

Dr. Janet Hodder
63840 Fossil Point Road
Coos Bay
OR 97420

Jill Rolfe
Coos County Planning
Coos County Courthouse
250 N. Baxter
Coquille, OR 97423

September 16, 2019

Re: County Remand File No. REM-19-001/LUBA Case No. 2016-095
Emailed to: and planning@co.coos.or.us

Dear Hearings Officer Stamp,

Please accept these comments for the rebuttal to the applicant's first submittal responding to your August 23, 2019 Order to Reopen Record for Coos County File No. REM-19-001 (HBCU-15-05/FP-15-09).

Response to the information provided by Rajnish Kelkar, Marine Operations, Jordan Cove Energy Project

Re: Nature and Scope of LNG Carrier Transits Report

Many of the details in Mr. Kelkar's letter to Mr. King (Exhibit 1) are contradictory and on some topics reflects that he has limited experience with the socioeconomic details of Coos Bay. Mr. Kelkar is correct that the total number of deep draft vessels entering Coos Bay is less than historic levels (PDF page 6). What he fails to mention is that the log and wood chip vessels that currently transit the bay do not require a vessel exclusion zone, are not accompanied by tractor tugs throughout the transit, and do not carry hazardous cargo. So it is irrelevant as to how many vessels transit Coos Bay because as long as other vessels in the bay observe the rules for the use of the Federal Navigation channel they are not excluded from conducting any other activity during vessel transit. The larger LNG tankers will require a security zone, will have tractor tugs attached to the vessel, have a hazardous cargo, and therefore will have a much larger impact on other vessels using Coos Bay.

His statement that fishing has declined is not supported by the evidence and I presume the statement was included to imply that fewer commercial and recreational fishing boats are using Coos Bay or crossing the bar than in past years. He is incorrect in this assertion. Recreational fishing, both in Coos Bay and the open ocean has increased considerably in recent years. I showed an example of this increase with data from the Oregon Department of Fish and Wildlife (ODFW) for the albacore tuna fishery in my September 4, 2019 comments. Since submitting those comments ODFW has released the August 2019 data on the number of recreational fishing boats that crossed the Coos Bay bar to fish for albacore tuna in the open ocean. In August 2019 1,314 trips were taken out of Charleston resulting in 2,628 bar crossings (see table 5 next page). Assuming it was suitable to fish every day in August 2019 (unlikely) that is 85 bar crossings/day. These data do not include any other type of vessels involved in fishing or other activities in Coos Bay or that crossed the bar. During August there were salmon fishermen "mooching -the-bar", commercial crabbers bringing in their pots as a result of the end of the

Exhibit: 67
Date: 9/17/19

Dungeness crab season, recreational crabbers, the shrimp trawl fleet, California based squid boats, several transient fishing boats moored in the bay adjacent to the Federal navigation channel, numerous crossings of the barge and scow associated with the river mile 12-15 dredging of the Coos Bay Federal Navigation channel, barges and scows carrying wood products, deep draft wood chip ships, vessels associated with the removal of the fiber optic cable south of Cape Arago, a few sail boats and single and groups of kayakers. A case-by-case threat assessment evaluation is probably impracticable considering the number of vessels that use Coos Bay or cross the bar on any given day and would severely restrict recreational and commercial fishing activities.

Table 5. Summary of recreational private boat albacore fishing effort for August 2019. Data from ODFW Recreational Boat Survey (ORBS). Figures are estimates based on angler surveys. Results are preliminary and subject to revision.

| Port (Private) | Number of Trips | Number of Anglers | Number of Albacore | CPUE (#fish / #anglers) |
|-----------------------|------------------------|--------------------------|---------------------------|--------------------------------|
| Astoria | 82 | 306 | 1,160 | 3.8 |
| Garibaldi | 479 | 1,609 | 9,762 | 6.1 |
| Pacific City | 124 | 312 | 1,146 | 3.7 |
| Depoe Bay | 152 | 444 | 1,930 | 4.3 |
| Newport | 350 | 1,080 | 4,728 | 4.4 |
| Winchester Bay | 520 | 1,689 | 12,011 | 7.1 |
| Charleston | 1,314 | 4,142 | 35,705 | 8.6 |
| Bandon | 94 | 265 | 1,942 | 7.3 |
| Gold Beach | 32 | 96 | 592 | 6.2 |
| Brookings | 298 | 858 | 5,751 | 6.7 |

Data from ODFW Albacore Tina Report August 2019

Likewise commercial fishing has experienced a resurgence since the recent introduction of new fisheries management regimes. In 2018 25,318,277 pounds of seafood were landed in Charleston with an ex-vessel value of \$34,280,762 – data provided in exhibit A.

