

Concise Explanatory Statement (CES) for 2020 Puget Sound Commercial Salmon Fishery Regulations

The Washington Department of Fish and Wildlife (WDFW) filed the Preproposal Statement of Inquiry (CR-101) on January 9, 2020 (WSR 20-03-062), and the Proposed Rule-making (CR-102) for the 2020 Puget Sound Commercial Salmon Fishery on May 6, 2020 (WSR 20-10-114). This proposed rule-making package is comprised of:

Rules amended as part of this rule-making:

- WAC 220-354-080 Puget Sound salmon – Closed Areas
- WAC 220-354-120 Puget Sound salmon – Purse seine – Open periods
- WAC 220-354-160 Puget Sound salmon – Gillnet – Open periods
- WAC 220-354-180 Puget Sound salmon – Reef net – Open periods
- WAC 220-354-210 Puget Sound salmon – Beach seine – Open periods

Rules repealed as part of this rule-making:

N/A

Rules created as part of this rule-making:

N/A

1. Background/Summary of Project:

This Concise Explanatory Statement (CES) describes the Washington Department of Fish and Wildlife's (WDFW's) reasons for adopting the 2020-2021 Puget Sound commercial salmon fishing rules and responds to public comments received on the proposed rules. The rules, once adopted, will be set forth in the Washington Administrative Code (WAC) at the sections listed above. The annual management period for each fishing season typically ends in April and begins anew each May.

Rulemaking by the Department is guided by resource management policies adopted by the Fish and Wildlife Commission at its regularly- or specially-scheduled meetings that are open to the public. Those policies can be found at: <https://wdfw.wa.gov/about/commission/policies>.

In addition, the Department's Director and staff interact with the Commission by reporting on policy implementation, including rule development and implementation, as part of the

Commission’s open public meetings. Commission meeting agendas and staff reports to the Commission are available at: <https://wdfw.wa.gov/about/commission/meetings>.

Due to the complexity of the annual salmon season setting process, the Commission typically delegates the authority to the Director, as authorized by law, to develop and adopt the rules to implement the outcomes of the process, while also providing policy guidance, as described above. For example, the North of Falcon Policy (C-3608) contains policy objectives to guide fishery rule-making and provides an express delegation of rule-making authority to the Director.

As discussed below, the Administrative Procedure Act, RCW 34.05 (APA) envisions a rule-making process by which input is solicited from the public during the preproposal phase to aid in the development of proposed rules. This public process is then carried through as the rules, once proposed, undergo additional public review and comment. The Director employs agency staff to assist in the rule-making process, but retains the final delegated decision-making authority on such rules. After consideration of public comments received and staff recommendations, the Director makes the final decision to sign the CR-103 rule-making order adopting the final rules.

The APA process for the proposed rules for the 2020-2021 Puget Sound commercial salmon season began when the CR-101, notice of intended rule-making, was filed on January 9, 2020 (WSR 20-03-062). Thereafter, the Department relied upon several forums to gather information and interact with regional fishery managers and constituent groups in order to develop the proposed rules that were presented in the CR-102 filed on May 6, 2020 (WSR 20-10-114) and became available for formal APA public review and comment.

These rule-making processes are described in more detail as follows:

North of Falcon / Pacific Fishery Management Council processes used to develop proposed rules (“Pre-notice Inquiry” stage of rule-making)

State, federal, and tribal fishery managers, and the Oregon Department of Fish and Wildlife (ODFW), work collaboratively with recreational and commercial stakeholders during North of Falcon (NOF) and Pacific Fishery Management Council (PFMC) meetings to develop fishery options based on the best available science. Data and information examined and considered include expected annual salmon returns; Endangered Species Act (ESA) requirements, expressed as annual stock-specific exploitation rates; treaty fishing rights of Northwest Tribes; and resource management policies of the Fish and Wildlife Commission. The name “North of Falcon” refers to Cape Falcon, Oregon, which is the southern border of active management for Washington salmon stocks. The process consists of series of public meetings involving federal, states’, and tribal representatives, who work together with input from recreational, commercial fishing, and conservation interests.

The NOF planning process deliberately overlaps with the March and April meetings of the PFMC, the federal authority responsible for setting ocean salmon seasons within the Exclusive Economic Zone, which extends from 3 to 200 miles off the Pacific coast. Work with federal fishery managers and fishing interests in offshore waters is essential to helping ensure coordinated state and federal fisheries for salmon stocks that migrate freely between state and federal waters.

In addition to the two PFMC meetings, the states of Washington and Oregon, and the Northwest Treaty Tribes, sponsor additional meetings to discuss alternative fishing seasons that meet conservation and harvest sharing objectives. Additionally, WDFW solicits input from advisory groups whose representatives represent a diverse range of user group interests.

The development of salmon fishing seasons begins with the completion of surveys of the previous year's spawning grounds and hatchery return estimates by state and tribal biologists. These biologists apportion catch in each area to specific management groups and calculate a total run-size for each group. Biologists complete this analysis, also known as a run-reconstruction, each fall or early winter. Based on total run-size, and the associated survival rates, state and tribal biologists forecast the number of salmon and steelhead returning for the coming year. State and tribal biologists, in coordination with PFMC participants, typically complete the forecasts each year by late February. From the run-size forecasts, fisheries managers determine the amount of fish available for directed or incidental harvest according to the management objectives. Once the forecasts and the number of fish available for harvest are determined, state and tribal fisheries managers begin the process of developing specific annual fishing regulation proposals to achieve, but not exceed, those harvest levels.

Rule development for the North of Falcon process in 2020 began in early January with the filing of the CR-101 and a commercial industry meeting to review the 2019 salmon fisheries. WDFW presented outcomes of the 2019 fishing season, discussed the state of salmon with regard to survival trends and biological effects (*e.g.*, climate and marine mammal predation), and began discussions on the upcoming 2020-21 fishing season.

Subsequently (and similar to previous years), the 2020-21 NOF salmon season planning process included several meetings held with the public, from February to April:

- February 28, 2020, associated with the Annual Forecast Kick-Off;
- March 16, 2020, associated with first of two NOF Public meetings;
- March 31, 2020, associated with the second of two NOF Public meetings; and
- April 4-10, 2020, associated with the final PFMC meeting.

Due to the COVID-19 pandemic, all meetings were held using online formats beginning in mid-March this year.

During these public meetings, WDFW gathered input from stakeholders on the structuring of fishing seasons, reviewed possible rule changes, and provided the public with information on the status of the 2020-21 planning process. WDFW considered the fishing regulation proposals shared at public meetings as a work in progress (*i.e.*, not final proposals) that would be further informed by comments received from meeting participants. Additionally, WDFW solicited and accepted public comments to inform fishing proposals online, via WDFW's website and through e-mail, thereby providing alternate avenues to comment, particularly for those individuals who could not attend the scheduled public meetings and webinars.

Concurrently in the 2020-21 NOF season planning process, tribal co-managers and WDFW conducted technical meetings and policy level discussions to co-develop conservation objectives, run-size forecasts, estimates of the allowable harvest, and tribal and non-tribal catch shares for the various salmon runs considered in defining fishing levels. Again, these meetings were held virtually (through online means) due to the COVID-19 Pandemic. WDFW and tribal co-managers negotiated coordinated fishing schedules for tribal- and state-managed Puget Sound salmon fisheries. These schedules provide the days of the week that are exclusively reserved for treaty fishing in areas where all-citizens fishing is also conducted. The Puget Sound commercial salmon fishing seasons adopted by WDFW in 2020 are the product of both the state-tribal government-to-government negotiation and the public process planning components of the annual NOF process.

CR-102 rule proposal phase with comment period and formal rule-making hearing

Based upon all the information generated via these forums and outreach efforts, WDFW developed and proposed fishery rules for public consideration through the APA process. Accordingly, the CR-102 for WDFW's rulemaking proposals for the Puget Sound commercial salmon seasons for 2020-21 was filed on May 6, 2020 (WSR 20-10-114). The CR-102 filing included proposed changes to the WAC sections listed at the beginning of this CES. The package of proposed rules comprises a suite of amendments to those pre-existing WAC sections, and reflects a unitary fishing season proposal for the 2020-21 proposed fishing season, expressed largely as time, place, and manner regulations for fishing activity, given the most recent conservation and allocation objectives. Functionally, the amended rules package is a unitary seasonal fishing package, and replaces the prior year's (2019-20) suite of fishing season rules.

Information regarding the proposed rule changes was electronically sent to participants in the NOF process who provided their contact information at meetings, as well as posted on WDFW's website. A news release on public comment opportunities associated with the CR-102 was also produced and sent to media and constituent distribution lists.

A formal APA rule-making hearing was held on June 9, 2020 (via Zoom webinar) to provide additional public opportunity for making comments on the proposed rules as published in the Washington State Register (WSR). A total of 37 individuals attended the rule-making hearing, and 5 of them provided testimony. A summary of the public hearing, the comments provided at the hearing, and WDFW's responses to those comments, has been prepared and provided to the Director of WDFW for his consideration in adopting the proposed rules. In addition to input received during the APA hearing, comments received by letter, electronic mail (addressed to the WDFW Rules Coordinator or other WDFW staff), and online (via the WDFW NOF webpage) during the NOF process and CR-102 comment period were considered throughout the rulemaking process.

2. Reasons for adopting the rules:

WDFW considered all the facts and circumstances surrounding the proposed 2020-21 Puget Sound commercial salmon season. The department carefully reviewed all input the public provided regarding preferred fishing rules during NOF public meetings (APA Pre-notice Inquiry stage) and the subsequent stages of the rule-making process designed to provide formal notice of and opportunity to comment on proposed rules (CR-102 filing of proposed rules, formal period of additional comment solicitation, and public rule-making hearing). WDFW considered and relied upon the best technical and scientific information available to tribal and state fishery management experts, including pre-season forecasts of the abundance of salmon stocks; and WDFW continues to use data during the season to update forecasts. Important characteristics of the commercial salmon fisheries were considered, including the catch likely to result from the proposed rules, providing significant harvest opportunities, and the economic value of these fisheries. WDFW also considered the proposed fishing schedules for state recreational fisheries and the schedules for tribal fisheries, as in some cases these schedules must be coordinated with the state's commercial fishing schedules as part of the co-management process developed under sub-proceedings of *U.S. v. Washington*.

