

FIFTH EDITION

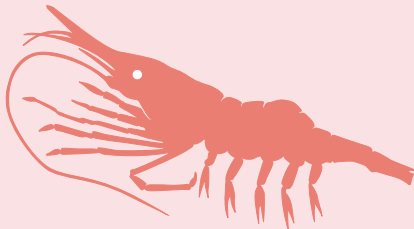
# 2020 Washington Pink Shrimp Fishery Newsletter



Welcome to the latest WDFW Pink Shrimp Newsletter!

Inside you will find information about the 2019 commercial pink shrimp fishery season, historical trends and news about the upcoming 2020 season.

For additional fishery information go to: <http://wdfw.wa.gov/fishing/commercial/shrimp/>



Newsletter Contents.....	Page
2019 Season Summary.....	2
Monitoring & Management.....	4
Euchalon Management & Research.....	9
Priority Actions.....	9
2019 Accomplishments.....	10
New for 2020.....	11
Management.....	12
Regulations.....	13
Contact Information.....	14

Washington Department of Fish and Wildlife  
Region 6 Shellfish Management Program  
48 Devonshire Road, Montesano, WA 98563  
Lorna Wargo | Dan Ayres

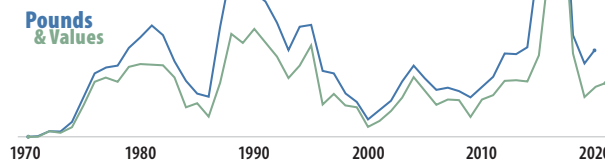
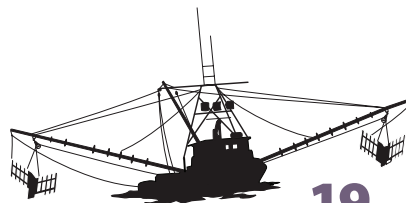


## 2019 was a success by many measures!

- 9.2 million pounds exceed the 30-year average (excluding the exceptional years of 2014 and 2015).
- Average of \$0.70 per pound was an all-time high.
- More boats made landings.
- Total season value - the 6th highest on record.

## 2019 Season

**9.2 M**  
pounds landed  
**\$6.4 M**  
ex-vessel value



### Catch Areas

**28%**  
Destruction Island

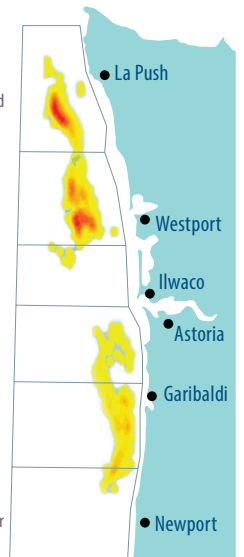
**37%**  
Grays Harbor

**<1%**  
Columbia River

**<1%**  
Tillamook Head

**27%**  
Cape Lookout

**8%**  
Cape Foulweather and south



**3rd Highest** ↑  
price per pound

← **Average**  
catch rate

# 2019 Season Summary

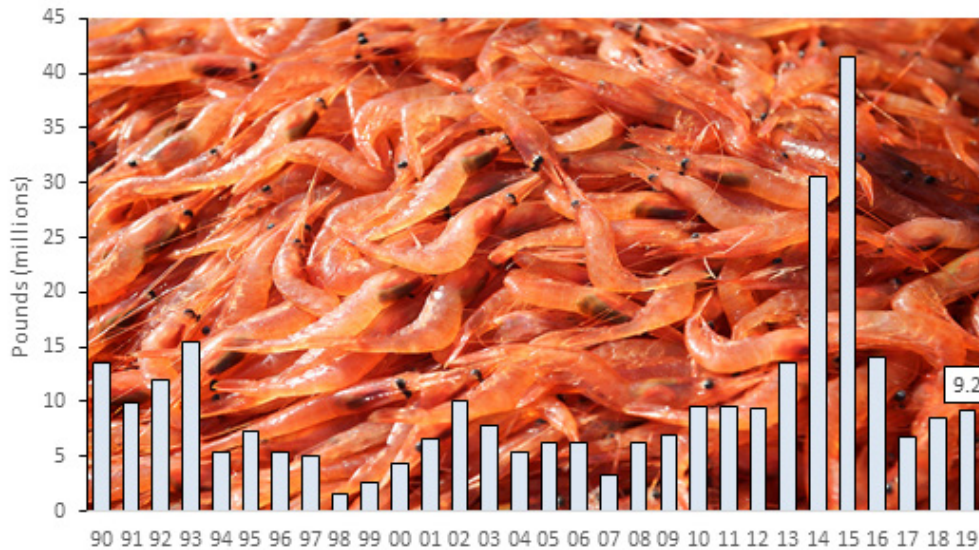
The 2019 landings of pink shrimp into Washington ports were higher than in both 2017 and 2018 (Figure 1). In fact, with the exception of the usually high landings that occurred in 2014 and 2015, the landings made in 2019 were the 6th highest since 1990. The number of vessels making landings increased from 20 to 22 (Figure 2).

Because the Washington Pink Shrimp Trawl license is a limited entry permit, any license that is not renewed in any

given year, sunsets (or goes away). The total number of licenses has consistently been just above 80 since 2004. This season only 72 permits were renewed, resulting in the first most recent significant drop of licenses that can be fished.

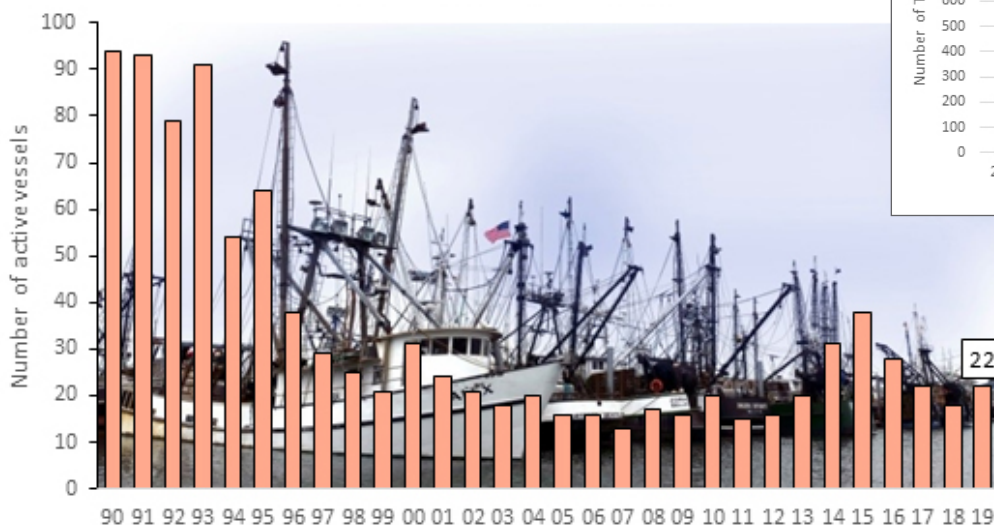
One measure of effort is the number of trips taken. The total made in 2019 was within the average excluding the two high seasons of 2014 and 2015 (Figure 3).