Mr Kelkar’s statement (PDF Page 7) that, “The studies undertaken of the NOAA tide data demonstrate that **most of the higher tides** will allow the departure of fully loaded LNG carriers.” directly contradicted in the next paragraph with the statement, “Based upon historical tidal records, approximately **50 -75%** of the high tides in Coos Bay will permit a normal size, fully-loaded LNG carrier to safely transit the Bay”. Rewriting this sentence it says that 50% -25% of the high tides **will not be suitable for transit**, which supports the assertion in my September 4, 2019 comments that many of the tides, particularly those in the neap tide series will not be suitable for LNG transits.

Another contradiction (PDF page 8) refers to the US Coast Guard security zone:
 “The Coast Guard security zone of 500 yards around the vessel would be in effect during the transit to and back from the terminal while the LNG carrier is in the FNC.”
 and
 “As has been stated, the US Coast Guard security zone is not an exclusion zone and persons and vessels will be allowed to remain in the bay during all transits.”
 So what is the security zone? Will I be able to crab next the Federal Navigation channel while the LNG ship passes? Information from the Coast Guard implies I will not. As noted in my September 4, 2019

comments the 500 yard security zone around the vessel encompasses the jetties and much of the shore of Coos Bay which will make moving away from the security zone impracticable and thus restrict the public trust rights of fishing, navigation and recreation.

A detail that has not been fully recognized in the applicant's materials is that each LNG tanker entering and leaving Coos Bay will be accompanied by three tractor tugs, two of which will be attached to the LNG tanker. They will be present in the security zone during transit and thus will further limit the ability of other vessels to be present in the area.

Transit time through the estuary

There is a contradiction between the information provided by the applicant regarding the transit times through the estuary. PDF page 3 implies the inbound transit is 90 minutes, "*As previously stated on the record, an LNG carrier will take about 90 minutes to travel from the Pilot station (two miles offshore) until it is inside the JCEP slip and access channel basin; it will likewise take 90 minute outbound. See Exhibit 1 at 4.*" Exhibit 1 at 4 however states, "*The transit time from the existing pilot station (about two miles offshore) to the JCEP terminal basin is 90 minutes. **Once near the basin, the LNG carrier will then swing around in the access channel to back into the slip and berth at the terminal.***" Due to the configuration of the Federal navigation channel this turn around maneuver will take place not in the mooring basin as implied by Mr. King, but in the turning basin that leads to the access channel which will cause interference with others users in the Bay. The time to turn the ship so that it can be backed into the mooring basin via the access channel is estimated to be 90 minutes. So the 180 minute inbound transit time appears to be a valid number.

LNG Tanker characteristics

Both Mr. Kelkar and Captain Whipple provide statements about the types of LNG carriers that will call at the terminal and the impact of tanker size on the timing of transits. Pembina (JCEP) will not be responsible for the LNG ships that move their gas, and as yet has not identified to the agencies or the public which companies will buy the gas and transit it to some yet to be determined location. Thus the assertions that there will be "*smaller*" ships with less draft requirements is not supported by any evidence provided by either Mr. Kelkar or Captain Whipple. There is a global trend toward a jump in the size of conventional LNG carriers from around 145,000 cubic meters to larger carriers of 210,000 - 265,000 cubic meters. Twenty-two LNG carriers in the global fleet were laid up as of the end of 2017. 100% of the LNG vessels laid up by the end of 2017 had cargo capacities of 148,000 cubic meters or less. Suggesting that smaller ships are no longer viable LNG carriers. In addition, 39 LNG vessels were on order worldwide at the end of 2017. None of the LNG vessels on order at the end of 2017 have cargo capacities at or below 148,000 cubic meters. All LNG carriers on order as of the end of 2017 will have capacities in excess of the 148,000 cubic meters [See appendix 6 page 84 https://www.igu.org/sites/default/files/node-news_item-field_file/104747-IGU-Book-Final_062818.pdf].

LNG Tanker Transit Security Zones

Captain Whipple's statement that, "*The group reviewed the existing security zones across the nation and determined that a 500-yard security zone would meet the needs of the USCG and Coos County Sheriff's office*" supports the examples of safety zones that are in place for other LNG facilities in

the US as I quoted on page 4 of my September 4, 2019 comments. As a reminder the Coast Guard safety zones for the Boston LNG facility are **500 yards on each side** of any liquefied natural gas carrier vessel while underway. And those for Cook Inlet, Alaska are for all navigable waters **within a 1000-yard radius of the Liquefied Natural Gas (LNG) tankers** during their inbound and outbound transits. The graphic provided by Captain Whipple on PDF page 19 however does not show a correct representation of a 500 yards security zone on each side of an LNG tanker. The graphic shows only a 500 yard zone **around the entire ship** (and fails to include the ~50 yard ship width). Thus it is missing 550 yards of the security zone. There will be no room on the Coos Bay bar and in many areas of Coos Bay for vessels to move out of the way. There is nowhere for another boat to go.

