



Summary Report of the 2019 Commercial Fishery for Razor Clams (*Siliqua patula*)

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**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW)
SUMMARY OF THE 2019 COMMERCIAL FISHERY
FOR RAZOR CLAMS (*Siliqua patula*)**

Fishery Objectives and Preseason Planning

In anticipation of a commercial razor clam season in 2019, which was primarily due to low levels of domoic acid in razor clams collected on recreational beaches adjacent to the Willapa Spits, a mailer was sent out to participants in early March with season information including scheduled dates to collect biotoxin samples to open the season April 1.

Fishery managers began conducting biotoxin sampling on the Willapa spits in March. Pre-season test results indicated domoic acid levels were below the regulatory closure level. On March 25, 2019 WDFW announced the fishery would open on April 1, 2019 and run just over twelve weeks, ending on June 24, 2019. Regulations for the commercial razor clam fishery allow digging only on “detached” (i.e. islands) spits. Nearing the end of the season, shifting sand filled in a channel of water that had separated the spits from the north end of Leadbetter Point. At low tide the southernmost spit and the northern end of Leadbetter Point essentially became continuous, and could be easily crossed. In the past when this has happened boundary poles have been installed at the north end of Leadbetter Point to provide a clear delineation between it and the spits. Again, boundary post were installed in 2019 to eliminate any uncertainty.

Biotoxin Sampling

Before the fishery opens the Washington Department of Health (DOH) protocols require two sets of razor clam samples be collected and results of the marine biotoxin tests must be below the federally established action levels. These sets of samples must be collected seven to ten days before the planned opener. Each sample collected must test below 20 parts per million (ppm) for domoic acid, below 80 micrograms per 100 grams of meat tested ($\mu\text{g}/100\text{g}$) for paralytic shellfish poisoning (PSP) and below 16 micrograms per 100 grams of meat tested for Diarrheic Shellfish Poisoning (DSP). Monitoring of biotoxin levels continues once the fishery is underway with fishery samples collected from dealers every seven to ten days. Razor clams for pre-season biotoxin testing collected from one site on the spits in mid-April tested under the action levels (Table 1). Levels for all three toxins were low throughout the season and were not an issue.

Table 1. 2019 Commercial Razor Clam Fishery Biotoxin Results

Collection Date	Sample Type	PSP Result (µg/100g)	Domoic Result (ppm)	DSP Result (µg/100g)
4/4/09	Pre-Season	NTD	6	NTD
4/20/19	Pre-Season	NTD	5	NTD
4/09/19	Fishery Sample	NTD	4	NTD
4/24/19	Fishery Sample	NTD	3	NTD
5/16/19	Fishery Sample	NTD	4	NTD
6/3/19	Fishery Sample	NTD	2	NTD

Fishing Season

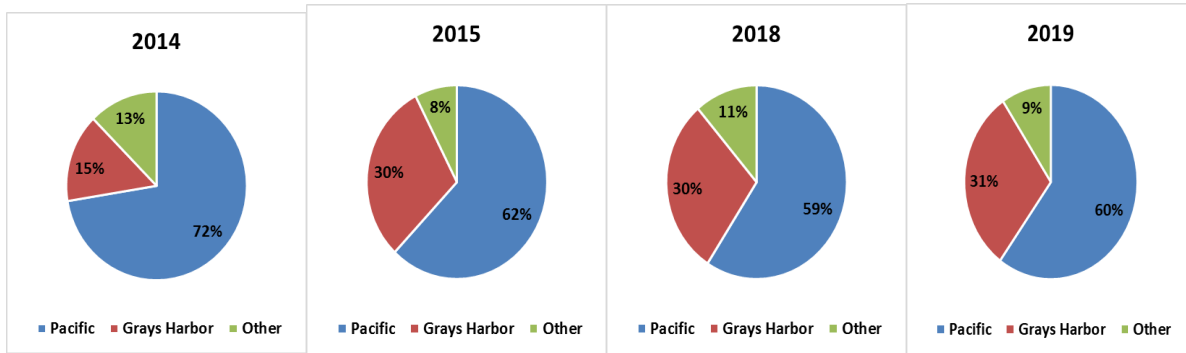
The 2019 season opened as planned on April 1 and was scheduled to last just over twelve weeks, ending on June 24th. Overall clam abundance and size was good throughout the season with some areas of the spits having an exceptional abundance of clams even at the higher tidal elevations. Locating areas with higher clam densities to dig and some poor weather days likely impacted landings and catch per unit of effort (CPUE) the first half of April. In poor weather some of the harvesters with larger boats can participate in the fishery but many that utilize small skiffs to access the spits cannot.