## Annual Landings



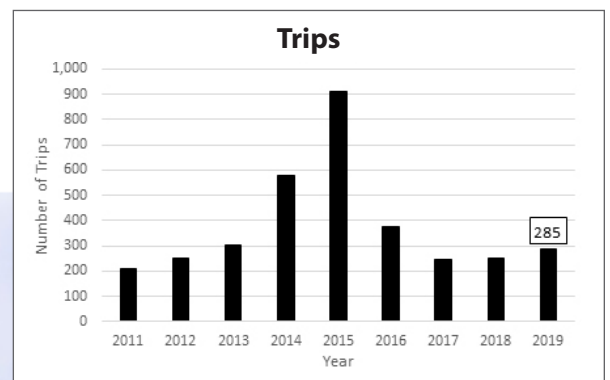
**Figure 1.** Annual landings (millions of pounds) of pink shrimp into Washington, 1990-2019

## Number of Active Vessels



**Figure 2.** Number of vessels actively fishing, 1990-2019.

## Trips



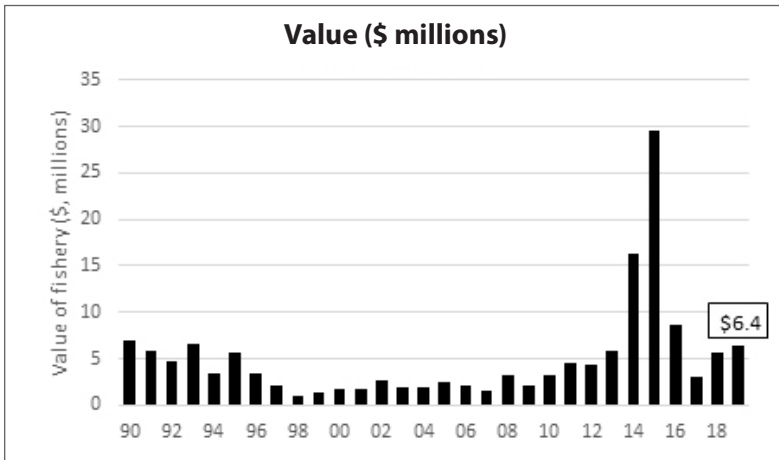
**Figure 3.** Number of fishing trips, 2011-2019.

Total 2019 fishery ex-vessel value (paid to the fisher at the time of landing) was \$6.4 million, an increase of \$750,000 more than in 2018 (Figure 4).

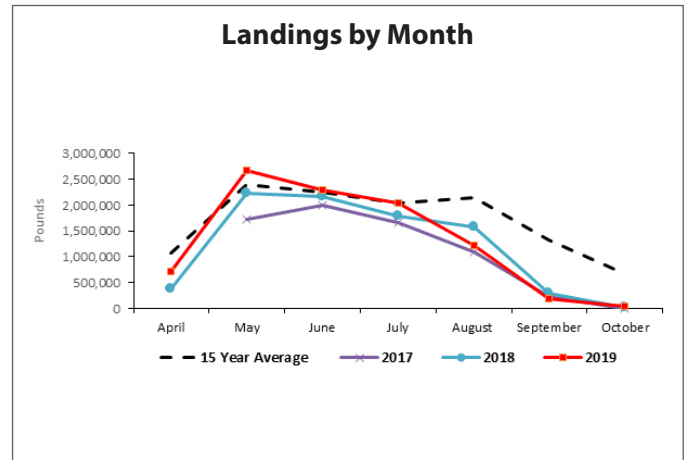
Landings by month during 2019 were higher early in the season than in the previous two seasons and in the 15-year average (Figure 5).

More than in the eight previous seasons, a larger portion of the shrimp landed into Washington in 2019 was caught in Oregon (Figure 6).

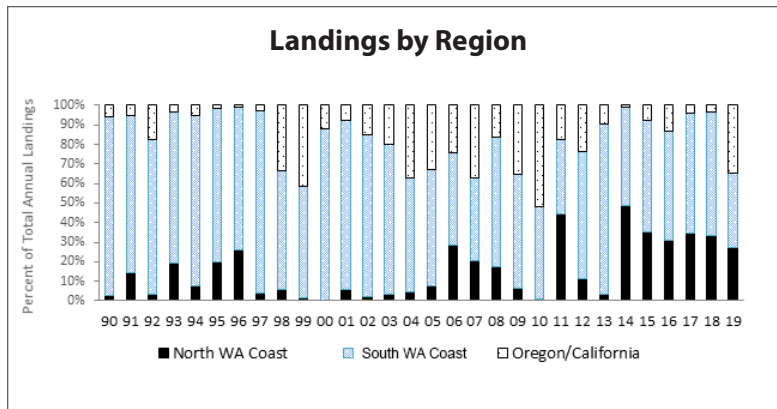
The average price per pound was the 3rd highest on record (Figure 7).



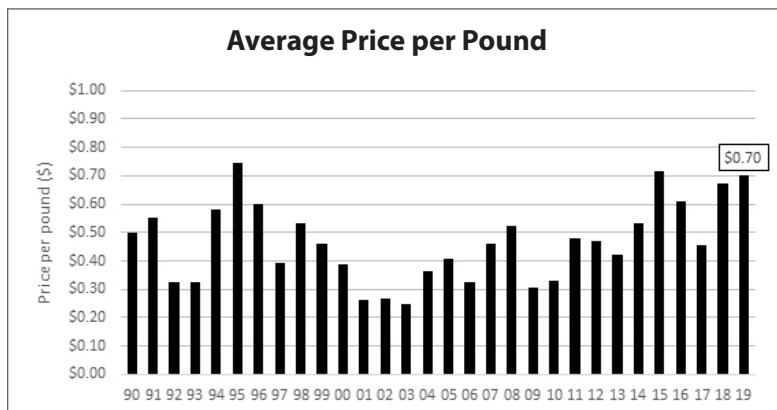
**Figure 4.** Ex-vessel value of Washington pink shrimp landings, 1990-2019.



