



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

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December 18, 2020

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The Honorable Brian Blake
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Dear Chairpersons Rolfes, Van De Wege, Ormsby, and Blake:

We are writing to provide you with the Washington Department of Fish and Wildlife (WDFW) report to the legislature on the work of the Puget Sound Recreational Fisheries Enhancement Fund (PSRFE) Oversight Committee.

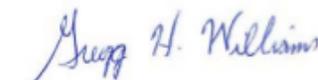
The PSRFEF Oversight Committee was established by the legislature in 2003 to advise the department on Puget Sound recreational fisheries. The group has developed goals, objectives and performance metrics to track the effectiveness of the Puget Sound recreational fisheries enhancement program and has annually reviewed and approved the enhancement fund budget.

Consistent with RCW 77.105.160 and RCW 43.01.036, the Oversight Committee partnered with the agency to develop this status report for the Legislature and Commission on our work to date. The following report outlines the Oversight Committee's progress towards the goals and objectives established by the legislature in our enabling legislation.

If you have any questions or concerns regarding this report to the legislature, please feel free to contact Tom McBride, WDFW's Legislative Director, at (360) 480-1472.

Sincerely,


Kelly Susewind, Director
Washington Department of Fish and Wildlife


Greg Williams, Chair
PSRFEF Oversight Committee

Puget Sound Recreational Fisheries Enhancement Fund- 2020 Report to WA Legislature

Washington Department of Fish and Wildlife



December 18, 2020

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For more information, see <https://wdfw.wa.gov/accessibility/requests-accommodation>.

Background

Leading up to the 1990s, recreational fishing opportunities for salmon and marine bottomfish in Puget Sound were on the decline. In 1993, the Washington State Legislature created the Puget Sound Recreational Fisheries Enhancement Program (PSRFE) to improve recreational fishing opportunities and increase the economic benefits from the fishery. To date, the program has worked to conserve, enhance, and improve fishing opportunity through outreach to promote fishing, hatchery fish production for harvest, and bottomfish conservation.

The Washington State Legislature created the PSRFE program in 1993 with a dedicated account called the Puget Sound Recreational Fisheries Enhancement fund. The funding is achieved from a portion of the fees collected from saltwater and combination fishing license sales, based on the proportion of purchasers who fish in Puget Sound which is derived through a survey.



History

2010 Audit of the Puget Sound Recreational Fisheries Enhancement Program (PSRFE)

The primary objective of the 1993 PSRFE program was focused on enhancing the “winter” blackmouth recreational fishery on Puget Sound through the release of 3 million yearling Chinook salmon into Puget Sound annually.

Following a request by the Legislature, the Washington State Auditor’s Office conducted a performance audit of the PSRFE program in 2010. Auditors concluded the following: 1) WDFW was not meeting its statutory goal to release 3 million delayed-release Chinook annually, 2) the statutory goal to release 3 million delayed-release Chinook was not effectively sustaining or restoring the Puget Sound Chinook salmon recreational fishery. The goal to release 3 million delayed release chinook salmon stems from research dated to the 1970s and 1980s. Recommendations based off the findings included the revision of the program’s goals to reflect contemporary data. Additionally, recommendations insisted on the use of outcome-oriented goals and regular reporting from the department to the commission and legislature to track the program’s progress.

In 2011, the Legislature repealed several sections of the RCW 75.54, and subsequently reauthorized the PSRFE program under RCW 77.105. The revised legislation includes provisions for marine fish enhancement as well as notable evaluation metrics. Under 77.105.005(3) the legislature has determined that the number of angler trips expended in these waters is the measure of fishing opportunity (WDFW).

Recreational Fisheries Enhancement Account

Historically, the budget for PRSFE was an annual recreational surcharge of \$10 for each combination and saltwater license sale. Following the 2009 recession, license fees were increased by 10% to backfill general fund cuts. In 2011, Legislature rolled the Puget Sound enhancement surcharge into the base saltwater and combination license fee. The annual budget reflects a portion of license sales of those who intended to fish for salmon or any marine species in Puget Sound (marine catch areas 5 to 13) or in Lake Washington. An annual survey develops these rates by license type from the previous year

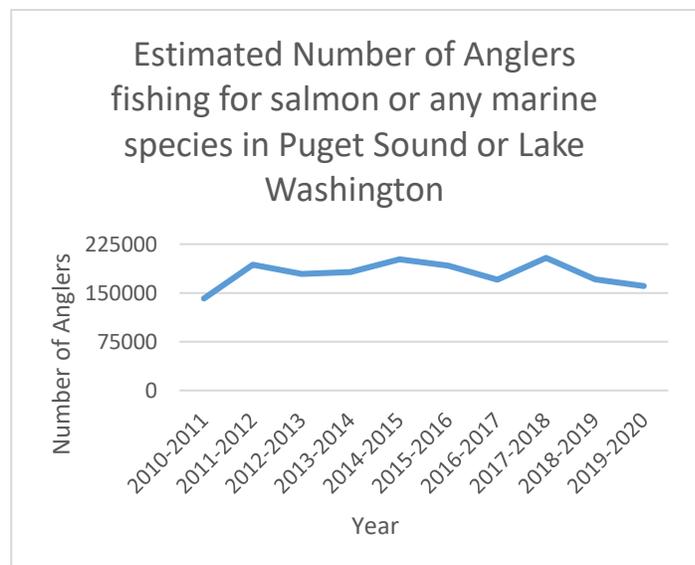


Figure 1. Source: WDFW.