Clam condition through early June was one of the best seen in recent years, packers were reporting exceptional meat recovery for shucked clam meat and the clams per pound average was significantly higher than last year. Given the abundance of marketable size clams for the human consumptive market and high percentage of meat recovery a season extension was considered by managers, however nearing the last good tide series of the schedule season clams began to show signs of spawning and subsequently a reduction in meat recovery. Given that the season has already ran twelve weeks and buying interest was decreasing a season extension was not offered in 2019. Typically season extensions are granted based on three factors; 1) digging opportunity lost to poor weather, 2) the stable CPUE during the season, and 3) willing buyers.

Licenses

In 2019, 75 licenses were sold and of these, 63 were actively fished. This is an increase from the 71 licenses sold in 2018 and a decrease from the 132 licenses sold in 2015. The decrease in 2019/18 license holders (Table 2) was likely due to uncertainty of fishing opportunity to recoup investment of time and money (i.e licenses, boat maintenance, gear) as a result of the early closure in 2015 and total loss of the 2016 and 2017 seasons due to domoic acid. Diggers that did participate in the 2019 season experienced slightly better than average digging as indicated by CUPE (Figure 3.). Given the success of the fishery this year, we expect participation to increase in 2020. As in past years, diggers were predominantly residents of Pacific (60%) and Grays Harbor (31%) counties (Figure 1).

Figure 1. Residence of Licensed Commercial Razor Clam Diggers by County (2013-2019)



*no licenses sold 2016-2017

Table 2. Residence of Licensed Commercial Razor Clam Diggers by County (2010-2019)

County	2011	2012	2013	2014	2015	2018	2019
Pacific	118	68	68	105	82	42	45
Grays Harbor	40	27	40	22	40	21	23
Other	16	10	16	18	10	8	7
Total	174	105	124	145	132	71	75

*no licenses sold 2016-2017

Fishery Landings

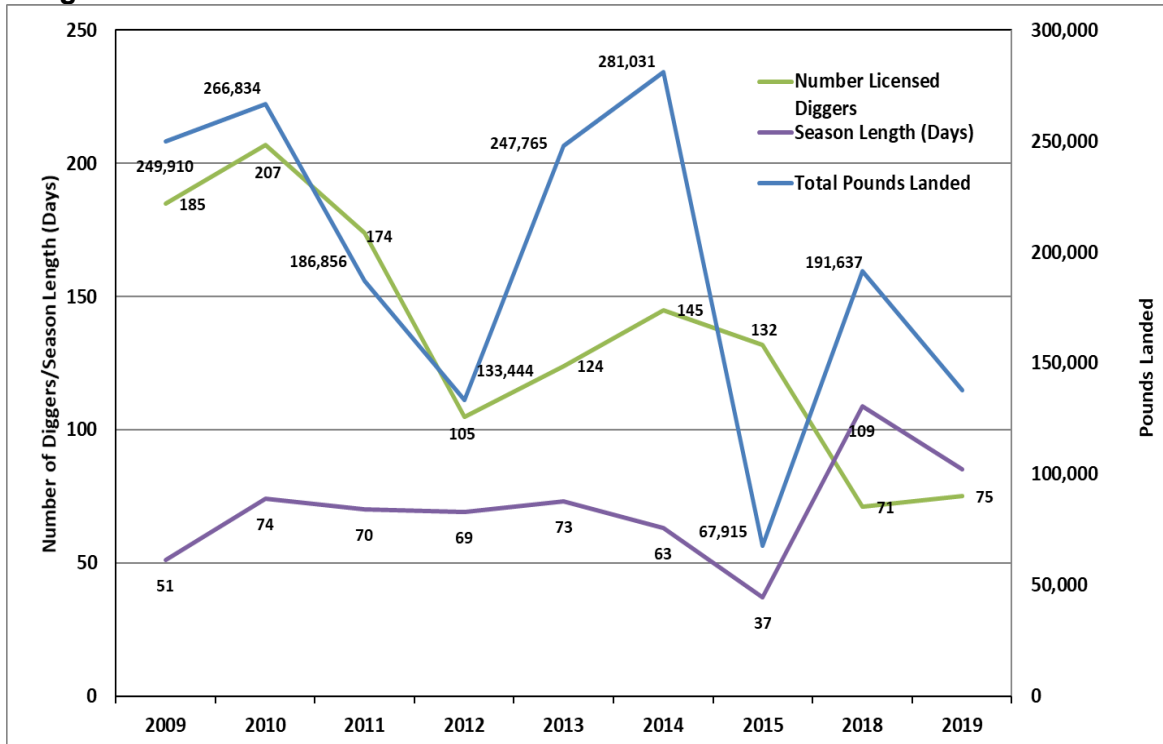
In total, the fishery landed 137,877 pounds of razor clams during the 85-day season, which places it as the tenth highest season on record (Figure 2, Table 3). The total direct value to diggers (ex-vessel value) was \$352,464, which is the seventh highest value on record for this fishery. Prices paid during the 2019 season ranged from \$1.80 to \$3.15 per pound with an average price of \$2.55 per pound, which is highest average price on record. One reason for the higher average price in 2019 was attributed the exceptional meat recovery and an increased number of clams sold to the human consumptive market.