After submitting my September 4, 2019 comments in which I outlined my correspondence with the US Coast Guard regarding the safety zone for the LNG tanker transit I received an email from Captain Jeremy C. Smith, Commander, Sector Columbia River, and Captain of the Port clarifying some details discussed in my earlier comments. The email is attached as Exhibit B. It points out that the US Coast Guard has responsibility for any LNG exclusion zone and that they have not yet determined all of the details for the zone in Coos Bay. As Captain Smith asserts in his email to me, *"Ultimately, these zones are published in the CFRs as LNG location and operations specific, which then gives the Captain of the Port the authority to enforce them."*

Captain Whipple's assertion on page 27 of the PDF, *"that LNG carriers transiting Coos Bay will be similar to the existing deep draft vessels transiting the bay."* is not true.

- They are a third again longer than any vessel currently transiting Coos Bay.
- No deep draft vessel currently transiting the bay is accompanied by a security zone, or tied to tractor tugs, or accompanied by security vessels that will interact with commercial or recreational craft.
- No deep draft vessels currently transiting the bay carry hazardous cargo. Wood chips and logs do not explode, and if a spill occurs they are not toxic material.

He then asserts, *"The primary difference is the security zone and waterway users being required to follow any directions given to them by the security boats."* Nowhere does the Coast Guard say, as Captain Whipple asserts, that the Coos County Sheriff will determine if boats needed to move or merely continue with their fishing or recreational boating. Or that the Coast Guard will evaluate boats on a case-by-case basis, or that they will allow "known" vessels to remain in the security zone. Likewise, the assertion on PDF page 3 that, *"Because the intent of the security zone is only to exclude subversive forces, "small recreational and fishing boats not perceived as a harm and [] not in the federal navigation channel would be allowed to remain where they are and continue with their activities as the LNG carrier passes through."* is not supported by any evidence from Captain Smith's email to me, the US Coast Guard's Water Way Suitability Report, or the Navigation Vessel Inspection Circular (NVIC), No. 02- 2011, "Guidance Related to Waterfront Liquefied Natural Gas (LNG) Facilities", or the 33 CFR 165; Regulated Navigation Areas and Limited Access Areas or the USCG Marine Safety Manual, Volume 4, Chapter 4 establishing Regulated Navigation Areas. The US Coast Guard will determine the intent and extent of the security zone in the manner outlined in the appropriate regulations if the JCEP is built and not before.

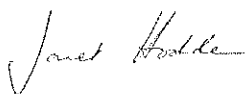
The inclusion of examples of security zones for vessels other than LNG tankers are totally irrelevant as the Federal Regulations Part 165—Regulated Navigation Areas and Limited Access Areas are specific to each port and circumstance. Although, the example for Humboldt Bay that Captain

Whipple provided supports the assertion that exclusion zones are 500 yards on all sides of a ship, not just 500 yards around the ship as depicted in Captain Whipple's figure: *"(3) Humboldt Bay. All waters, extending from the surface to the sea floor, within 500 yards (457 meters) ahead, astern and extending along either side of a tanker, cruise ship, or HVA underway"*

It is not clear why the applicant's submission includes all of the information about how boaters will be informed of the LNG transit security zone as it was not a topic requested by the Hearings Officer. However as I am very familiar with boating activities in lower Coos Bay I provide the following observations that shed some reality on the issue. The discussion of how boaters and fishermen will learn of LNG transits and how they might respond does not reflect the reality of many fishermen and boaters that use Coos Bay or cross the bar. Take for example this August. A vast number of those tuna boats are not home ported in Charleston, many come for other Oregon areas, or even farther afield. Many of these recreational boats launch at the no-fee Empire boat ramp at approximately river mile 6. Thus they transit almost all of the LNG transit route if they are planning to fish outside of Coos Bay and would not see any of the information that may be present in the Charleston boat basin regarding LNG transits. Implying the concept of "known" and "unknown" boats will be an unworkable situation when 10's of these boats leave the Charleston harbor at the same time, or are leaving from the Empire boat ramp, racing to cross the bar to enter the ocean. It is also very unlikely that they will be familiar with any of the examples of how waterway users will be informed of LNG transits outlined by Captain Whipple. This is also true for commercial fishermen. For example, fishermen returning in the dark from a winter time crab fishing trip in rough seas are not going to check a web site to find out if an LNG tanker is transiting, nor do they plan their trips far in advance so that they can avoid LNG departure and arrival times. Commercial fishing just does not work that way. They leave and return to port based on weather conditions, the time it has taken to gather their catch, the schedule of the fish plant buyers, the availability and timing of the ice plant to provide ice, and the regulations associated with their particular type of fishery, as well as many other decision criteria. The idea that recreational fishers will contact an official source when they are on the water is also unlikely. Many recreational fishers in Coos Bay do not have VHF marine radio, some will not have cell phones or access to a web site.