**Figure 5.** Pink shrimp landings by month for 2017-2019, and the 15-year average.

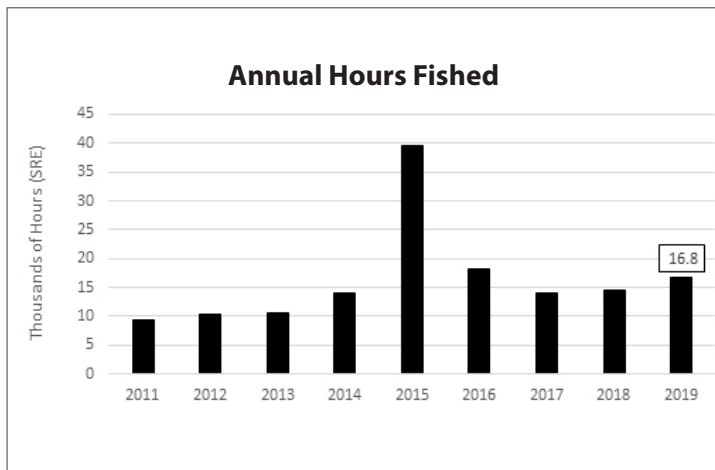


**Figure 6.** Shrimp fishery landings by region, 1990-2019

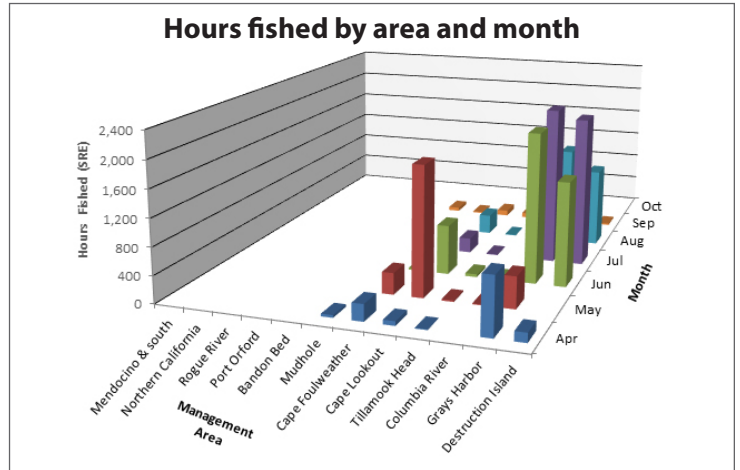


**Figure 7.** Average price per pound, 1990-2019.

# 2019 Fishery Monitoring and Research



**Figure 8.** Estimated total annual hours fished (1000s), 2011-2019.



**Figure 9.** Estimated total hours fished by management area and month for 2019.

## Effort

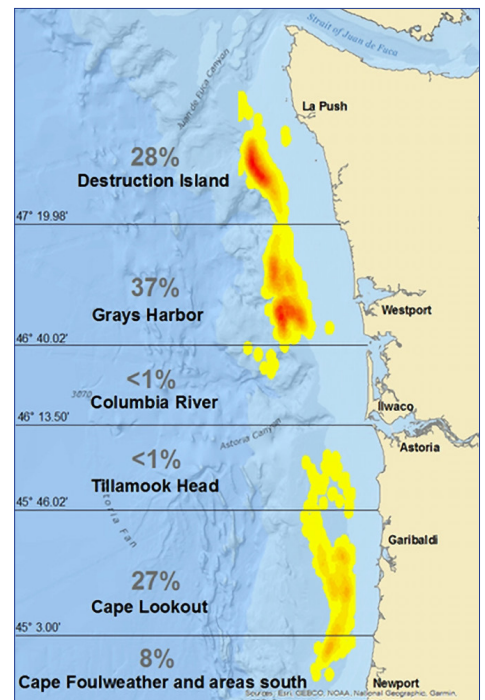
Effort is measured by the number of hours fished. The number of hours fished has been relatively consistent since 2016 (Figure 8). Fishing hours are estimated as “single-rig equivalents” or SREs. In the past, most vessels towed only one net, i.e., single rig. Now, double rig vessels are most common but to maintain a consistent data set, fishing hours for “double-rig” vessels are multiplied by 1.6.

The 2019 season saw more fishing occurring off Oregon, particularly in May, than has been typical (Figure 9). By summer, fishing shifted north into the Grays Harbor and Destruction Island areas of Washington.

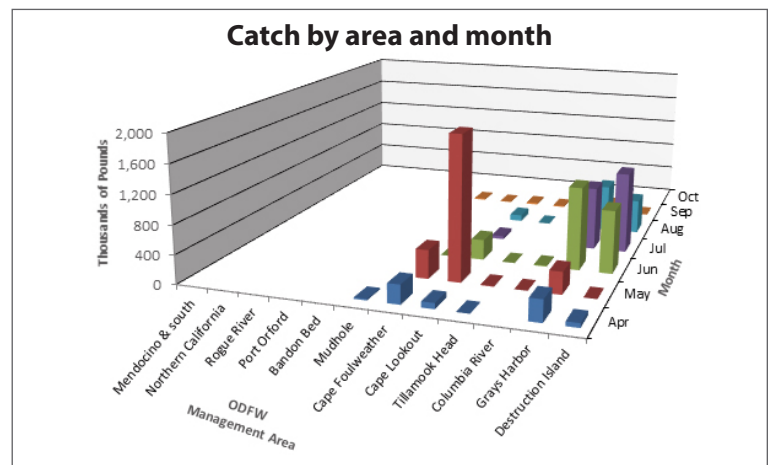
## Catch Distribution

In 2019 more shrimp were harvested off Oregon in 2019 than in recent years, and mostly from the Cape Lookout area (Figure 10). For comparison, no more than 1% of a total season’s harvest has been caught in the Cape Lookout area over the past five years. As we explained earlier, the heat map shows where the shrimp landed in Washington were caught; the deeper or darker the color the more catch that came from that location.

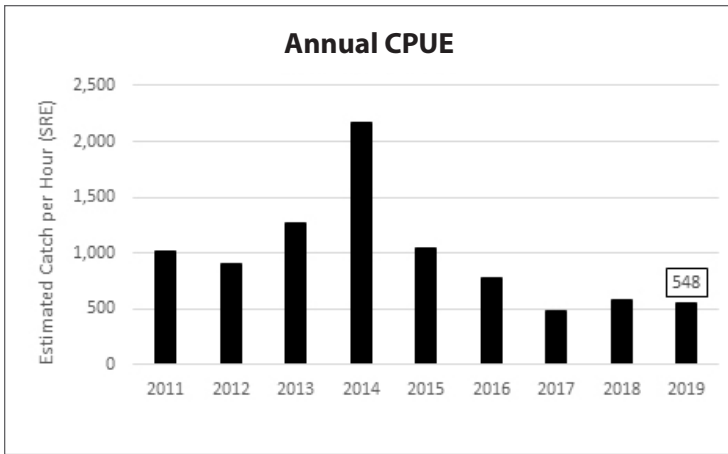
Figure 11 also shows where shrimp landed into Washington were caught in 2019, adding the month for each area. More shrimp were caught in May at Cape Lookout than in any other area for a single month. Overall most of the catch was taken in June and July from the Grays Harbor and Destruction Island areas.



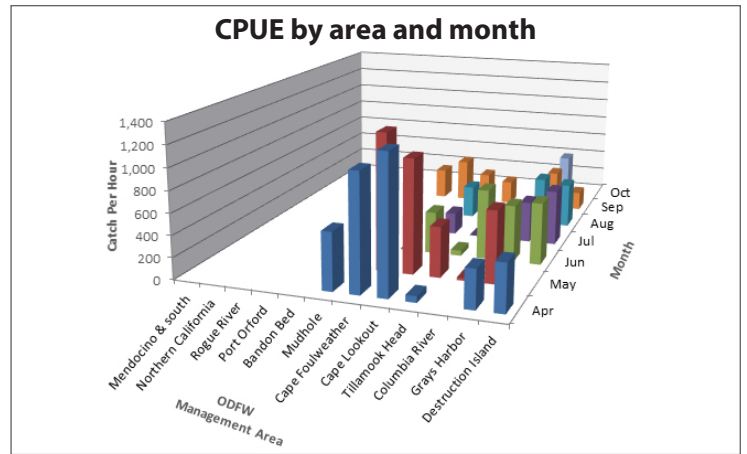
**Figure 10.** Distribution, by percent, of pink shrimp catch landed into Washington by management area in 2019. This heat map shows where the shrimp landed in Washington were caught; the deeper or darker the color the more catch that came from that location.



**Figure 11.** Estimated pink shrimp pounds landed into Washington by area and month, 2019



**Figure 12.** Estimated pounds of catch per SRE hour, 2011-2019.



**Figure 13.** Estimated pounds of shrimp caught per hour (SRE) by area and month, 2019

### Catch Rates

Fishing efficiency or catch per unit of effort (CPUE) was 548 pounds per SRE (single rig equivalent) hour (Figure 12) for the season. CPUE was highest in the spring, particularly off Oregon, and substantially lower elsewhere. CPUE declined through the season due to the low stock abundance (Figure 13).