Regulations for the 2020-21 Puget Sound commercial salmon fisheries were considered with respect to established objectives. These objectives include generally-applied statewide objectives, together with detailed regional-specific objectives described within the regional sections set forth further below. WDFW shared these objectives with commercial fishery representatives during the 2020 NOF and APA public processes. These objectives are listed below in order of priority:

1. Conserve the wildlife and food fish, game fish, and shellfish resources in a manner that does not impair the resource (RCW 77.04.012) by achieving conservation objectives for all species and stocks.
 - a. Ensure primary stocks meet escapement goals and/or management objectives (*e.g.*, exploitation rate).

- b. Manage fisheries consistent with Fish and Wildlife Commission Policies C3608 (2019-2023 North of Falcon) and C3619 (Hatchery and Fishery Reform). This includes using management strategies to limit seabird mortalities consistent with the federal Migratory Bird Treaty Act.
 - c. Monitor fisheries to ensure objectives (1.a.) and (1.b.) are met.
2. Harvest the non-treaty share of harvestable salmon.
 3. Promote orderly fisheries and enhance and improve recreational and commercial fishing in this state (RCW 77.04.012).
 4. Seek to maintain the economic well-being and stability of the fishing industry in the state (RCW 77.04.012).

When taking these objectives into account, WDFW conducted a thorough assessment of all technical and scientific information available to state and tribal co-managers. For example, the co-managers in 2020 analyzed pre-season forecast and stock identification data to determine agreed upon in-season harvest plans. Additionally, WDFW reviewed all input (written and oral, formal and informal) from industry representatives and the general public regarding preferred fishing rules received during NOF public meetings and in communication outside those scheduled public meetings, and all input received by the department via electronic or mail portals provided for public commenting upon the proposed rules.

Important five-to-ten year metrics of the Puget Sound commercial salmon fishery considerations include: licensed vessel to active vessel participant ratios, catch and by-catch compositions, predicted harvest under proposed rules, and the economics of these commercial fisheries. WDFW also considered the coordination of State- and Tribal-managed commercial and recreational fishing schedules. These elements were evaluated in accordance with the sub-proceedings of *U.S. v. Washington*, to attain an agreed-to fishery package receiving ESA authorization for 2020 all-citizens commercial salmon fisheries in Puget Sound.

Based upon the information and input gathered, received, and reviewed, WDFW believes that adoption of the proposed 2020-21 Puget Sound commercial fishing regulations will be consistent with the identified management objectives, according to the following rationale:

Objective 1.a.: Ensure primary stocks meet escapement goals and/or management objectives.

The proposed rules and regulations for Puget Sound commercial salmon fisheries are constructed with the objective of achieving conservation objectives defined for each target species, stock, or management unit. The proposed rules define schedules with open fishing periods only for those fisheries that are directed at salmon stocks with harvestable abundance; all fisheries are monitored to ensure that catches do not exceed the number allowed for each species, stock, or

management unit at which the fishery is directed. WDFW relied on State-Tribal co-manager pre-season forecasts of abundance to construct the fishing schedules. WDFW will use in-season information, where available, to update pre-season forecasts of stock abundance and revise estimates of the allowable catches for each fishery.

Objective 1.b.: Manage fisheries to minimize mortalities on non-target species and stocks.

Fish and Wildlife Commission Policy C-3608, titled *2019-2023 North of Falcon*, instructs the department to manage fisheries to minimize mortalities on non-target species and stocks. In structuring rules for the 2020 Puget Sound commercial salmon seasons, WDFW considered impacts of fisheries on non-target species, including ESA-listed Puget Sound Chinook salmon, Hood Canal summer Chum salmon, and Puget Sound steelhead, and two species of rockfish occurring in Puget Sound (yelloweye rockfish and Boccaccio), as well as other fish and wildlife species of concern. The proposed regulations are structured to ensure that incidental mortalities on non-target species are minimized by focusing fisheries at times and in areas of peak abundance for target salmon stocks, while avoiding times and areas with higher incidence of non-target species. For the proposed regulations to minimize bycatch, WDFW considered the best available science concerning the potential impact of these fishing seasons on non-target species, often relying on joint recommendations of tribal and state technical staff, commercial fisher observations, and historical catch accounting in the process.

Because bycatch mortalities vary by fishing method, the objective of minimizing bycatch requires WDFW to apply different rules to the different gear types. For example, salmon bycatch mortality associated with operation of reef net gear (used only in Salmon Management and Catch Reporting Area 7/7A fisheries) is assumed by state and tribal fishery managers to be zero, because minimal contact with non-target salmon occurs with this gear during fishing operations, and all prohibited bycatch is quickly released. For purse seine gear, state and tribal managers reviewed results of scientific studies on salmon bycatch mortality and agreed that the majority of Coho and Chinook salmon encountered by this gear will survive being sorted and returned to the water. Based on this scientific data, bycatch mortality of Chinook and Coho salmon in Puget Sound commercial purse seine fisheries targeting other salmon species can be minimized by requiring that these non-target species be released.

Scientific studies that have been conducted on mortality rates for Coho and Chinook salmon encountered by gillnet gear largely indicate that release mortality rates are high. In accordance with the best available science, WDFW addresses the bycatch minimization objective for gillnet gear differently than the approach used for purse seine gear. Relying on recommendations of the Joint Chinook Technical Committee of the Pacific Salmon Commission (Report TCCHINOOK (97)-1. PSC, 1997) that “CNR (Chinook non-retention) gillnet fisheries are unlikely to be implemented due to the high expected mortality rate of the fish released,” WDFW believes that requiring release of Chinook and Coho salmon in Puget Sound gillnet fisheries generally will not

result in the minimization of bycatch mortality. In the majority of Puget Sound gillnet fisheries WDFW does not require release of Chinook or Coho. Fishers are prohibited from discarding salmon that may be legally retained, except for fish that are made unmarketable due to marine mammal depredation. Because all retained salmon are required to be reported on commercial fish tickets, WDFW assumes that bycatch of these species is accounted for through Commercial Fish Receiving Tickets. From 2013 to 2016, WDFW had increased on-board monitoring of gillnet vessels, with the objective of comparing levels of bycatch estimated from direct observation of gillnet bycatch of Chinook and Coho to levels accounted for on Commercial Fish Receiving Tickets. Due to logistical and budgetary constraints of the current Puget Sound Commercial Monitoring Program, the more intensive coverage of Puget Sound gillnet fisheries has been reduced but is still present.

There may be unique circumstances where WDFW believes that the bycatch minimization objective will be achieved by requiring release of certain salmon species from gillnets. Such circumstances include when regulations restrict the number of participating licenses, such that all participants can be monitored; when regulations limit the size of fishing gear and length of net soak times (*e.g.*, in the extreme terminal Area 12A Coho fishery with skiff gillnets); or when regulations require the use of recovery boxes.

The mortality rates applied to Chinook salmon encountered and released in Puget Sound purse seine fisheries, and the drop-out rates applied to gillnet fisheries, based on joint-tribal-state technical recommendations, are documented in the *2010 Comprehensive Management Plan for Puget Sound Chinook: Harvest Management Component*. This plan was approved by the National Marine Fisheries Service (NMFS), providing ESA coverage for Puget Sound Fisheries under Limit 6 of the ESA 4(d) rule. More recently, annual consultation with NMFS and the associated ESA coverage has come in the form of an annual take authorization under section 7 of the ESA with approval coming through the federal nexus of NMFS consultation with the Bureau of Indian Affairs.

In addition to measures described above, WDFW's proposed regulations for Puget Sound commercial salmon fisheries incorporate gear, time, and area restrictions to minimize bycatch encounters. This is particularly the case for summer Chum originating from Hood Canal and the Eastern Strait of Juan de Fuca. In March of 1999, NMFS determined that the summer Chum originating from Hood Canal and the Strait of Juan de Fuca represented an Evolutionarily Significant Unit (ESU), and formally listed these fish under the Endangered Species Act (ESA) as a threatened species. In April 2000 the state and tribal co-managers published a summer Chum management plan, approved by NMFS (*Summer Chum Salmon Conservation Initiative - An Implementation Plan to Recover Summer Chum in the Hood Canal and Strait of Juan de Fuca Region*), which contains base conservation regimes (BCR) for fisheries with specific guidelines by area, timing gear type, and summer Chum forecasts combined with in-season escapement numbers. For example, in Area 12A, under the BCR guidelines, beach seine fisheries cannot

begin prior to August 21st, while gillnet fisheries cannot begin prior to September 1st. Also, the BCR guidelines stipulate that these fisheries cannot open until at least 1,500 Chum have been counted in the river, and can open one day per week if fewer than 2,500 Chum have been counted in-river. Further, all-citizens gillnets can open only if tribal fisheries are open, and gillnets must release Chum by cutting the mesh ensnaring the fish.

Conservation concerns over the non-salmon species encountered during Puget Sound commercial salmon fisheries are increasing. Fish species of concern in Puget Sound include ESA-listed Chinook salmon, summer Chum salmon, and steelhead, as well as ESA-listed Boccaccio and Yelloweye rockfish. Other wildlife species of concern in the Puget Sound include federal ESA-listed Southern Resident killer whales and marbled murrelets; along with tufted puffins, a state-listed Endangered Species. For these species, data collected from purse seine observations indicate a low encounter rate, but (as discussed below) there is minimal gillnet monitoring data from recent seasons. Extrapolation of purse seine data to the gillnet fishery in general may not be valid, given known differences between the gear types and their impacts on various species.

Bycatch of seabirds entangled in gillnet gear is believed to pose the greatest risk of injuring or mortality of commercial salmon net types. Encounters and mortalities of ESA-listed marbled murrelets are documented in the *USFWS Biological Opinion on the proposed 2017-2036 Puget Sound Salmon Fisheries and its effects on Marbled Murrelet*, 2017. This Biological Opinion (Bi-Op.) on marbled murrelets provides incidental take coverage for both WDFW and Treaty Tribal managed Puget Sound salmon fisheries through 2037, unless consultation by the USFWS is initiated prior to that time. In its Bi-Op., the United States Fish and Wildlife Service (USFWS) used all-citizens commercial effort data from 2000 to 2015 to extrapolate expected effort and impacts of the fishery to marbled murrelets during the proposed action. USFWS concluded that the proposed Puget Sound salmon fisheries are not likely to have an appreciable influence on the numbers of marbled murrelets when taking into account cumulative effects on the species. However, should any substantial increases in fishing effort occur, WDFW is concerned that take limits could be exceeded and re-consultation on Puget Sound salmon fisheries triggered. Re-consultation of the current Bi-Op. for marbled murrelets could include further restrictions on Puget Sound commercial fisheries. WDFW is therefore particularly cautious about expanding fishing time.

