

Analysis of Commercial Fishing Licence, Quota, and Vessel Values

Prepared for Fisheries and Oceans Canada, Pacific Region

Prepared by Christy Whitmore

As of December 31, 2022



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Cat. No. Fs1-94E-PDF

ISSN 2816-7090

Analysis of commercial fishing licence, quota, and vessel values : prepared for
Fisheries and Oceans Canada, Pacific region : as at December 31, 2022

Issue number: 23-2249

Citation for this publication:

Fisheries and Oceans Canada (2023). Analysis of Commercial Fishing Licence, Quota, and
Vessel Values as of December 31, 2022.

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Introduction

For almost thirty years, the Indigenous Programs Division at Fisheries and Oceans Canada (DFO) has conducted a licence and quota valuation analysis on a yearly basis. The purpose of this study is to assess the value of commercial fishing licences and quotas utilized in the Pacific commercial fishery. This year's report includes an assessment of commercial fishing licence and quota values from January 1, 2022, to December 31, 2022.

The objectives of this report include providing information for licence retirement and reallocation programs; estimating potential treaty impacts on the commercial fishery; assessing the economic health of the Pacific fishing industry; developing policies for First Nations participation in the fishery and licence redistribution; and evaluating the impacts of policy decisions on the Pacific fishery. Maintaining consistency in the methodology is crucial as it enables changes in values to be viewed in relation to the fishery's broader changes.

This report's valuations are predominantly based on individual market transactions, wherever feasible. However, in instances where market transactions were non-existent or scarce, anecdotal information might have been considered. If no data was available, values from the 2021 study were utilized. Essentially, this report represents the contractor's attempt to consolidate imprecise data into a pre-existing time series of values.

In this report, each valuation is assigned a confidence level, which varies from low to high. This is an effort to qualify the contractor's professional judgment regarding the valuation's precision, based on factors such as the number of individual transactions recorded, the quality of the information obtained, and any anecdotal information considered.

Unless otherwise stated, all valuations found within this report do not account for inflation.

The valuation of every species in the report comprises a market outlook and commentary section that consolidates qualitative perspectives obtained from interviewees during the data collection phase. The objective of the outlook/commentary section is to present a comprehensive overview of each individual species' fishery and market, which may include qualitative knowledge from contractor's 25 years of expertise in Pacific fisheries. The interviewees, who are industry experts, fishers, brokers, or market participants in the BC commercial fishery, were contacted as part of the research process.

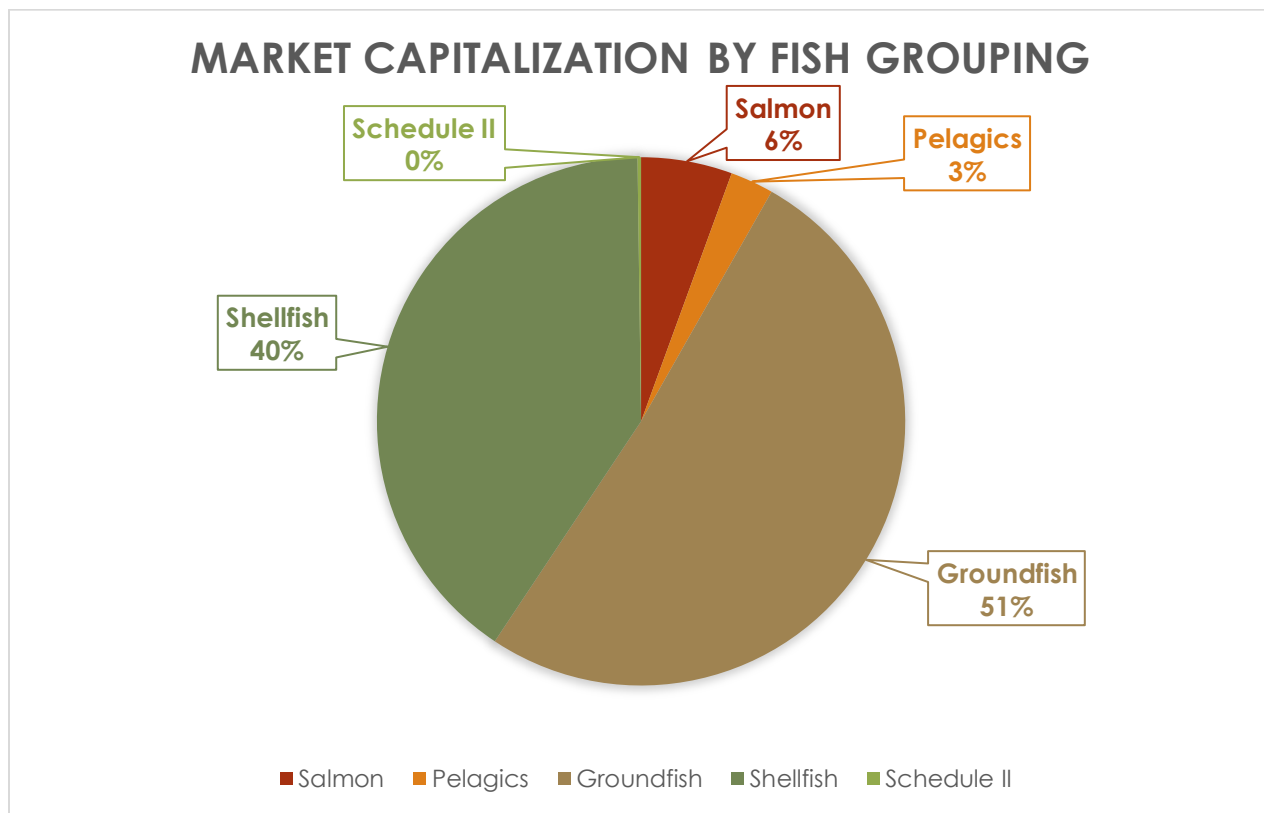
Summary: year ending December 31, 2022

At the end of December 31, 2022, the market valuation of Pacific commercial fishing licences and quota, not including communal commercial licences numbers, is presented in the following table:

Fish grouping	Fishery	Licence Category	No. of commercial licences*	Average licence value (\$)	Aggregate licence value (\$)	Aggregate quota value (\$)	Average quota value (\$/lb)	Total licence and quota value (\$)
Salmon	Salmon seine	AS	207	\$348,580	\$72,156,060	n/a	n/a	\$72,156,060
	Salmon gillnet	AG	1043	\$37,187	\$38,786,071	n/a	n/a	\$38,786,071
	Salmon troll	AT	280	\$138,274	\$38,716,720	n/a	n/a	\$38,716,720
Pelagics	Herring – roe herring seine	HS	241	\$107,535	\$25,915,874	n/a	n/a	\$25,915,874
	Herring – roe herring gillnet	HG	979	\$33,411	\$32,709,369	n/a	n/a	\$32,709,369
	Tuna	USA 68	45	\$250,000	\$11,250,000	n/a	n/a	\$11,250,000
	Sardine	ZS	25	n/a	n/a	n/a	n/a	n/a
Ground-fish	Halibut	L	338	\$32,602	\$11,019,476	\$642,190,500	\$114.00	\$653,209,976
	Sablefish	K	41	\$525,000	\$21,525,000	\$262,333,510	\$80.00	\$283,858,510
	Groundfish trawl	T	135	\$41,000	\$5,535,000	\$198,749,531	\$1.70 (uncut) \$0.20 (hake)	\$204,284,531
	Rockfish inside	ZN	52	\$37,500	\$1,950,000	n/a	n/a	\$1,950,000
	Rockfish outside	ZN	158	\$224,000	\$35,392,000	n/a	n/a	\$35,392,000
	Lingcod hook and line	n/a	n/a	n/a	n/a	\$30,899,954	\$12.00	\$30,899,954
	Dogfish hook and line	n/a	n/a	n/a	n/a	\$2,308,678	\$0.11	\$2,308,678
Shellfish	Prawn	W	185	\$850,000	\$157,250,000	n/a	n/a	\$157,250,000
	Crab	R	186	\$1,500,000	\$279,000,000	n/a	n/a	\$279,000,000
	Shrimp	S	205	\$42,000	\$8,610,000	n/a	n/a	\$8,610,000
	Geoduck	G	50	\$250,000	\$12,500,000	\$462,500,000	\$925,000	\$475,000,000
	Sea cucumber	ZD	82	\$1,500,000	\$123,000,000	n/a	n/a	\$123,000,000
	Red sea urchin	ZC	79	\$321,000	\$25,359,000	n/a	n/a	\$25,359,000
	Green sea urchin	ZA	48	\$80,000	\$3,840,000	n/a	n/a	\$3,840,000
	Euphausiid	ZF	16	\$40,000	\$640,000	n/a	n/a	\$640,000
Schedule II	Schedule II (Lingcod, Dogfish, Tuna)	C	307	\$18,490	\$5,676,430h	n/a	n/a	\$5,676,430

2022 Market value by fishery grouping.

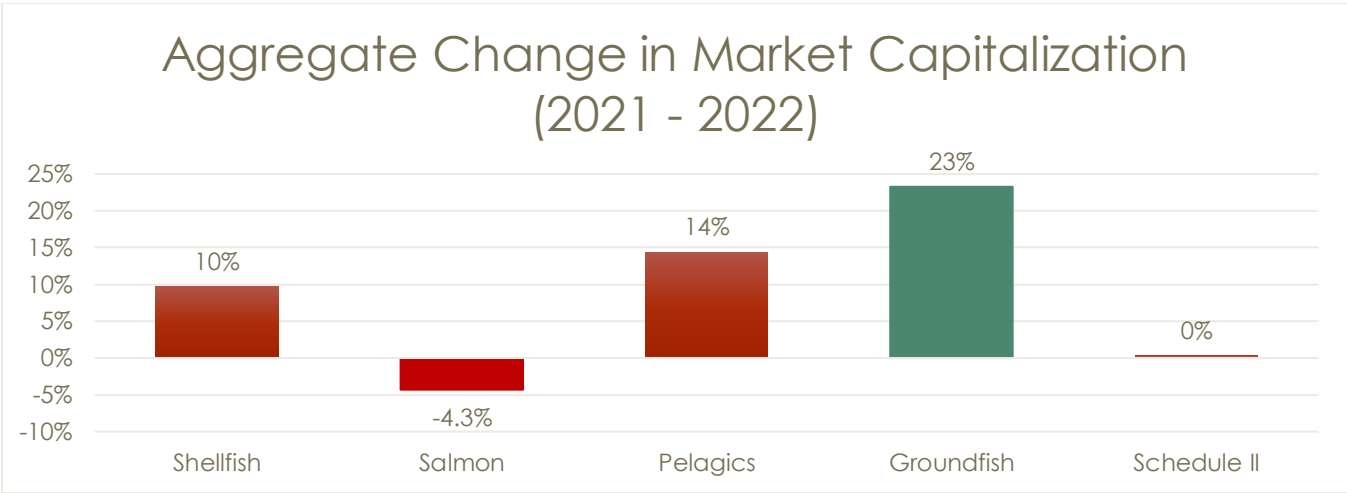
Groundfish, which comprises halibut, sablefish, rockfish, lingcod, and dogfish, held the largest market share value of 51% in the Pacific Region fisheries market in 2022, as determined by comparing transaction values. Meanwhile, shellfish came in second place with a market share value of 40%. In contrast, salmon, and herring, two fisheries with significant historical importance in BC, only accounted for 6% and 3%, respectively.



Percentage change in market value by fishery grouping, 2022 vs. 2021.

The collected data for this report reveals that the commercial fishing industry has experienced a significant surge in the groundfish sector, which has contributed to an increase in total market capitalization compared to the 2021 valuations¹. Among the groundfish species, halibut has emerged as a top performer, with increasing demand in both the local and export markets. This growing demand for halibut has led to an increase in its price, which has been a significant contributor to the overall growth of the groundfish sector.

However, there has been a 4.3% decline in the valuation of salmon compared to the previous year. As reported by a majority of interviewees, this decrease has been attributed to the PSSI announcement made in 2021, which has created great uncertainty in the salmon industry. The interviewees have pointed out that this announcement has had a significant impact on the market for salmon licences and has contributed to the decline in their market value.

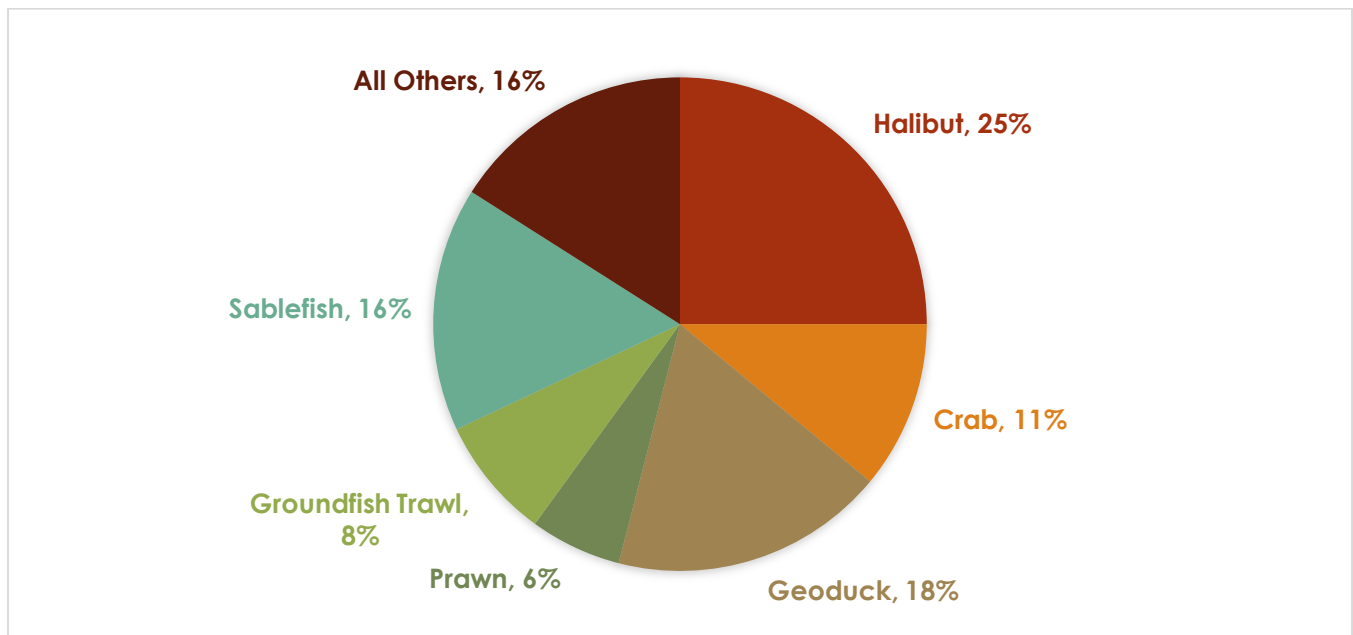


¹ Analysis of commercial fishing licence, quota, and vessel values as of December 31, 2021.