The applicant has not provided any additional evidence to show that the JCEP activities in Coos Bay will not interfere public trust rights. It continues to be clear that the applicant's proposal to construct an LNG facility in Coos Bay should be denied by the County.

Sincerely,



Janet Hodder Ph.D.

Exhibit A – 2018 Fisheries Landing data for Charleston, Oregon from ODFW
Exhibit B – September 12, 2019 Email from Captain Smith

Jan Hodder

From: Smith, Jeremy C CAPT <Jeremy.C.Smith@uscg.mil>
Sent: Thursday, September 12, 2019 3:02 PM
To: jhodder111@gmail.com
Cc: Saboe, Olav M CAPT; Bailey, Gretchen M CAPT; Moore, Alan H CAPT; Whitley, Dixon T LCDR
Subject: Questions re Safety and Security Zones
Attachments: LNG CFR NVIC Info.pdf

Greetings Dr. Hodder,

My colleague from Sector North Bend reached out after your meeting at a recent town hall. To answer your question perhaps it would be beneficial to share some excerpts from our Code of Federal Regulations (CFRs) that are relevant to LNG waterfront facility operations: 33 CFR Part 127 - "Waterfront Facilities Handling Liquefied Natural Gas and Liquefied Hazardous Gas" and 33 CFR Part 165 Subpart F - "Specific Regulated Navigation Areas and Limited Access Areas" (LNG safety and security zones listed by district). The Coast Guard (CG) provides additional information in Navigation Vessel Inspection Circular (NVIC), No. 02-2011, "Guidance Related to Waterfront Liquefied Natural Gas (LNG) Facilities." All are attached for your reference.

The NVIC contains enclosure (1), "Overview - Process and Procedures Associated with Waterfront LNG Facilities" and in the beginning has a helpful flow chart that outlines three phases: I. Application Process, II.

Construction, and III. Operation. After all Phase I and II approvals are completed and all conditions in the commission order are satisfied, the Federal Energy Regulatory Commission's will authorize facility operations.

That is the point at which the CG may establish safety and security zones, if deemed prudent in the interests of safety, security, and other marine transportation system factors (NVIC page 8, paragraph 5.c., "Establishment of Safety and/or Security Zones").

These types of safety and security zones are published as permanent regulations and undergo a rulemaking process with its own timelines requiring planning and coordination across all CG and DHS levels.

Ultimately, these zones are published in the CFRs as LNG location and operations specific, which then gives the Captain of the Port the authority to enforce them. As an example, I am providing an excerpt from 33 CFR Part

165 that list all existing permanent safety and security zone regulations in effect by CG district with an example being, 33 CFR Sec. 165.110 - First Coast Guard District, "Safety and Security Zone; Liquefied Natural Gas Carrier Transits and Anchorage Operations, Boston Massachusetts."

I appreciate your question and the opportunity to shed light on the overall process used to establish safety and security zones. Should you have any further questions or need further assistance, please do not hesitate to contact me or my Prevention staff at Marine Safety Unit (MSU) Portland, Captain Alan Moore, Commanding Officer, at (503) 240-9355 or Alan.H.Moore@uscg.mil or Lieutenant Commander Dixon Whitley, Chief, Waterways/Facilities Division, at (503) 240-2594 or Dixon.T.Whitley@uscg.mil.