and is applied to current license sales (Figure 1). The average annual budget depends on license sales, Puget Sound fishing participation, and spending authority.

Figure 2 below shows PSRFE budget revenue summary per biennium. Please note Biennium 19-21 is currently updated through end of fiscal year 2020. It does not include spending for the full biennium, only revenue.

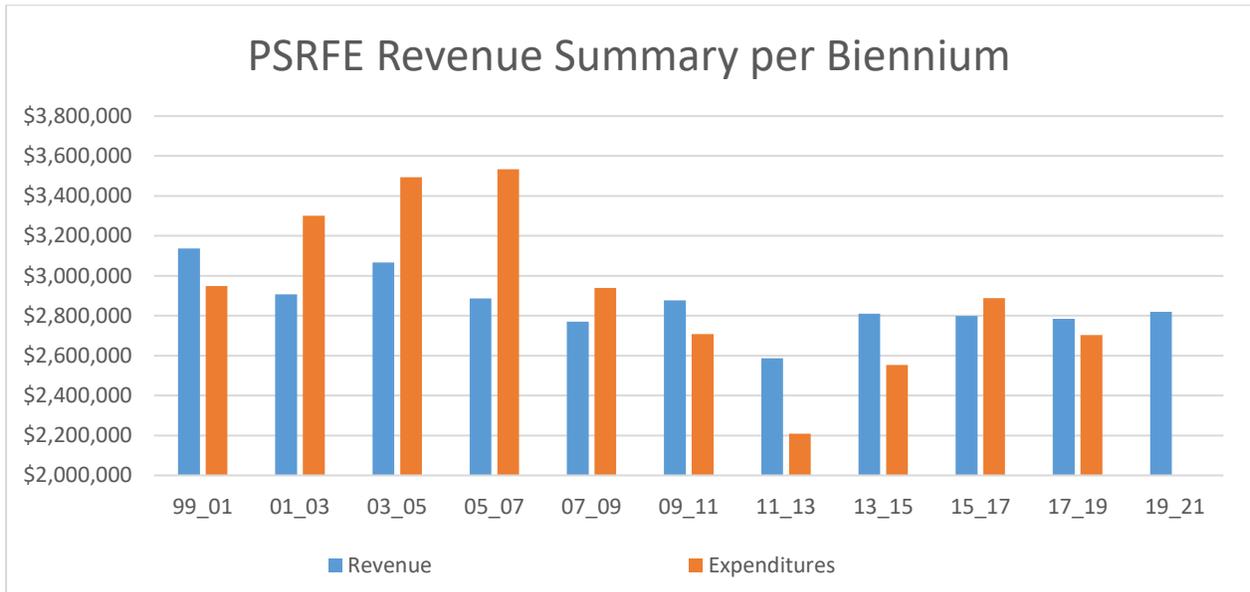


Figure 2. Source: WDFW.

As shown in Figures 3 and 4 below, most of the budget is spent on hatchery production. With legislative changes in 2011 and the development of goals and objectives, additional resources have been allocated to pursue other projects, including outreach and bottomfish conservation. These distribution efforts are further discussed throughout the four strategies below.

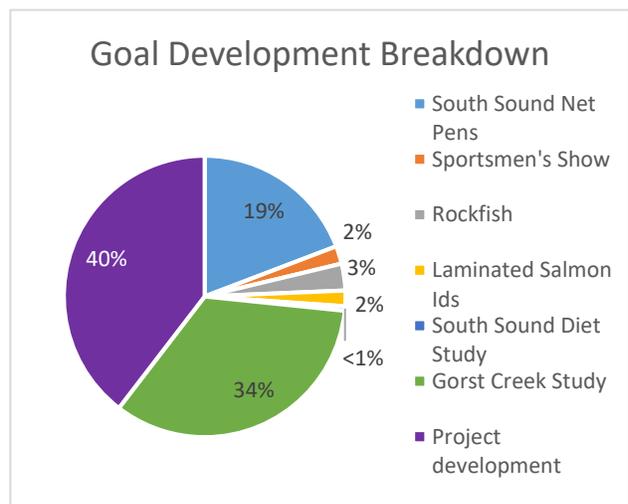
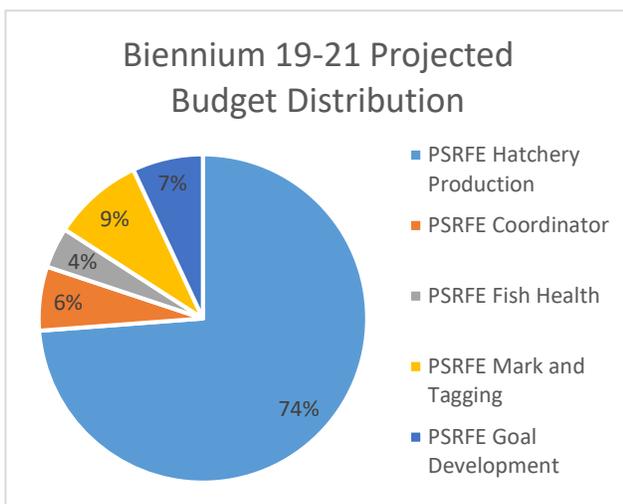