Top six fisheries relative to overall licence and quota values (\$ millions)

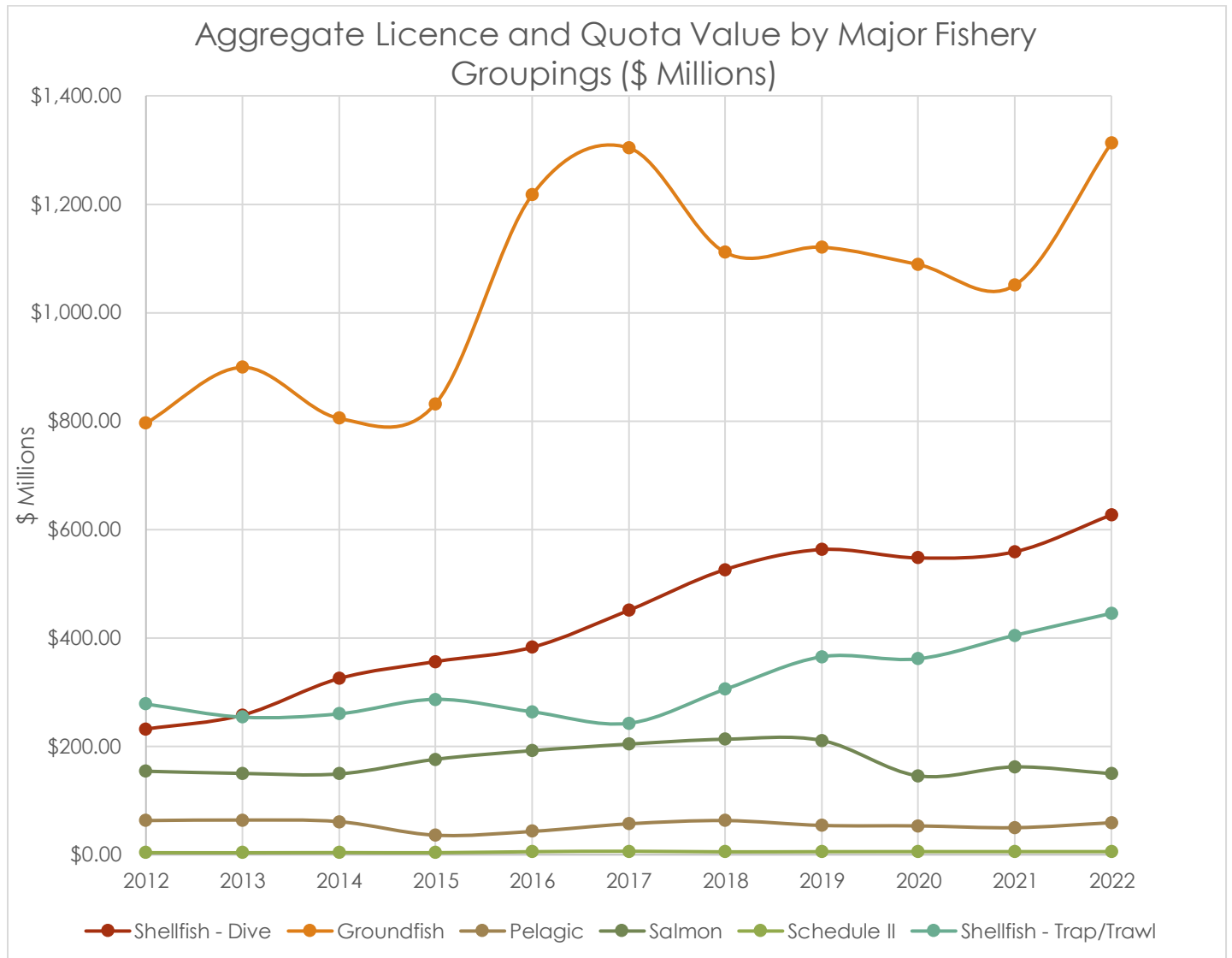
Based on the data collected regarding the 2022 market transactions, the licences and quota value of the Pacific Region Fisheries are mainly driven by two species - halibut and sablefish. These species are highly sought after both in local and export markets, which has led to their increased value.

In contrast, licences for shellfish such as geoduck, crab, and prawns are also highly valuable due to their significant export demand. The export demand for these species has led to their increased demand and value.



Aggregate licence and quota value (\$ millions) by major fishery groupings

Aggregate value over the last 10 years is shown by fishery grouping in the chart below.



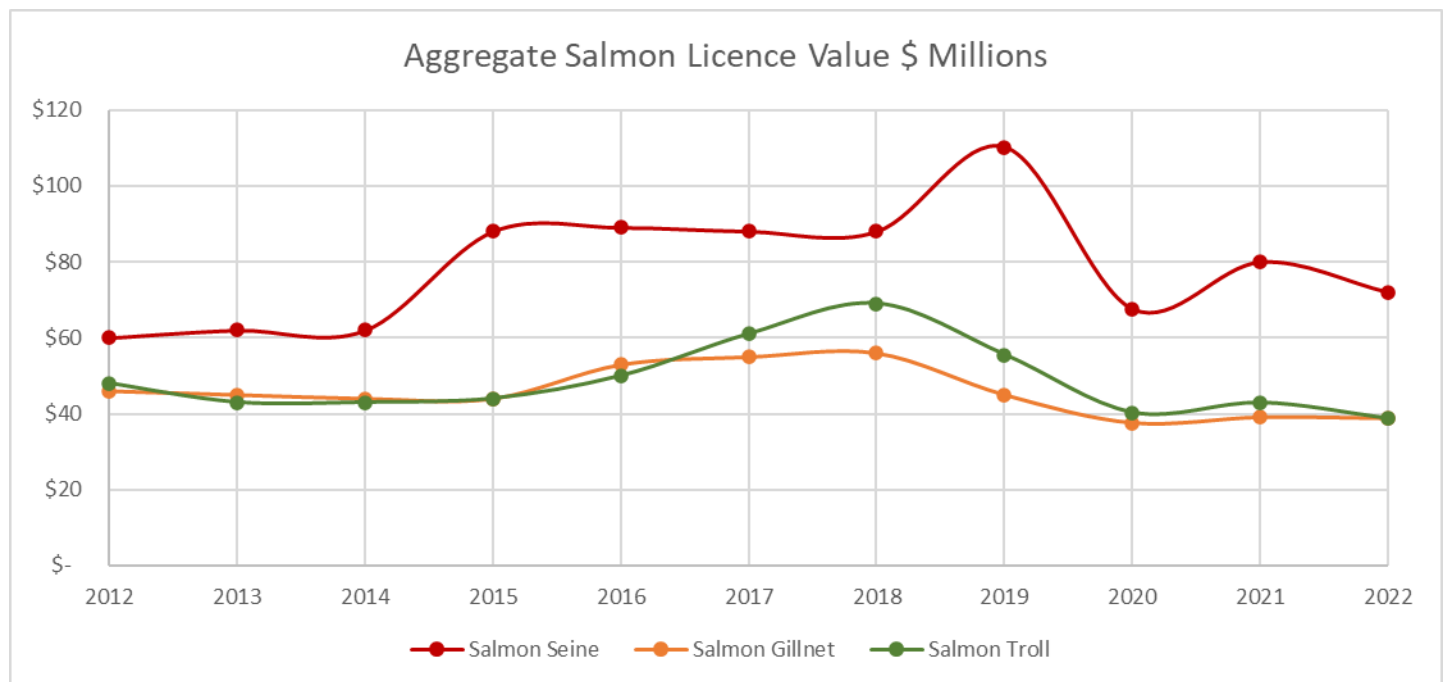
Salmon

The commercial salmon fishing industry continues to be marked by a sense of uncertainty surrounding the policy and regulatory landscape. This has raised concerns about potential reductions in fishing opportunities. This atmosphere of uncertainty has contributed to a perception that salmon fisheries are high-risk, resulting in a decrease in demand for licences.

There has been a decline in the value of seine, gillnet, and troll licences from 2021 to 2022. Specifically, gillnet licences decreased by 1%, and seine and troll licences decreased by 10%. The primary reason for this decline is attributed to the uncertainty in government policy and perceived risk in the fishery, stemming from the loss of access and fishing opportunities.

According to the fishers that were interviewed, they have adopted a "wait and see" approach regarding their licences, as they closely monitor the rollout of the Department of Fisheries and Oceans (DFO) new Pacific Salmon Strategy Initiative (PSSI) and its associated programs aimed at reducing the number of active licences in the industry. The decrease in the value of these licences is a reflection of the apprehension among fishers about the future of the fishery and their ability to maintain a sustainable livelihood.

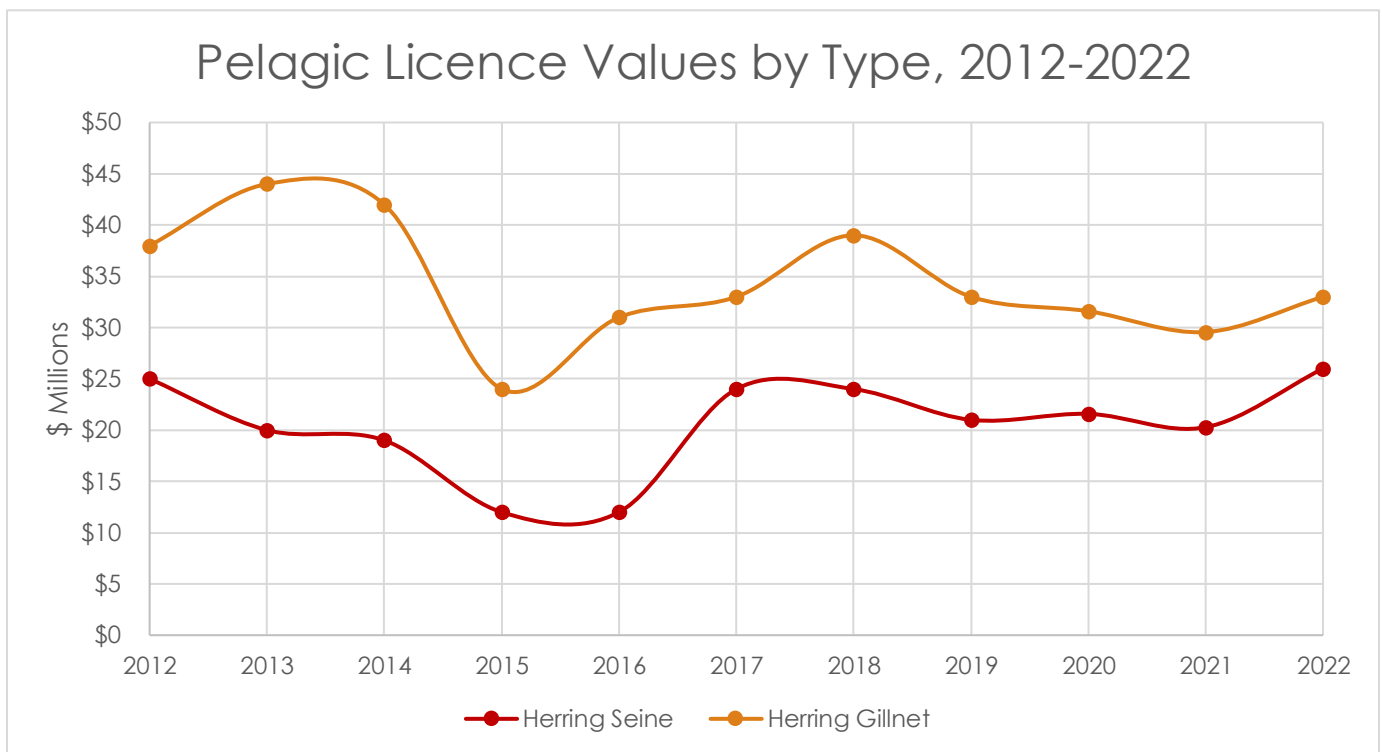
The Pacific Salmon Strategy Initiative (PSSI), launched in June 2021, aims to address the decline in Pacific salmon populations. The initiative involves working collaboratively with Indigenous peoples, stakeholders, and the public to identify and implement actions to conserve and rebuild Pacific salmon populations through conservation and reduction of fishing pressure, and other key actions. PSSI is intended to support a more sustainable approach to Pacific salmon fisheries over a long-term.



Pelagics

In December 2021, it was announced that Pacific Herring commercial fisheries would be closed on the West Coast except for the Strait of Georgia where harvesting would be reduced to 10%. However, some industry experts believe that the cyclical nature of herring stocks and the possibility of future increases in value make it a worthwhile investment for those who are willing to take a long-term view. These buyers believe that the current downturn in the market may be temporary and that herring stocks could rebound in the coming years, leading to an increase in licence values.

As a result, there was a 12% aggregate increase in herring gillnet licences and a significant 28% increase in herring seine licences aggregate. By observing the considerable movement in transactions in their licences over the past year, herring seine licences were perceived to have increased their value in 2022, while herring gillnet licence prices were viewed as more volatile during the same period.

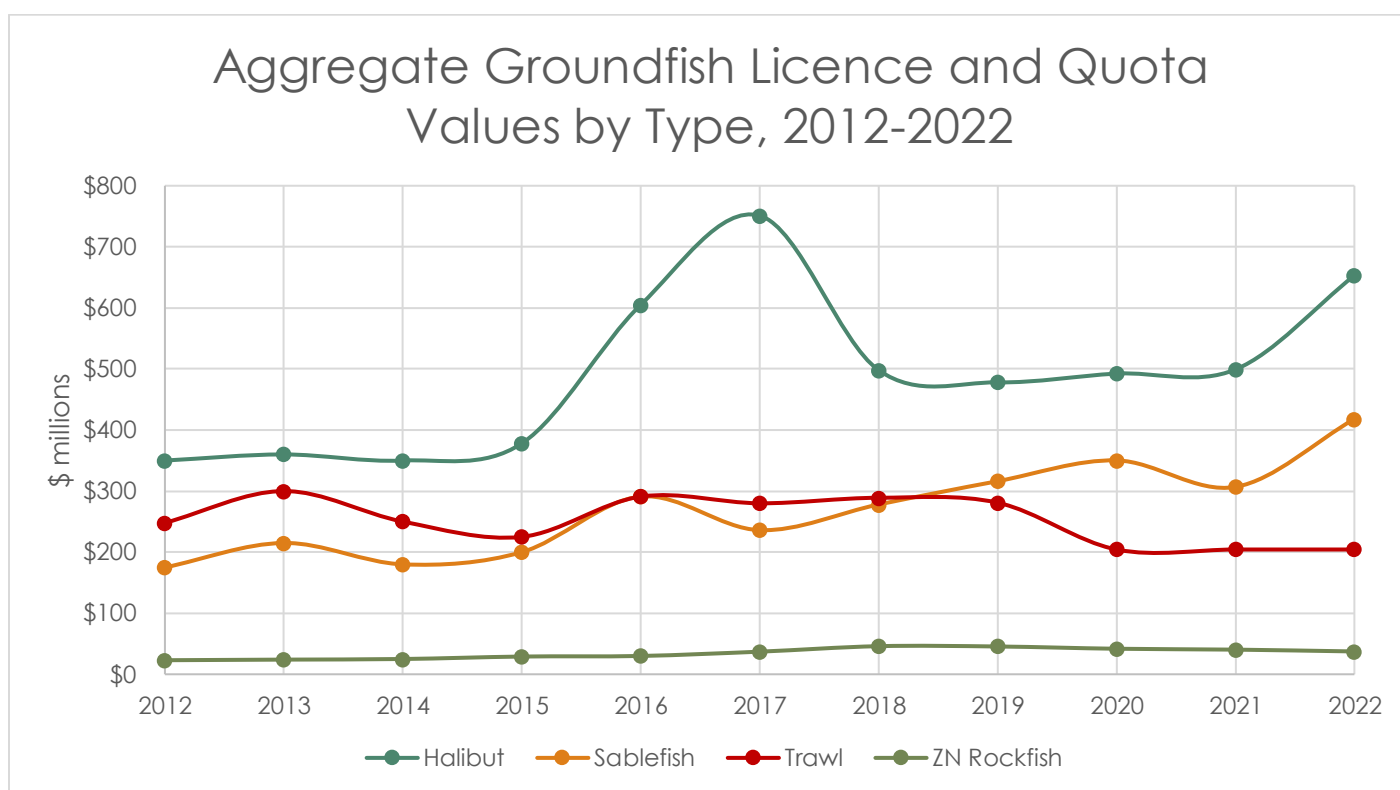


Groundfish

Groundfish licences and quota in 2022, which includes trawl, halibut, sablefish, rockfish (inside and outside), lingcod, and dogfish has shown moderate fluctuations. However, there have been some significant changes in certain species types. The licence and quota value of halibut in 2022 has risen considerably by 31%, while sablefish has increased by 36%. On the other hand, rockfish has experienced a decrease of 7%, while trawl has remained the same.

The halibut fishery has been considered a success story during the COVID-19 pandemic. The industry was able to shift its focus from food-service industries to direct-to-consumer markets, which helped to maintain its value. Sablefish is seen as a fishery with strong fundamentals, but it is relatively expensive and harder to catch compared to halibut. Rockfish licences, especially outside rockfish, have constantly fluctuated due to market instability of live rockfish due to COVID-19 restrictions.

Despite the fluctuations in groundfish fisheries, there has been no movement in groundfish trawl licences prices. These licences have remained stable over the past year, and there has been no significant change in their market value.