### Biological Sampling

Our shrimp technician collects count per pound, length and sex data. Due to the limited number of staff, sampling is done only at Westport. We assume the landings there are generally representative of the fishery or catch landed at other Washington ports. Samples were collected monthly from catch that originated offshore Washington and Oregon. In 2019, 2600 shrimp were sampled which was the lowest number since 2016 when our program was first fully operational. Staffing was reduced due to vacancies and we expect coverage to rebound in 2020.

### Count per Pound

Shrimp size in the fishery is managed by count per pound. The legal maximum is 160 shrimp per pound.

Shrimp count per pound in 2019 (Figure 14):

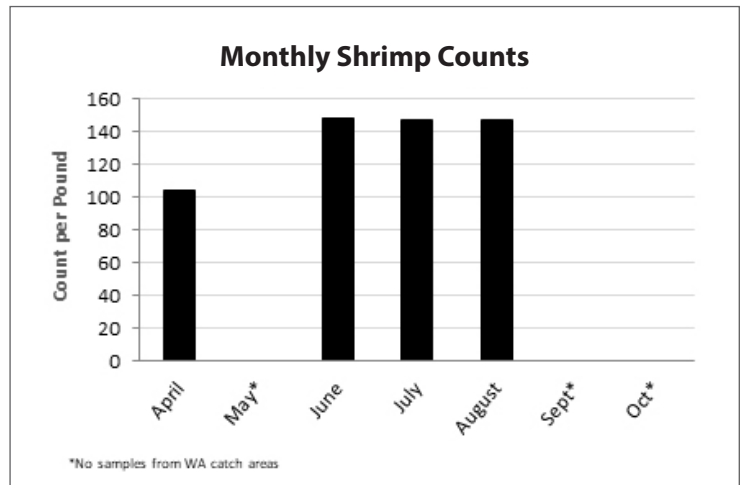
- Season average (from WA and OR): 137
- Season average (from WA only): 144
- Only 3 samples exceeded the 160 count

### Shrimp caught in Washington and landed in Oregon.

Not all the shrimp caught off Washington are landed here. If they hold the appropriate state license, shrimpers can land in either Washington or Oregon.

#### Shrimp caught in Washington and landed in Oregon.

Year	Millions of Pounds
2019	5.1
2018	5.0
2017	2.8
2016	11.0



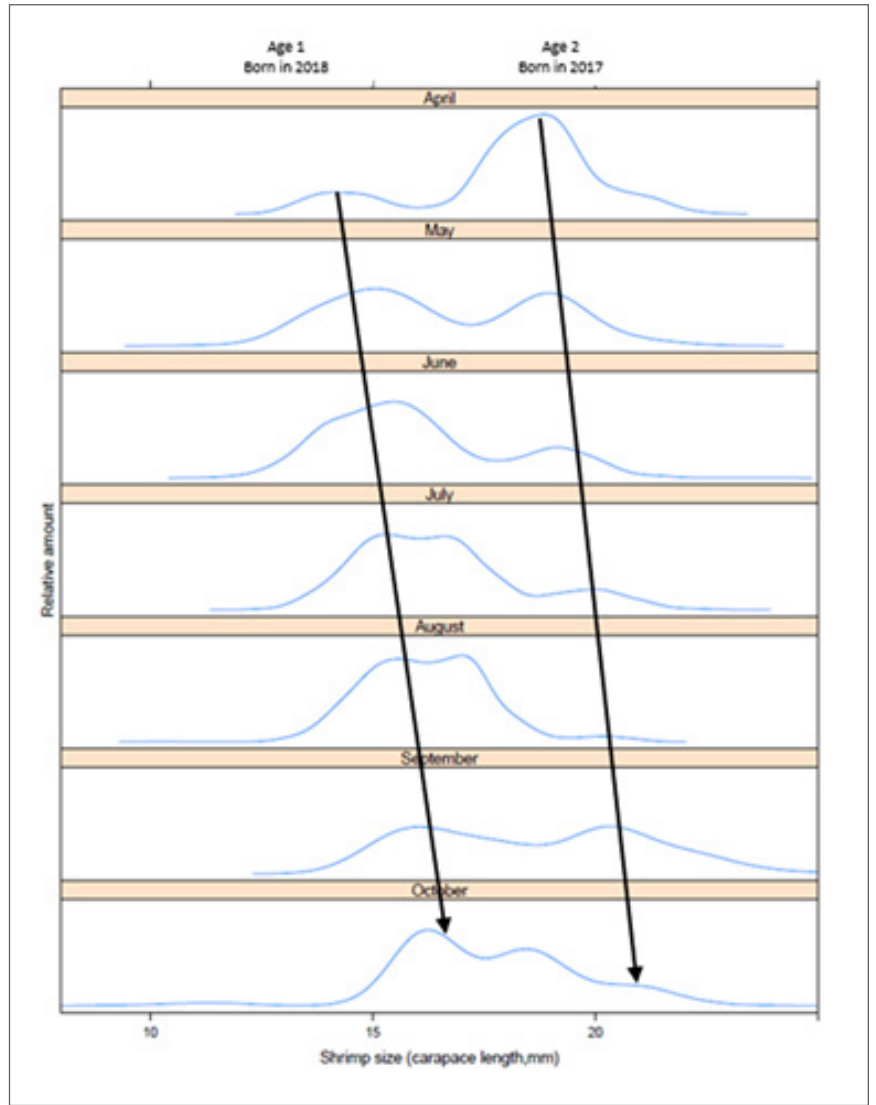
**Figure 14 .** Average count per pound, weighted by pounds landed, 2019.



### Shrimp Age Classes

Shrimp lack physical “age” structures or body parts like otoliths (ear-bones) or scales that are typically used to age fish. Instead, the carapace is measured. Since shrimp eggs are released at the same time shrimp of similar size can be assumed to be the same age.

By grouping carapace lengths and plotting these data, we can visually characterize the age classes present in the fishery as shown in Figure 15. Here we include data collected at Westport as well as data provided to us from the Oregon Department of Fish and Wildlife (ODFW). The ODFW data comes from vessels that fished off Washington and landed at Oregon ports.



**Figure 15.** Size distribution of pink shrimp, April- October 2019. Age 2 shrimp - those born in 2017 - showed strongly through most of the season.



## 2019 Enforcement Report

During the 2019 season, WDFW Region Six Police Region Six Coastal Detachment reported the following coverage specific to the pink shrimp fishery:

- Number of Contacts: 35 (primarily dockside offloads, but includes at-sea boarding)
- Violations: 2 (both were warnings for failing to obtain deckhand licenses)
- Hours of Patrol: 28

**Note:** During a March 2019 joint training session with Oregon, shrimp managers briefed Enforcement officers on the fishing light regulation, provided sample lights to support easy recognition, and highlighted the key compliance concerns, e.g. excluders and shrimp counts.



# At-sea Fishery Observation and Bycatch

Reducing bycatch in the Washington pink shrimp fishery has been a priority for nearly 20 years. Two decades of research, gear innovation and regulatory actions have advanced the conservation of rockfish and eulachon.