Figure 3 (left) and Figure 4 (right). Source: WDFW.

Current Goals and Objectives

Following the legislative changes in 2011, the Oversight Committee in conjunction with WDFW developed the following performance-based goals to measure progress and ultimately improve the cost-effectiveness of the program.

The outcome performance measure is an increase in angler trips in Puget Sound and Lake Washington by 5% per biennium. As detailed in later sections, the four strategies work towards this 5% increase.

Historical Angling Trips

The declining populations of salmon and rockfish species in Puget Sound and Lake Washington continue to impact recreational fishing opportunity. These declines are due to habitat destruction, sea lion and seal predation, changes in ocean productivity, and historical overfishing. The four strategies emphasize outreach, research, hatchery production, resource management and conservation to improve populations in Puget Sound and Lake Washington.

While these strategies work towards the 5% increase per biennium, reduced populations ultimately affect the past and current availability of fishing due to restrictive regulations on these fisheries. As shown in Figures 5 and 6, the number of angling trips correlates to the number of open salmon fishing days. The decline in 2016 demonstrates this correlation.

In 2016, recreational fishing opportunity was limited in Puget Sound to reduce mortality of Coho stocks. Low coastal and Puget Sound returns in 2015 and low Coho run size forecasts for 2016 drove restrictive measures on Puget Sound recreational fisheries. The retention of Coho was prohibited in Puget

| Goal | Progress |
|---|---|
| Improve the recreational fishing opportunities in Puget Sound and Lake Washington and Increase the economic benefits from the fishery |  |
| Strategy | |
| Improve marketing and remove obstacles to build interest and participation in the fishery |  |
| Increase effectiveness of hatcheries providing salmon to PS fisheries |  |
| Develop a long-term strategy for improving recreational <u>bottomfish</u> fisheries in PS |  |
| Stabilize and enhance resources invested in improving PS recreational fisheries |  |

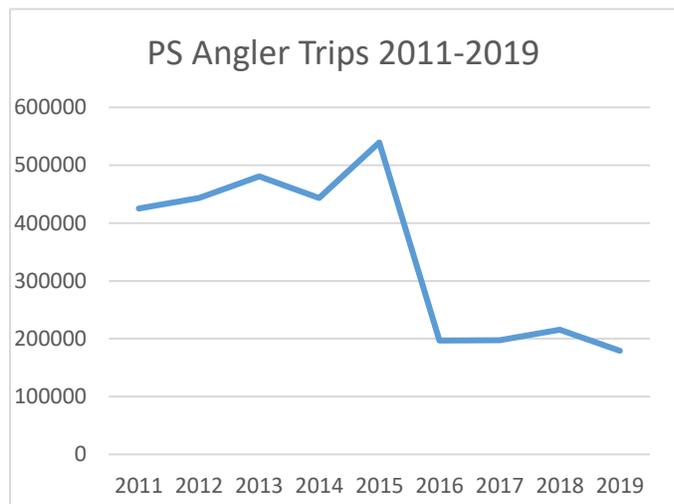
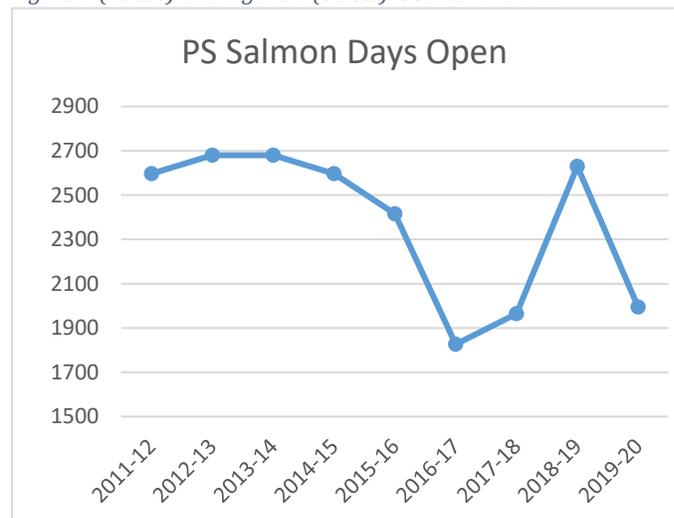


Figure 5 (above) and Figure 6 (below). Source: WDFW.