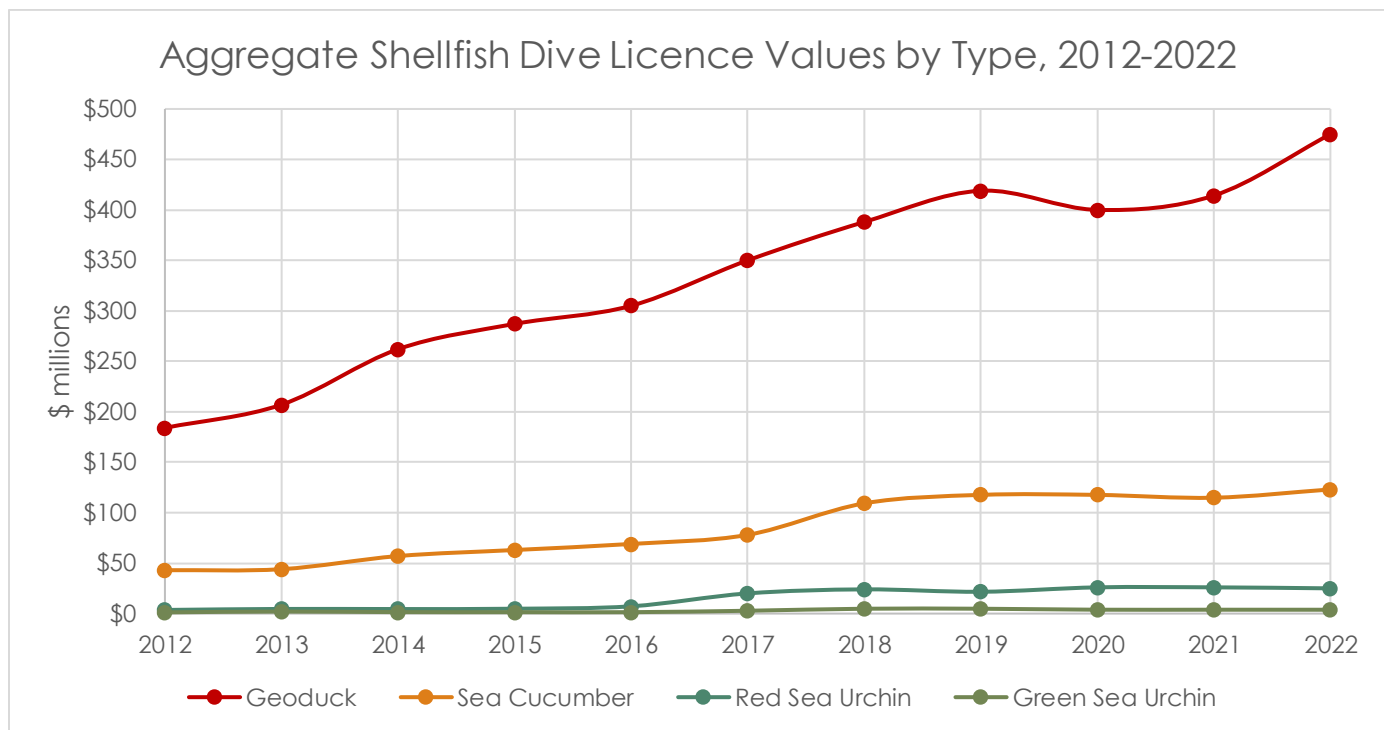


Shellfish by dive

Through the transaction data that was collected in 2022, it is observed that overall, the shellfish dive fisheries are showing stability and some slight growth, except for the sea urchin fisheries, which seem to be facing some challenges. The geoduck licences and quota block values witnessed an aggregate increase of 15% in 2022, which is a positive trend. Similarly, the sea cucumber licences also saw a small aggregate increase of 7%.

However, the red urchin licence values saw an aggregate decrease of 4%, which could be attributed to various factors such as market demand and supply, and seasonality. On the other hand, the green urchin values remained static, suggesting a stable market for this type of shellfish.

Interviewees have noted that despite the challenges facing the sea urchin fisheries, the shellfish dive fisheries, appear to be doing well.



Shellfish by trap and net

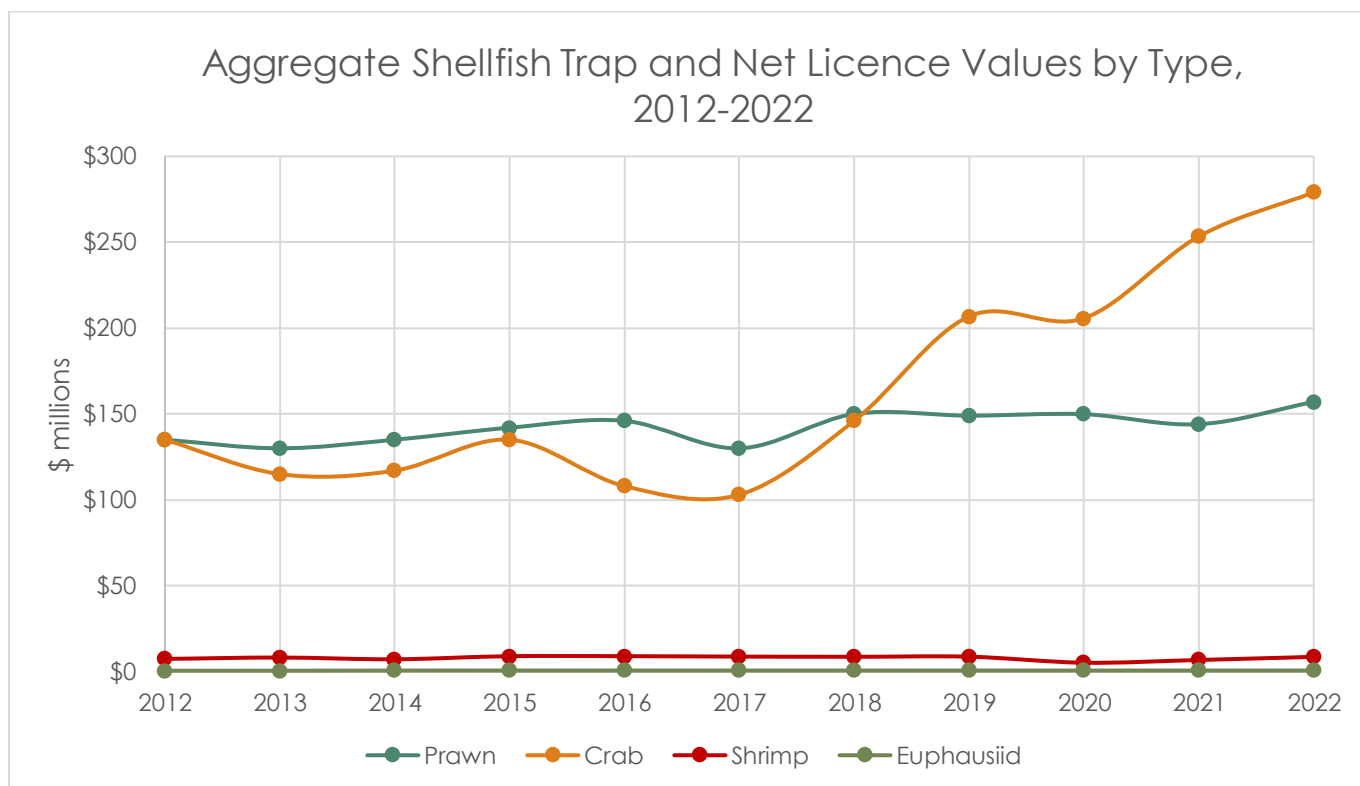
From examining the transactions from 2022 in the shellfish trap and net fisheries, licences have been experiencing significant increases, particularly in the crab sector. Interviewees noted this can be attributed to various factors, such as favorable market conditions, increased demand for crab products, and improved management practices that ensure sustainability and protection of the resource.

Moreover, the value of prawn licences has increased by 9%. This can be attributed to several factors, such as the quality of prawn products, the growing demand in both local and export markets, and the increasing interest from young and new entrants wanting to venture into the fishery.

In addition, shrimp licence values have gone up by aggregate of 27%, which is a substantial increase. However, all industry experts, that were interviewed, believe that the 2021 valuation of shrimp licences may have been undervalued, as it is believed that industry isn't seeing an overall demand for shrimp licences.

Despite the decreased demand for live crab products from China, resulting in decreased fishing revenues in 2022, the licence values have increased by 10% in anticipation of a better year in 2023. This suggests that industry players are optimistic about the future of the sector and are willing to invest in licences in anticipation of higher returns.

Overall, the shellfish trap fisheries appear to be performing well, with significant increases in the crab sector, moderate growth in the prawn sector, and substantial growth in the shrimp sector. Interviewees see the positive trends in the sector can be attributed to favorable market conditions, new entrants, and sustainable harvesting practices.



Rates of return – leasing

The table below shows the estimated rate of return for fisheries with Individual Quota Fisheries (IVQ) licences or quotas that are readily leased, and typically non-vessel based, during the valuation period of 2022.

Fishery	Lease rate	Quota/licence valuation	Rate of return
Herring – roe seine	\$-	\$90,000/licence	n/a
Herring – roe gillnet	\$2,750/licence	\$35,000/licence	7.86%
Halibut	\$5.50/lb	\$114.00/lb	4.82%
Sablefish	\$1.20/lb	\$75.00/lb	1.60%
Trawl – groundfish (uncut)	\$0.13/lb	\$1.7/lb	7.65%
Trawl – groundfish (hake)	\$0.01/lb	\$0.2/lb	5.00%
Rockfish inside	\$2,200/licence	\$35,000/licence	6.28%
Rockfish outside	\$5,500/licence	\$224,000/licence	2.45%
Lingcod hook and line	\$0.20/lb	\$11/lb	1.82%
Dogfish hook and line	\$-	\$0.11/lb	0.00%
Prawn	\$50,000/licence	\$950,000/licence	5.26%
Crab	\$37,000/licence	\$1,500,000/licence	2.46%
Geoduck	\$93,600/block	\$950,000/block	10.2%
Sea cucumber	\$80,000/licence	\$1,500,000/licence	5.33%
Red sea urchin	\$1,875/licence	\$321,000/licence	0.58%
Green sea urchin	\$6,000/licence	\$80,000/licence	7.50%

Methodology

List of valuations performed in this report.

Fishery grouping	Fishery	Gear	Avg. vessel value	Valuation			
				Avg. licence value		Quota Value	Lease Value
				Full Fee	Reduced Fee		
Salmon	Salmon	Seine	x	x	x		x
	Salmon	Gillnet	x	x	x		x
	Salmon	Troll	x	x	x		x
Pelagics	Herring – roe	Seine	x	x	x		x
	Herring – roe	Gillnet	x	x	x		x
	Herring – SOK						
	Tuna	Hook and Line		x			
	Sardine	Seine					
Groundfish	Halibut	Longline	x	x		x	x
	Sablefish	Longline/trap	x	x		x	x
	Groundfish trawl	Trawl	x	x		x	x
	Rockfish	Hook and Line	x	x			x
	Lingcod and Dogfish	Hook and Line				x	x
Shellfish	Prawn	Trap	x	x			x
	Crab	Trap	x	x			x
	Shrimp	Trawl	x	x			
	Geoduck	Dive	x	x		x	x
	Sea cucumber	Dive	x	x			x
	Green sea urchin	Dive	x	x		x	
	Red sea urchin	Drive	x	x		x	
	Euphausiid	Trawl	x	x			
Schedule II	Schedule II species			x			

Valuation methodology

To gather information on the values of commercial fishing licences and quotas, interviews were conducted with individual licence holders, brokers, fishers, processors, industry publications, and anyone with knowledge of specific market transactions. Most valuations are a combination of multiple sources as listed above. In situations where data was not obtainable, the 2021 report data was utilized. The following is a list of sources of information, ranked in order of preference:

- Information based on verified transactions.
- Anecdotal knowledge about transactions or industry expert viewpoints on pricing.
- Quoted prices (but not executed) from boat brokers or trade publications.
- Contractor's assessment.

The contractor has determined the confidence level of each identified transaction in each fishery valuation based on several factors. These factors include past confidence levels, transaction consistency, and the diversity of sources reporting similar transactions. The contractor has assigned a confidence level of high, medium (med), or low based on the number of factors met. If all three factors are met, the confidence level is high. If two factors are met, the confidence level is medium. If one or none of the factors are met, the confidence level is low.

Licence and quota stratification and valuation criteria

For each licence type, the valuation encompasses the quota and units (such as per foot, per licence, etc.), as well as details on the number of transactions identified and the degree of confidence in the valuation.

Furthermore, a general summary is incorporated for:

- Licence category (AS, AG, AT, etc.).
- Nature of licence (vessel or party-based).
- Number of commercial licences available.
- Number of communal commercial licences available.
- Licence management regime (area licensing including a number of areas, stacking, etc.).
- The type of stratification utilized (per licence, per lb, etc.).
- Vessel build (classic or modern).
- Number of vessels.

Valuation trends

The valuation trend graphs for each commercial fishery have been recently updated. It's important to keep in mind that these graphs are not inflation-adjusted and there may be instances where new data was unavailable.

Licencing information

For more detailed licensing information than what is provided in this report's summary, please consult the following sources:

IFMPs: <http://www.pac.dfo-mpo.gc.ca/fm-gp/ifmp-eng.html>

DFO Licencing: <https://www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/licence-commercial-eng.html>

Vessel valuation

The commercial fleet value for each fishery is determined by using historical data on average vessel values as a starting point but with adjustments made to account for changes in the number of vessels. While this methodology provides a useful estimate, it is not without limitations. Specifically, given the significant changes to the Pacific fishing fleet over the past decade, these values may not always reflect current market pricing as of 2022.

To arrive at the total number of vessels, duplicates were eliminated from the overall count, as certain licences allow stacking multiple licences onto a single vessel. The vessels were subsequently categorized as either modern or classic, with the former being those built after 1980 and the latter being those built prior to 1980. Since this parameter was utilized to differentiate between vessels, those that did not include classification information were not tallied. Consequently, the valuation does not include all vessels from the dataset.

It is important to note that the valuation of fleet vessels in this scenario is based on incomplete datasets, which introduces a degree of imprecision into the estimates. Additionally, the number of licenced vessels is sourced from a single data source, which may not capture all vessels in the fleet. As a result, any conclusions drawn from the analysis should be interpreted with caution and considered in conjunction with other relevant data and information. To improve the accuracy of the estimates, it may be necessary to incorporate additional data sources or to adjust the methodology used to account for changes in the fleet over time.

SALMON- Salmon seine (AS)

Background to valuation

General	
Licence category	AS
Nature of Licence	Vessel-based
# commercial licences	207
# communal commercial licences	67
Area licencing?	2 areas (A + B)
Stacking?	Yes
Competitive or quota mgmt.?	Quota

Valuation parameters	
Licence	Per licence
Quota	n/a
Vessels	yes
Amount of trading activity in the category this year	low
Transactions reported for valuation	2
Confidence in current year valuation	low

Current valuation

Licence value on December 31, 2022

Category	# of Licences	Value/Licence \$	Total Value \$
AS Licence- Full fee	193	\$350,000	\$67,550,000
AS Licence- Reduced fee	14	\$329,000	\$4,606,000
FAS Licence - Communal commercial	67	n/a	n/a
All AS/FAS	207* (274)	\$348,580 (average value)	\$72,156,060

*not including communal commercial licences

Valuation comments

- Uncovered transactions involving AS licences, ranging from \$300,000 to \$400,000, have shown a decrease from the values recorded in 2021, which were in the range of 350,000 to \$450,000.
- There were no uncovered licences with reduced fees. However, the reduced fee amounts have been estimated by calculating the percentage difference between the full fee licences in 2020 and 2021.

Vessel value

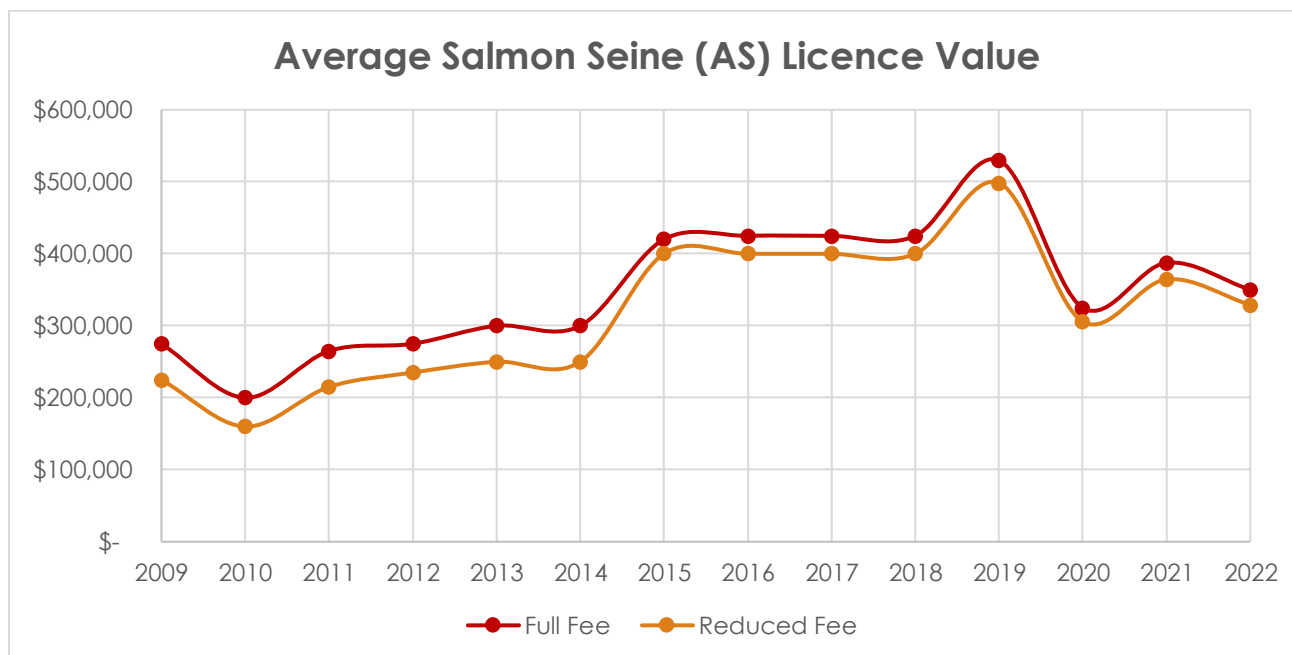
To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Salmon Seine	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	69	\$ 197,820.00	\$ 13,649,580
Modern	38	\$ 694,575.00	\$ 26,393,850
Total By Average	107	\$ 446,197.50	\$ 47,743,133

Licensing trends

- The Pacific Salmon Strategy Initiative, a new DFO program for salmon fisheries, was announced in 2021, creating an atmosphere of uncertainty in the fishery. Interviewees have expressed a sense of waiting to see how the situation will develop in the next year or two.