Regards,

CAPT Jeremy C. Smith
Commander, Sector Columbia River
Captain of the Port

2018 Final
POUNDS AND VALUES OF COMMERCIALY CAUGHT FISH AND SHELLFISH LANDED IN OREGON - IN CHARLESTON



| | | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|----------------------|----|---------|----------|---------|---------|---------|---------|-----------|-----------|-----------|---------|----------|----------|-----------|
| Fish | # | 329,787 | 278,552 | 508,873 | 677,544 | 397,770 | 446,235 | 929,335 | 874,509 | 474,180 | 372,996 | 692,031 | 806,554 | 6,788,366 |
| | \$ | 238,402 | 189,947 | 312,291 | 355,717 | 284,592 | 838,707 | 1,765,490 | 1,852,126 | 687,777 | 451,876 | 480,918 | 511,595 | 7,969,438 |
| Cabezon | # | | 105 | 455 | | 56 | | 46 | 98 | 17 | 132 | 24 | 40 | 973 |
| | \$ | | 158 | 1,076 | | 81 | | 138 | 147 | 26 | 432 | 48 | 43 | 2,149 |
| Eel Pout | # | | | | 2 | | | | | | | 6 | | 8 |
| | \$ | | | | 0 | | | | | | | 0 | | 0 |
| Flounder, arrowtooth | # | 9,263 | 22,438 | 15,732 | 33,252 | 14,209 | 767 | 648 | 1,868 | 713 | 19,850 | 31,810 | 17,360 | 167,910 |
| | \$ | 851 | 1,981 | 1,475 | 3,178 | 1,384 | 77 | 62 | 173 | 68 | 1,703 | 2,875 | 1,455 | 15,282 |
| Greenling sp. | # | | | 2 | | | | | 1 | 2 | | | | 5 |
| | \$ | | | 10 | | | | | 2 | 1 | | | | 8 |
| Grenadier, Pacific | # | 4 | | 3 | 2 | 2 | 4 | | | | | 16 | 16 | 47 |
| | \$ | 0 | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Grenadier, Unsp. | # | | | | 10 | 1 | | | | | | 12 | 3 | 26 |
| | \$ | | | | 0 | 0 | | | | | | 0 | 0 | 0 |
| Hagfish sp | # | 53,319 | 70,365 | 109,142 | 94,230 | 103,920 | 136,334 | 108,433 | 44,135 | 95,365 | 95,315 | 49,274 | 68,009 | 1,027,842 |
| | \$ | 49,217 | 64,586 | 98,916 | 87,213 | 100,034 | 135,206 | 109,330 | 49,652 | 95,521 | 93,060 | 52,004 | 65,893 | 1,000,632 |
| Halibut, Pacific | # | | | | | 16 | 29,790 | 28,525 | | | | | | 58,315 |
| | \$ | | | | | 91 | 153,798 | 152,947 | | | | | | 306,835 |
| Herring, Pacific | # | | | | | | 7 | | | | | | | 7 |
| | \$ | | | | | | 0 | | | | | | | 0 |
| Lingcod | # | 564 | 1,251 | 2,613 | 1,662 | 4,900 | 2,784 | 2,664 | 5,298 | 584 | 5,147 | 2,961 | 1,660 | 32,088 |
| | \$ | 991 | 2,829 | 6,303 | 3,471 | 7,484 | 3,925 | 3,498 | 7,704 | 730 | 9,209 | 6,239 | 2,271 | 54,654 |
| Mackerel, Pacific | # | | | | | | 1 | | | | | | | 1 |
| | \$ | | | | | | 0 | | | | | | | 0 |
| Pacific Ocean perch | # | 2,044 | 497 | 647 | 200 | 2 | 2,122 | | | 1,756 | 111 | 1,643 | 2,130 | 11,152 |
| | \$ | 412 | 127 | 12 | 59 | 2 | 849 | | | 651 | 34 | 350 | 542 | 3,038 |
| Ratfish | # | 8 | | 3 | | 39 | 246 | 335 | | | 2 | | | 633 |
| | \$ | 0 | | 0 | | 0 | 5 | 17 | | | 0 | | | 22 |
| Rockfish, black | # | | 126 | 159 | 10 | 31 | | 104 | 50 | 41 | 190 | 136 | 91 | 938 |
| | \$ | | 198 | 429 | 13 | 43 | | 199 | 75 | 62 | 280 | 259 | 145 | 1,703 |
| Rockfish, blue | # | | | | | | | | | | 11 | | 35 | 46 |
| | \$ | | | | | | | | | | 22 | | 53 | 75 |
| Rockfish, brown | # | | | | | | | | | 4 | | | | 4 |
| | \$ | | | | | | | | | 2 | | | | 2 |

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POUNDS AND VALUES OF COMMERCIALY CAUGHT FISH AND SHELLFISH LANDED IN OREGON - IN CHARLESTON



| | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|---------------------------|-----------|----------|--------|--------|--------|---------|---------|---------|-----------|---------|----------|----------|-----------|
| Rockfish, canary | # 52 | | | 15 | 2,648 | 1,430 | 49 | 211 | 9,335 | 477 | 13 | 17 | 14,247 |
| | \$ 78 | | | 10 | 1,468 | 721 | 51 | 102 | 4,207 | 458 | 22 | 27 | 7,144 |
| Rockfish, china | # 6 | 2 | | | 7 | | 2 | 7 | | | | | 24 |
| | \$ 9 | 3 | | | 9 | | 3 | 11 | | | | | 35 |
| Rockfish, copper | # | | 12 | | | | 26 | 16 | 10 | | 6 | 1 | 71 |
| | \$ | | 24 | | | | 82 | 24 | 15 | | 12 | 2 | 158 |
| Rockfish, darkblotched | # 10,724 | 2,086 | 22,616 | 7,110 | 56 | 491 | | 110 | 1,783 | 7,649 | 31,641 | 23,594 | 107,860 |
| | \$ 4,101 | 805 | 9,070 | 3,266 | 27 | 176 | | 62 | 802 | 2,757 | 12,924 | 9,619 | 43,609 |
| Rockfish, quillback | # | | | | | | 7 | 18 | 5 | 2 | 5 | | 37 |
| | \$ | | | | | | 3 | 36 | 6 | 3 | 10 | | 60 |
| Rockfish, Rougheye/blacks | # 82 | 4 | 172 | 365 | 149 | 813 | 286 | 296 | 78 | 355 | 119 | 73 | 2,792 |
| | \$ 36 | 0 | 86 | 152 | 112 | 852 | 255 | 277 | 33 | 159 | 107 | 46 | 2,115 |
| Rockfish, Shelf | # 1 | 1 | 18 | 633 | 343 | 1,756 | 145 | 237 | 899 | 280 | 16 | 38 | 4,367 |
| | \$ 0 | 0 | 6 | 242 | 78 | 725 | 147 | 59 | 209 | 109 | 11 | 8 | 1,594 |
| Rockfish, shortbelly | # | | | | | 55 | | | | | | | 55 |
| | \$ | | | | | 0 | | | | | | | 0 |
| Rockfish, shorttraker | # | | | 29 | 30 | | | 10 | | 4 | 28 | 15 | 116 |
| | \$ | | | 12 | 23 | | | 5 | | 3 | 17 | 8 | 68 |
| Rockfish, Slope | # 747 | 781 | 2,153 | 2,585 | 296 | 1,203 | 211 | 1,371 | 1,169 | 910 | 2,625 | 1,640 | 15,691 |
| | \$ 180 | 124 | 441 | 522 | 318 | 776 | 220 | 1,044 | 144 | 300 | 723 | 380 | 5,172 |
| Rockfish, tiger | # | 17 | | | | | | | | | | | 17 |
| | \$ | 26 | | | | | | | | | | | 26 |
| Rockfish, vermillion | # 5 | 26 | 45 | 31 | 17 | | 11 | 21 | 24 | 69 | 8 | | 257 |
| | \$ 8 | 39 | 73 | 44 | 24 | | 20 | 32 | 36 | 146 | 16 | | 438 |
| Rockfish, widow | # | | | 5 | 13 | 76,114 | 6,754 | | 484 | 4 | | 1 | 83,355 |
| | \$ | | | 2 | 5 | 26,395 | 2,295 | | 163 | 2 | | 0 | 28,862 |
| Rockfish, yelloweye | # | | | | | 1 | 451 | | 14 | | | | 466 |
| | \$ | | | | | 0 | 451 | | 6 | | | | 457 |
| Rockfish, yellowtail | # | | | | 1,446 | 5,694 | 1,327 | 174 | 179 | 214 | | | 9,034 |
| | \$ | | | | 676 | 2,443 | 698 | 190 | 73 | 87 | | | 4,167 |
| Sablefish | # 19,000 | 14,833 | 22,235 | 70,577 | 22,551 | 74,956 | 59,152 | 175,025 | 21,549 | 65,578 | 109,148 | 67,799 | 722,403 |
| | \$ 35,082 | 20,726 | 31,067 | 70,556 | 28,692 | 209,682 | 198,847 | 586,143 | 75,321 | 148,047 | 166,125 | 69,411 | 1,639,679 |
| Salmon, chinook | # | | | | 1,885 | 23,612 | 17,881 | 50,911 | 1,505 | 665 | 66 | | 96,325 |
| | \$ | | | | 17,892 | 210,622 | 120,775 | 318,566 | 10,621 | 6,001 | 513 | | 684,990 |
| Sandeab, Pacific | # | | | 50 | 5,945 | 4,198 | 2,176 | 11,316 | 2,867 | 2,639 | | | 29,191 |

