Sound and Vancouver averaged about 350 vessels on most summer weekends, with peak numbers of 4,300 and 3,500 for the British Columbia Derby and the Sun Derby, respectively.”

¹⁰ Reproduced with permission from “Where Rivers, Mountains and People Meet,” Squamish Líl’wat Cultural Centre.

¹¹ Ibid.

¹² The author is a fishing guide; this is a personal observation.

¹³ See footnote 1

¹⁴ Reviewer Dave Brown adds that 2016 was not as good as 2015 for Chinook.

¹⁵ Neville, C. 2016. Strait of Georgia Juvenile Salmon. In: Chandler, P.C., S.A. King, and R.I. Perry. (Eds.). 2016. *State of the physical, biological and selected fishery resources of Pacific Canadian marine ecosystems in 2015*. Can. Tech. Rep. Fish. Aquat. Sci. 3179: viii + 230 p.

¹⁶ Fisheries and Oceans Canada. 2016. *Finfish Species and Limits Table*. Accessed Sept 28, 2016. <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/species-especies/fintable-tableaupoisson-eng.html>

¹⁷ <http://www.pac.dfo-mpo.gc.ca/stats/rec/gs/index-eng.html>

¹⁸ Brown, D. Personal communication with K. Bodtker, Editor, Oct 21, 2016.

¹⁹ Fisheries and Oceans Canada. 1999. *Inner South Coast Chum Salmon*. DFO Science Stock Status Report D6-09 (1999). Accessed Oct 21, 2016. <http://www.dfo-mpo.gc.ca/csas/Csas/status/1999/D6-09e.pdf>

²⁰ See footnote 1

²¹ Brown, D. Personal communication with K. Bodtker, Editor, Oct 21, 2016.

²² Lunn, I. Fish Biologist, Ministry of Forests Lands and Natural Resource Operations, South Coast Region. Email communication to the author. May 10, 2016.

²³ Lunn, I. Personal communication with author C. Brown, May 10, 2016.

²⁴ 1,268 angler days x \$400/day in guide services equals \$507,200 revenue.

²⁵ Lunn, I. Email communication to author C. Brown, May 24, 2016. Corroborated by D. Brown, reviewer, Oct 21, 2016 in conversation with K. Bodtker, editor.

²⁶ Assonitis, J. Email communication to author C. Brown. October 2016. From November through May, Chinook are primarily feeding in Howe Sound (i.e., they are fish from other systems and are not returning to spawn), while in July and early August there is a small fishery for returning Squamish river system fish.

²⁷ Assonitis, J. Email communication to author C. Brown. October 2016.