Recent AS licence valuations

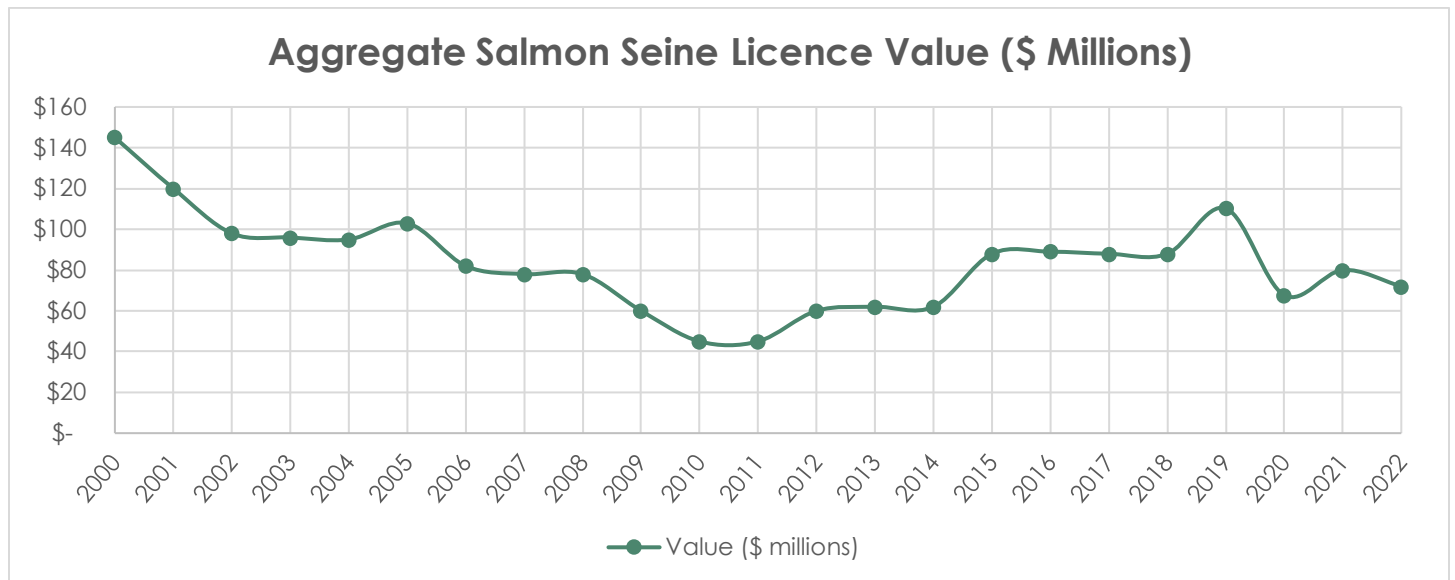


Recent AS licence lease rates

There were no instances of AS licence lease transactions that were discovered.

Aggregate value of salmon seine (AS) licences (\$ million by year)

Interviewees have stated that the overall value of licences has witnessed a notable decline in the 2022 year. The reason behind this decline, as per their views, is the uncertain future of the salmon fishery.



Outlook/commentary

The salmon seine sector faces an uncertain future considering the following observations:

- Interviewees believe that the policy and regulatory environment surrounding the salmon fishing industry is uncertain; which could lead to a reduction in commercial fishing opportunities. This uncertainty has created a perception that salmon fisheries are high-risk; resulting in a decrease in demand for licences.

SALMON - Salmon gillnet (AG)

Background to valuation

General	
Licence category	AG
Nature of Licence	vessel-based
# commercial licences	1,043
# communal commercial licences	334
Area licencing?	3 areas (C, D, E)
Stacking?	Yes
Competitive or quota mgmt.?	competitive

Valuation parameters	
Licence	Per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	2
Confidence in current year valuation	low

Current valuation

Category	# of Licences ²	Value/Licence \$	Total Value \$
AG – Full fee	690	\$38,200	\$26,358,000
AG – Reduced fee	353	\$35,207	\$12,428,071
FAG – Communal commercial	334	n/a	n/a
All AG/FAG	1,043* (1,377)	\$37,187 (average value)	\$38,786,071

*not including communal commercial licences

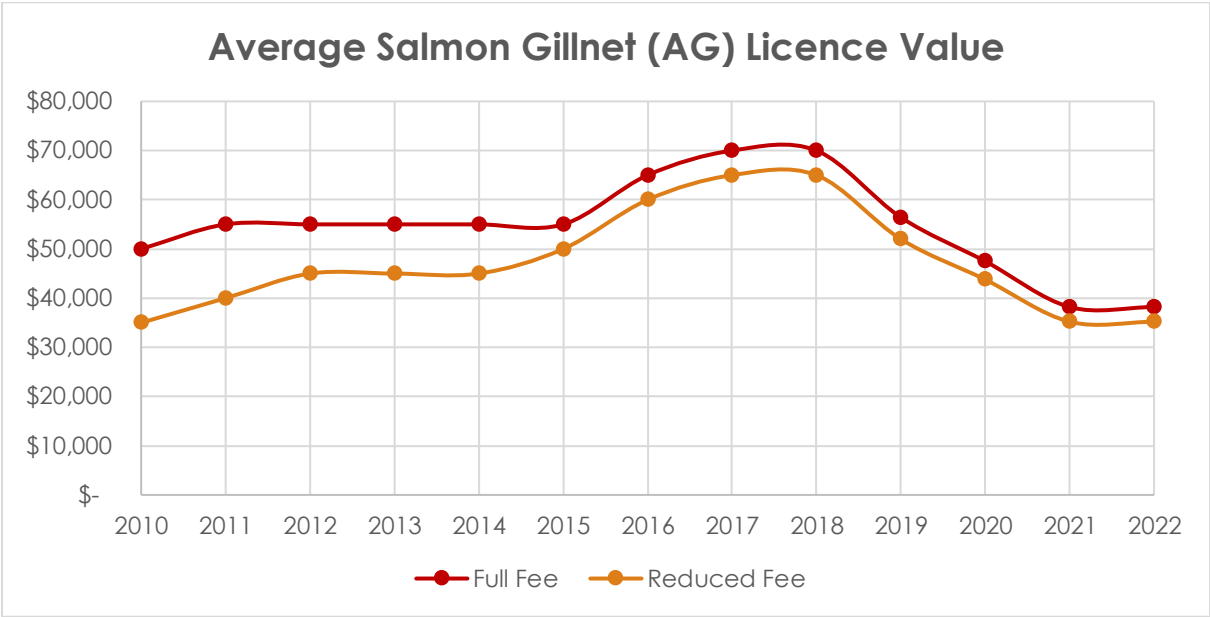
Valuation comments

- The range of licence values for full fee licences was between \$37,500 and \$60,000, and this range was observed across all areas.
- There were no transactions of licences with reduced fees. However, the reduced fee amounts have been estimated by calculating the percentage difference between the full fee licences in 2020 and 2021.

² In addition to AG and FAG licence eligibilities, there are 254 NAG licences in the gill net fishery held by the Northern Native Fishing Corporation.

Licencing trends

Recent salmon gillnet (AG) licence valuations

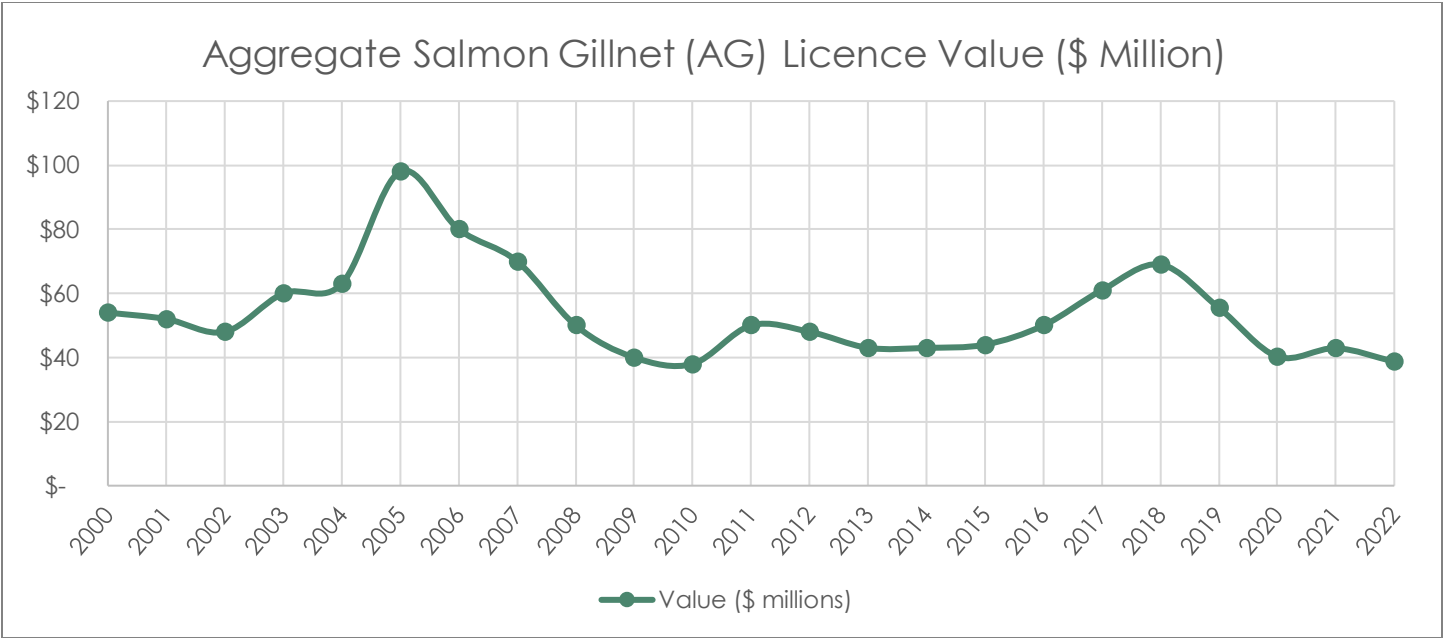


Recent salmon gillnet (AG) licence lease rates

Lease rates in 2022 were between \$1,000-\$1,800, but due to such limited fishing opportunities in 2022 rates fluctuated dramatically.

Aggregate value of salmon gillnet licences (\$ millions by year)

The aggregate value of licences has experienced a significant decline over the past year, owing to a combination of environmental impacts and broader structural and policy changes in the fishery.



Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Salmon Gillnet	#vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	286	\$ 78,488	\$ 22,447,425
Modern	230	\$ 174,195	\$ 40,064,850
Average Total	516	\$ 126,341	\$ 65,192,085

Outlook/commentary

The salmon gillnet sector faces an uncertain future considering the following observations:

- In 2022, gillnetters experienced excellent sockeye fishing opportunities in Area D Barkley Sound and in Area C of the Skeena River.
- Although there were high expectations for Area D to have a large sockeye run like five years ago the anticipated numbers did not materialize resulting in limited openings for Johnstone Strait.
- The Pacific Salmon Strategy Initiative, a new DFO program for salmon fisheries, was announced in 2021, creating an atmosphere of uncertainty in the fishery. Interviewees have expressed a sense of waiting to see how the situation will develop in the next year or two.

SALMON – Salmon troll (AT)

Background to valuation

General	
Licence category	AT
Nature of Licence	vessel-based
# commercial licences	280
# communal commercial licences	93
Area licencing?	3 areas (F, G, H)
Stacking?	Yes
Competitive or quota mgmt.?	competitive

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	3
Confidence in current year valuation	low

Current valuation

Licence value on December 31, 2022:

Category	# of Licences	Value/Licence \$	Total Value \$
AT – Full fee	274	\$138,750	\$38,017,500
AT – Reduced fee	6	\$116,550	\$699,300
FAT – Communal commercial	93	n/a	n/a
All AT/FAT Average	280* (373)	\$138,274	\$38,716,720

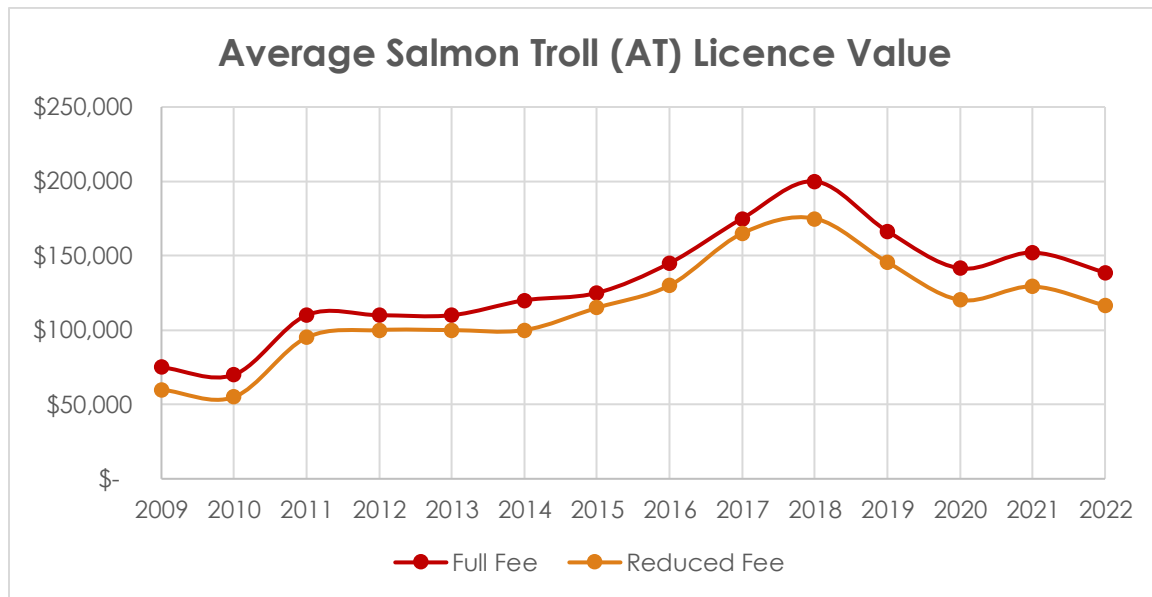
*not including communal commercial licences

Valuation comments

- Transactions for the year 2022 ranged from \$130,000 to \$150,000.
- There were no transactions of licences with reduced fees. However, the reduced fee amounts have been estimated by calculating the percentage difference between the full fee licences in 2020 and 2021.