2018 Final

POUNDS AND VALUES OF COMMERCIALY CAUGHT FISH AND SHELLFISH LANDED IN OREGON - IN CHARLESTON



| | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|----|---------|----------|---------|---------|---------|--------|-------|--------|-----------|---------|----------|----------|-----------|
| \$ | | | | 38 | 3,645 | 2,268 | 1,456 | 7,310 | 1,436 | 1,592 | | | 17,745 |
| # | 33 | 17 | 13 | 16 | 8 | | | | | | 51 | 147 | 285 |
| \$ | 0 | 0 | 0 | 0 | 0 | | | | | | 0 | 0 | 0 |
| # | | | | | | | 92 | 116 | | | | | 208 |
| \$ | | | | | | | 184 | 172 | | | | | 356 |
| # | 196 | | | | | | | | | 82 | | | 281 |
| \$ | 19 | | | | | | | | | 0 | | | 19 |
| # | | | | | | | 34 | | | | | | 34 |
| \$ | | | | | | | 68 | | | | | | 68 |
| # | 71 | | | | 5,546 | 2,582 | 1,519 | 5,712 | 377 | 1,604 | 92 | | 17,503 |
| \$ | 28 | | | | 1,893 | 875 | 536 | 1,002 | 138 | 519 | 32 | | 5,023 |
| # | 7,421 | 5,657 | 8,889 | 19,115 | 12,285 | 2,800 | 1,255 | 5,144 | 1,320 | 12,862 | 23,805 | 18,714 | 119,267 |
| \$ | 2,291 | 1,603 | 2,913 | 5,024 | 3,021 | 629 | 357 | 1,261 | 348 | 3,407 | 7,004 | 5,692 | 33,560 |
| # | 152 | 156 | 181 | 366 | 60 | 6 | | | | 152 | 629 | 414 | 2,116 |
| \$ | 0 | 0 | 0 | 0 | 0 | 0 | | | | 12 | 0 | 0 | 12 |
| # | | | | | | 7 | | | | | | | 7 |
| \$ | | | | | | 0 | | | | | | | 0 |
| # | | | | 165 | 4 | | | | | | 11 | | 180 |
| \$ | | | | 0 | 0 | | | | | | 0 | | 0 |
| # | 105,284 | 84,414 | 259,046 | 371,856 | 137,049 | 12,026 | 486 | 2,691 | 6,059 | 44,407 | 259,797 | 354,770 | 1,637,885 |
| \$ | 44,058 | 36,323 | 101,898 | 139,937 | 49,852 | 3,417 | 193 | 1,167 | 2,686 | 20,088 | 111,509 | 145,771 | 656,899 |
| # | 2,422 | 3,721 | 3,217 | 1,630 | 3,159 | 1,605 | 584 | 3,019 | 1,221 | 2,856 | 4,321 | 2,673 | 30,428 |
| \$ | 711 | 1,147 | 895 | 356 | 588 | 295 | 91 | 658 | 211 | 600 | 910 | 588 | 7,050 |
| # | 93,330 | 54,219 | 44,818 | 5,301 | 48,850 | 19,071 | 5,390 | 18,399 | 8,284 | 23,096 | 83,967 | 175,584 | 580,309 |
| \$ | 90,851 | 51,994 | 49,958 | 5,672 | 52,144 | 20,906 | 6,402 | 22,500 | 9,677 | 27,890 | 86,221 | 182,853 | 607,068 |
| # | 8,835 | 11,504 | 6,289 | 23,232 | 12,020 | 2,706 | 67 | 507 | 2,150 | 8,906 | 39,239 | 23,133 | 138,588 |
| \$ | 2,813 | 3,817 | 1,644 | 8,294 | 4,359 | 753 | 25 | 166 | 641 | 3,276 | 12,774 | 7,570 | 46,132 |
| # | | | | | 4 | | | | | 15 | | | 19 |
| \$ | | | | | 0 | | | | | 4 | | | 4 |
| # | | | | | | 42 | | | | | | | 42 |
| \$ | | | | | | 21 | | | | | | | 21 |
| # | | | | | | | | | | 8 | | | 8 |
| \$ | | | | | | | | | | 0 | | | 0 |
| # | | 19 | | | | | | | | | | | 19 |
| \$ | | 26 | | | | | | | | | | | 26 |