The proposed regulations for the 2020-21 Puget Sound commercial salmon seasons include restrictions specific to purse seine and gillnet gears that are expected to reduce seabird mortalities. These restrictions are identical to those implemented since the mid-1990s, based on recommendations of scientists conducting seabird bycatch studies as well as input from both gillnet and purse seine fishers.

Marine mammal injuries and mortalities in Puget Sound net fisheries are another concern. The federal Marine Mammal Protection Act (MMPA) requires the National Oceanic and Atmospheric Administration (NOAA) Fisheries to address the impacts of all fisheries on individual marine mammal stocks, and to classify fisheries into one of three categories based on their risk of “incidental take” of marine mammals. All fisheries are required to report marine mammal injuries or mortalities to NOAA Fisheries within 48 hours of the event. Puget Sound purse seine fisheries are designated as a Category III fishery, “with a remote likelihood or no known serious injuries or mortalities” to marine mammals, and have no requirements beyond reporting any injuries or mortalities. Puget Sound gillnet fisheries are designated as a Category II fishery, “with occasional serious injuries or mortalities” to marine mammals. Category II fisheries require fishers to obtain an annual Marine Mammal Take Authorization from NOAA Fisheries and carry it on board the vessel during any commercial fishing operations. Currently NOAA Fisheries cites incidental takes of harbor porpoises as being the driver for the Category II designation of the gillnet fishery. NOAA Fisheries’ final rule, providing take authorization for the 2020-21 Puget Sound commercial salmon fisheries, was published in the Federal Register on May 5, 2020.

An additional concern with net fishing is lost or derelict gear, because they can remain in the environment and entangle animals until they can be located and removed. Efforts to locate and remove derelict gear have increased in recent years, as have concerns over their impacts on ESA-listed rockfish species in Puget Sound. The Northwest Straits Foundation (NWSF) reported removing 5,808 pieces of derelict fishing nets, of which a large majority have been gillnets, from Puget Sound, the San Juan Islands, and the Strait of Juan de Fuca since 2002. The length of time the nets have been in the water is estimated based on biological growth on the net as well as the amount of sediment on the net. Most of the nets identified and removed were gillnets, and based on interviews with fishers, data from enforcement agencies, and recent fishing effort, NWSF estimates that between 5 and 13 additional nets or portions of nets are lost each year by all-citizens net fishermen in Puget Sound.

In 2012, the Legislature passed a law (RCW 77.12.870) requiring commercial fishermen to report any gear they abandon to WDFW within 24 hours, so that the gear can be located and removed as soon as possible. Reporting of derelict gear is summarized annually by the Northwest Indian Fisheries Commission in conjunction with the NWSF and WDFW.

In summary, WDFW believes that the proposed rules and regulations for the 2020-21 Puget Sound commercial salmon seasons are reasonably constructed to meet the objective to minimize bycatch overall. However, with respect to non-target salmon species and stocks, seabirds, and other non-salmon species, continued—and in certain cases increased—monitoring is needed to verify that bycatch is indeed minimized. As new scientifically-reliable information becomes available in the future, WDFW will adapt and adjust the fisheries as necessary to continue to protect non-target species.

Objective 1.c.: Monitor fisheries to ensure objectives (1.a.) and (1.b.) are met.

Assessing non-target salmon bycatch is a matter of estimating both the number of fish encountered by the gear and the proportion of the fish released that will survive. WDFW relies on scientific studies to determine the release survival rate. The most accurate estimates of numbers of fish or other species incidentally encountered in purse seine and gillnet fisheries come from direct, on-board sampling by trained technical staff. The data collection is focused on non-target salmon species, although data on ESA-listed species and other species of concern are collected when possible. However, this on-board sampling does not provide estimates for additional sources of fishing related mortality, such as net dropout (*i.e.*, fish that fall out of the net while the net is being retrieved) or predation by marine mammals on fish captured in the net.

Sampling and monitoring programs implemented by WDFW have been focused on purse seine fisheries to obtain mortality estimates on non-target salmonids. In-season monitoring data are needed from purse seine vessels to estimate the number of Chinook and Coho salmon they encounter in a fishery when they are not allowed to retain those species. For gillnet fisheries WDFW relies on fish tickets for non-target salmon catch numbers, as gillnets are required to retain Chinook and Coho. From 2011 to 2014, WDFW focused a portion of its commercial sampling efforts on gillnet vessels in an attempt to collect data on bycatch of non-target salmon, non-salable fish, and other species. With the limited resources available for commercial monitoring, collecting data on gillnets required the department to reduce the sampling on purse seine vessels and rely on bycatch data and rates from past years with more robust sampling for projecting bycatch impacts for purse seines. Examination of gillnet observer data collected during this time has raised some questions about whether fish tickets can be used to accurately evaluate bycatch of non-target salmon species. For both Areas 10/11 and 12/12B, gillnet observer data show a higher rate of Chinook encounters than were reported on fish tickets for gillnet landings. WDFW currently does not have the resources to increase observer coverage in the gillnet fishery to determine the cause of discrepancies between fish tickets and observer data.

Several species and stocks of conservation concern are encountered incidentally to Puget Sound commercial salmon fisheries, including ESA-listed Chinook salmon, Puget Sound steelhead, and species of Puget Sound rockfish. Commercial fishers are prohibited from landing some of these species in any fishery (*e.g.*, steelhead), and therefore, these fish are not reported on fish tickets. Consequently, WDFW has been unable to estimate bycatch in gillnets for some species. Unfortunately, the sampling program is limited by its budget, meaning that comprehensive sampling of all fisheries to address bycatch concerns is not possible every year. WDFW will utilize available sampling information in a precautionary manner, and may adjust fishing schedules if data indicate that non-target species bycatch levels for either gear type are greater than levels assumed in pre-season planning models and analyses.

Objective 2: Harvest the all-citizens share of salmon.

The proposed rules and regulations for the Puget Sound commercial fisheries are designed to ensure that the total allowable catches defined for each fishery are fully utilized. Season structures considered for 2020-21 reflect expected abundance of target salmon species and stocks, based on pre-season forecasts. Abundances for some salmon stocks will be updated as the season progresses, based on scientific information collected from the fisheries and agreements reached by the state and tribal co-managers. The all-citizens total allowable catch will be adjusted accordingly, and may result in increasing all-citizens fishing opportunity. However, given the uncertainty associated with estimates of fishing effort, harvest rates, and the abundance of the target species or incidentally caught species, in-season adjustments to the fisheries may be necessary to meet conservation objectives. These adjustments could result in the harvest of less than the full all-citizens allowable catch. WDFW will attempt to provide advanced notice to the commercial fishing fleet of any changes to schedules.

If tribal harvest allocations are not fully utilized, WDFW may seek to maximize the state's commercial-fishing harvest opportunity by adjusting the all-citizens total allowable catch, consistent with the state-tribal Puget Sound Salmon Management Plan and Washington Fish and Wildlife Commission's North of Falcon policy (C-3608). Policy C-3608 states in part: "The Department will seek non-treaty fishing access to unutilized portions of treaty harvest allocations through the implementation of pre-season agreements, taking into consideration changes in abundance, fishery conflicts, and factors that may influence attainment of spawning escapement objectives."

Objective 3: Maintain the economic well-being and stability of the fishing industry (RCW 77.04.012); allow a sustainable level of harvest sufficient to provide opportunity for each gear type (RCW 77.50.120).

The proposed rules and regulations for these commercial fisheries are designed to maintain the economic well-being and stability of the fishing industry, and to provide a sustainable level of harvest sufficient to provide opportunity for each gear type. This management objective is challenging to address, given the diversity of the Puget Sound commercial salmon fishing fleet in terms of gear types, and the number of discretely managed fisheries opened each year. In addition, the economic health and stability of these fisheries depends on many factors beyond WDFW's control, including the prices paid for salmon, the abundance of salmon, the relative size of the salmon, the proportion of vessels choosing to participate in a fishery, the catch rates of vessels that do participate, and other factors.

Prices paid for salmon caught in these fisheries are influenced by international market conditions and other factors WDFW cannot control. These include, but are not limited to, abundance of salmon in the fishery, the amount of salmon available from fisheries in other areas such as Alaska, the amount of product stored from previous years, competition between buyers, quality

of the fish, and prices of farmed salmon. WDFW also cannot control the effort of fishers who hold limited-entry Puget Sound commercial salmon permits (189 gillnet, 75 purse seine, and 11 reef net). While WDFW can open areas to harvest of salmon for commercial license holders, the department cannot control the number of vessels that choose to participate in full-fleet openings. Participation levels in a given opening are driven by many factors, including the price of salmon, cost of fuel, weather and tidal conditions, and harvest opportunities on other species of fish and/or harvest opportunities in other Puget Sound salmon areas. Catch rates for a given gear type will vary between years and within a single year over individual openings due to changes in salmon abundance, salmon size, migration behavior, and many other operational decisions made by vessels participating in the fishery that are not listed here.

Finally, WDFW negotiates all-citizens commercial salmon fishing openings with tribal co-managers, consistent with the process developed under sub-proceedings of *United States v. Washington*. These negotiations, as well as in-season coordination and management with tribal co-managers, have many different components that reach far beyond the scope of Puget Sound commercial salmon fisheries. This means that there may be instances where WDFW would prefer to maintain or increase fishing opportunity for all-citizens fishers, but the ability to do so is affected by the need to make compromises in order to achieve successful negotiations with tribal co-managers. ESA requirements for affected, listed species must also be factored into fishery impact modeling and state-tribal negotiations.

Given the many factors beyond WDFW's control, the department believes that the most effective means of positively affecting the well-being and stability of the industry is by providing a predictable season structure designed to access the full allowable harvest. WDFW believes it is prudent to avoid annual or short-term adjustments to season schedules because there is significant inter-annual variation in fishery performance, and the outcome of a single year may not indicate that an adjustment is appropriate or necessary to achieve this management objective. In situations where the all-citizens share is not being fully utilized, increased opportunity can promote the well-being of the industry, if that opportunity can be provided while meeting conservation objectives for target and non-target species and stocks. This management approach gives fishing businesses the ability to plan for upcoming opportunities and to make business-based decisions about when and where to fish.

The rationales for WDFW's belief that the 2020-21 rules will promote the well-being and stability of the industry and allow a sustainable level of harvest are detailed by area and fishery immediately below. Due to the potential de-stabilizing effect of changes, focus is placed on modifications to schedules from past years and ways the modifications are expected to affect achievement of Objective 3. Rationale for incorporating or not incorporating industry input received during the NOF process are also included here.