Licencing trends

Recent AT- Salmon troll licence valuation

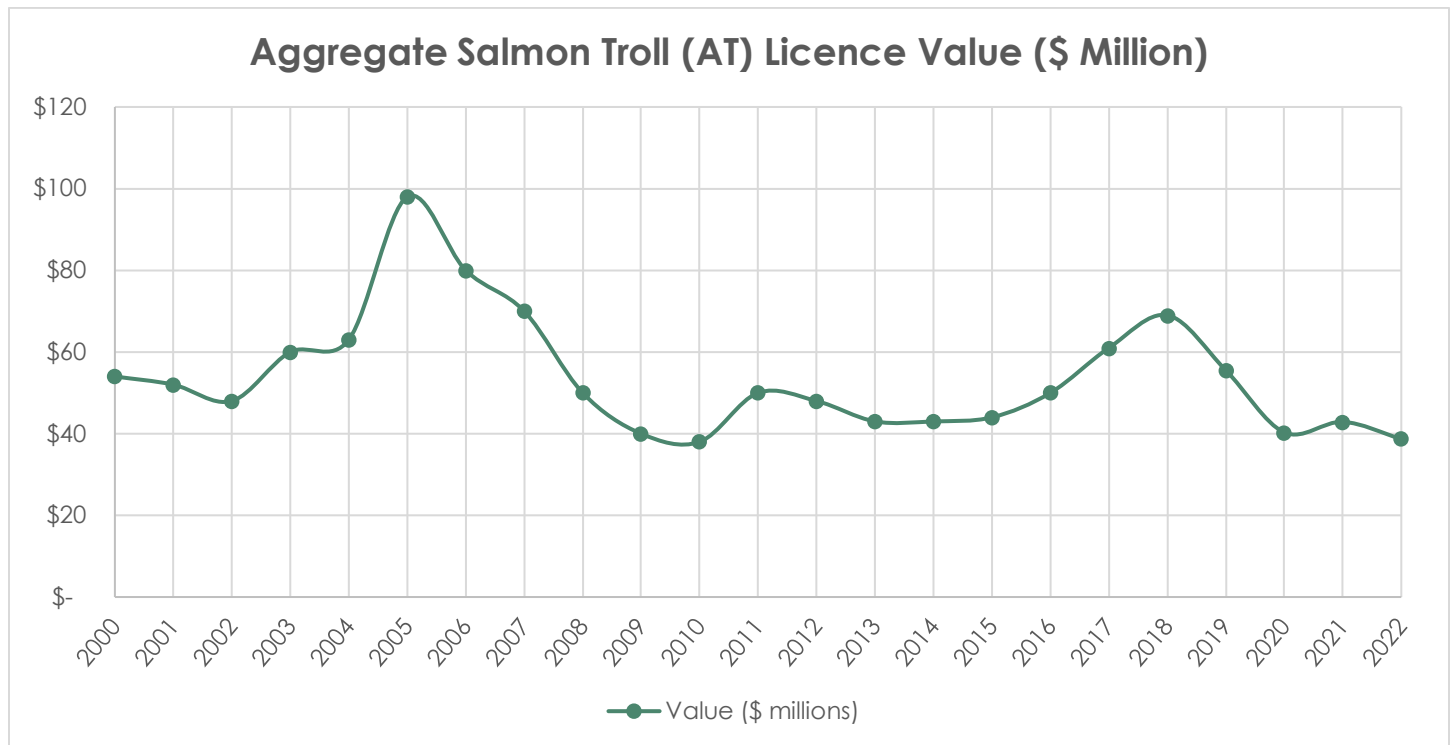


Recent AT licence lease rate (\$)

There were no instances of AT licence lease transactions that were discovered.

Aggregate value of AT licence (\$ millions by year)

The aggregate value of licences has experienced a significant decline over the past year, owing to a combination of environmental impacts and broader structural and policy changes in the fishery.



Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Salmon Troll	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	183	\$ 146,265	\$ 26,766,495
Modern	38	\$ 281,715	\$ 10,705,170
Average Total	221	\$ 213,990	\$ 47,291,790

Outlook/commentary

The salmon troll sector faces an uncertain future considering the following observations:

- Salmon opportunities on the coast were limited in 2022.
- Salmon trolling is regarded as high-risk due to low stock abundance and closures.
- Due to the impacts of climate change, management decisions that limit fishing opportunities including marine protected areas closures, and reduced abundance, fishing on the coast is considered a high-risk and sporadic activity.
- The Pacific Salmon Strategy Initiative, a new DFO program for salmon fisheries was announced in 2021, creating an atmosphere of uncertainty in the fishery. Interviewees have expressed a sense of waiting to see how the situation will develop in the next year or two.

SALMON- Yukon River (AYR)³

Background to valuation

General	
Licence category	AYR
Nature of Licence	Fisher based – Gillnet and Fishwheel only
# commercial licences	30
# communal commercial licences	12
Area licencing?	3 areas: Yukon, Stewart, Pelly
Stacking?	No
Competitive or quota mgmt.?	Competitive

Valuation parameters	
Licence	Per licence
Quota	n/a
Vessels	No
Amount of trading activity in the category this year	low
Transactions reported for valuation	0
Confidence in current year valuation	low

Current valuation

No licence transactions reported for 2022

Category	# of Licences	Value/Licence \$	Total Value \$
AYR Licence- Full fee	30		
FAYR Licence - Communal commercial	8	n/a	n/a
All AYR/FAYR	38		

Valuation comments

- In March 1985, the United States and Canada agreed to co-manage the Yukon River under the Pacific Salmon Treaty (PST) and established the Yukon River Salmon Agreement (YRSA).⁴
- Yukon River has 3 managed areas: Yukon River, Stewart River, and Pelly River which have primarily chinook and chum fisheries.
- Yukon River has been closed for commercial fishery in 2021 and 2022 due to low escapement numbers.

³ new to report

⁴ Yukon River chinook, fall chum and coho salmon integrated fisheries management plan summary 2019 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/smon-yukon-ifmp-pgip-sm-eng.html>

SALMON- Stikine River (ATBR)⁵

Background to valuation

General	
Licence category	ATBR
Nature of Licence	Party based – Gillnet
# commercial licences	23 (6 upper + 17 lower)
# communal commercial licences	12
Area licencing?	2 areas - upper and lower Stikine
Stacking?	No
Competitive or quota mgmt.?	Competitive

Valuation parameters	
Licence	Per licence
Quota	n/a
Vessels	No
Amount of trading activity in the category this year	low
Transactions reported for valuation	0
Confidence in current year valuation	low

Current valuation

No licence transaction for 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
ATBR Licence- Full fee	16		
FATBR Licence - Communal commercial	8	n/a	n/a
All ATBR/FATBR	24		

Valuation comments

- Stikine River is co-managed with DFO, Alaska and Tahltan First Nation under the Pacific Salmon Treaty.⁶
- Primarily a chinook, sockeye and coho fishery.
- One commercial opening in 2022 due to low escapement levels.

⁵ new to report

⁶ Yukon River chinook, fall chum and coho salmon integrated fisheries management plan summary 2019 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/smon-yukon-ifmp-pgip-sm-eng.html>

PELAGICS - Roe herring seine (HS)

Background to valuation

General	
Licence category	HS
Nature of Licence	party-based
Commercial licences #	241
Communal licences #	11
Area licencing?	5 areas
Stacking?	yes
Competitive or quota mgmt.?	pools (equal sharing)

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	7
Confidence in current year valuation	med

Current Valuation

Licence value on December 31, 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
HS - Full fee	195	\$108,571	\$21,171,345
HS - Reduced fee	46	\$103,142	\$4,744,532
FHS - Communal commercial	11	n/a	n/a
All HS/FHS	241* (252)	\$107,535(average value)	\$25,915,874

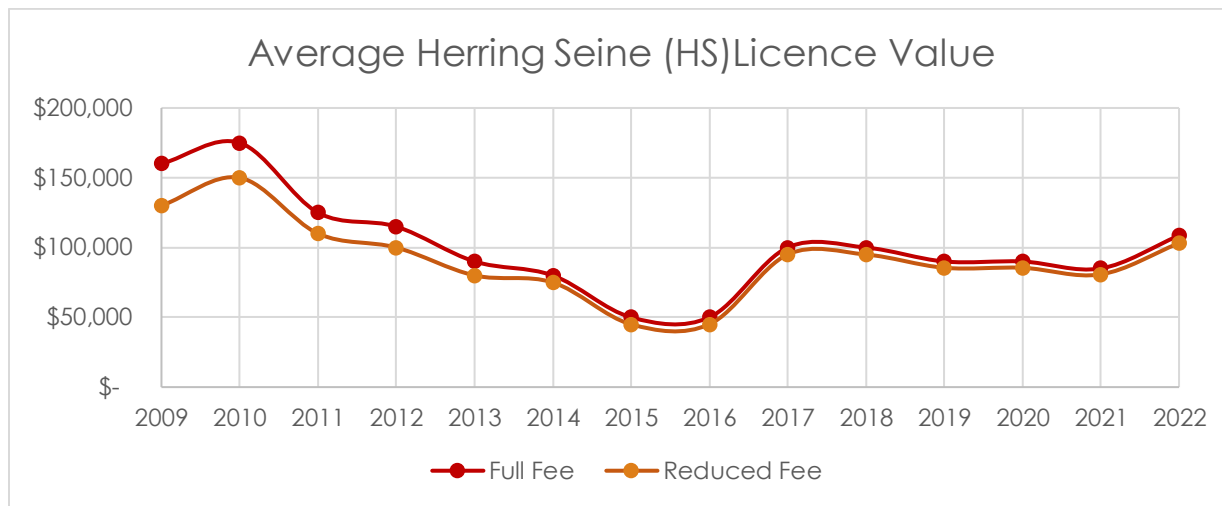
*not including communal commercial licences

Valuation comments

- Full fee licences ranged between \$50,000 to \$120,000, with industry experts noting that the market price was likely around \$100,000 or lower.
- No reduced fee licence transactions were uncovered. Reduced fee values have been estimated based on the percentage difference of full-fee licences from 2019 to 2020.

Licencing trends

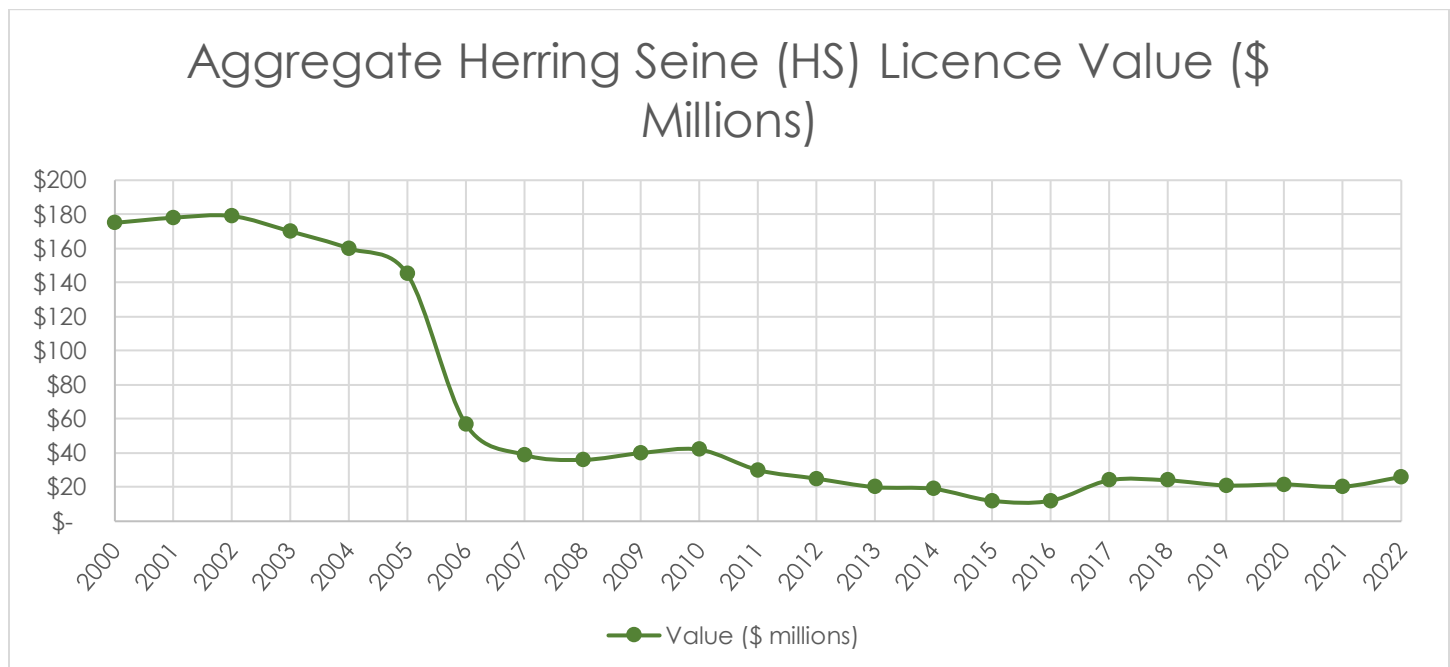
Recent HG licence valuation



Recent HS licence lease rates (\$)

There were no instances of HS licence lease transactions that were discovered.

Aggregate value of HS licence (\$ millions by year)



Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided.

Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Herring Seine	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	55	\$ 188,160	\$ 10,348,800
Modern	33	\$ 788,130	\$ 26,008,290
Average Total	88	\$ 488,145	\$ 42,956,760

Outlook/commentary

The following observations summarize the outlook for the roe herring seine fishery:

- This was a challenging year for the fishery, with COVID-19 causing the closure of the main export market, Japan. However, industry experts commented that broader socio-cultural changes have led to a resurgence of roe herring consumption amongst youth in Japan, boding well for a fishery that saw declining licence values only until 4 years ago.

PELAGICS - Roe herring gillnet (HG)

Background to valuation

General	
Licence category	HG
Nature of Licence	party-based
# Commercial licences	979
# communal commercial licences	288
Area licencing?	5 areas
Stacking?	yes
Competitive or quota mgmt.?	pools (equal sharing)

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	high
# Transactions reported for valuation	~12
Confidence in current year valuation	high

Current valuation

Licence value on December 31, 2022.

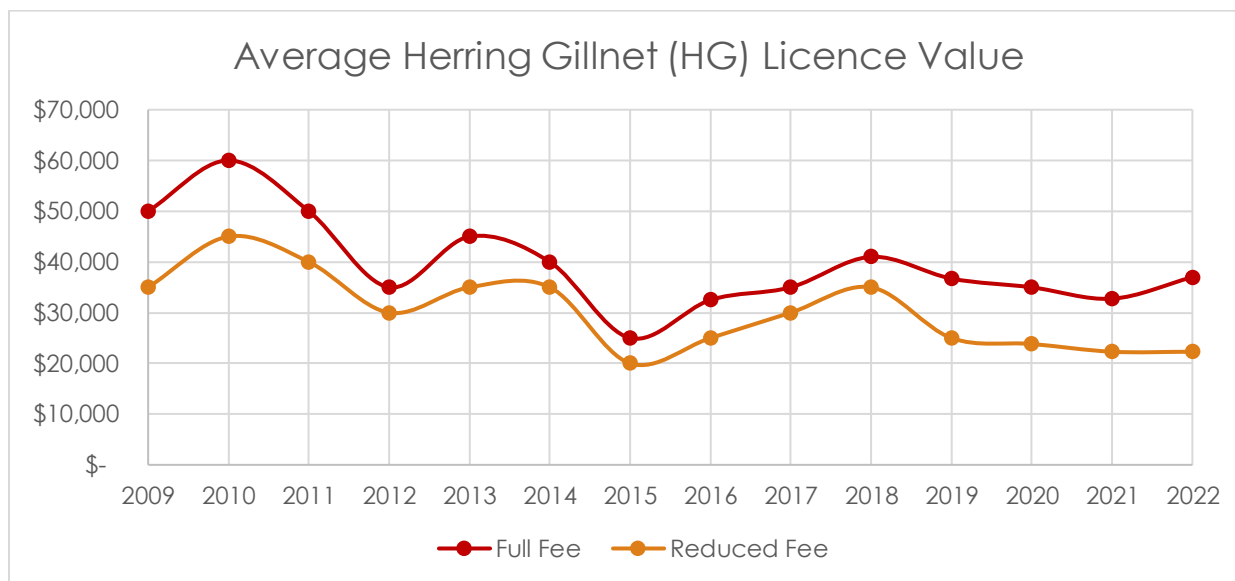
Category	# of Licences	Value/Licence \$	Total Value \$
HG - Full fee	740	\$37,000	\$27,380,000
HG - Reduced fee	239	\$22,299	\$5,329,461
FHG - Communal commercial	280	n/a	
All HG/FHG	979* (1,259)	\$33,411(average value)	\$32,709,369

Valuation comments

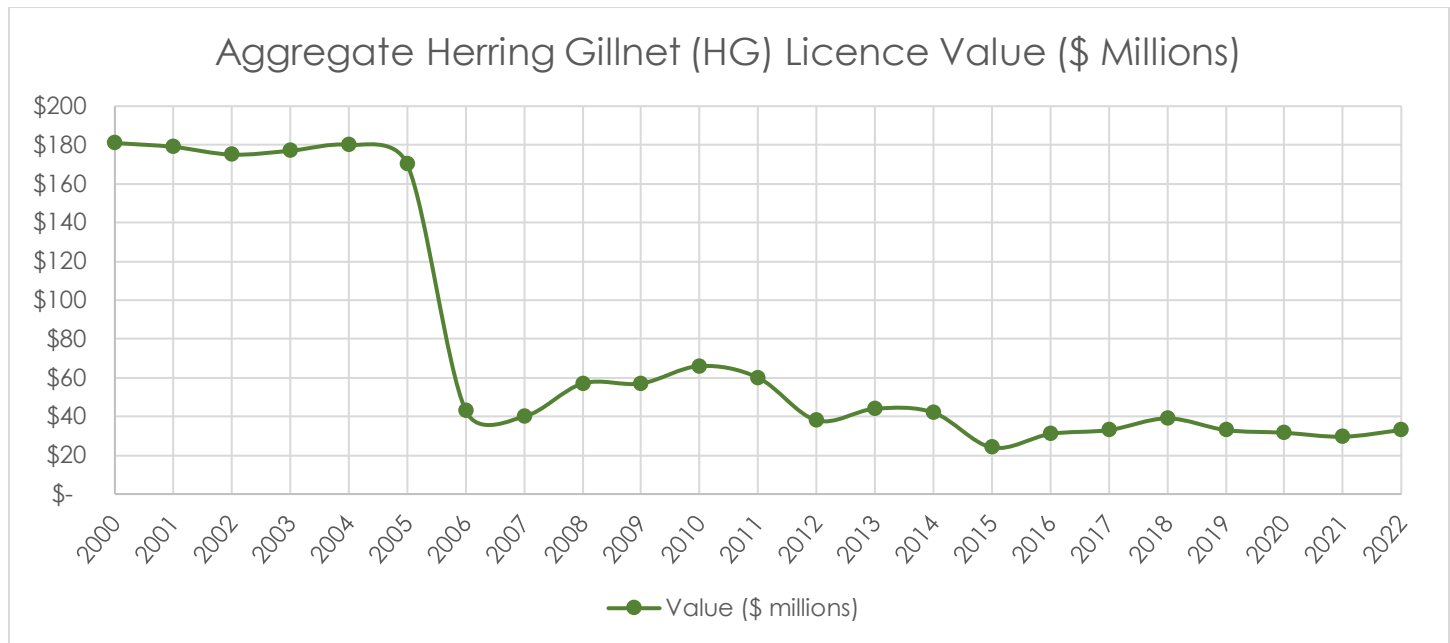
- Licence values for the 2022 year ranged from \$33,000 - \$39,000 from the 12 transactions that were reported.
- No reduced fee licence transactions were uncovered. Reduced fee values have been estimated based on the percent difference in full-fee licences from 2020 to 2021.
- Since 2018, the values for full-fee licences have decreased, and there is uncertainty about the future viability of the herring fishery due to the total allowable catch and stock abundance, which may be impacting licence values. Despite this, these licences are in high demand and are selling quickly when available, according to industry experts.