Clam landings occurred on 78 days of the 85-day season; on average 19 diggers, each day landed about 83 pounds of clams per day (Figure 3). There were 91 personal use take home limits, comprising 6% of the 1,503 total landings. This is down slightly from the previous full season in 2018 where the percentage of take home limits was 9% of the 1,797 landings.

Table 3. Razor Clam Ex-Vessel Prices (per lb)

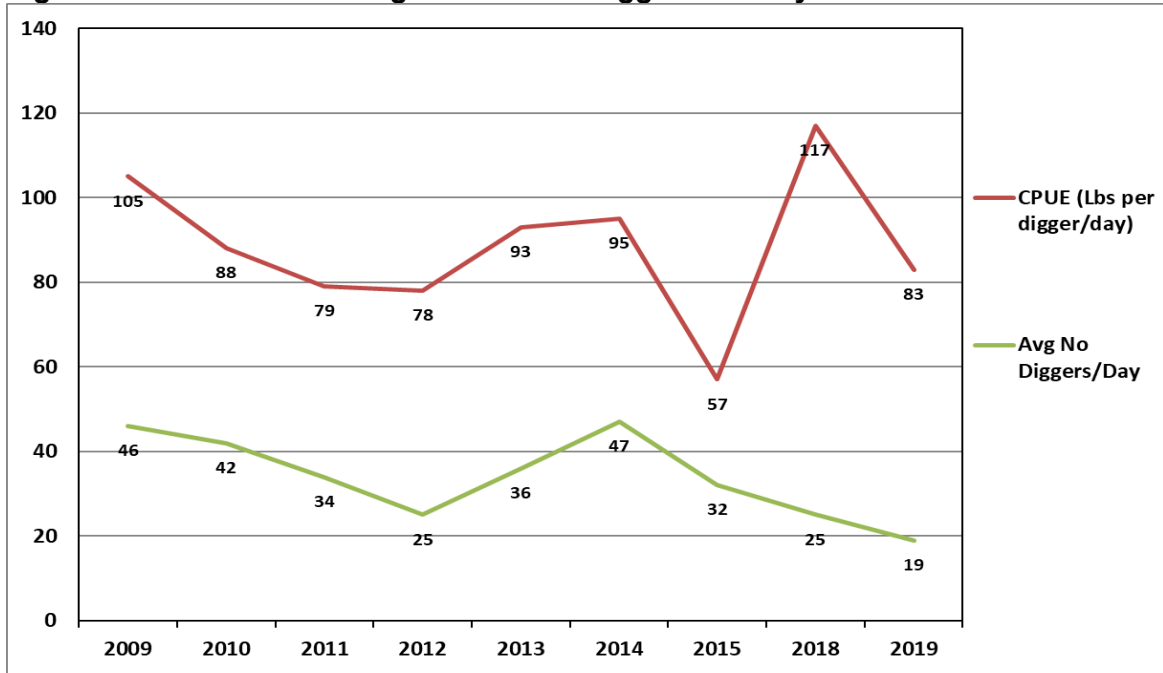
Year	Average Price (per lb)	Low	High
2009	\$ 1.63	\$ 1.00	\$ 1.80
2010	\$ 1.62	\$ 1.00	\$ 1.85
2011	\$ 1.75	\$ 1.40	\$ 2.00
2012	\$ 1.97	\$ 1.50	\$ 2.50
2013	\$ 2.34	\$ 1.60	\$ 2.75
2014	\$ 1.99	\$ 1.25	\$ 2.40
2015	\$ 1.66	\$ 1.60	\$ 1.85
2016	N/A	-	-
2017	N/A	-	-
2018	\$ 2.48	\$ 2.25	\$ 2.90
2019	\$ 2.55	\$ 1.80	\$ 3.15