Area 6D (Coho) – The 2020 schedule is similar to that in recent years, and, per the Summer Chum Salmon Conservation Initiative (SCSCI), the fishery will open on September 21st. The fishery will be open from Monday through Friday and close on weekends.

Area 7/7A (Chum) – In 2014 through 2016, the U.S. harvested its full share of Area 7/7A Chum available under the Pacific Salmon Treaty. These were the first years the U.S. harvested its full share of Chum since the renegotiation of the Chum annex of the Pacific Salmon Treaty in 2008. In order to provide opportunity for the all-citizens fleet to harvest its share, an agreement, similar to that in recent years, was negotiated with tribal co-managers (1) providing additional all-citizens fishing opportunity early in the season (2) if, after the first 3 days of all-citizens fishing, only a small portion of the all-citizens share has been harvested. The all-citizens fishery will be open October 10th, 11th, 12th, 14th, and 15th; and will reopen through the end of the season on either October 18th or 19th, based on the all-citizens catch in those first 5 days. The 2020 schedule provides the maximum amount of fishing time for all gear types, within the constraints of the Pacific Salmon Treaty and negotiated co-management agreements, for the treaty Indian and all-citizens fleets.

Area 7B/7C (Chinook/Coho/Chum) – The 2020 fishing schedule for Areas 7B and 7C has been adjusted for calendar dates, management periods, and forecasted returns. The start week has been adjusted to Week 34, delaying the fishery (relative to the previous season) to mitigate for high volumes of dogfish shark bycatch that are more likely to occur in earlier openings. Additionally, the Whatcom Creek Zone is closed during Chum Management starting Week 44, and the schedule has been reduced to 2 days per week, to allow for increased chum escapement and pursuit of hatchery egg take goals.

Area 8A (Coho) – The Area 8A Coho directed fisheries are closed for 2020. Stocks are forecasted to not meet escapement goals in the Snohomish River. Additionally, the status of Snohomish wild Coho are currently considered “over fished,” as described in the PFM’s West Coast Salmon Management Plan, thereby requiring fishery managers to implement measures seeking to rebuild this stock.

Area 8D (Coho and Chum) – The Area 8D Coho- and Chum-directed fisheries are closed for 2020. Local Coho and Chum stocks are not projected to not meet their escapement goals.

Area 9A (Coho) – The 2020 fishery structure is identical to that in recent years, with adjustments made for calendar dates, and will be open weekly Sunday through Saturday. The opening date of this fishery mirrors that of the Area 9A tribal fishery.

Area 12A (Coho) – The 2020 fishery structure is like that in recent years, with beach seines opening on Tuesday, August 18, the earliest weekday date permitted under the SCSCI. Skiff gillnet openings may be scheduled later in the season pending summer Chum escapement numbers and discussions with tribal co-managers.

Area 12C (Chinook) – WDFW has implemented a beach seine fishery in the Hoodport Hatchery Zone of Area 12C to target a portion of the non-treaty share of hatchery Chinook returning to Hood Canal. The 2020 fishery is limited to those to whom WDFW has issued an Emerging Commercial Fishery license and a Puget Sound Beach Seine permit. Total landed catch for this fishery will not exceed 10,000 Chinook. The fishery is scheduled for two days per week (Mondays and Wednesdays) from July 27th through September 2nd. Per the SCSCI, all Chum salmon must be released.

Areas 10/11 and 12/12B/12C (Chum) – As stated in Objective 3 above, WDFW’s commercial fishing regulations are structured to maintain the economic well-being and stability of the fishing industry (RCW 77.04.012) and allow a sustainable level of harvest sufficient to provide opportunity for each gear type (RCW 77.50.120). One of the best examples of how WDFW has achieved this objective is through the fishing schedules for Areas 10/11 and 12/12B for the gillnet and purse seine fisheries.

In past years, the fishing schedules for Areas 10/11 and 12/12B have been carefully planned to ensure that fishing effort is split between the two areas, rather than scheduling openings permitting the entire purse seine and gillnet fleets to participate in both areas each week. While the fishing schedule in the adopted rule continues to split fishing effort, the Area 10/11 fishery is unlikely to occur in 2020, due to the poor expected return of chum to South Puget Sound. Specifically, this year’s South Sound co-manager forecast of wild Chum was again lower than average. In Areas 10/11, the all-citizens fishery will be closed pending the results of the Apple Cove Test Fishery (ACTF). With the resulting reduced share, similar to that in 2019, to help conserve limiting stocks such as Puyallup winters and several smaller deep south Puget Sound stocks of concern, the co-managers decided to delay the start of the fishery until after the first two weeks of the ACTF, to evaluate the run strength before proceeding. In Areas 12/12B, co-managers agreed to a pre-season plan for 2020 that is similar to last year’s plan for gillnets and purse seines in Weeks 42-45. This schedule will be adjusted according to in-season updates of Chum abundance.

To assess the short- and long-term stability and economic well-being of these two closely-linked commercial fisheries (Areas 10/11 and 12/12B), WDFW assembled and analyzed catch data, economic information (ex-vessel landing value), and the number of licensed vessels, by gear type, for the Chum salmon fisheries operating in these two areas combined, for the period from 1974 through 2019. Ex-vessel landing value data were adjusted according to the Gross Domestic Product: Implicit Price Deflator (GDPDEF) to account for inflation and allow for comparability of the economic data between years. These data and summary statistics are presented in Table 1 to this CES, including average values by each gear for the period 1974-2003 (the historical time period, with consistent yearly fishing schedules, providing equal fishing time to gillnet and purse seine gear); the period 2004-2019 (the time period in which extra fishing time was provided for gillnet gear); and also for the period 2009-2019 (the most recent time

period with relatively consistent yearly fishing schedules providing additional fishing time for gillnet gear). How the characteristics of the gillnet and purse seine fisheries have changed during these timeframes and how WDFW has responded to those changes are described in more detail below, to provide context for the adopted rules for the 2020 fisheries.

For the period 1974-2003, the proportion of the total catch of these two fisheries landed by gillnets was an average of 30%, while 70% of the total catch was landed by purse seines. During that same period, gillnets accounted on average for 78% of the licenses eligible to participate in these fisheries, while purse seines accounted on average for 22%. The total number of participating licenses and the composition of the fleet by gear type have changed dramatically over time, due to changes in the salmon industry (such as a government-sponsored license buy-back program). Across the most recent time period, 2009-2019, the gillnet proportion of the licenses has been 72%, a 6% drop from the historic level of 78%; commensurately, the proportion of purse seine licenses has increased from 22% to 28%. In order to calculate what the expected percentages of total catch would be for the 2009-2019 period, given the change in fleet composition, WDFW calculated the mean percentage of total catch per mean percentage of licenses during the historic time period (1974-2003). These percentages were multiplied by the current percentages of licenses for each gear and scaled to 100% to calculate the expected percentages of catch under the current fleet composition. Given the change in fleet composition, the expectation would be for the average catch share for gillnets to drop from a historical share of 32% to a share of 26% for the 2009-2019 period and for purse seines to increase proportionally from 68% to 74%.

In 2003, the Hood Canal and south Sound Chum fishery schedules were significantly altered in response to multi-year signs of instability, including low prices per pound for Chum salmon across gear types and low participation and catches in these fisheries by the gillnet fleet. Prior to 2003, WDFW managed these fisheries by providing equal fishing opportunity for both gillnet and purse seine, in terms of number of days open. Beginning in 2003, WDFW provided significant additional fishing time for gillnets to promote the economic well-being of that sector of the industry. Catch and ex-vessel values in these fisheries have rebounded in response to these changes, which suggests that the efficiency and economic viability of the gillnet fishery improved over time. In response, WDFW adjusted fishing schedules to reduce the extra time the gillnet season was open.

Beginning in 2008, the annual fishing schedules included “market” openings for gillnet vessels in south Puget Sound, as gillnet fishers indicated this would enhance their ability to direct retail market their catch. By selling directly, harvesters remove the need for a buyer (*i.e.*, broker or middleman) and thus, can better realize the difference between ex-vessel values and retail prices paid by the consumer, which increases their profit margins. Market openings are 8-hour openings late in the week that are intended to allow gillnet fishers to supply fresh fish to niche

markets for the weekend, presumably for a greater economic return than for the same fish landed earlier in the week.

From 2008 to 2013, the fishing schedules for Chum fishing in south Puget Sound and Hood Canal provided consistent ratios of gillnet-to-purse seine fishing time, with small changes made annually to provide variation in “first fishing” opportunities within areas and weeks for each fishing group. Industry representatives for both gear groups have long maintained that having the “first fishing” opportunity of the week maximizes the economic value for that fleet; however, WDFW’s past analysis of fish landing receipts has not shown conclusive evidence that this is consistently the case.

As noted above, beginning in 2008, fishing schedules were adjusted annually to provide equitable sharing of “first fishing” opportunities between the two fisheries. Historically gillnets had the first fishing opportunity each in Areas 10/11 fishing Sunday nights, and purse seines had the first fishing opportunity each week in Hood Canal fishing Mondays. There had also historically been no overlap in time of fishery openings between the two gear types in these fisheries. During this same timeframe (2009-2013), recognizing that both fisheries had a competing interest in securing what became termed the “first start,” WDFW also provided for an overlap in fishing time for the two fleets of one hour. This one-hour overlap was combined with alternating first starts, and scheduling of one gillnet full night and one “market” night in weeks when there was only one purse seine opening. Prior to 2009, the gillnet fishery had closed at 7:00 a.m. on openings immediately preceding a purse seine opening; as a result of this new schedule, the gillnet fishery was extended with a closing time of 8:00 a.m. on days that the purse seine fishery opened at 7:00 a.m. As noted in public comments that WDFW has received subsequent to this change, there are differences of opinion as to whether this one-hour overlap in fishing time was agreed to by the gillnet and purse seine representatives who participated in the annual NOF process, and if there had been agreement, whether it was intended to be for one year only (*i.e.*, 2009) or to continue annually through the 2009-2013 period as it did.

In 2014, several changes were made to the fishing schedules for gillnet and purse seine for three very different reasons: to 1) adjust the catch proportions between gillnet and purse seine for consistency with the 2008-2012 period; 2) avoid an on-the-water spatial conflict between these gear types; and 3) achieve co-manager agreement on Chum fisheries, which also has implications relative to securing co-manager agreement for the broader NOF process. The specific changes and WDFW’s rationale are explained in detail below.