Licencing trends

Recent HG licence valuation



Aggregate value of HG licences (\$ millions by year)



Recent HG licence lease rates (\$)

HG licences leased in the range of \$3,000 in 2022 however, we had limited verification of this value.

Outlook/commentary

- The herring fishery is perceived as high-risk for new entrants due to changes in total allowable catch each season and declining stock abundance, leaving the future of the fishery in question.
- Interviewees talk about some positive news in the herring gillnet fishery, as there has been a resurgence in demand from Japan due to youth consuming more herring roe. However, it remains to be seen if this will be enough to overcome the challenges posed by reducing stock abundance.⁷

⁷ Please refer to the last paragraph on page three of this report

PELAGICS - Spawn on kelp (J)⁸

Background to valuation

General	
Licence category	J
Nature of Licence	party based
Commercial licences #	38
Communal licences #	10
Area licencing?	
Stacking?	no
Competitive or quota mgmt.?	pools (equal sharing)

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	no
Amount of trading activity in category this year	low
Transactions reported for valuation	0
Confidence in current year valuation	low

Current valuation

Restriction on licence nomination (non-transferability) with this licence, therefore, no market value.

Category	# of Licences	Value/Licence \$	Total Value \$
J - Full fee	28		
FJ - Communal commercial	10	n/a	n/a
All J/FJ	38		

Valuation comments

- Closed to commercial harvest in 2022.
- Most licences are held by First Nations and the remaining few are non-transferable.
- Licences are issued for the purpose of herring pond operations; wherein the herring are caught and then transferred to a pond where they spawn on the kelp that is suspended in the water. Once the herring have spawned on the kelp, it is harvested along with the spawn, brined in totes, and then sold to the Japanese market.

⁸ new to report

PELAGICS – Tuna (USA 68)

Background to valuation

General	
Licence category	USA 68
Nature of Licence	vessel-based
# commercial licences	45
# communal commercial licences	0
Area licencing?	no
Stacking?	no
Competitive or quota mgmt.?	competitive

Licence parameters	
Licence	per licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	low
Transactions reported for valuation	0
Confidence in current year valuation	med

Current valuation

Licence value on December 31, 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
USA 68 Licence	45	\$250,000	\$11,250,000

Valuation comments

- Valuation is based on 2 licences that are currently listed for sale on Pacific Boat Brokers.
- Typically, tuna fishers do not depend on the USA 68 licence unless they plan to fish in American waters. Instead, they opt for a Schedule II licence with tuna privileges, which allows them to fish in Canadian waters. Tuna fishing in Canada is somewhat unpredictable, as it is contingent on the fish migrating into Canadian waters. Some years, this may not happen until August or September. In contrast, in the US, fishing can start as early as June in most years, making it a more reliable fishery.
- The fishery primarily utilizes troll gear, and the majority of vessels range from 40 to 60 feet in length. However, in recent years, some former seine boats, which are 70 to 90 feet in length, have also geared up for tuna fishing, according to interviewees. About 90% of the tuna caught is frozen-at-sea (FAS) and delivered frozen.

PELAGICS – Sardine (ZS)

Background to valuation

Licence category	ZS
Nature of Licence	party-based
# commercial licences	25
# communal commercial licences	0
Area licencing?	No
Stacking?	No
Competitive or quota mgmt..?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	none
Transactions reported for valuation	none
Confidence in current year valuation	no valuation provided

Current valuation

Licence value on December 31, 2022.

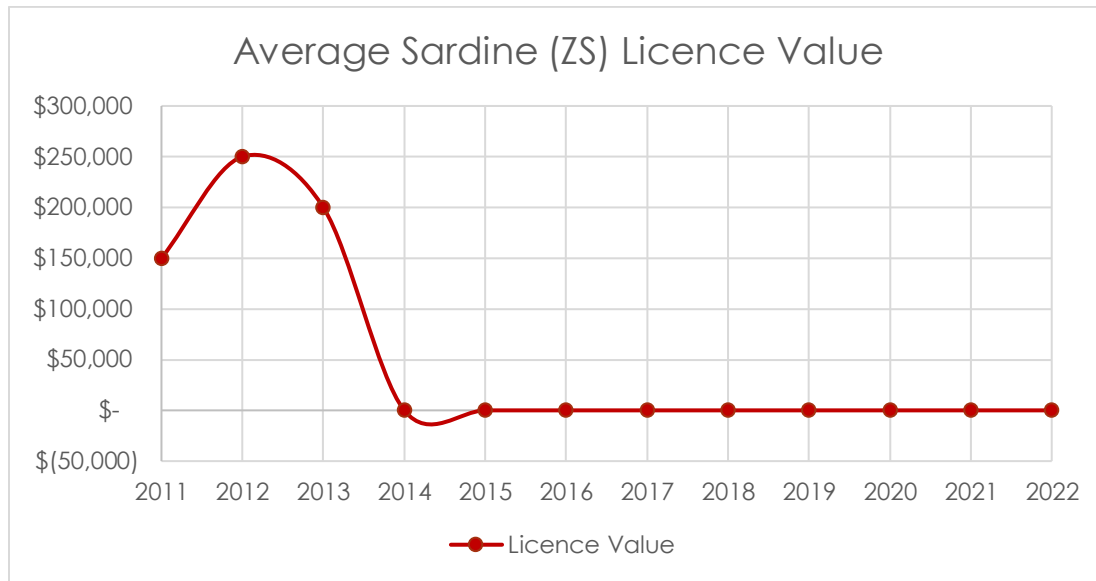
Category	# of Licences	Value/Licence \$	Total Value \$
ZS Licence	25	n/a	n/a

Valuation comments

- For the ninth consecutive season in 2022, no sardine biomass has been observed on the BC Coast, leading to a lack of harvesting opportunities.
- No transactions have been recorded for this licence in the past year, or in the last nine years, resulting in the absence of a valuation graph.

Licencing trends

Recent ZS licence valuation



Outlook/commentary

- The presence of sardines off the coast of BC is influenced by oceanic conditions and their migratory patterns.*
- When examining the history of BC Commercial Fisheries, from 1925 to 1947; numerous canneries and reduction plants were constructed solely for sardine processing. They eventually went bankrupt in 1947 when the sardines migrated away and the DFO closed the fishery.*
- Experimental fisheries were conducted in the Pacific region from 1996-2002, followed by the opening of a commercial fishery from 2002-2008, which has since been closed. *
- According to historical cycles, sardines may not make a reappearance on the BC Coast for another 31 years. This is because they have historically migrated to the coast every 50 years and stayed for a period of around 15-20 years.⁹

⁹ (including asterisks) Integrated Fisheries Management Plan summary: Pacific sardine (*Sardinops Sagax*), Pacific Region Aug. 1, 2021 to May 31, 2024 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/sardine-ifmp-pgip-sm-eng.html>

GROUND FISH – Halibut (L)

Background to valuation

General	
Licence category	L
Nature of Licence	vessel-based
# commercial licences	338
# communal commercial licences	95
Area licencing?	no
Stacking?	no
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per foot
Quota	per lb
Vessels	yes
Amount of trading activity in the category this year	med
Transactions reported for valuation	~ 5 (licences) ~ 16 (quota)
Confidence in current year valuation	med

Current valuation

Category	# of Licences	Value/Licence \$/ft Value/Quota \$/lb	Avg. Licence \$	Total Value \$
L Licence - Commercial	338	\$810	\$32,602	\$11,019,476*
FL Licence - Communal commercial	95	n/a	n/a	n/a
Halibut Quota	5,633,250 lbs	\$114	n/a	\$642,190,500
Total Value (Licences and Quota)	n/a	n/a	n/a	\$653,209,976

*calculation on number of licences and average licence value

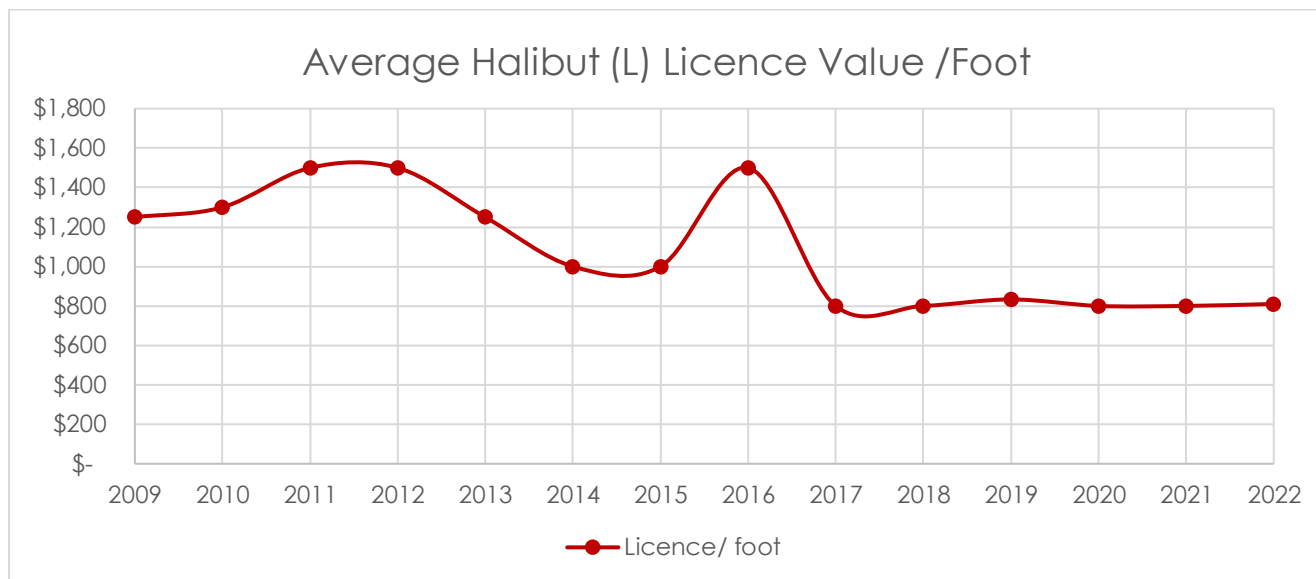
Valuation comments

- Average licence value based on \$810 per foot and 40.25 ft average vessel length is \$32,200.

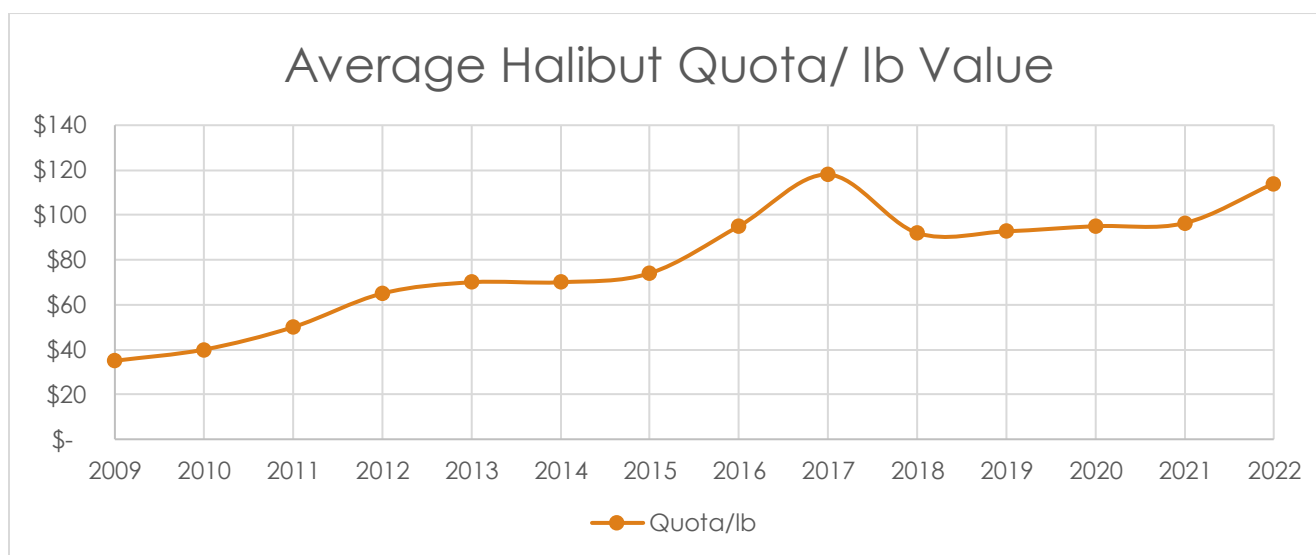
- Halibut quota ranged from \$95-125/lb, rising upward to \$128-\$130 in the Fall towards the end of the season.