Figure 2. 2009-2019 Total Pounds Landed vs. Number of Licensed Diggers and Season Length.



*no harvest 2016-2017

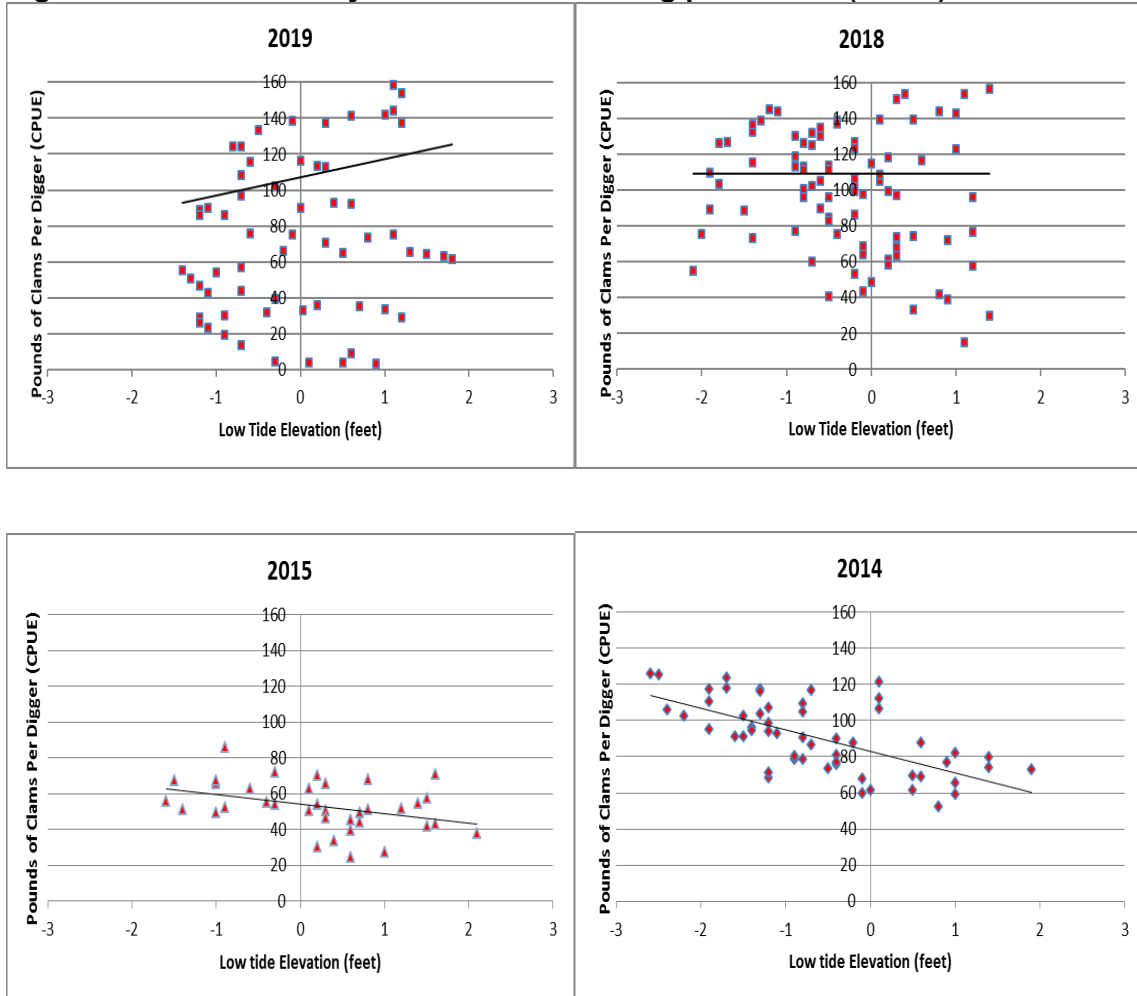
Figure 3. 2009 – 2019 Average Number of Diggers Per day and Catch Per Unit Effort