Adjusting Catch Proportions

WDFW adjusted the fishing schedules relative to the 2008-2013 schedules, by adding additional gillnet time, in response to further declines in gillnet landings. In 2013, both gear groups caught significantly more fish and had higher ex-vessel revenue than what had been projected pre-season (primarily due to a substantially higher than forecasted return of Chum

salmon in Hood Canal); however, the proportions of catch were markedly different than projected, with 13% of the catch by gillnets and 87% of the catch by purse seines. This was a 45% reduction in the proportion of catch by the gillnet fleet compared to the 2008-2012 period.

Given this significant reduction, WDFW questioned industry members for plausible explanations for such a difference in the sixth year of a consistent fishing schedule. The only explanation that was both offered and is supported by available data is that gillnet effort decreased in 2013 in spite of consistent fishing opportunity. While the decline in gillnet participation was not attributable to a change in fishing regulations, the magnitude of change was large enough to cause concerns with stability, similar to the concerns that led WDFW to provide additional gillnet opportunity in 2003. Gillnet industry representatives requested that WDFW provide additional gillnet opportunity to address that instability. In response, WDFW made changes to the 2014 schedule that included expanding “market nights” in Areas 10 and 11 to full nights, thereby adding 33 hours to the fishery with the intent of achieving catch proportions similar to the recent average prior to the reduction observed in 2013 (*i.e.*, 2008-2012). The Department projected that this fishing schedule would result in catch proportions of 25% for gillnets and 75% for purse seines during the 2014 season. Post-season analysis of 2014 catch data showed that actual catch proportions were 24% by gillnets and 76% by purse seines, which coincides with the 2008-2012 average catch proportions.

Avoiding Gear Conflicts

As described above, the fishing schedules for the gillnet and purse seine fisheries from 2009 to 2013 provided for a one-hour overlap between the closing time for the gillnet fishery and the opening time for the purse seine fishery. During this timeframe, the purse seine representatives continually complained about the continued allowance of this practice, noting that there was a “gear conflict.” It should be noted that while the phrase “gear conflict” is regularly used in describing fisheries using different gears or methods to target the same species or stocks, the conflict is really spatial. While true “gear conflicts” do occur on occasion (*e.g.*, bottom trawlers that pick up stationary crab pots in their trawl nets), the situation tends to happen by accident (*e.g.*, the surface buoy attached to the crab pot is missing and the trawler is unaware that there is a crab pot in its path). In general, fishery participants of all gear types will actively avoid encounters with each other’s gear to minimize damage or loss to their own vessel or gear, which can be expensive to repair or replace. It should also be recognized, however, that there is an inherent advantage to the fishery that is closing (*i.e.*, the gillnet fishery) by already occupying the space that the purse seine fishery would like to enter. In response, the purse seine vessels would need to choose to either fish less effectively in a nearby space with sufficient distance to avoid gear damage or loss, or delay fishing altogether until the gillnet fishery closed. Therefore, in recognition of this conflict and the other measures that were being taken to expand the gillnet fishing opportunity in 2014, WDFW decided to revert back to the pre-2009 closure time of 7:00 a.m. for the gillnet fishery on mornings that the gillnet fishery immediately precedes the purse

seine fishery. In practice, this has resulted in application of the 7:00 a.m. closure for the gillnet fishery on two mornings per year for the 2014-2019 seasons.

Achieving Co-Manager Agreement

Additional changes in fishing schedules occurred in 2014 resulting from negotiations with tribal co-managers; however, WDFW consistently adjusted seasons for gillnet and purse seine to maintain a balance in opportunity and achieve the 2008-2012 average catch proportions. Prior to 2014, the schedule provided 2 days for all-citizens purse seines, and 2 days for all-citizens gillnets, in both Hood Canal and south Puget Sound, during Week 44; and no fishing days in Week 42. There was significant tribal co-manager opposition to scheduling 2 days of purse seine fishing in Week 44. The negotiations ultimately resulted in the following schedule modifications (relative to prior years). For the 2014, 2015, and 2017 fishing seasons, 1 day of purse seine fishing was moved from Week 44 to Week 42. For 2016, WDFW agreed to remove 1 day of purse seine fishing in Week 44, but did not add that day back into Week 42, and did not schedule any gillnet fishing days in Week 42. In addition, for 2016, WDFW agreed to schedule only 1 purse seine day per week during Weeks 45 and 46.

In scheduling the 2014 and 2015 seasons, WDFW used estimates of Chum catch per hour by gear type to predict catch proportions of 25% for gillnets and 75% for purse seines, for Hood Canal and south Puget Sound Chum fisheries combined. As noted above, the resulting actual catch proportions in 2014 were very similar to the pre-season projections, at 24% for gillnets and 76% for purse seines. For 2015 and 2016, however, a similar fishing schedule resulted in very different catch proportions: of 31% and 32% gillnet, and 69% and 68% purse seine, respectively. WDFW explored potential bias in in-season run-size update models, but could not achieve co-manager agreement on a run-size update. Without co-manager agreement on an increased run-size, WDFW-managed fisheries had to be constrained to preseason fishing schedules during what is considered a peak week of the fishery (Week 44), in spite of evidence that abundance was higher than expected preseason. As noted above, in 2015 and 2016, the purse seine fleet was reduced from the 2 days in Week 44 in 2014 to one 1 per week in Weeks 44, 45, and 46.

Inherent differences in the selectivity and efficiency of purse seine versus gillnet gear likely affected the catch proportions in 2015 and 2016 when fishing closed in the peak week of the return. Purse seines are highly selective for schooling fish and efficiently catch relatively high numbers of fish in the peak of the run, whereas gillnets are less selective and less efficient than seines in the presence of high abundance. Therefore, if WDFW had been able to schedule 2 days per week for purse seine in Week 44 and/or Week 45, a catch proportion closer to the historical of 26% gillnet/74% purse seine, rather than the actual 31-32% gillnet/68-69% purse seine, would have likely occurred.

In planning 2018 fisheries, WDFW took this information into account and addressed this by removing 1 day of gillnet fishing in the first week of the fishery, and scheduling 2 days of

purse seine fishing in Week 45, in an effort to return to the 26% gillnet/74% purse seine catch proportions. The 2018 season resulted in catch proportions similar to those expected (28% gillnet; 72% purse seine).

In 2019, chum management was identified as a major priority by tribal co-managers around Puget Sound, with a particular emphasis on south Puget Sound chum, specifically related to a very weak forecast of Puyallup and Nisqually late/winter Chum. Co-managers agreed to a pre-season plan for 2019 that was similar to 2018 for gillnets and purse seines in Weeks 42-45, with the intent that this schedule would be adjusted according to in-season updates of Chum abundance.

WDFW and the Nisqually Tribe agreed to close fisheries in terminal areas during the management period of late/winter Chum. In addition to closing the extreme terminal areas (portions of marine area 13 off the mouth of the Nisqually River and in-river), in 2017, tribal co-managers were emphatic that no Chum fisheries occur in Areas 10 or 11 after Week 45. In pre-season negotiations for 2019-20, tribal co-managers reiterated their concerns for conservation needs for late/winter Chum, and required a thorough revision of Chum management throughout south Puget Sound. In these negotiations tribal co-managers again demanded that no Chum fisheries occur in Areas 10 or 11 after week 45. Ultimately, WDFW and tribal co-managers agreed to schedule fisheries in south Puget Sound that are similar to those which occurred during 2017-18; specifically, no fishing in Areas 10 and 11 after week 45, as well as specific exclusionary zones in Areas 10 and 11, as outlined in WAC 220-354-080. As part of this agreement, WDFW and tribal co-managers in south Puget Sound initiated a thorough co-manager technical review of conservation and management needs for south Sound Chum.

In 2019, WDFW managed the Chum fishery in-season to allow for the full harvest of the all-citizens' share in a manner that is most beneficial to the full all-citizens commercial fleet. With similar schedules and the deviation from 2014 to 2015 and 2016, pre-season estimates were difficult to project based on the 2019 schedule; however, based on 2019 Chum run-size forecasts for south Sound and Hood Canal, and preliminary calculations of expected harvestable numbers at those run-sizes, the total all-citizens share of Chum for those areas was estimated at 338,000 fish or approximately 3 million pounds (based on an average weight of 8.8 pounds per fish for 2011-2017). If the entire all-citizens share as projected pre-season were harvested, using the 2018 average price per pound would result in an estimated ex-vessel value of \$3.2 million for 2019. It is reasonable to expect that catch and ex-vessel value totals will be split between gears by proportions similar to those seen since 2008, with the exception of the additional gillnet fishing time with the change of market to full nights and the removal of 1 day of seining during the peak of the fishery that began in 2014. Using these calculations described, WDFW had anticipated the catch proportions to be 27% gillnet/73% purse seine; post-season catch data indicates that the actual catch proportions were 25% gillnet/75% purse seine, which was within the intended catch sharing target.

In the pre-season negotiations between WDFW and tribal co-managers for 2020-21 Chum fisheries in south Puget Sound, we continued to recognize the need for a conservative approach to management related to very weak forecasts of Puyallup and Nisqually late/winter Chum. WDFW and tribal co-managers agreed to delay the start of the Chum fishery in Areas 10/11 until at least Week 43, pending the outcome of the “In-season Update Model” generated by the Apple Cove Test Fishery. If sufficient numbers of Chum are then expected to return to south Puget Sound, and co-management agreement can be reached, a fishery may be conducted. As part of this agreement, WDFW and tribal co-managers in south Puget Sound will continue with efforts to conduct a thorough co-manager technical review of conservation and management needs for south Sound Chum. Co-managers agreed to a pre-season plan for Area 12/12B that is similar to last year’s plan for gillnets and purse seines in Weeks 42-45. It is expected that participation will likely be higher due to the Area 10/11 closure this year. WDFW will closely monitor this fishery in response to the expected increased effort, the potential effect of that increase on catch rates, and the need to ensure that catch does not exceed the non-treaty share of harvest. This schedule will be adjusted according to in-season updates of Chum abundance and non-treaty catch.

In 2020, WDFW expects to manage the Chum fishery in-season to allow for the full harvest of the all-citizens share in a manner that is most beneficial to the full all-citizens commercial fleet. With the deviation from 2014 to 2015 and 2016 despite similar schedules, it is difficult to project what the catch will be based on the 2020 schedule; however, WDFW provides an analysis that can help inform such projections below.