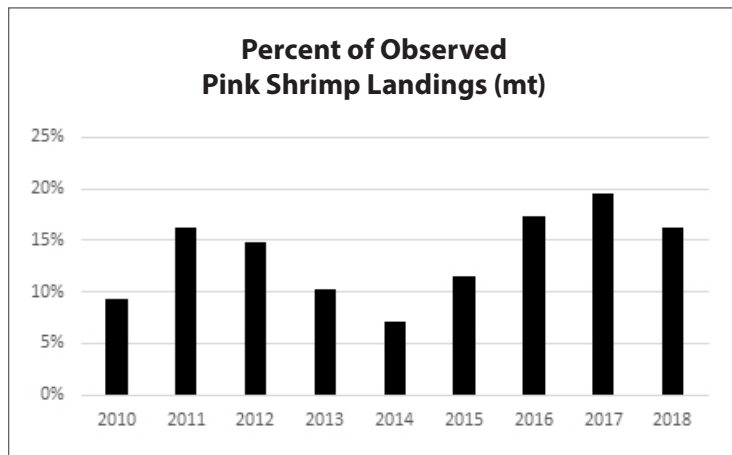
Federal biologists have been observing onboard Washington shrimp vessels since 2010 to document bycatch (Figure 16). The number of vessels, trips and tows observed each year from 2011 to 2017 are shown in Figure 17, and Tables 1 and 2 include all the published bycatch data for marine fish and shellfish species<sup>1,2,3</sup>.

Evaluating bycatch data must be done carefully. Significant gear changes before and during the federal observer program

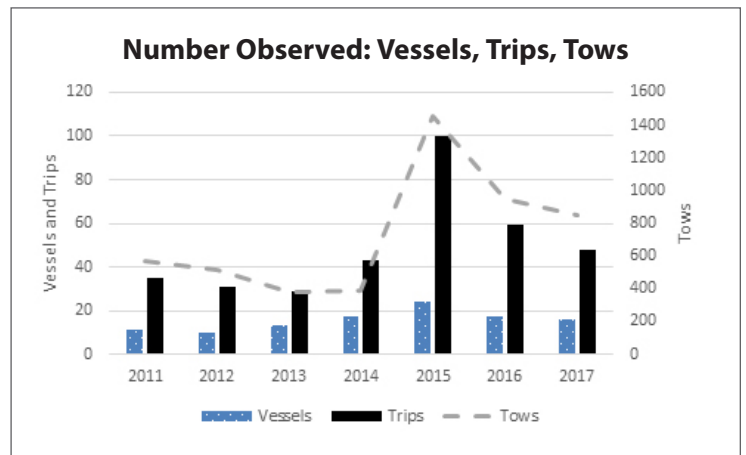
mean there is no easy “before” or “after” point in time over which to compare bycatch in the fishery.

Stock dynamics must also be considered. For example, a study looking at the distribution (in space and time) of eulachon and shrimp compared fishery data and NOAA research bottom trawl survey data and found that increases in eulachon bycatch in 2012 could be attributed to increases in eulachon abundance.<sup>4</sup>

Observers also collect data on marine mammal bycatch. No marine mammal bycatch has been documented in the Washington shrimp fishery.<sup>5</sup>



**Figure 16.** Federal observer coverage rate of Washington vessels, in terms of pounds of shrimp caught.<sup>1</sup>



**Figure 17.** The number of Washington pink shrimp vessels, trip and tow observed since 2011.<sup>2</sup>



**Table 1.** Estimated bycatch of eulachon and groundfish and non-groundfish species in metric tons. The groundfish and non-groundfish species in this table ranked in the top 20% for bycatch at least one year across all years, not including eulachon. Note: Zeroes (0) represent actual catch that rounds to zero at two decimal places (i.e., less than 10 pounds). Dashes represent no catch. <sup>2,3</sup>

Estimated bycatch of eulachon and groundfish and non-groundfish species in metric tons							
Species (metric tons)	2011	2012	2013	2014	2015	2016	2017
Eulachon	5.68	156.69	202.83	142.76	219.48	31.78	11.5
Arrowtooth flounder	2.03	2.49	1.05	1.45	2.97	0.25	0.27
Canary rockfish	0.02	--	--	--	0.8	--	--
Darkblotched rockfish	1.37	1.58	0.45	6.38	2	2.9	3.63
Dover sole	0.93	0.46	0.36	0.47	1.4	0.57	0.39
Flatfish unid	--	1.00	0.09	--	--	0.12	0.02
Flathead sole	0.2	1.76	0.52	0.2	--	0.68	0.33
Greenstriped rockfish	0.31	0.13	0.01	0.43	0.97	0.26	0.05
Longnose skate	0.47	0.41	0.97	0	0.62	--	0.02
Non-eulachon smelt unid	--	--	--	--	--	--	0.85
Pacific hake	20.66	0.15	0.04	0.01	--	--	157.38
Pacific ocean perch	0.14	0.05	0.07	6.54	--	--	0.19
Pacific sanddab	0.15	0.1	0.01	2.97	--	0.55	0.19
Petrale sole	0.74	0.08	0.51	1.32	--	--	0.2
Rex sole	7.58	4.02	4.44	3.97	--	3.86	7.5
Rockfish unid	--	--	0.01	0.8	0.28	--	--
Sablefish	0.02	0	8.02	--	--	--	0
Shelf rockfish unid	0.14	3.07	--	--	--	0.11	0.64
Shortbelly rockfish	0	--	--	0.31	--	--	5.05
Slender sole	23.7	--	21.15	29.93	--	--	6.31

**Table 2.** List of additional bycatch species or species groups from 2011-2017. The species in this table ranked in the bottom 80% for bycatch across all years and totaled an estimated 6.09 metric tons.

Aleutian skate	Deepsea sole	Pacific cod	Sand sole	Spotted Ratfish
Aurora rockfish	Dungeness crab	Pygmy rockfish	Sandpaper skate	Starry flounder
Big skate	English sole	Quillback rockfish	Sculpins	Starry skate
Black and Yellow rockfish	Halfbanded rockfish	Redbanded rockfish	Sharpchin rockfish	Stripetail rockfish
Black skate	Harlequin rockfish	Redstripe rockfish	Shortspine thornyhead	Vermilion rockfish
Blackgill rockfish	Lanternfishes	Rock sole	Silvergray rockfish	Whitebait smelt
Bocaccio rockfish	Lingcod	Rosethorn rockfish	Skates	Widow rockfish
California Skate	Longfin sanddab	Rougheye rockfish	Slope rockfish	Yelloweye rockfish
Chilipepper rockfish	Longspine Thornyhead	Rougheye/Blackspotted rockfish	Smelts	Yellowmouth rockfish
C-O turbot	Non-Humboldt squids		Soupin Shark	Yellowtail rockfish



# Eulachon Management and Research

While WDFW shrimp managers strive to reduce bycatch and thereby improve the fishery's sustainability, our colleagues in the Columbia River Management Unit based at the WDFW Southwest Region office in Ridgefield lead Eulachon management and research. Columbia River Unit Program managers provided the following to highlight WDFW accomplishments in 2019 to better understand Eulachon population abundance and dynamics:

- Continued annual spawning stock biomass estimation for the mainstem Columbia River Eulachon population (upstream from the estuary).
- Compared the patterns of SSB estimations for the Columbia River Eulachon populations with those from other populations, such as the Fraser River (Figure 18).
- WDFW participated in establishing the Eulachon Recovery and Implementation Framework will participate in the Eulachon Technical Recovery and Implementation Team (ETRIT).