Sound, and salmon fishing was closed during Coho periods (September to October) for most marine areas (Areas 5-11 and 13).

The closure of Lake Washington sockeye salmon has also significantly influenced fishing effort. Although Lake Washington angling trips are not included in the above graphs, the decline in the sockeye stock plays an important role in the participation of recreational fishing on Lake Washington. Each year, WDFW and the Muckleshoot Indian tribe conduct fish counts at the Ballard Locks to determine the run size, whether escapement goals will be met, and the opening of the sockeye fishery. Due to insufficient escapement numbers, the Lake Washington Sockeye salmon fishery has been closed since 2006. Although recreational fishing is open for species such as Black crappie, yellow perch, and even Coho for a limited period, effort on Lake Washington has not been the same due to diminished sockeye returns.

Another factor affecting fishing effort is rockfish availability. Currently, certain populations are in such a decline that only marine area 5 is open for limited rockfish fishing. All other areas must release all rockfish species.





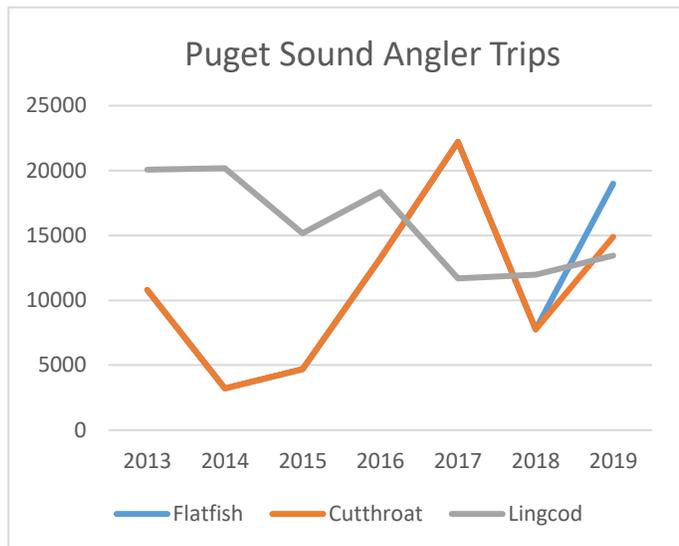
Strategy 1: Improve marketing and remove obstacles to build interest and participation in the fishery

The Puget Sound Recreational Fishery Enhancement Program utilized various marketing tactics to educate new and experienced anglers regarding fishing opportunities in Puget Sound and Lake Washington. The program has attended the Puyallup Sportsmen’s Show for the past six years and the Seattle Boat Show for the past two years. Additionally, the program has made significant efforts in outreach events and seminars at Joint Base Lewis McChord (JBLM). These events have also given WDFW staff the opportunity to conduct surveys to better understand anglers’ awareness of PSRFE. About 1800 surveys have been conducted per year at events as well as online.

Additionally, PSRFE has used these events to educate anglers on new rules and regulations, including rockfish conservation practices. The program is also encouraging anglers of underutilized fish stocks in Puget Sound, such as Flounder, cutthroat, and lingcod fisheries. To further promote these underutilized fisheries, multiple YouTube marketing videos have been developed. To date, the program has developed videos on sea-run cutthroat, flounder/sole, and pink salmon; all of which can be found on the Fish Washington website.