Based on 2020 Chum run-size forecasts for Hood Canal, and preliminary calculations of expected harvestable numbers at those run-sizes, the total all-citizens share of Chum for those areas is estimated at 174,000 fish, or approximately 1.53 million pounds (based on an average weight of 8.8 pounds per fish for 2011-2017). If the entire all-citizens share, as projected pre-season, is harvested, using the 2019 average price per pound would result in an estimated ex-vessel value of \$1.4 million for 2020. It is reasonable to expect that catch and ex-vessel value totals will be split between gears in proportions similar to those seen since 2008, with the exception of: the additional gillnet fishing time added with the change from market nights to full nights, and the removal of one day of seining during the peak of the fishery, both of which measures began in 2014. Using the calculations described below, WDFW anticipates gillnets will catch 24% of the Chum and purse seines will catch 76% (see Table 1).

From the period of 2014 to 2018, the gillnet fleet in Hood Canal and south Puget Sound averaged 738 Chum per hour fished during openings with landings, while the purse seine fleet averaged 3,808 Chum per hour fished during openings with landings. Using the catch per hour averages to account for the changes in fishing schedules that began in 2014, a catch of 43,458 for gillnets and an expected catch of 130,375 for purse seines. Using the 2011-2017 average landed Chum weight of 8.8 pounds, these catch estimates equate to an ex-vessel value (based on 2019

prices) of \$352,761, or \$2,063 per gillnet license; and an ex-vessel value of \$1,058,292, or \$14,111 per purse seine license (Figure 1 and Figure 2). These values are about half of the GDPDEF-adjusted average of \$4,458 per gillnet license and \$32,112 per purse seine license for the period 2014-2019. These value-per-license calculations assume that all license holders participate in these fisheries. If fewer than all license holders participate, at identical total ex-vessel values, the average amount per participant would be higher than these estimates. The estimated 2020 ex-vessel values are within the range seen from 2014 to 2019, and thus the anticipated outcome is similar to that in recent years.

* * *

WDFW believes that the season structures proposed for the 2020 Puget Sound commercial salmon rules and regulations will promote the economic well-being and stability of the commercial fishing industry while meeting the constraints imposed by conservation objectives. Catch and ex-vessel value outcomes have not been projected for all species in all fishery management areas; however, WDFW has estimated that the likely outcomes will be similar to the commercial salmon fisheries in south Puget Sound and Hood Canal for Chum salmon, the two largest commercial salmon fisheries in Puget Sound. WDFW has routinely stated that consistent annual fishing schedules contribute to industry stability, and that there are factors beyond WDFW's control contributing to instability. For 2020 WDFW anticipates catch proportions of total Chum for gillnets and purse seines will be similar to the 2009-2019 average, at 25% and 75%, gillnet and purse seine, respectively. This expected outcome is very close to the historic averages of 26% and 74% for gillnets and purse seines. WDFW believes the projected result of the 2020 season is consistent with promoting both short- and long-term stability of the fishing industry (as reflected by comparison to the historical record), is consistent with maintaining the economic well-being of the industry, and provides sustainable harvest levels by offering opportunity for each gear type within the constraints of run-size forecasts for 2020.

3. Differences between the text of the proposed rules and the rules as adopted:

There were three schedule and date errors identified in the CR-102, which were needed to match the proposal with the intended schedule that was developed and shared with industry representatives prior to the CR-102 filing. These were:

1. An Area 6D date correction to the chum retention date of October 12;
2. An Area 7/7A date correction to the chinook release date of October 18; and
3. An Area 10/11 date and time correction to the gillnet night fishery hours for November 4 to 5pm to 7am, retaining the morning hour adjustment prior to a purse seine opening.

There were other minor corrections made after the filing of the CR-102, which were needed to address incorrect dates and grammatical issues.

4. Public comments, response to comments, and consideration of comments

The following are the issues identified and comments received from participants in the Puget Sound commercial fishery meetings following the filing of the Preproposal Statement of Inquiry (CR-101) and prior to the filing of the Proposed Rules (CR-102):

Puget Sound/Hood Canal gillnet:

Comment: The Puget Sound Harvesters Association submitted a comment letter in opposition to the removal of one hour of fishing time from the gillnet fleet, which initially occurred in 2014 in response to a gear conflict issue raised by the purse seine fleet, and requested that this restriction be removed. The stated reasons for their request are: that 1) “there was not a time restriction for gillnetters in 2009 in Area 10/11”; 2) there was not “unanimous consent” and the restriction “was created without agreement”; and 3) “[t]he size reduction of the gillnet fleet and the simultaneous opening of area 10/11 and area 12 has dispersed the fleets, both gill net and purse seine, to the point that the overlap or gear problem no longer exists.”

WDFW Response: WDFW acknowledges that the one-hour overlap in fishing time was allowed during the 2009-2013 seasons, as described in Section 2; however, prior to that, the gillnet fishery had closed at 7:00 a.m. each year since 2003. The change in 2009 coincided with other changes: alternating first starts, and scheduling one gillnet full night and one “market” night in weeks when there was only one purse seine opening. While WDFW has stated in past Concise Explanatory Statements that there was agreement between the gillnet and purse seine fleets for the allowance of the one-hour overlap, there has been debate as to whether this overlap was intended to be for one-year only (*i.e.*, 2009), or to continue through the 2009-2013 period as it did. Regardless, subsequent to 2009, there were complaints by the purse seine fleet that cited issues associated with gear conflicts, and in 2014, WDFW removed the one-hour overlap and reverted back to the 7:00 a.m. closure for the gillnet fishery during weeks when it immediately precedes a purse seine opener.

WDFW also acknowledges that the decision to remove the one-hour overlap was not achieved through “unanimous consent” of the fishery participants; instead, WDFW made the decision as a matter of policy with respect to the issue of gear conflict avoidance. Implementing means to prevent gear conflict is the department’s established policy position, and had been the practice for the Area 10/11 and 12/12B fisheries since 2003, until the change—facilitated by “unanimous consent” between the gear groups—occurred in 2009 as described above. Per RCW 77.04.012, the department is required to promote orderly fisheries, and doing so means, among other things, avoiding gear conflicts. WDFW’s Director and staff are further guided by the Fish and Wildlife Commission’s policy for 2019-2023 NOF fisheries (*see* Policy [C-3608](#) “Gear and Fishery Conflicts,” p. 3). Under these circumstances, if WDFW staff were going to consider a recommendation to the Director that he adopt rules (via his delegated authority) that potentially deviate from a Commission policy, being able to identify “unanimous consent” among the

affected constituent gear groups would be an important consideration in determining next steps. Absent such agreement, however, WDFW's established management practice is to follow the department's policies and structure fisheries in a manner that avoids gear conflicts; WDFW does not need unanimous consent to follow an established policy already in effect.

In addition, with regard to the assertion that a reduction in gillnet fleet size allows for increased dispersal of the fleet, thereby negating any problems associated with gear conflicts, WDFW disagrees. As was also noted in Section 2 of this CES, while WDFW does not have the data to determine whether gear conflict would or would not occur, there is an inherent advantage to the fleet already occupying the space; and, even if the fleet is of smaller size, the spatial "footprint" of an actively-fishing gillnet can be substantial relative to the purse seine vessel that wants to fish the same area. WDFW also does not have catch data of fine enough resolution to project the effect on catch proportions resulting from allowing a single gillnet opening to extend past the 7:00 a.m. purse seine opening time.

Comment: WDFW received a comment from purse seine representatives supporting the 7:00 a.m. closure on days of fishery overlap to prevent gear conflicts.

WDFW Response: WDFW agrees; as described above, this is consistent with RCW 77.04.012 and Commission Policy C-3608 for the 2019-2023 North of Falcon fisheries.

Comment: WDFW also received a request to extend the gillnet fishery until 9:00 a.m. in portions of Areas 10 and 11 where purse seine vessels do not operate.

Response: WDFW is not opposed to managing this fishery on a finer spatial scale; however, without a specific proposal, it is difficult to assess what the trade-offs may be in doing so. Once we have a proposal, we would certainly need to have discussions with tribal co-managers, all fishery participants, and WDFW Enforcement about any proposals to keep the gillnet fishery open longer in smaller, discrete areas, before we could provide a more definitive response. While observations from WDFW field staff suggest that gear conflict may be limited in certain portions of Areas 10/11, WDFW cannot state conclusively that no gear conflict would arise. WDFW also does not have catch data of fine enough resolution to project the effect on catch proportions resulting from allowing a single gillnet opening to extend past the 7:00 a.m. purse seine opening time, much less an opening that would occur in only parts of Areas 10/11. Therefore, any such proposals would need to be considered in light of the data that would need to be collected, and how that would be done, to adequately monitor adherence to discrete fishing areas and associated catch.

Comment: Some gillnet industry representatives questioned the shift in fishing hours for Hood Canal gillnet openings that begin the week of November 8, as openings prior to November 8 in Hood Canal are scheduled for 7:00 a.m. to 7:00 p.m. and openings after November 8 are scheduled for 6:00 a.m. to 6:00 p.m.

WDFW Response: Fishing hours have been adjusted in the past to account for the change in hours of daylight that occurs when Daylight Saving Time ends. Preferences between fishing dawn hours and fishing dusk hours vary among individual fishers. Given general expectations of fishery participants, after discussions with industry representatives, which did not result in industry “consensus,” WDFW decided to maintain the past practice of shifting hours in early November to account for the change in hours of daylight.

Beach Seine:

Questions from industry representatives relating to the Area 12C Chinook fishery were generally addressed with the members of the Beach Seine Advisory Board. The only non-treaty commercial Chinook salmon fishing opportunity in recent years in Area 12C has been for beach seine operators. Participants in this seine fishery expressed interest in utilizing a smaller gauge twine for the webbing of the net. WDFW is open to considering the use of smaller twine; however, lacking information on what the catch and bycatch implications may be, we are unable to assess the potential impacts of this proposed change in gear definition.

The weekly fishing days for the beach seine fishery were adjusted back to Monday/Wednesday, from the Tuesday/Thursday schedule of 2019, in efforts to offer an alternate first start to tribal co-managers. The beach seine fishers saw no need for this, but were accepting of the idea.

There was also interest by both purse seines and gillnets to get “some” limited opportunity in Area 12C for hatchery Chinook. Staff reiterated that the Commission’s North of Falcon policy (POL C-3608) prioritizes Chinook salmon for recreational fisheries. The small beach seine fishery in the Hoodspout Hatchery Zone is directed at surplus hatchery fish that have already migrated through the majority of recreational fisheries. The Hoodspout zone is too small to provide gillnet or purse seine openings. Any commercial openings outside of that zone would result in impacts on wild Chinook, thus taking opportunity away from the recreational fishery. The proposed rules do not include purse seine or gillnet openings targeting Chinook salmon in Area 12C.