Licencing trends

Recent L licence valuation

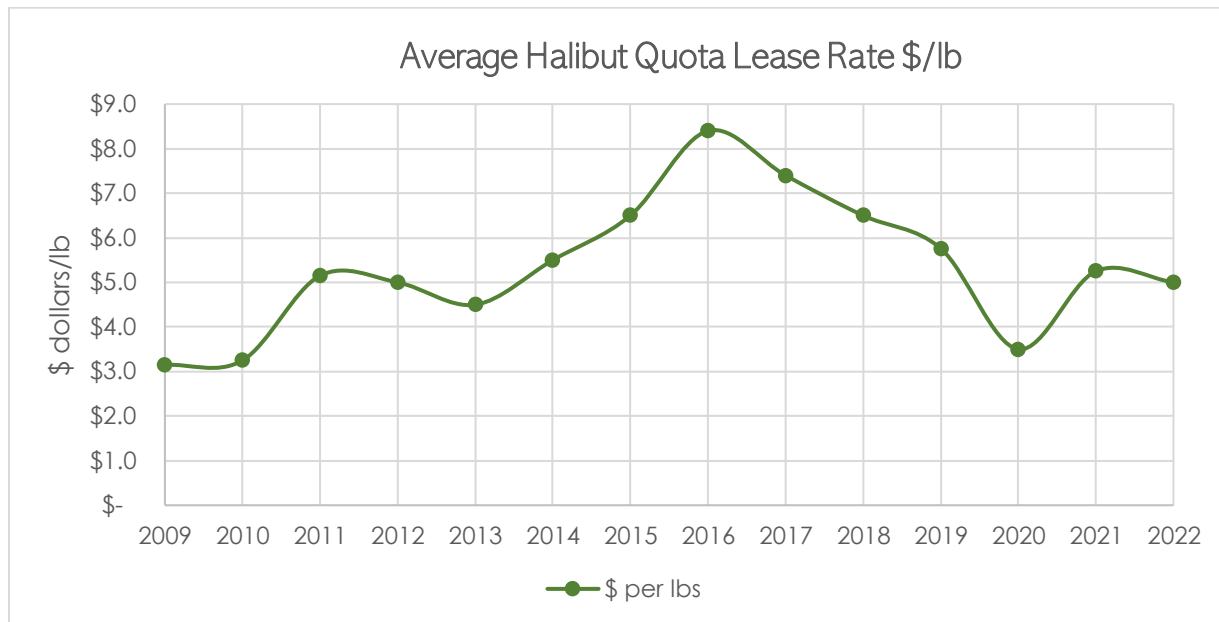


Recent Halibut quota valuation

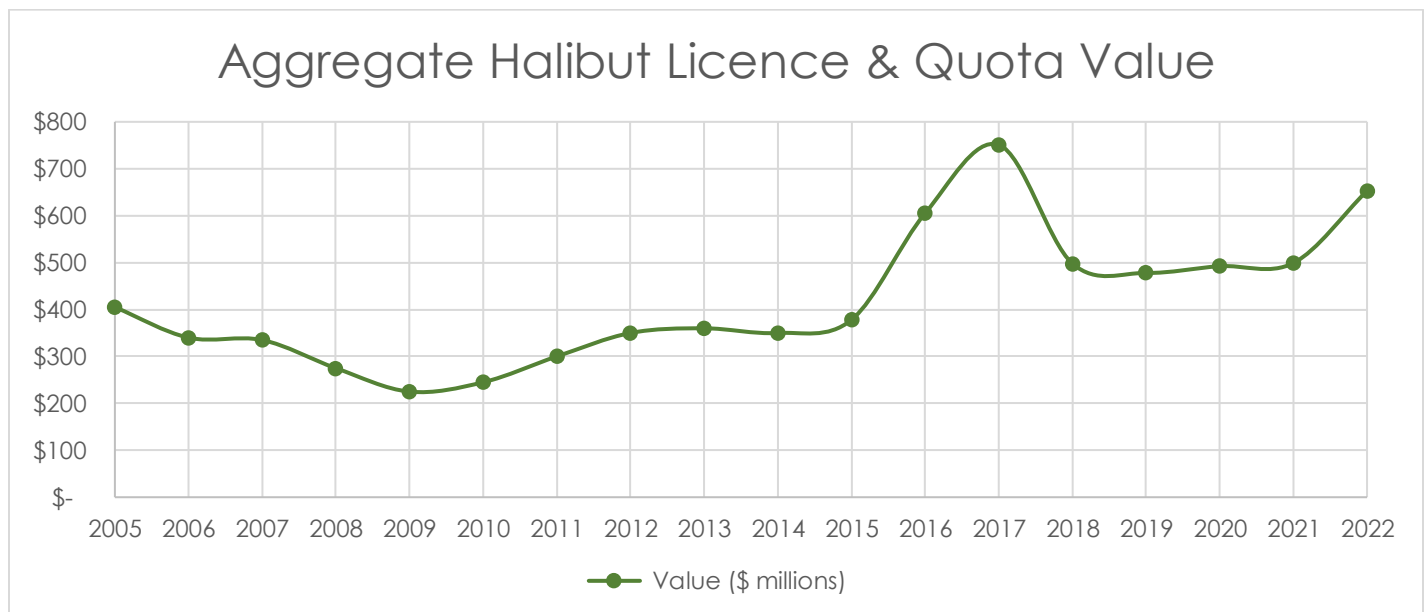


Recent halibut quota lease rates (\$ per lb)

A total of 45 transactions for halibut leasing, in 2022, were examined, and the rates varied between \$4.75 and \$5.50 per pound. After a decrease due to the drop in halibut prices caused by COVID-19, the lease rates for quotas are once again on the rise. The lease price for quotas tends to increase as the demand and prices for halibut in the market increase.



Aggregate value of L licences and halibut quota (\$ million by year)



Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Halibut	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	182	\$ 158,025	\$ 27,970,425
Modern	88	\$ 288,120	\$ 24,778,320
Average Total	270	\$ 223,073	\$ 58,668,068

Outlook/commentary

The summary for the halibut value and quota outlook is as follows:

- All interviewees spoke of the emergence of the direct-to-consumer market that has provided new opportunities to sell in-demand fish like halibut; however, accessing this market requires substantial value addition to make the product appealing to consumers.
- The marketplace is showing a decrease in small halibut quota transactions, as many retired fishers who held small blocks have already sold them, and larger blocks are now available for sale.
- Competition of several stakeholders trying to purchase quota is driving the current prices higher.
- Interviewees report that the increased price of halibut quota is also speculated to be attributed to several reports of foreign investment in the fishery quota.
- Fishers reported difficulties in catching halibut this year as the fish did not appear in regular volumes near the BC Coast in the spring and early summer, but the catch increased in early fall. It was reported that 96% of the Total Allowable Catch (TAC) was caught in BC waters.¹⁰

¹⁰ Integrated fisheries management plan summary: Groundfish - Pacific Region, 2022 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/ground-fond-ifmp-pgip-sm-eng.html>

GROUND FISH – Sablefish (K)

Background to valuation

General	
Licence category	K
Nature of Licence	vessel-based
# commercial licences	41
# communal commercial licences	7
Area licencing?	no
Stacking?	no
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per foot
Quota	per lb (j-cut)
Vessels	yes
Amount of trading activity in the category this year	med
# Transactions reported for valuation	~ 12 (quota) ~ 1 (licence)
Confidence in current year valuation	med

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/Licence \$/ft Value/Quota \$/lb \$/lb (j-cut) ¹¹	Value/Licence \$	Total Value \$
K Licence - Commercial	41	\$8,883	\$525,000	\$21,525,000 ¹³
FK Licence - Communal commercial	7	n	n/a	n/a
Sablefish Quota	3,279,169 lbs j-cut	\$80	n/a	\$262,333,510
Total Value (Licences and Quota)	n/a	n/a	n/a	\$283,858,510

¹² [Pacific Region integrated fisheries management plan, groundfish, effective February 21, 2023 \(dfo-mpo.gc.ca\)](#)

¹³ calculation on number of licences and average licence value

Valuation comments

- The average vessel length of 59.1 feet is used to calculate the average licence value based on \$525,000.
- According to industry experts over the past three years, there has been no availability of sablefish licences on the market, leading to a significant increase in price due to high demand of interested parties to purchase one.
- Quota prices for the year 2022 had a range of \$75-90 per pound, with higher prices observed primarily in the early part of the year. However, industry experts suggest that the current market price is closer to \$75 per pound.

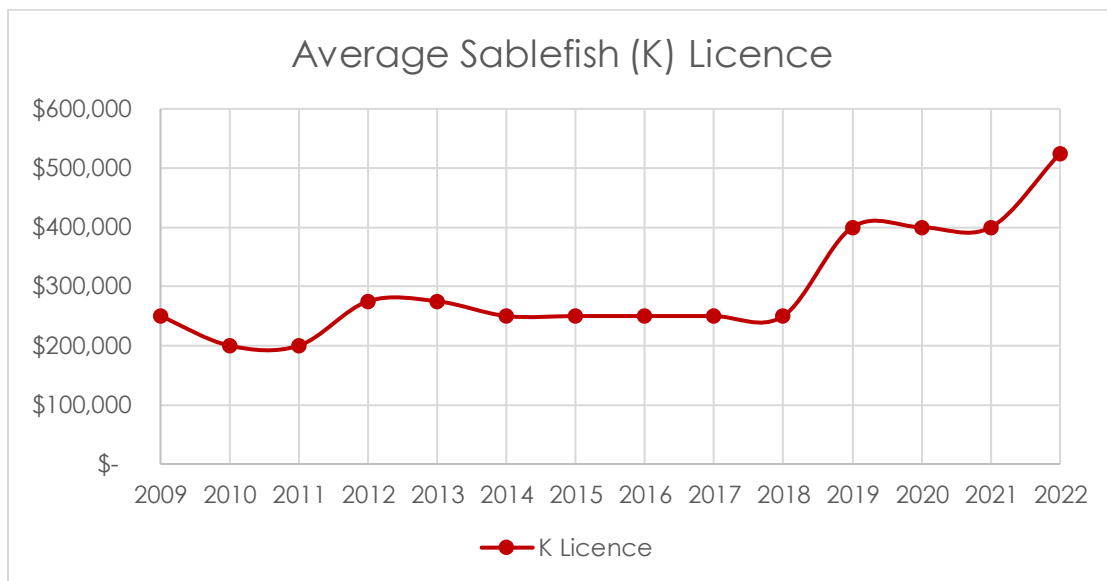
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

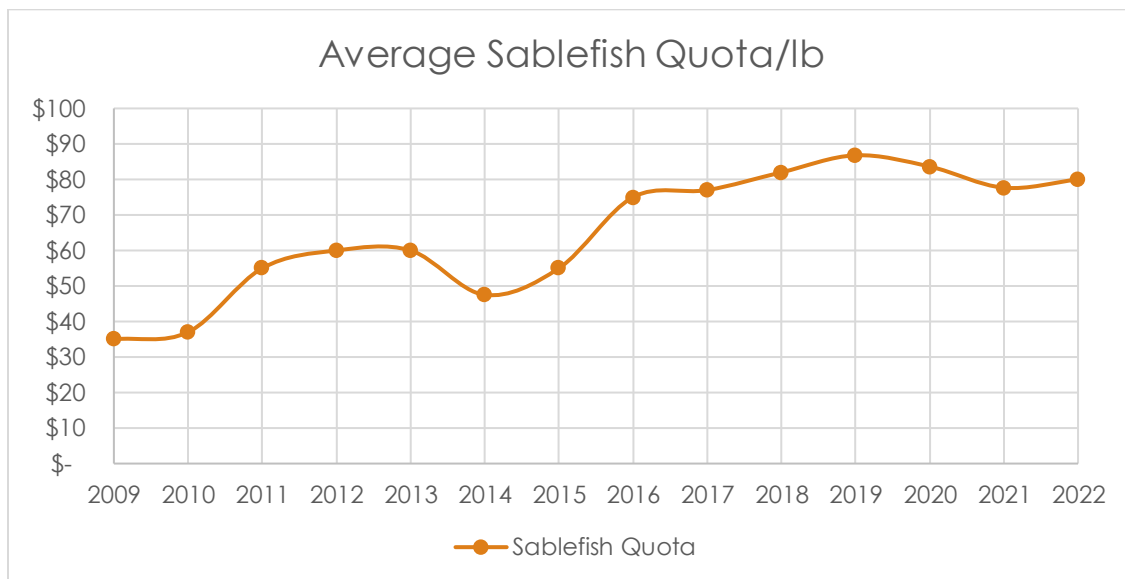
Sablefish	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	26	\$ 215,040	\$ 5,591,040
Modern	11	\$ 698,880	\$ 7,687,680
Average Total	37	\$ 456,960	\$ 16,907,520

Licence and quota trends

Recent K licence valuation

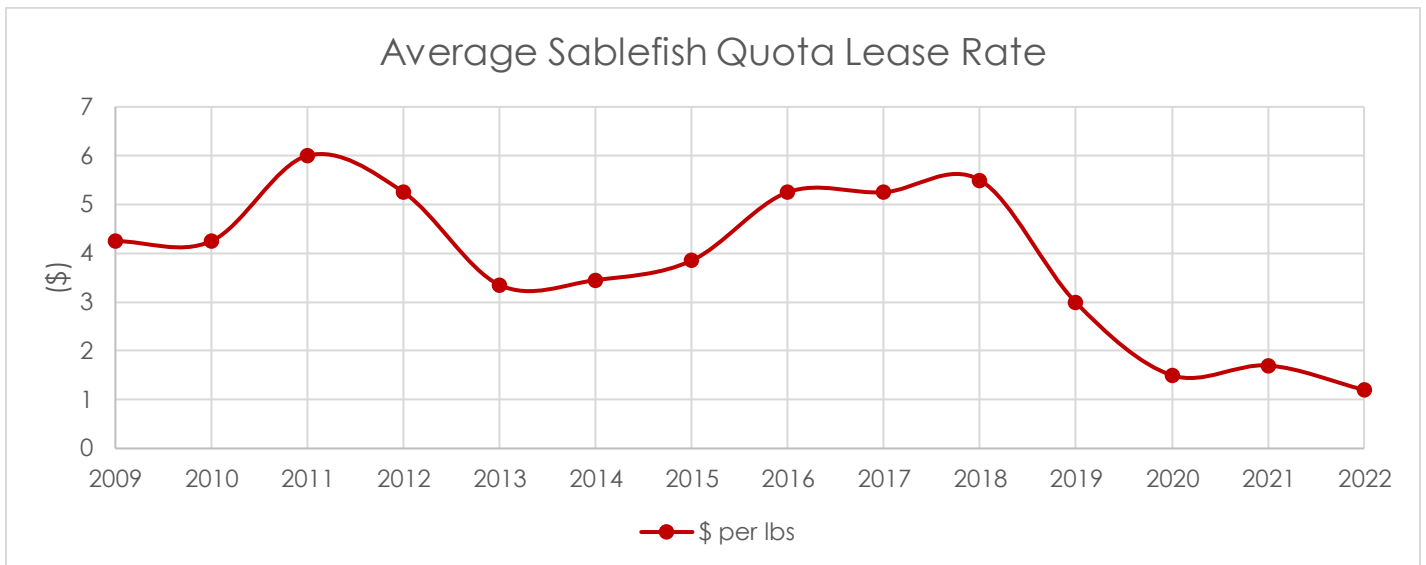


Recent K quota valuation (\$ per lb)

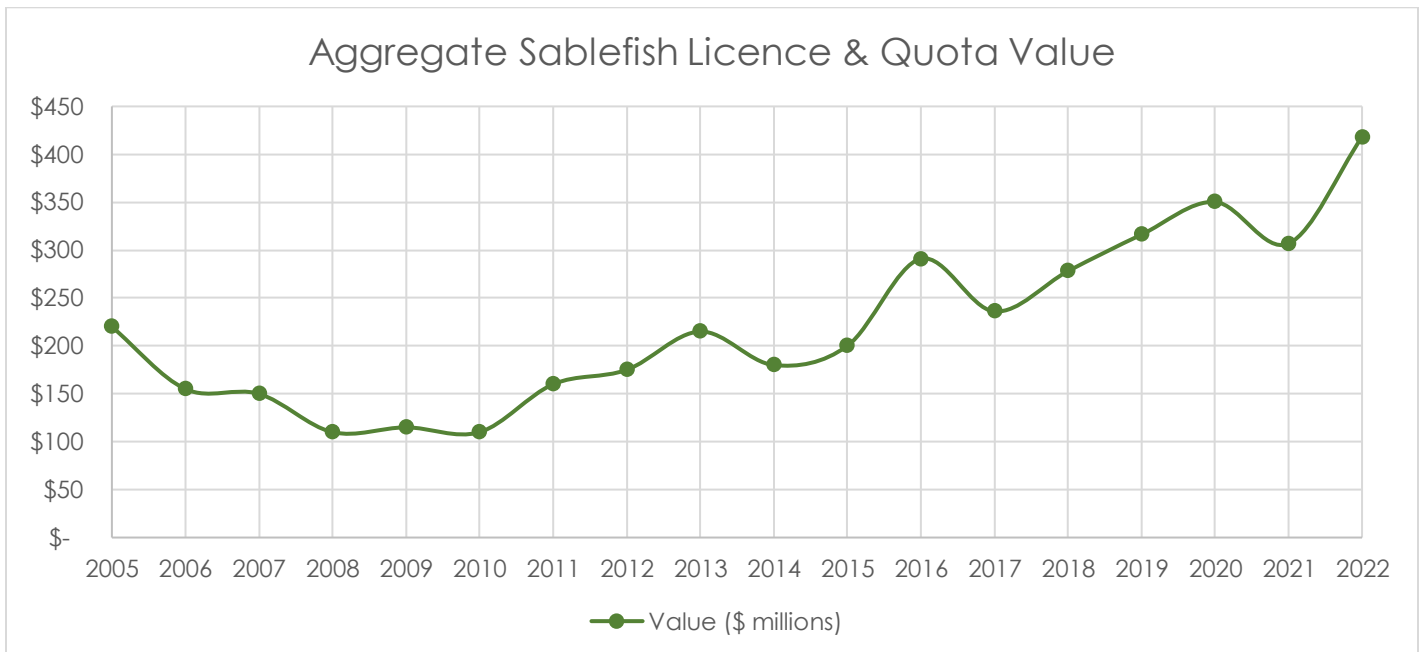


Recent sablefish quota lease rates (\$ per lb)

- Industry experts that were interviewed spoke of an excess number of fish not being caught and “left in the water,” leaving an abundance of quota to lease at a low rate of \$1.20-1.30 for the season.



Aggregate value of K licence and quota (\$ millions by year)



Outlook/commentary

Interviewees and industry experts observed that sablefish has been hit hard in several areas: exports, small-sized fish in the biomass and increased whale predation.