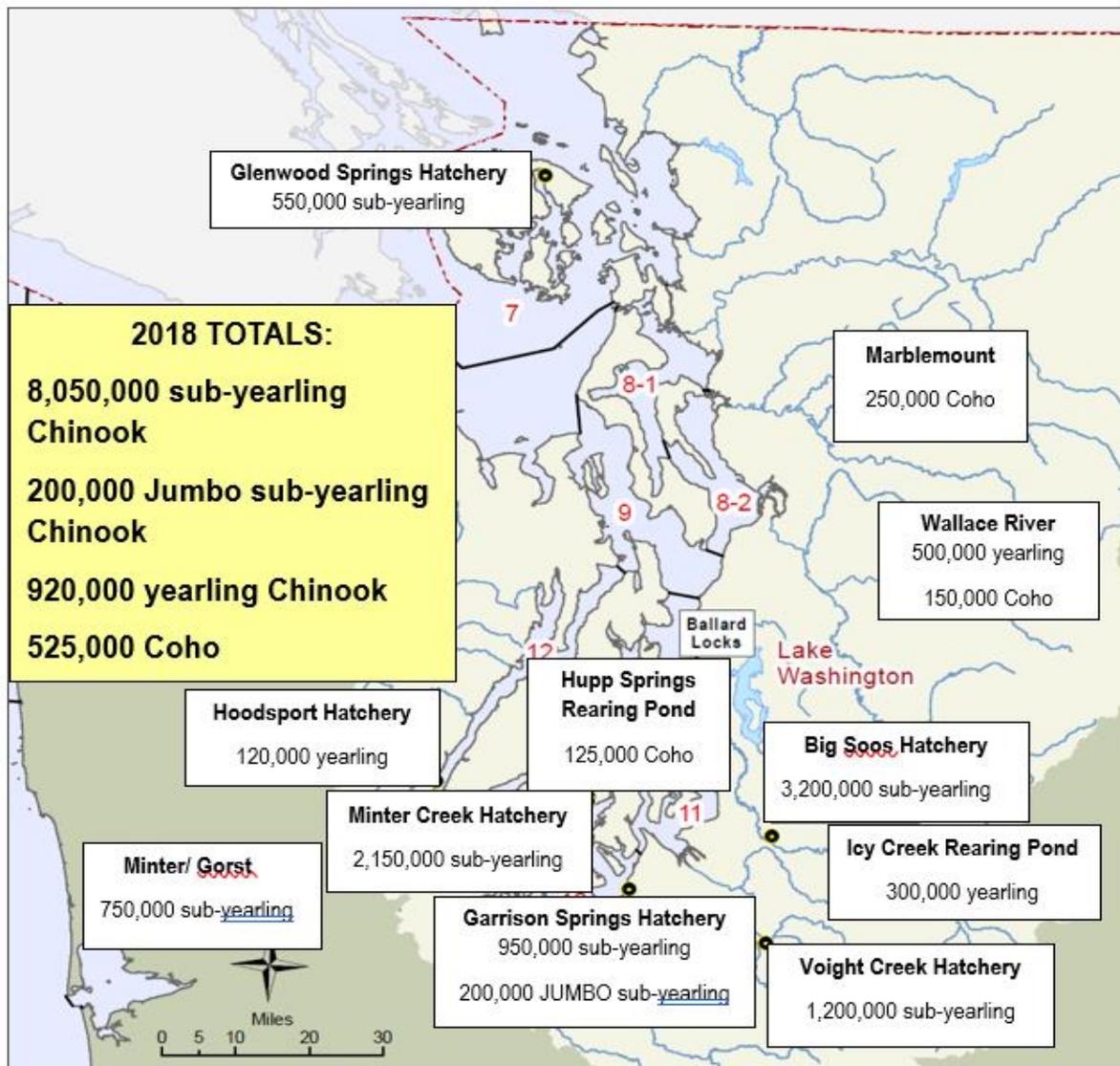
Figure 7 (below). Source: WDFW.



Strategy 2: Increase effectiveness of hatcheries providing salmon to Puget Sound fisheries

The PSRFEF Oversight Committee has made significant investments in hatchery production, research, marking and tagging over the years, which have contributed to Puget Sound recreational fisheries. Initially, investments focused on winter blackmouth programs. In recent years, focus has shifted to Coho programs throughout the Puget Sound. Coho programs are more cost effective to run and have resulted in more robust returns and opportunities for Puget Sound anglers.

Hatchery produced fish are the foundation to recreational fishing. The PSRFE program currently contributes funding to fish rearing efforts at WDFW hatcheries on Puget Sound (map below). PSRFE total production includes over 8 million sub-yearling Chinook salmon, 900K yearling Chinook salmon, and 525K yearling Coho salmon.



2018 Map of PSRFE funded salmon hatchery locations on Puget Sound, including total number of salmon species

In order to maximize harvest and fishing opportunity, the program also dedicates funds to hatchery research. A report produced by the Hatchery Scientific Review Group (HSRG) in 2018 to review the 13 salmon production programs and facilities in Puget Sound was supported by PSRFE dollars¹. The report calculated and summarized Chinook and Coho survival rates, contribution rates, and cost per fish. The following table has been updated since the 2018 report to include recovery data to date of the PSRFE funded salmon hatchery programs.