## Priority Actions

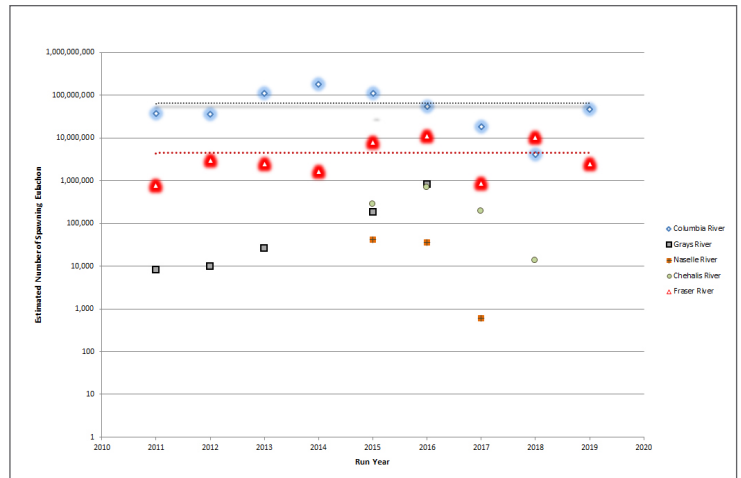
### WE WILL BE FOCUSING ON LOGBOOKS IN 2020!

You've heard the saying "garbage in – garbage out" which can be put in more positive terms "GOOD IN - GOOD OUT". We encourage you to document your fishing data as correctly as possible so the information more accurately portrays the fishery.

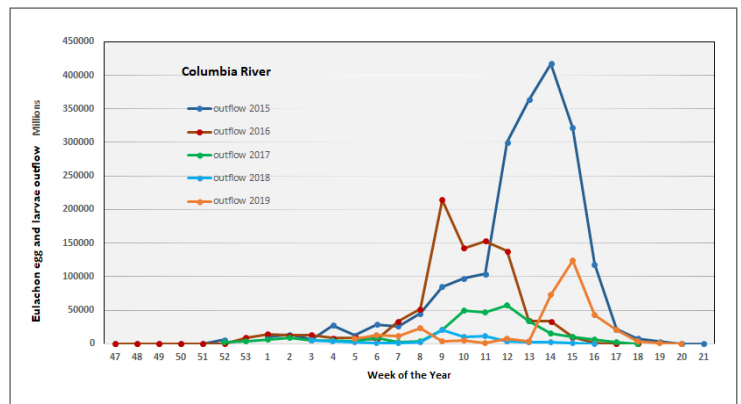
But first, good data is not useful if logbooks are not submitted. The goal is to have a completed logbook for 95% of the shrimp trips made each year. Most years have been closer to 90%. Performance in 2019 was a bit disappointing - only 82% of the trips had logbook turned in (Figure 20).

You can do your part by submitting a logbook promptly after each trip. Logbooks can be mailed, handed to the WDFW shellfish technician or placed in the drop box located at Washington Crab. We will be monitoring timely submission more closely this year. Logbooks are legally due by the 10th of the month following any month you've actively fished, and on our end, turning your logbook in on time helps us to process and enter the data as it comes in.

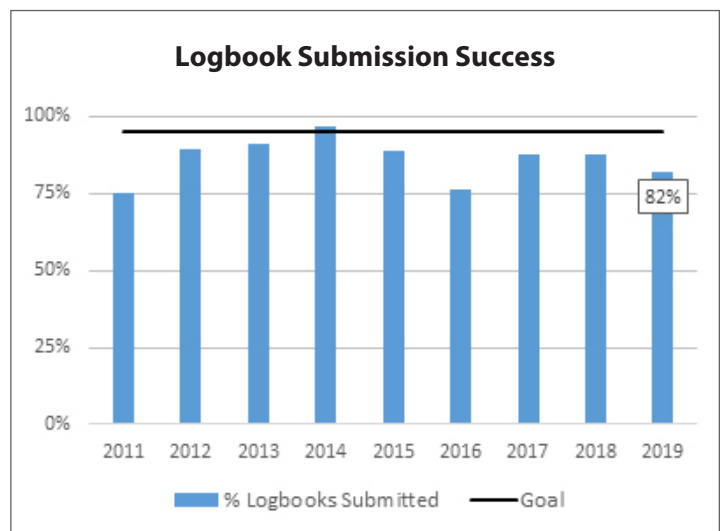
Often, we find the bycatch box on the logbook left blank. We know some skippers have expressed concern about how to report very small amounts of bycatch. Your best estimate is all that is expected. Like catch, simply record the total amount for each tow in pounds.



**Figure 18.** Comparison of estimated number of Eulachon spawning in the Columbia, Fraser, Chehalis, Naselle and Grays Rivers.



**Figure 19.** Comparison of weekly outflow (passive migration) of Eulachon smelt plankton (eggs and larvae) into the Columbia River estuary at the Clifton Channel - Price Island transect for 2014-15, 2015-16, 2016-17, 2018, and 2019.



**Figure 20.** The percentage of trips each year with a submitted logbook.

# 2019 Accomplishments

## Marine Steward Ship Council Certification

The current MSC certification is valid through February 2023 at which time the fishery will need to be re-evaluated. During the intervening years, independent reviewers conduct annual audits to monitor fishery performance.

The findings from the 2019 audit found the “fishery remains consistent with all aspects of the MSC standard” and concluded the fishery should retain its certification.<sup>6</sup>

General information about the MSC program can be found at: <https://www.msc.org/>

Notices, assessment and audit reports specific to the Oregon-Washington ocean pink shrimp fishery can be found at: <https://fisheries.msc.org/en/fisheries/oregon-and-washington-pink-shrimp>



### Why is certification important?

Markets are dynamic but preference for responsibly harvested seafood continues to grow. As much as 50% or more of the shrimp landed in Washington and Oregon are destined for markets that demand sustainably sourced seafood. Fishery sustainability has long been a factor for gaining and maintaining access to European markets; this is true for the US as well.



## Distribution of LED Lights to Fleet

In 2019 WDFW was pleased join with ODFW and CDFW to purchase and distribute to our shrimp fleet LED lights and other informational material using funding from a Federal ESA Section 6 Grant. Specifically, WDFW provided lights to 10 vessels landing in Westport. This was a one-time program and it remains the responsibility of each vessel operator to ensure they comply with our regulations by having approved and operating LED lights. You will find more details in our regulation section.

Any boats that did not receive lights in 2019 are still eligible to receive a full complement of new lights and the informational material. In addition, we have some lights remaining and are offering each boat that did get lights in 2019, six additional replacement lights. You must receive those in the port where you received your original supply. Please contact Travis Haring at 360-249-4628 extension 237 for more information.