2018 Final

POUNDS AND VALUES OF COMMERCIALY CAUGHT FISH AND SHELLFISH LANDED IN OREGON - IN
CHARLESTON



| | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|------------------------|--------------|-----------|-----------|---------|-----------|-----------|-----------|-----------|-----------|---------|----------|----------|------------|
| Thornyhead, longspine | # 746 | 515 | 383 | 7,596 | 2,683 | 5,620 | | | 689 | 8,712 | 28,904 | 27,679 | 83,527 |
| | \$ 82 | 96 | 31 | 1,700 | 398 | 1,074 | | | 202 | 2,415 | 9,190 | 5,775 | 20,963 |
| Thornyhead, shortspine | # 8,182 | 5,603 | 9,680 | 37,414 | 17,704 | 3,624 | 119 | 328 | 1,159 | 4,248 | 21,344 | 20,700 | 130,105 |
| | \$ 6,308 | 3,252 | 5,961 | 25,956 | 10,249 | 2,595 | 99 | 218 | 787 | 1,929 | 11,023 | 13,435 | 81,812 |
| Tuna, albacore | # | | | | | 32,943 | 690,366 | 547,403 | 314,548 | 66,445 | | | 1,651,705 |
| | \$ | | | | | 59,639 | 1,166,008 | 853,366 | 482,956 | 127,336 | | | 2,689,305 |
| Tuna, bluefin | # | | | | | | | 30 | | | | | 30 |
| | \$ | | | | | | | 30 | | | | | 30 |
| Whiting, Pac. (hake) | # 7,354 | 138 | 348 | 85 | 36 | 818 | 179 | | | 14 | 314 | 210 | 9,496 |
| | \$ 363 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 | 0 | 363 |
| Crustaceans | # 1,404,788 | 2,824,520 | 778,735 | 139,244 | 1,291,117 | 3,184,958 | 3,395,072 | 1,885,871 | 1,478,121 | 833,345 | 2,310 | 2,444 | 17,220,525 |
| | \$ 3,902,499 | 8,022,765 | 3,174,568 | 830,370 | 1,369,899 | 2,315,231 | 2,555,588 | 1,570,306 | 1,354,474 | 759,183 | 3,736 | 336 | 25,858,955 |
| Crab, Dungeness, bay | # | | | | | | | | 58 | 1,962 | 825 | | 2,845 |
| | \$ | | | | | | | | 294 | 7,544 | 3,186 | | 11,024 |
| Crab, Dungeness, ocean | # 1,404,753 | 2,824,449 | 778,540 | 114,361 | 65,691 | 14,551 | 4,599 | 7,545 | | | 1,210 | 2,276 | 5,217,975 |
| | \$ 3,902,429 | 8,022,623 | 3,174,178 | 815,930 | 462,781 | 76,045 | 23,816 | 41,855 | | | 0 | 0 | 16,519,657 |
| Shrimp, ghost | # 35 | 71 | 195 | 142 | 321 | 640 | 308 | 188 | 204 | 305 | 275 | 168 | 2,852 |
| | \$ 70 | 142 | 390 | 284 | 642 | 1,280 | 616 | 376 | 408 | 610 | 550 | 336 | 5,704 |
| Shrimp, pink | # | | | 24,602 | 1,223,790 | 3,169,206 | 3,390,165 | 1,878,138 | 1,477,859 | 831,078 | | | 11,994,838 |
| | \$ | | | 12,488 | 890,696 | 2,231,198 | 2,531,156 | 1,528,075 | 1,353,772 | 751,029 | | | 9,298,414 |
| Shrimp, spot | # | | | 139 | 1,315 | 561 | | | | | | | 2,015 |
| | \$ | | | 1,688 | 15,780 | 6,708 | | | | | | | 24,156 |
| Molluscs | # 2,750 | 4,452 | 5,413 | 2,055 | 46,810 | 1,242,375 | 424 | 2,088 | 914 | 178 | 115 | 1,812 | 1,309,386 |
| | \$ 3,137 | 5,581 | 6,895 | 2,618 | 25,094 | 402,030 | 607 | 2,653 | 1,176 | 259 | 173 | 2,146 | 452,369 |
| Clams, butter | # 501 | 271 | 3,330 | 178 | 139 | 209 | 305 | 167 | 159 | 169 | 115 | 97 | 5,431 |
| | \$ 325 | 339 | 4,261 | 223 | 209 | 458 | 251 | 239 | 254 | 173 | 146 | 146 | 6,879 |
| Clams, cockie | # 2,249 | 4,119 | 1,784 | 1,531 | 2,167 | 954 | 119 | 322 | | | | 1,265 | 14,510 |
| | \$ 2,811 | 5,149 | 2,237 | 1,876 | 2,696 | 1,289 | 149 | 403 | | | | 1,701 | 18,311 |
| Clams, gaper | # | | 100 | | | | | 1,599 | 755 | | | | 450 |
| | \$ | | 100 | | | | | 1,999 | 937 | | | | 299 |
| Octopus | # 62 | 198 | 346 | 153 | 396 | | | | | 9 | | | 1,164 |
| | \$ 93 | 297 | 519 | 153 | 272 | | | | | 5 | | | 1,339 |
| Squid, Market | # | | | 44,490 | 1,240,886 | | | | | | | | 1,285,376 |
| | \$ | | | 22,245 | 400,260 | | | | | | | | 422,505 |
| Squid, other sp. | # | | 1 | | | | | | | | | | 1 |

2018 Final
POUNDS AND VALUES OF COMMERCIALY CAUGHT FISH AND SHELLFISH LANDED IN OREGON - IN
CHARLESTON



| | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|------------|
| \$ | | | 0 | | | | | | | | | | 0 |
| Total # | 1,737,325 | 3,107,524 | 1,293,021 | 818,843 | 1,735,697 | 4,873,568 | 4,324,831 | 2,762,468 | 1,953,215 | 1,206,519 | 694,456 | 810,810 | 25,318,277 |
| \$ | 4,144,038 | 8,218,293 | 3,493,754 | 1,188,705 | 1,679,585 | 3,555,968 | 4,321,685 | 3,425,085 | 2,043,427 | 1,211,318 | 484,827 | 514,077 | 34,280,762 |