| Hatchery Name | Species | Age at Release | Run | Total Released (Avg.) | Smolt to Adult Return % | Adults Produced | PS Sport fishery* | | PS Blackmouth fishery | |
|------------------|---------|-------------------|--------|-----------------------|-------------------------|-----------------|-------------------|--------|-----------------------|--------|
| | | | | | | | Per 100,000 ** | % *** | Per 100,000 | % |
| Wallace River | Chinook | Yearling | Summer | 74287 | 0.88% | 653 | 132 | 15.00% | 67 | 7.64% |
| Voight Creek | Chinook | Subyearling | Fall | 1272465 | 0.65% | 8227 | 81 | 12.51% | 14 | 2.12% |
| Garrison Springs | Chinook | Subyearling Lates | Fall | 84519 | 0.63% | 528 | 170 | 27.17 | 36 | 5.73% |
| Hoodspout | Chinook | Yearling | Fall | 129269 | 0.58% | 753 | 195 | 33.53% | 58 | 10.02% |
| Icy Creek | Chinook | Yearling | Fall | 90940 | 0.44% | 403 | 98 | 25% | 31 | 8.08% |
| Big Soos | Chinook | Subyearling | Fall | 2913168 | 0.44% | 12785 | 44 | 9.96% | 6 | 1.27% |
| Minter (Gorst) | Chinook | Subyearling | Fall | 1715153 | 0.38% | 6451 | 46 | 12.23% | 8 | 2.20% |
| Glenwood Springs | Chinook | Subyearling | Fall | 493756 | 0.37% | 1848 | 40 | 10.60% | 7 | 1.92% |
| Garrison Springs | Chinook | Subyearling | Fall | 968917 | 0.32% | 3134 | 70 | 21.77% | 14 | 4.22% |
| Minter Creek | Chinook | Subyearling | Fall | 1473492 | 0.31% | 4545 | 57 | 18.40% | 12 | 4.01% |
| Marblemount | Coho | | Fall | 210942 | 5.29% | 11159 | 430 | 7.83% | NA | NA |
| Wallace River | Coho | | Fall | 91266 | 5.49% | 5009 | 663 | 63.09% | NA | NA |
| Hupp Springs**** | Coho | | Fall | | | | | | NA | NA |

*Total fish harvested in Puget Sound summer and winter sport fishery

**Total adult fish harvested per 100,000 released

***Percent harvested adult fish per 100,000 released

****No current performance or cost data for Hupp Springs Coho

Source: PSRFE data.

Additionally, PSRFE has contributed to research to increase efficacy of hatchery production, salmon survival rates, and fishery contribution; most importantly adults returning to Puget Sound sport fisheries. Some of these studies follow the efforts of the Salish Sea Marine Survival Project² in understanding factors affecting the survival of marine species, specifically salmon. For a comprehensive list of all PSRFE studies, please see below.

¹https://wdfw.wa.gov/sites/default/files/about/advisory/psrfe/docs/Final_Report_HSRG_to_PSRFEFOC_November_2018.pdf

² <https://marinesurvivalproject.com/the-project/>

Past Studies:

1. Cedar River Sockeye Report (2018): The Lake Washington Sockeye salmon fishery is an important recreational fishery for Puget Sound. Unfortunately, due to insufficient escapement numbers, the fishery has been closed since 2006. WDFW and PSRFE has been looking to alternate rearing strategies to improve survival of sockeye salmon. Currently, more than 90% of juvenile sockeye do not survive to smolt stage in Lake Washington. A recent report (2018) was conducted of the Cedar River Sockeye hatchery to estimate abundance and migration timing of natural origin sockeye fry migrating into Lake Washington³.

Ongoing Studies:

1. Chinook Orca Recovery Education (CORE) at Pt. Defiance Study- C.O.R.E. is a public/private partnership project to rear and release surplus Chinook salmon at net pens for public engagement. This is a project focused on outreach specifically to increase awareness of salmon populations and orca survival⁴.
2. South Sound Diet Study- This project is a partnership with anglers to better understand foraging patterns of south sound salmon on an ongoing basis. WDFW has asked anglers to extract stomachs from salmon for research⁵.
3. South Sound Coho Barging Study- This study partners with the Squaxin tribe to barge Coho salmon past known mortality zones to evaluate survival rates⁶.
4. Puget Sound Early Marine Survival Study- This study explores release times throughout Puget Sound to determine effects of survival on juveniles, adult returns, and size⁷.
 - a. Garrison Springs Chinook Jumbo Late time (Jumbo) release study- This study evaluates alternate release times of chinook subyearling salmon based on survival rates. A normal subyearling release is compared to a late subyearling release time (a.k.a. Jumbo).
 - b. Gorst Creek Marine Survival Study- This is a newer study introducing two separate release time groups to Gorst creek. This study will observe differences in survival and returns of Chinook salmon.
5. Hatchery feasibility report- The University of Washington's College of the Built Environment (CBE) partnered with WDFW, the Muckleshoot Indian Tribe and Puget Sound Anglers to develop a course focused on hatchery rearing strategies and salmon recovery. The course was designed to identify hatchery production efforts and explore best options for salmon survival. Report to be completed by August 2021⁸.

³ <https://wdfw.wa.gov/sites/default/files/publications/02082/wdfw02082.pdf>

⁴ <https://nwsalmonresearch.org/chinook-orca-recovery-project/>

⁵ Puget Sound Chinook and Coho feeding study Flyer, David Stormer, WDFW

⁶ <https://wdfw.wa.gov/sites/default/files/publications/01969/wdfw01969.pdf>

⁷ Hatchery Release Timing Studies, Hatchery Evaluation and Assessment Team Powerpoint, Gary Marston, WDFW

⁸WDFW Goods and Services Contract with UW, Statement of Work, David Stormer, WDFW

Strategy 3: Develop a long-term strategy for improving recreational bottomfish fisheries in Puget Sound

The PSRFE program has supported efforts to improve recreational bottomfish fisheries through research, production, outreach, and education.