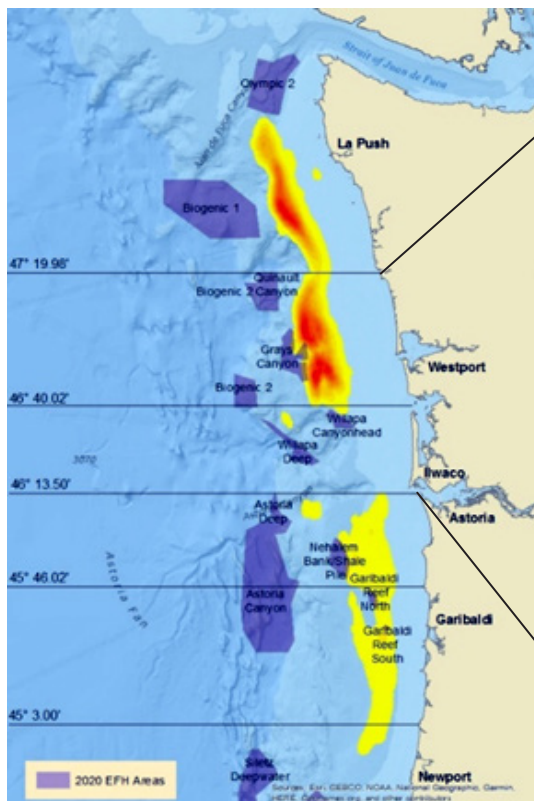


## Essential Fish Habitat

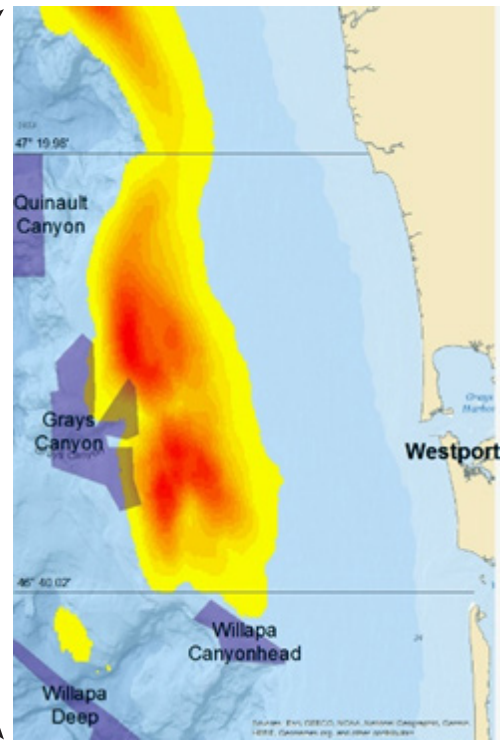
NOAA Fisheries announced new rules for Essential Fish Habitat Conservation Areas (EFHCAs) in January 2020 that change existing or add areas where bottom trawling is prohibited. This prohibition applies to pink shrimp trawling. EFH conservation areas protect the waters and substrate necessary for fish to spawn, breed, feed, or grow to maturity. The longitude and latitude coordinates are available digitally for downloading to your vessel plotters. Go to: [www.fisheries.gov](http://www.fisheries.gov).

[noaa.gov/action/amendment-28-pacific-coast-groundfish-fishery-management-plan](http://noaa.gov/action/amendment-28-pacific-coast-groundfish-fishery-management-plan)

We mapped Washington pink shrimp logbook data and the revised/new EFHCAs in Washington waters (Figures 21 and 22). Some trawling in the closed area is evident, especially along eastern edge of Grays Canyon. Shrimpers need to exercise care and avoid fishing these locations.



**Figure 21.** Shrimp trawling and EFH off Washington and Oregon



**Figure 22.** Shrimp trawling off Westport, WA and EFH.

## Shrimping Prospects for 2020

Prospects lean toward a less than “average” year off Washington in 2020. The Oregon forecast models for the upcoming season predicts catches of 25 or 29 million pounds which are considered low.<sup>5</sup>

One of the models developed by ODFW comparing many years of shrimp population data and environmental data demonstrates a relationship between ocean conditions and shrimp recruitment to the fishery. Sea-level height as measured at Crescent City, CA has proven to be a good “representative” of environmental conditions with lower sea-level heights

associated with better shrimp recruitment in Oregon. How well these models apply to shrimp recruitment off Washington is uncertain. In terms of catch our landings are about a quarter to a third of Oregon’s, but the trends are similar.

Shrimp caught in 2020 are coming from three year classes: 2017, 2018 and 2019. According to this model, environmental conditions were excellent for larval shrimp in 2017 but just so-so in 2018 (age 2 shrimp in 2020) and 2019 (age 1 shrimp in 2020). Typically age one and two shrimp account for most of the shrimp available to the fishery.

# Management

## Collaboration

Behind the scenes, we continue our long-standing collaboration with the ODFW Pink Shrimp Team.

- LED lights and outreach materials distribution at Washington ports.
- ODFW has hosted WDFW Police for joint enforcement training.
- Training of WDFW technicians by Oregon staff to ensure similar sampling approaches and techniques.
- Starting 2020 we will be sharing length data on a monthly basis. This will support coast-wide modelling of the shrimp resource.
- Along with ODFW, we are interested in evaluating LED lights on an industrial scale and will be exploring funding sources.

In addition, in 2019, we provided Washington pink shrimp fishery data for a NOAA shrimp study that is analyzing shrimp growth rates, evaluating catch rates relative to fishable biomass, and exploring the potential to build a bioeconomic model. With Washington shrimp data, federal scientists can account for shrimp harvested in Oregon waters by including data from shrimp landed in Washington. Outcomes from this study will be shared with you – stay tuned!

## Electronic Fish Tickets “E-tix”

Shrimp dealers began submitting fish tickets electronically to WDFW through the Pacific States Marine Fisheries Commission’s E-Tix Portal for select coastal fisheries in 2019.

To participate in this voluntary system, dealers can sign an agreement with the Department that permits them to submit electronic fish tickets for specific fisheries outlined in the agreement. The dealer then commits to using only electronic fish tickets for the selected fisheries and areas until they choose to opt out.

Currently, electronic fish tickets are required for West Coast directed groundfish landings, Pacific halibut, research landings and Alaskan groundfish. Once a fishery has mandatory electronic fish tickets a dealer will be unable to opt out. Most coastal shrimp dealers are using the “E-tix” system. Those still relying on paper tickets are encouraged to consider using the opportunity to become familiar with the system while it is voluntary. We have not decided as to when E-tix might be mandatory for pink shrimp, however this may be a likely next step. Coastal Dungeness crab, like shrimp, is operating under the voluntary agreement approach.

We welcome comments from dealers, especially from those whose operations make using electronic fish tickets challenging.

In 2019, e-Tix were largely error-free. The most common mistake was using the wrong fishing license, for example, using a Washington Dungeness crab license, to land shrimp.



## Logbook Drop Box

With cooperation of Washington Crab Producers, WDFW installed a secure logbook drop box in Westport. You will find this in the Washington Crab weigh shack or buying station on the Dock Street dock, in Westport.

Feel free to use this location to drop off your logbooks at the time of landing. Only our staff will have access to the contents of the box, and they will regularly collect logbooks from this location. It is our hope that this convenience will make it easier for you and provide us logbooks in a timely fashion. Of course, you are still welcome to mail your logbooks to us, drop them off at our Montesano Office or hand them to a WDFW shrimp technician at port.

**Our office location and mailing address are:**

**WDFW, Region Six Office  
48 Devonshire Road  
Montesano, WA 989563**

### Reminder:

Logbooks are due by the **10th** day of the month following any shrimp fishing activity

# Fishing Regulations

## Coordination with Oregon and California

While most regulations are similar, when fishing offshore another state shrimpers are reminded to confirm that their operations conform to that state's regulations. For example, Oregon law does not authorize the landing of frozen shrimp, whereas this activity is permissible via permit in Washington. Also, Oregon licensed shrimpers can trawl in that state's territorial waters; conversely, Washington does not allow any trawling in its coastal territorial waters (0-3 miles).

Fishing lights are required in all three states.

Shrimp trawl logbooks are required by both WDFW and ODFW, and each agency will accept the other state's logbook

## Freezing at Sea

As mentioned above, Washington regulations do not explicitly prohibit freezing catch at sea. However, to address fishery specific needs, the pink shrimp trawl fishery permit now has provisions to support monitoring and sampling of frozen landed catch. The permit now requires those who intend to process shrimp at sea off Washington by freezing their catch to:

- notify the WDFW their intent to do so;
- notify WDFW personnel 24 hours of landing;
- provide (upon request) WDFW a sample of 25 pounds of whole shrimp processed at sea by freezing and a sample of 25 pounds of fresh shrimp.