*no harvest 2016-2017

Discounting other factors such as weather or surf conditions, generally any tide less than +1.5 foot offers comparably good digging opportunity (Figure 4, Table 4). Interestingly in 2019 the catch per unit of effort (CPUE: in this case the total pounds of clams dug in one day divided by the number of diggers) actually increased with higher tidal heights, with some of the highest CPUE days occurring on tide heights greater than +1 feet. CPUE has fluctuated over the past years but the overall trend for those years as shown by the regression line fitted to the CPUE data (Figure 3) indicates the fishery is stable.

Figure 4. 2013-2019 Daily Pounds of Clams Dug per Person (CPUE) and Tide Elevation



*no harvest 2016-2017

Table 4. Commercial Razor Clam: Harvest Totals, Value, Season Length and Licenses.

Washington Non-Treaty Commercial Razor Clam Fishery									
Year	Pounds Landed	Ex-Vessel Value	Number			Non-Resident Licenses	License Revenue	License Fees	
			Days	Diggers	Licenses			Resident	Non-Resident
76	14,047	\$10,512		-	187		\$935	\$5	\$5
77	5,797	\$6,150		-	365		\$1,825	\$5	\$5
78	25,386	\$20,355		-	191		\$4,595	\$5	\$5
79	10,750	\$10,976		-	1,695		\$8,475	\$5	\$5
80	18,390	\$18,781	80	-	1,518		\$7,590	\$5	\$5
81	2,891	\$3,842	39	-	1,411		\$7,055	\$5	\$5
82	6,672	\$9,432	91	-	1,322		\$6,610	\$5	\$5
83	6,732	\$8,678	69	-	1,366		\$6,830	\$5	\$5
84	Nix Closure								
85	Nix Closure								
86	58,814	\$73,114	64	-	378	13	\$19,500	\$50	\$100
87	103	\$194	4	-	115	7	\$6,100	\$50	\$100
88	Closed due to low population levels								
89	20,140	\$35,161	28	-	205	2	\$10,350	\$50	\$100
90	26,553	\$48,073	36	-	290	6	\$14,800	\$50	\$100
91	26,630	\$44,106	42	-	267	8	\$13,750	\$50	\$100
92	Domoic Acid Closure								
93	Domoic Acid Closure								
94	46,854	\$59,487	40	-	95	3	\$12,500	\$130	\$180
95	88,290	\$109,364	38	-	127	0	\$16,510	\$130	\$180
96	25,188	\$29,295	37	-	110	1	\$14,350	\$130	\$180
97	2,849	\$3,579	21	-	28	3	\$3,790	\$130	\$180
98	4,485	\$6,558	24	-	40	0	\$5,200	\$130	\$180
99	Domoic Acid Closure								
00	69,595	\$84,106	51	-	79	0	\$10,270	\$130	\$180
01	75,744	\$77,439	47	62	97	0	\$12,610	\$130	\$180
02	119,777	\$118,349	46	97	105	0	\$13,650	\$130	\$180
03	17,474	\$21,169	18	40	44	0	\$5,720	\$130	\$180
04	183,327	\$269,139	68	112	114	0	\$14,820	\$130	\$180
05	102,939	\$154,746	41	112	115	3	\$15,490	\$130	\$180
06	134,661	\$199,469	64	103	110	0	\$14,300	\$130	\$180
07	140,616	\$211,118	55	119	122	1	\$16,040	\$130	\$180
08	205,634	\$355,705	61	108	143	0	\$18,590	\$130	\$180
09	249,910	\$407,130	51	164	185	4	\$24,250	\$130	\$180
10	266,834	\$431,519	74	184	207	2	\$27,010	\$130	\$180
11	186,856	\$327,022	70	155	174	3	\$22,770	\$130	\$180
12	133,444	\$262,611	69	104	105	2	\$24,785	\$235	\$290
13	247,765	\$579,159	73	121	124	2	\$29,250	\$235	\$290
14	281,031	\$559,552	63	135	145	0	\$34,075	\$235	\$290
15*	67,915	\$112,799	37	118	132	0	\$30,550	\$235	\$290
16	Domoic Acid Closure								
17	Domoic Acid Closure								
18	191,637	\$473,746	79	66	72	3	\$20,745	\$285	\$360
19	137,877	\$352,464	85	63	75	1			