Regular fishery and population status assessment is critical to identify groundfish trends. In 2011, PSRFE supported NOAA in ongoing research on lingcod viability in a hatchery setting. Two reports were generated from this research assessing lingcod stocks and harvest management in Puget Sound⁹. Further research stopped due to potential effects on rockfish populations.

PSRFE has also contributed funds to the conservation of rockfish species, as certain populations continue to decline. In 2010, the Endangered Species Act (ESA) categorized three rockfish species as endangered and two as threatened. In compliance with the ESA, WDFW prohibited retention of rockfish species in marine areas 6-13, while limiting a black rockfish fishery to marine area 5.

PSRFE has dedicated close to \$50,000 since 2011 to increase angler awareness of rockfish populations through outreach and products, such as rockfish ID guides, and descending devices. Starting in 2017, descending devices were required aboard all vessels. Since 2017, \$15,000 have been allocated to descending devices, which have been continuously distributed at events.



Rockfish Releases 2003-2020 Marine Areas 6-13

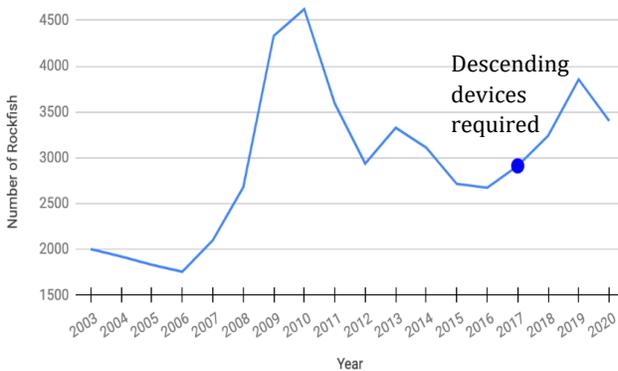


Figure 8. Source: WDFW.

Figure 8 shows a decrease in rockfish releases starting in 2010 due to a decrease in overall rockfish encounters after the ESA listings. Additionally, the increase in releases since 2016 demonstrates the increased use of descending devices since they were required in 2017.

⁹ (1) <https://doi.org/10.1080/10641262.2013.799391>; (2) <https://pubmed.ncbi.nlm.nih.gov/23731140/>

Strategy 4: Stabilize and enhance resources invested in improving Puget Sound recreational fisheries

As outlined in the three strategies above, the program works towards improving Puget Sound recreational fisheries through outreach, hatchery production, and resource management, i.e., conservation practices. This fourth strategy focuses on resource management through maintaining and improving the fiscal health of the program. PSRFE has supported various attempts by the agency to adjust license fees so they reflect cost of living. Unfortunately, legislation advanced in the 2017, 2018, and 2019 legislative sessions failed and so this inflationary adjustment has not been implemented, eroding the buying power of the PSRFE over time.

Outreach events contribute to the program’s success in resource enhancement. These events raise fishery interest and in turn add to the number of fish license sales. Since 2017, JBLM has increased its percentage of license sales compared to total license sales per year. In 2017, JBLM sales accounted for 0.51% of total licenses sold to anglers. In 2020, JBLM participation increased to 0.88% of total licenses sold of saltwater and combination sales. There has been a 38% license sale increase since 2017 based off the previous odd or even year.