## Vessel Monitoring System (VMS)

The National Marine Fisheries Service requires any vessel using non-groundfish trawl gear in federal waters to have VMS installed. Declaration reports are also mandated prior to fishing. Specific compliance information can be found at the NMFS Vessel Monitoring System website at: [www.westcoast.fisheries.noaa.gov/fisheries/management/vms.html](http://www.westcoast.fisheries.noaa.gov/fisheries/management/vms.html) or contact the NMFS Office of Law Enforcement (OLE) at 206.526.6140

## Groundfish Limits

Limits have not changed from 2019.



Shrimp trawlers are limited to 1,500 pounds of groundfish per TRIP with a daily limit of 500 pounds. Included in the daily and trip limits are sub-limits for: lingcod at 300

pounds per month with a 24" minimum size, and sablefish at 2000 pounds per month. Canary rockfish, yelloweye rockfish and Thornyhead rockfish are all PROHIBITED. All other groundfish species taken count towards the 500 per day or 1,500-pound trip limits and do not have species-specific limits. The amount of groundfish landed may not exceed the amount of pink shrimp landed.

A complete copy of Pacific Coast Groundfish Fishery management measures for 2020 can be found under "Public Notices, Inseason Updates and Trip Limit Tables" here: [www.westcoast.fisheries.noaa.gov/fisheries/groundfish/index.html](http://www.westcoast.fisheries.noaa.gov/fisheries/groundfish/index.html)

## Fishing Lights

Washington shrimpers are required to use fishing lights on the footrope of each trawl net. Similar rules apply when fishing off Oregon. Shrimpers fishing both Washington and Oregon should note the specifications are the same for both states.

Footrope lighting devices must meet the following criteria:

- Lighting devices must be operational;
- Lighting devices must be securely attached within six inches of the forward leading edge of the bottom panel of trawl netting; and
- Each trawl net must have a minimum of five lighting devices, spaced four feet apart in the central sixteen feet of each net.

Three lighting devices are approved for use:

1. [Lindgren-Pitman "LP Electrolume Light" – Green](#)
2. [Catch All Tackle "Deep Drop LED Fishing Light" – Green](#)
3. Rock-engineering "LED Rope Light" – Green

## Crewmember License

Crewmember licenses are required for all individuals age 16 and older working on-board all commercial fishing vessels that land fish or shellfish in Washington State.

- An individual can purchase their own crewmember license that is valid for participating in all Washington commercial fisheries.
- A vessel operator can purchase up to two undesignated crewmember licenses to accommodate crewmembers who do not have their own individual crewmember license. The

---

**The need to minimize bycatch is important NOT ONLY when bycatch volumes are high. Low bycatch volumes can reflect poor abundance, making the use of lights even more important.**

---

undesigned crewmember license is assigned to the vessel and covers only one crewmember at a time but will allow for frequent crewmember changes.

- Primary and alternate operators are exempt from needing to purchase a crewmember license if they are on board a vessel that designates them as an operator. Immediate family members, including spouses, children, or grandchildren of the license owner or alternate operator are exempt from the crewmember licensing requirement.

Individual crewmember licenses can be purchased at any license vendor or online through WILD. The cost is \$40.50 for Washington state residents and \$123.00 for non-residents. Undesignated individual crewmember licenses cost \$35 for Washington state residents and \$110.00 for non-residents and can only be purchased at WDFW licensing department in Olympia

For more information or to purchase a crewmember license go to: [wdfw.wa.gov/licenses/commercial/miscellaneous](http://wdfw.wa.gov/licenses/commercial/miscellaneous)

#### Sources:

1. Somers, K.A., J.E. Jannot, K. Richerson, V. Tuttle, & J. McVeigh. 2018. FOS coverage rates, 2002-2018. 2019. NOAA Fisheries, NWFSC Observer Program, 2725 Montlake Blvd E., Seattle, WA 98112. [http://www.nwfsc.noaa.gov/research/divisions/fram/observation/data\\_products/sector\\_products.cfm#ob](http://www.nwfsc.noaa.gov/research/divisions/fram/observation/data_products/sector_products.cfm#ob)
2. Gustafson, R., K. Richerson, K. Somers, V. Tuttle, J. Jannot and J. McVeigh. 2019. Observed and estimated bycatch of eulachon in 2002-2017. NOAA Fisheries. Conservation Biology Division and Fishery Resource and Analysis Division. NWFSC. 2725 Montlake Boulevard East, Seattle, WA 98112. Draft: May 22, 2019. PFMC. June 2019. Agenda Item I.4.a NMFS Report 2. <https://www.pcouncil.org/documents/2019/06/agenda-item-i-4-a-nmfs-report-2-observed-and-estimated-bycatch-of-eulachon-in-2002-2017-us-west-coast-groundfish-fisheries-electronic-only.pdf/>

3. Somers, K.A., J. Jannot, K. Richerson, N.B. Riley, V. Tuttle, and J. McVeigh. 2018. Estimated discard and catch of groundfish species in the 2017 U.S. west coast fisheries. NOAA Fisheries, NWFSC Observer Program, 2725 Montlake Blvd E., Seattle, WA 98112.

Somers, K.A., J. Jannot, N.B. Riley, V. Tuttle, and J. McVeigh. 2017. Estimated discard and catch of groundfish species in the 2016 U.S. west coast fisheries. NOAA Fisheries, NWFSC Observer Program, 2725 Montlake Blvd E., Seattle, WA 98112.

Data for Table 1 and 2 were compiled from Excel spreadsheet reports produced by NOAA Fisheries West Coast Groundfish Observer Program, Groundfish Mortality Reports by Year. Extracted March 2020. [https://www.nwfsc.noaa.gov/research/divisions/fram/observation/data\\_products/species\\_management.cfm](https://www.nwfsc.noaa.gov/research/divisions/fram/observation/data_products/species_management.cfm)

4. Ward, E.J., J.E. Jannot, Y.-W. Lee, K. Ono, A.O. Shelton, and J. T. Thorson. 2015 Using spatiotemporal species distribution models to identify temporally evolving hotspots of species co-occurrence. *Ecological Applications*, 25: 2198-2209.
5. Jannot, J. E., K. A. Somers, V. Tuttle, J. McVeigh, J. V. Carretta, and V. Helker. 2018. Observed and Estimated Marine Mammal Bycatch in U.S. West Coast Groundfish Fisheries, 2002-16. U.S. Department of Commerce, NWFSC Processed Report 2018-03.
6. MRAGS Americas. 2019. Oregon and Washington Pink Shrimp (*Pandalus jordani*) Trawl Fishery Surveillance Review of Information. 8950 Martin Luther King Jr. Street N. #202, St. Petersburg, Florida, 33702-2211. MRAG-MS-C\_F26\_v2. 11pp.
7. Groth, S.D., Blume, M., and J.M. Smith (2020). 31th Annual Pink Shrimp Review. Oregon Department of Fish and Wildlife Marine Resources Program, Newport, Oregon. 15 pp.



Pink shrimp, *Pandalus jordani*

#### For more information, contact:

**Dan Ayres**  
Coastal Shellfish Manager  
360-249-4628 (ext. 209)  
[Daniel.Ayres@dfw.wa.gov](mailto:Daniel.Ayres@dfw.wa.gov)

**Lorna Wargo**  
Coastal Marine Fisheries Manager  
360-249-1221  
[Lorna.Wargo@dfw.wa.gov](mailto:Lorna.Wargo@dfw.wa.gov)

**Travis Haring**  
Scientific Technician  
360-249-4628 (ext. 237)

#### Our Website:

<http://wdfw.wa.gov/fishing/commercial/shrimp/>