Table 5. 2019 Commercial Razor Clam: Daily Landings, Effort and Take Home Limits

Date	Day	Tide (ft)	Time	Number Landings	Daily Total Landings (lbs)	CPUE (lbs per digger/day)	Number Take Home Limits
4/3/19	Wednesday	0.6	6:35	1	9	9	0
4/4/19	Thursday	0.7	7:07	6	197	33	0
4/7/19	Sunday	0.1	8:47	4	187	47	0
4/8/19	Monday	0	9:22	3	60	20	0
4/9/19	Tuesday	0	10:01	2	58	29	2
4/12/19	Friday	0.5	12:59	9	399	44	0
4/14/19	Sunday	0.2	13:24	5	246	49	0
4/15/19	Monday	-0.1	14:22	20	1360	68	1
4/16/19	Tuesday	-0.2	15:12	18	1054	59	1
4/17/19	Wednesday	0.7	5:38	9	346	38	0
4/18/19	Thursday	-0.1	6:30	9	708	79	0
4/19/19	Friday	-0.6	7:19	19	1575	83	3
4/20/19	Saturday	-0.9	8:05	27	1848	68	1
4/21/19	Sunday	-0.9	8:50	23	2083	91	4
4/22/19	Monday	-0.7	9:34	18	1425	79	3
4/23/19	Tuesday	-0.4	10:18	18	1358	75	2
4/24/19	Wednesday	0.1	11:04	18	1462	81	2
4/25/19	Thursday	0.6	11:56	11	970	88	0
4/26/19	Friday	1	12:57	4	272	68	1
4/27/19	Saturday	1.2	14:01	1	29	29	0
4/28/19	Sunday	1.2	14:59	9	527	59	1
4/29/19	Monday	1.2	15:50	11	455	41	0
4/30/19	Tuesday	1.1	16:34	6	263	44	1
5/1/19	Wednesday	1.1	17:14	14	926	66	1
5/2/19	Thursday	1	5:30	13	998	77	1
5/3/19	Friday	0.3	6:34	29	2580	89	1
5/4/19	Saturday	-0.1	7:13	26	2314	89	3
5/5/19	Sunday	-0.5	7:51	28	2301	82	3
5/6/19	Monday	-0.7	8:29	31	2075	67	2
5/7/19	Tuesday	-0.8	9:08	33	3206	97	3
5/8/19	Wednesday	-0.7	9:51	33	3345	101	0
5/9/19	Thursday	-0.6	10:38	28	2381	85	3
5/10/19	Friday	-0.3	11:34	29	2411	83	0
5/11/19	Saturday	0	12:38	19	2338	123	3
5/12/19	Sunday	0.2	13:46	25	2908	116	4
5/13/19	Monday	0.3	14:49	21	2537	121	4
5/14/19	Tuesday	0.4	15:46	2	142	71	0