Chum Management:

WDFW described to meeting attendees the challenges associated with chum management and pre-season planning, which were consuming large amounts of co-manager meetings. The ultimate outcome from the 2020-21 North of Falcon process is for co-managers to continue to develop a comprehensive Chum Management Plan for Puget Sound over the next few years. It is anticipated that this plan will address conservation needs, allocation, accounting, and in-season management to aid in the long-term mutual success of co-managers in achieving self-sustaining chum fisheries throughout Puget Sound.

Responses to Comments Received during the Comment Period for WSR 20-10-114 (rule-making comments after filing of the CR-102)

The CR-102 setting forth the proposed rules for the 2020 all-citizens commercial salmon fisheries in Puget Sound was filed on May 6, 2020 (WSR 20-10-114). The comment period for the proposed rules closed on June 8, 2020, and an APA rule-making hearing was held via webinar at 9:00 a.m. on June 9, 2020.

During the May 6-June 8 comment period, commenters representing both the Purse Seine Vessel Owners Association and gillnetters expressed an objection to the Hazel Point closure to all non-tribal fishers. Unfortunately, staff were not able to gain agreement with co-managers for further relaxation of this closure area for the 2020 season. Tribal representatives expressed the view that closure of this area is important to prevent gear conflict between small tribal gillnet vessels and non-tribal vessels fishing on the same days.

WDFW received additional comments about the closing time for the Area 10/11 gillnet fishery on the morning of November 5 that were similar to the comments received prior to the CR-102 filing. Section 2 of this CES includes a detailed description of the changes that have been made to the fishing schedules for this fishery since 2003, and WDFW's approach to maintaining stability for the gillnet and purse seine fleets by scheduling fisheries in a manner that achieves their historical catch proportions.

Also described in Section 2 is the rationale for WDFW's initial decision in 2014 to remove the one-hour overlap on days that the gillnet and purse seine fisheries are both open. This is further explained in the beginning of Section 4 in response to comments WDFW received from the Puget Sound Harvesters Association prior to the filing of the proposed rules (CR-102).

The final rule closes gillnet fishing at 7:00 a.m. the morning of purse seine fishing (November 5), consistent with the fishing plan shared with industry prior to the CR-102 filing. This decision is consistent with RCW 77.04.012, Commission Policy C-3608 for the 2019-2023 North of Falcon fisheries, and with WDFW's management approach to maintaining industry stability.

CONCLUSION

WDFW has considered all the facts and circumstances surrounding the 2020-21 Puget Sound commercial salmon season schedule. WDFW carefully reviewed all input from industry representatives and the public during the North of Falcon rule development process. WDFW believes the 2020-21 Puget Sound commercial salmon fishing regulations are reasonably developed to comply with WDFW's statutory mandates and to be consistent with WDFW's management objectives for these fisheries.

Year	GDPDEF Factor	Combined Gears Total Catch	Combined Gears Ex-vessel Value	Combined Gears Ex-vessel Value GDPDEF adjusted	GN Licenses	GN Catch	GN Proportion of catch	GN Ex-vessel Value	GN Ex-vessel Value GDPDEF Adjusted	GN Ex-vessel Value GDPDEF Adjusted Per License	Purse Seine Licenses	PS Catch	PS Proportion of Catch	PS Ex-Vessel Value	PS Ex-Vessel Value GDPDEF Adjusted	PS Ex-vessel Value GDPDEF Adjusted Per License
1974	1.188	15,353	\$78,322	\$93,039	1,990	2,023	0.13	\$10,399	\$12,353	\$6	137	13,330	0.87	\$67,923	\$80,686	\$589
1975	1.186	6,534	\$49,699	\$58,918	1,659	3,017	0.46	\$20,410	\$24,196	\$15	385	3,517	0.54	\$29,289	\$34,722	\$90
1976	1.183	119,743	\$1,107,754	\$1,310,104	1,536	65,385	0.55	\$644,114	\$761,772	\$496	376	54,358	0.45	\$463,640	\$548,331	\$1,458
1977	1.179	146,509	\$1,471,793	\$1,735,057	1,517	114,444	0.78	\$1,189,141	\$1,401,846	\$924	393	32,065	0.22	\$282,653	\$333,212	\$848
1978	1.173	291,755	\$3,110,616	\$3,650,083	1,532	166,416	0.57	\$2,132,816	\$2,502,705	\$1,634	402	125,339	0.43	\$977,800	\$1,147,378	\$2,854
1979	1.166	13,063	\$87,840	\$102,413	1,501	6,901	0.53	\$54,040	\$63,005	\$42	402	6,162	0.47	\$33,800	\$39,408	\$98
1980	1.157	192,116	\$1,029,828	\$1,191,414	1,487	78,977	0.41	\$513,517	\$594,091	\$400	398	113,139	0.59	\$516,311	\$597,323	\$1,501
1981	1.147	123,688	\$1,113,134	\$1,277,312	1,450	63,428	0.51	\$587,612	\$674,280	\$465	396	60,260	0.49	\$525,522	\$603,033	\$1,523
1982	1.137	200,191	\$1,144,347	\$1,300,646	1,420	70,801	0.35	\$425,611	\$483,743	\$341	390	129,390	0.65	\$718,736	\$816,904	\$2,095
1983	1.127	128,969	\$1,039,556	\$1,172,058	1,374	46,097	0.36	\$376,604	\$424,606	\$309	383	82,872	0.64	\$662,953	\$747,452	\$1,952
1984	1.117	266,228	\$2,016,143	\$2,252,685	1,259	94,041	0.35	\$708,422	\$791,536	\$629	367	172,187	0.65	\$1,307,722	\$1,461,148	\$3,981
1985	1.107	184,764	\$935,630	\$1,035,755	1,196	53,811	0.29	\$335,146	\$371,012	\$310	349	130,953	0.71	\$600,483	\$664,743	\$1,905
1986	1.099	276,814	\$1,141,165	\$1,253,665	1,200	71,595	0.26	\$301,284	\$330,986	\$276	345	205,219	0.74	\$839,881	\$922,679	\$2,674
1987	1.091	466,208	\$6,608,284	\$7,210,688	1,148	105,651	0.23	\$1,760,755	\$1,921,264	\$1,674	341	360,557	0.77	\$4,847,529	\$5,289,424	\$15,512
1988	1.085	471,548	\$3,651,358	\$3,960,012	1,142	153,758	0.33	\$1,223,330	\$1,326,739	\$1,162	342	317,790	0.67	\$2,428,028	\$2,633,272	\$7,700
1989	1.079	274,858	\$2,430,410	\$2,622,520	1,152	95,913	0.35	\$828,325	\$893,799	\$776	341	178,945	0.65	\$1,602,086	\$1,728,721	\$5,070
1990	1.074	261,821	\$2,270,850	\$2,437,862	1,148	89,200	0.34	\$776,463	\$833,568	\$726	337	172,621	0.66	\$1,494,388	\$1,604,294	\$4,761
1991	1.067	307,908	\$1,481,976	\$1,581,290	1,132	77,835	0.25	\$423,123	\$451,478	\$399	330	230,073	0.75	\$1,058,853	\$1,129,811	\$3,424
1992	1.063	529,520	\$2,461,390	\$2,615,837	1,118	173,808	0.33	\$833,282	\$885,568	\$792	327	355,712	0.67	\$1,628,109	\$1,730,269	\$5,291
1993	1.059	402,089	\$2,316,092	\$2,452,446	1,083	125,238	0.31	\$757,658	\$802,263	\$741	318	276,851	0.69	\$1,558,434	\$1,650,182	\$5,189
1994	1.056	386,967	\$1,104,806	\$1,166,221	1,042	64,465	0.17	\$181,819	\$191,926	\$184	306	322,502	0.83	\$922,987	\$974,295	\$3,184
1995	1.053	288,538	\$809,434	\$851,956	966	55,178	0.19	\$150,667	\$158,582	\$164	297	233,360	0.81	\$658,767	\$693,374	\$2,335
1996	1.049	490,370	\$786,358	\$824,917	887	74,319	0.15	\$114,229	\$119,831	\$135	292	416,051	0.85	\$672,129	\$705,086	\$2,415
1997	1.045	209,837	\$856,313	\$895,108	872	19,488	0.09	\$74,057	\$77,412	\$89	290	190,349	0.91	\$782,255	\$817,696	\$2,820
1998	1.042	414,133	\$682,627	\$711,079	820	52,035	0.13	\$86,581	\$90,190	\$110	276	362,098	0.87	\$596,046	\$620,890	\$2,250
1999	1.038	90,471	\$317,261	\$329,418	682	18,782	0.21	\$63,843	\$66,289	\$97	262	71,689	0.79	\$253,418	\$263,128	\$1,004
2000	1.035	123,932	\$627,545	\$649,793	679	19,329	0.16	\$92,279	\$95,551	\$141	262	104,603	0.84	\$535,266	\$554,242	\$2,115
2001	1.033	679,244	\$1,490,595	\$1,539,244	359	48,505	0.07	\$100,715	\$104,002	\$290	122	630,739	0.93	\$1,389,880	\$1,435,241	\$11,764
2002	1.030	788,468	\$1,317,428	\$1,357,038	215	29,534	0.04	\$48,076	\$49,522	\$230	84	758,934	0.96	\$1,269,351	\$1,307,516	\$15,566
2003	1.027	713,597	\$1,339,056	\$1,375,809	208	59,043	0.08	\$104,987	\$107,869	\$519	83	654,554	0.92	\$1,234,068	\$1,267,940	\$15,276
2004	1.024	1,047,080	\$2,718,389	\$2,783,813	204	113,781	0.11	\$324,818	\$332,635	\$1,631	81	933,299	0.89	\$2,393,572	\$2,451,178	\$30,261
2005	1.021	318,802	\$1,327,792	\$1,355,530	202	94,944	0.30	\$386,887	\$394,969	\$1,955	81	223,858	0.70	\$940,905	\$960,560	\$11,859
2006	1.018	695,849	\$3,748,099	\$3,814,955	198	116,160	0.17	\$590,702	\$601,238	\$3,037	75	579,689	0.83	\$3,157,397	\$3,213,717	\$42,850
2007	1.015	598,376	\$4,719,458	\$4,790,587	198	169,933	0.28	\$1,324,268	\$1,344,226	\$6,789	75	428,443	0.72	\$3,395,191	\$3,446,361	\$45,951
2008	1.012	375,857	\$2,947,450	\$2,984,288	196	92,454	0.25	\$732,344	\$741,497	\$3,783	75	283,403	0.75	\$ 2,215,105	\$2,242,790	\$29,904
2009	1.010	278,064	\$1,891,232	\$1,909,944	195	78,693	0.28	\$531,471	\$536,729	\$2,752	75	199,371	0.72	\$ 1,359,761	\$1,373,215	\$18,310
2010	1.007	404,366	\$3,431,392	\$3,457,107	195	98,057	0.24	\$835,904	\$842,168	\$4,319	75	306,309	0.76	\$ 2,595,488	\$2,614,938	\$34,866
2011	1.004	431,128	\$4,421,962	\$4,437,825	195	88,405	0.21	\$951,290	\$954,703	\$4,896	75	342,723	0.79	\$ 3,470,672	\$3,483,122	\$46,442
2012	1.000	538,130	\$3,804,469	\$3,804,469	195	131,532	0.24	\$878,373	\$878,373	\$4,504	75	406,598	0.76	\$ 2,926,095	\$2,926,095	\$39,015
2013	0.996	874,442	\$5,113,149	\$5,094,203	195	115,008	0.13	\$639,352	\$636,983	\$3,267	75	759,434	0.87	\$ 4,473,797	\$4,457,220	\$59,430
2014	0.992	468,939	\$3,711,457	\$3,681,569	195	111,225	0.24	\$838,759	\$832,004	\$4,267	75	357,714	0.76	\$ 2,872,698	\$2,849,564	\$37,994
2015	0.988	481,038	\$2,608,822	\$2,578,781	195	148,114	0.31	\$742,932	\$734,377	\$3,766	75	332,924	0.69	\$ 1,865,890	\$1,844,404	\$24,592
2016	0.985	363,686	\$2,837,737	\$2,793,949	195	117,897	0.32	\$918,078	\$903,912	\$4,635	75	245,789	0.68	\$ 1,919,658	\$1,890,037	\$25,200
2017	0.980	649,177	\$6,287,663	\$6,162,630	195	148,899	0.23	\$1,430,999	\$1,402,543	\$7,193	75	500,278	0.77	\$ 4,856,664	\$4,760,087	\$63,468
2018	0.976	349,970	\$3,336,182	\$3,255,205	171	98,756	0.28	\$943,782	\$920,874	\$5,385	75	251,214	0.72	\$ 2,377,379	\$2,319,674	\$30,929
2019	0.971	133,290	\$1,074,674	\$1,043,271	171	33,246	0.25	\$264,290	\$256,567	\$1,500	75	100,044	0.75	\$ 810,384	\$786,704	\$10,489
1974-2003 Avg.		295,508	1,495,920	1,633,813	1,126	69,967	0.30	497,310	553,733	469	311	225,541	0.70	998,610	1,080,080	4,241
2004-2019 Avg.		500,512	3,373,745	3,371,758	193	109,819	0.24	770,891	769,613	3,980	76	390,693	0.76	2,601,916	2,601,229	34,472
2009-2019 avg.		452,021	\$3,501,703	\$3,474,450	191	106,348	0.25	815,930	809,021	4,226	75	345,673	0.75	2,684,408	2,664,096	35,521