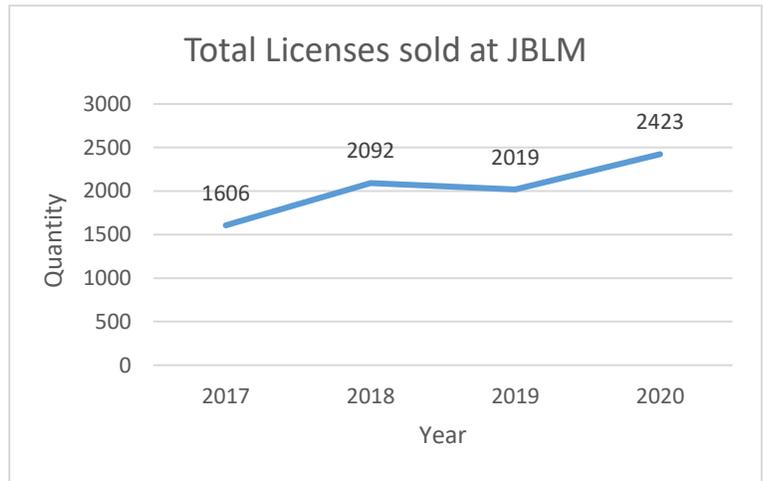
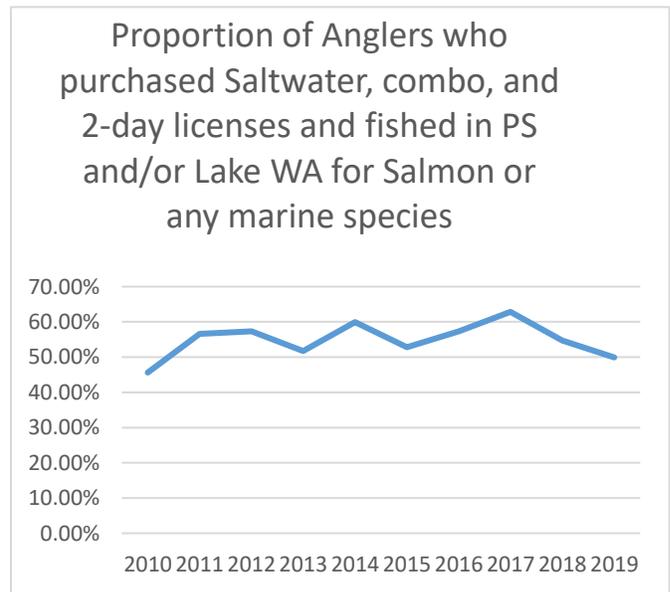
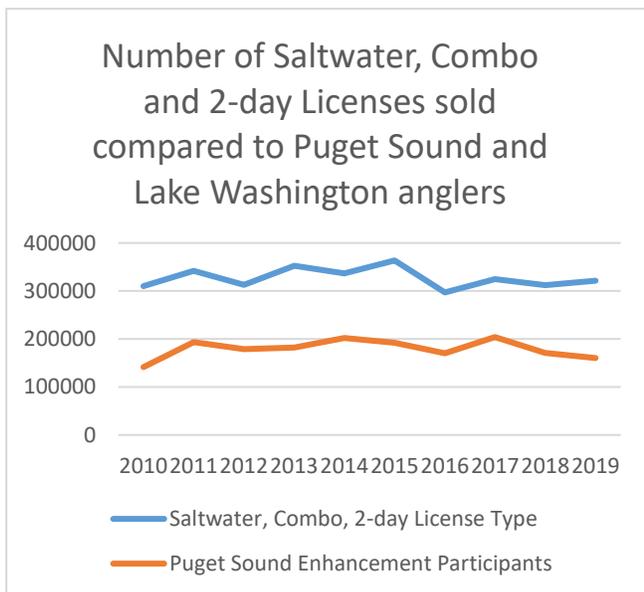


Figure 9. Source: WDFW.

Figure 10 (left) shows the total license quantities of saltwater, combination, and 2-day license sales compared to the total number of participants fishing for salmon or any marine species in Puget Sound or Lake Washington, a.k.a. Puget Sound Enhancement angler (PSE). Figure 11 (right below) shows this proportion of PSE anglers to the number of licenses sold.



PSRFE continues to engage in public outreach to promote fishing and awareness of the program. PSRFE has been pursuing alternate funding sources, such as a cost share program and a match grant program. Currently, the program funds 30% of the Hupp Springs hatchery program. The match grant program is being discussed now. The agency and the PSRFEF Oversight Committee is exploring transitioning to a grant program with a formal project solicitation process in order to increase the volume and competitiveness of projects we fund and to leverage matching funds from project sponsors. This will ensure that we have robust project lists, a transparent process and don't have unallotted funds at the end of the biennium, which has happened in past years.

Conclusion

In conclusion, through investments in conservation, hatchery production, outreach, and resource management, the program has diversified the agency's approach to enhancing recreational fisheries throughout Puget Sound. Despite these great strides, it is critical to point out that the rapidly changing climate and eroding habitat conditions in Puget Sound have and will continue to challenge the work and limit achievements of PSRFE in the years to come. The program is developing new ideas in research and outreach to improve and enhance fishing opportunity. Some ideas being discussed are listed below:

- Live salmon cameras at Issaquah Hatchery to educate public on salmon life cycles
- "How-to" videos to encourage anglers to get outside and fish underutilized stocks
- Hatchery production review of limitations affecting survival and contribution rates

Appendix 1: 2010 Washington State Auditor's Report on the Puget Sound Recreational Fisheries Enhancement Fund

file:///S:/FP/FishMgmt/Baltzell,%20Mark/ForHailey/PSRFEF/Audit/2010/Delayed%20Release%20Chinook%20Audit%20040910%20ar1003365[1].pdf

Appendix 2: 2013 Puget Sound Recreational Salmon and Marine Fish Enhancement Program Goals and Objectives. RCW 77.105.160

https://wdfw.wa.gov/sites/default/files/about/advisory/psrfef/PSRFEF_Guidelines.pdf

Puget Sound Recreational Fishery Enhancement Fund Oversight Committee (2019-20)

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