5/15/19	Wednesday	0.6	16:38	16	760	48	0
5/16/19	Thursday	0	5:25	23	1496	65	0
5/17/19	Friday	-0.7	6:15	26	2552	98	3
5/18/19	Saturday	-1.1	7:03	29	3006	104	2
5/19/19	Sunday	-1.2	7:48	23	2162	94	2
5/20/19	Monday	-1.2	8:31	34	3293	97	3
5/21/19	Tuesday	-0.9	9:13	30	2033	68	4
5/22/19	Wednesday	-0.6	9:53	32	3148	98	1
5/23/19	Thursday	-0.1	10:34	20	2035	102	1
5/24/19	Friday	0.3	11:17	3	203	68	0
5/25/19	Saturday	0.8	12:05	17	955	56	1
5/26/19	Sunday	1.1	12:58	26	1538	59	3
5/27/19	Monday	1.3	13:53	19	1455	77	0
5/28/19	Tuesday	1.5	14:47	11	1388	126	0
5/29/19	Wednesday	1.7	15:36	17	1894	111	0
5/30/19	Thursday	1.8	16:21	17	1322	78	0
5/31/19	Friday	0.5	5:23	13	1162	89	1
6/1/19	Saturday	-0.2	6:07	31	3018	97	4
6/2/19	Sunday	-0.7	6:50	36	3406	95	1
6/3/19	Monday	-1	7:32	31	3498	113	1
6/4/19	Tuesday	-1.3	8:14	34	4029	119	0
6/5/19	Wednesday	-1.4	8:57	32	2866	90	5
6/6/19	Thursday	-1.2	9:42	26	3041	117	1
6/7/19	Friday	-1.1	10:29	21	2286	109	0
6/8/19	Saturday	-0.7	11:19	24	3184	133	2
6/9/19	Sunday	-0.3	12:15	33	3684	112	1
6/10/19	Monday	0.2	13:13	22	1946	88	0
6/11/19	Tuesday	0.7	14:13	22	1673	76	0
6/12/19	Wednesday	1	15:10	10	615	62	0
6/13/19	Thursday	0.3	4:16	2	124	62	0
6/14/19	Friday	-0.4	5:11	9	1048	116	0
6/15/19	Saturday	-0.9	6:01	22	2293	104	0
6/16/19	Sunday	-1.2	6:48	13	1589	122	0
6/17/19	Monday	-1.2	7:32	27	2823	105	0
6/18/19	Tuesday	-1.1	8:14	26	3429	132	0
6/19/19	Wednesday	-0.9	8:52	26	2859	110	0
6/20/19	Thursday	-0.7	9:29	27	2707	100	1
6/21/19	Friday	-0.3	10:04	20	2187	109	2
6/22/19	Saturday	0.1	10:39	25	3087	123	0
6/23/19	Sunday	0.5	11:16	26	2755	106	1
6/24/19	Monday	0.9	11:57	22	1701	77	1
Season Totals				1,505	137,603	83	91

Commercial Sales and Trends

Commercial buyers must be certified by the Washington Department of Health to purchase razor clams and the certification is renewed annually. Buyers must also have a WDFW wholesale dealer license and all razor clams purchased must be documented on shellfish receiving tickets. Typically, five to six companies register to buy razor clams each year. Most dealers are established wholesale seafood businesses in Pacific and Grays Harbor counties that operate year-round in various fisheries and they purchase the majority of clams. In addition, some wholesale buyers are simply individuals that have obtained the required licenses and certification to purchase razor clams only. Typically these dealers are commercial Dungeness crab fishers buying razor clams for bait. Generally there are two to three buyers that fit these criteria each season.

Dungeness crab fishers favor razor clams as bait because they are a natural food source of crabs and keep well in crab pot bait cans. While the majority of the harvested clams are still sold as crab bait, this percentage has varied over the past few years as more and more clams are destined to the fresh market. In 2012 the percentage sold fresh was around 9%, in 2014 this increased to around 25% and in 2019 to around 30%.

Wholesalers point out the market for fresh razor clams are limited by their narrow 2-3 day shelf life and because profitability to the wholesaler is held in check by other razor clams entering the market. These other sources include the Quinault Indian Nation and clams coming from both Canada and Alaska. For some buyers the main benefit in purchasing razor clams comes from keeping their work crews employed during a typically slow time of year and providing superior quality bait to the commercial crabbers who fish in the winter months.

Management Conclusions

In recent years, dealers have tried to take advantage of stable seasons and strong production to develop retail markets locally and overseas however closures due to domoic acid have caused major disruptions in maintaining and increasing market development. In addition, the fishery provides an important economic bridge between crab and salmon seasons for both dealers and diggers. Within the constraints posed by population abundance and biotoxin levels, management of the fishery will continue to promote season predictability to support marketing opportunities for human consumption and to provide a reliable source of bait for the Dungeness crab fishery.