Table 1. Chum catch, licenses and economic values GDPDEF adjusted for gillnet and purse seine, in the combined south Puget Sound and Hood Canal fisheries, 1974-2019.

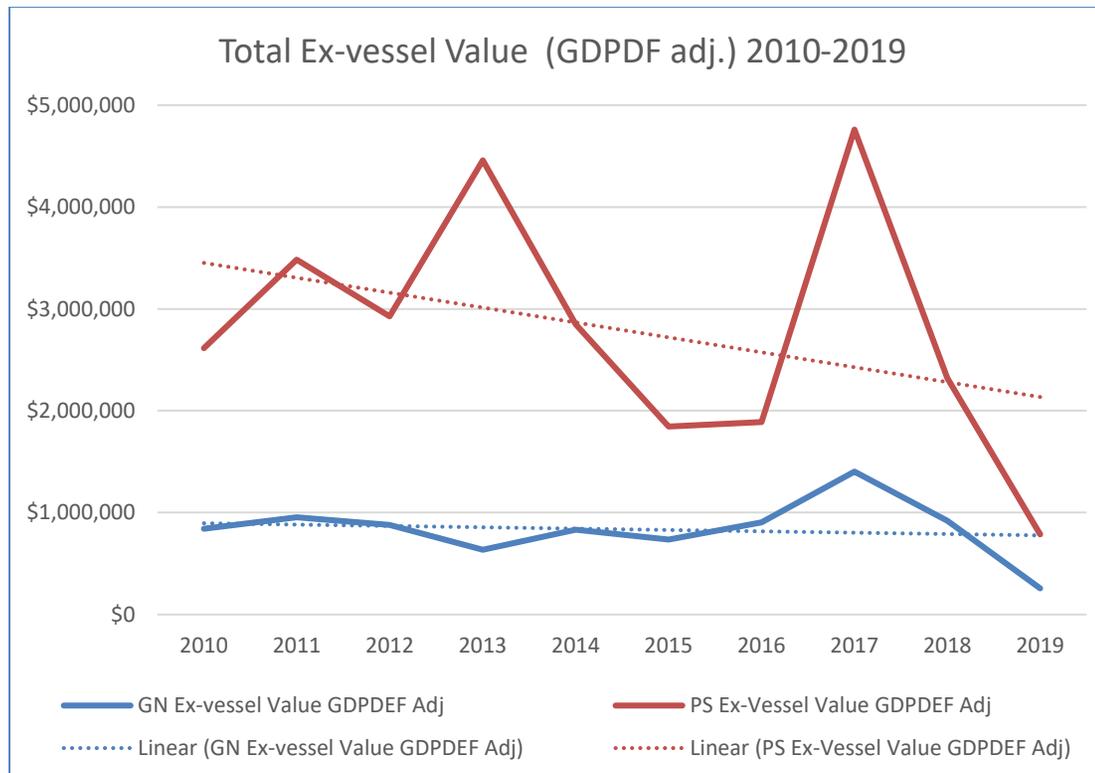


Figure 1. Trends in annual, GDPDEF-adjusted ex-vessel value of gillnet and purse seine Chum salmon landings for south Puget Sound (Areas 10 and 11) and Hood Canal (Areas 12, 12B and 12C), 2010 – 2018, and projected value for 2019.

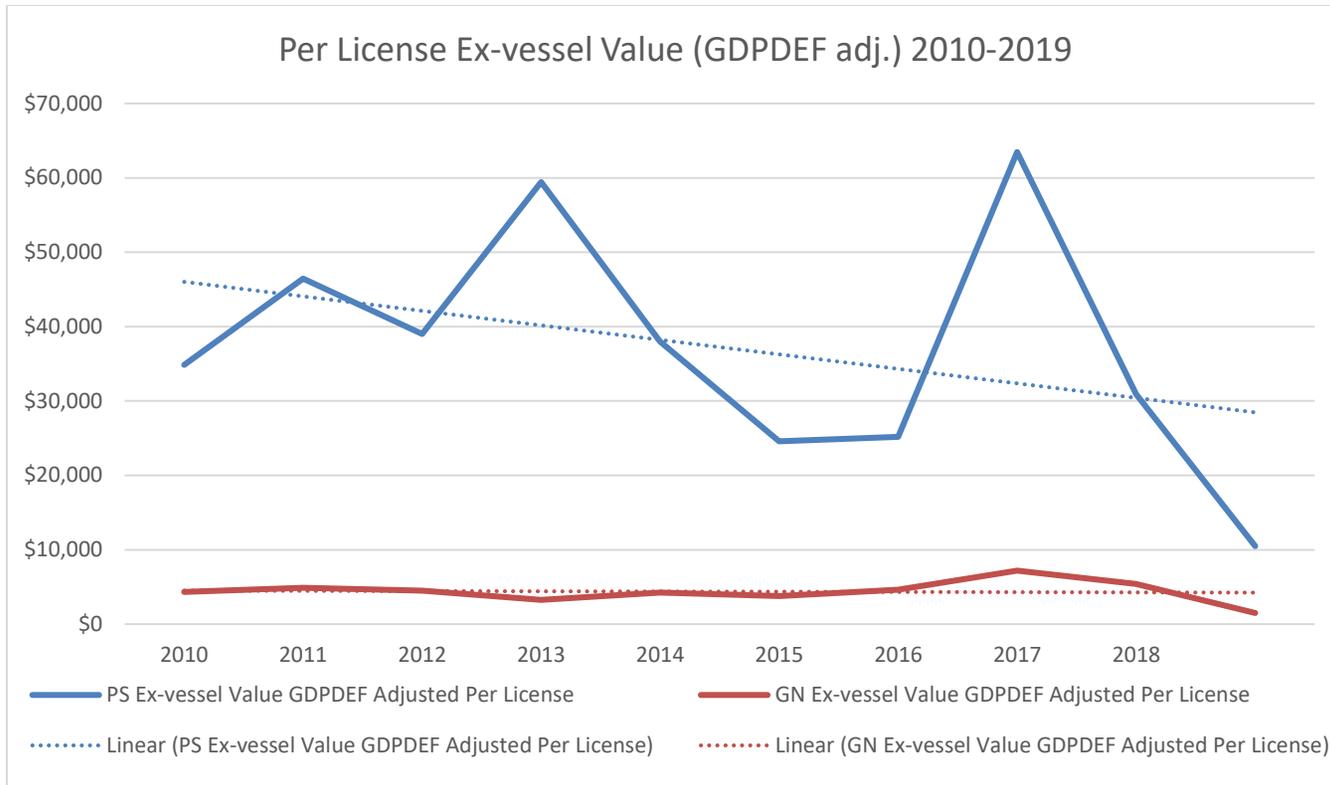


Figure 2. Trends in annual, GDPDEF-adjusted ex-vessel value per license for gillnet and purse seine Chum salmon landings for south Puget Sound (Areas 10 and 11) and Hood Canal (Areas 12, 12B, and 12C), 2010– 2019.

Table 2. Comparison of pre-season scheduled hours from 2013 - 2019 by gear type in Hood Canal and south Puget Sound Chum fisheries.

Year	Gillnet		Purse Seine	
	South Sound	Hood Canal	South Sound	Hood Canal
2019	111	123	53	73
2018	111	123	53	73
2017	175	157	73	83
2016	189	144	73	73
2015	221	170	83	83
2014	221	172	83	83
2013	165	148	83	83