- The abundance of small-sized fish, which are priced significantly lower than large ones, contributes to a decline in the price of quota purchases.
- Small fish, increased predation by sperm whales, and possibly the effects of seismic activity on sablefish migration have all been contributing factors to low catch levels in the fishing industry.
- It was noted that the sablefish is a species that heavily depends on the Japanese export market, but due to COVID restrictions, the demand has declined. In contrast, the local market in Canada has shown an increase in demand, but some consumers perceive sablefish as a luxury item that is too expensive. Furthermore, many local consumers lack knowledge of how to cook it, which lowers its demand.
- Recent catch activity has seen sablefish increasing in average size which is leading fishers to be hopeful of larger-sized fish for 2023 to fetch much higher revenue for their efforts.
- Over the past three years, fishers have expressed that they have experienced more predation from whales, which feed on the catch as it is being brought aboard the vessel. According to several interviewees, 20-30 sperm whales have suddenly appeared out of nowhere, once the hydraulics have started to haul their gear, and feast on the sablefish as it is brought aboard. This is causing the fishers to be continually moving to different areas; however, the whales eventually find the vessel again. This is resulting in reduced catch sizes and less usage of quota.

GROUND FISH – Groundfish trawl (T)

Background to valuation

General	
Licence category	T
Nature of Licence	vessel-based
# commercial licences	135
# communal commercial licences	4
Area licencing?	no
Stacking?	no
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per foot
Quota	per lb
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	~ 0 (licence) ~ 0 (quota)
Confidence in current year valuation	low

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences lbs quota	Value/Licence \$/ft Value/ quota \$/lb	Avg. licence \$	Total Value \$
T Licence – Commercial	135	\$672	\$41,000	\$5,535,000
FT Licence- Communal commercial	4	n/a	n/a	n/a
Uncut quota	93,279,778 lbs	\$1.70	n/a	\$158,575,623
Hake quota (gulf and offshore)	200,869,542 lbs	\$0.20	n/a	\$40,173,908
Total value	294,149,320 lbs	n/a	n/a	\$204,284,531

Valuation comments

- The average per foot licence value is estimated to be \$672 based on a \$41,000 average licence value and an average vessel length of 61 feet. However, there were no recent licence transactions found and the licence value from the previous year was used for estimation.
- There is no available information on hake quota transactions, but reports suggest that the price has increased over the year, reaching \$1.5/lb in 2022.
- T licences are valued differently depending on their holding capacity. Smaller T licences in the \$40,000 - \$50,000 range are often purchased just to hold quota, while larger ones in the \$200,000 - \$400,000 range are sought after for their larger holding caps and sold at a premium. However, industry experts indicate that there is currently low demand for T licences, making it difficult to estimate their market price.
- Overall, the lack of recent transaction data and low demand for some licences make it challenging to estimate current market values. The information available suggests that the market for some licences, such as T licences, may be stagnant or declining. The anecdotal reports of increasing hake quota prices indicate a potential upward trend, but without recent transaction data, it is challenging to confirm this trend.

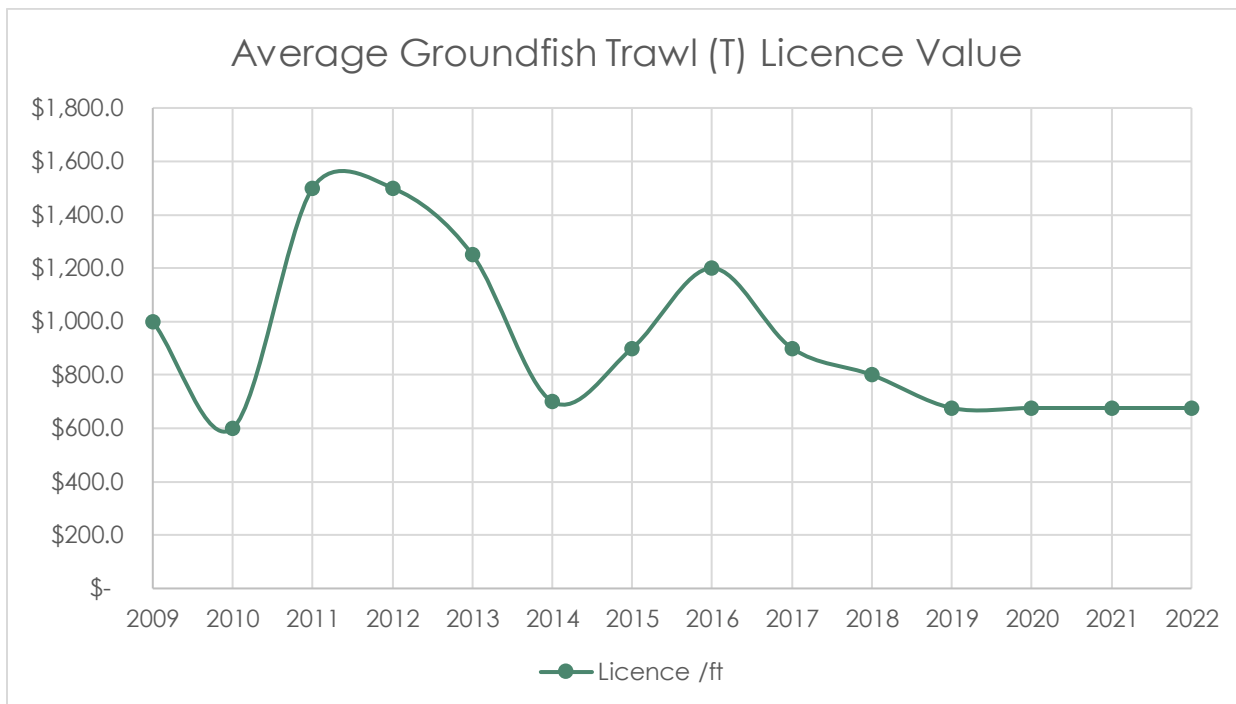
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

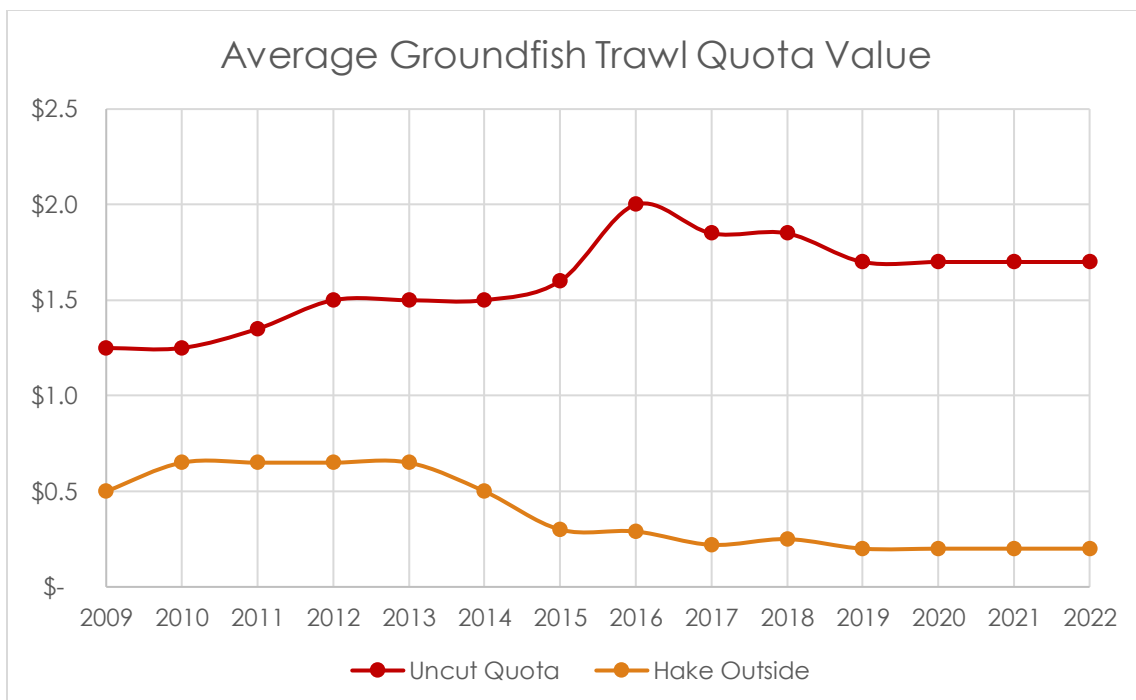
Groundfish trawl	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	69	\$ 473,025	\$ 32,638,725
Modern	36	\$ 1,478,400	\$ 53,222,400
Average Total	105	\$ 975,713	\$ 102,449,813

Licence and quota trends

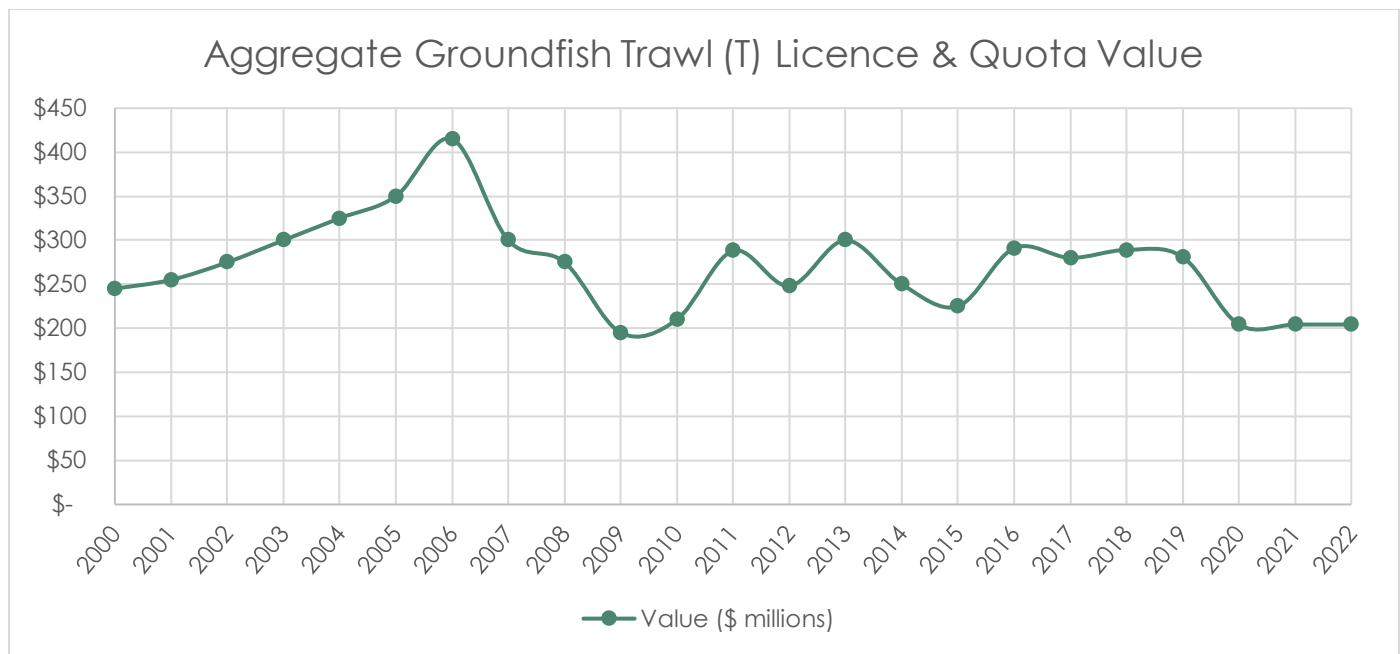
Recent T licence and trawl quota valuation (\$ per foot)



Recent T trawl quota valuation (\$ per lb)



Aggregate value of T licence and trawl quota (\$ millions by year)



Recent T licence and quota lease rates

No licence or quota lease transactions were uncovered.

Outlook/commentary

- The assigned holding capacity for each T licence has a significant impact on its worth. Licences belonging to larger vessels that possess Schedule II privileges are in high demand due to their tuna fishing opportunities.

GROUND FISH - Rockfish hook and line (ZN)

Background to valuation

General	
Licence category	ZN
Nature of Licence	party-based
# commercial licences	210
# communal commercial licences	51
Area licencing?	yes
Stacking?	no
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
# transactions reported for valuation	~ 2 (inside) ~ 5 (outside)
Confidence in current year valuation	High

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
ZN inside licence - commercial	52	\$37,500	\$1,950,000
ZN outside licence -commercial	158	\$224,000	\$35,392,000
ZN Licence - communal commercial	51	n/a	n/a
ZN/FZN total	261		\$37,342,000

Valuation comments

- Every year, a few ZN licences become available in the market as halibut fishers retire their licences. Many vessels had acquired ZN licences in the past decade to address their bycatch concerns.
- ZNO licence values ranged from \$200,000-\$252,000.
- ZNI licence values ranged from \$35,000-\$40,000.
- The licence value has decreased due to market instability caused by COVID-19 restrictions in local Asian markets. This has led to significant fluctuations in the price of live quillback, impacting demand for the licence.

Recent ZN lease rates (\$)

The lease prices for ZNI licences were around \$1,500, while for ZNO licences, they were \$7,700.

Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

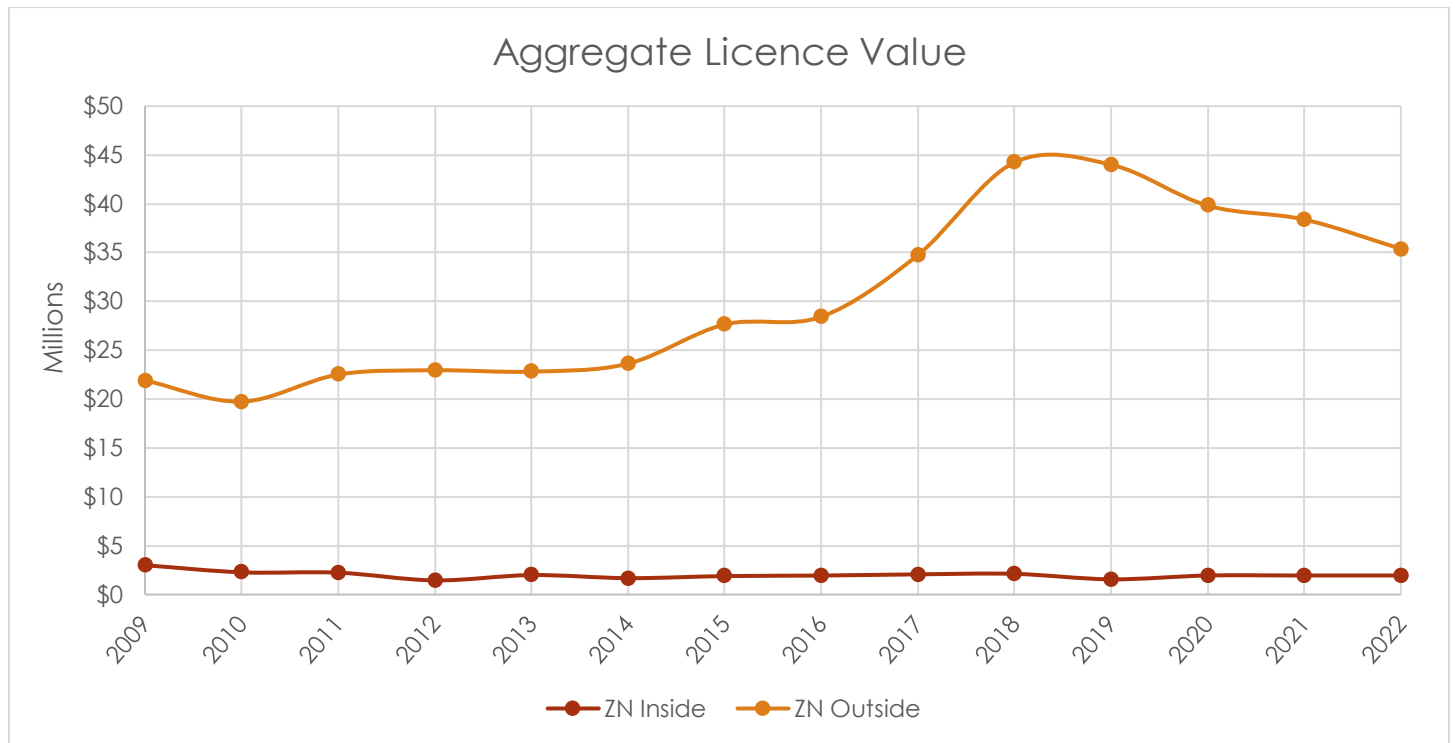
Vessel value ZN outside

ZN Outside	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	80	\$ 146,265	\$ 11,701,200
Modern	44	\$ 307,545	\$ 13,531,980
Average Total	124	\$ 226,905	\$ 28,136,220

Vessel value ZN inside

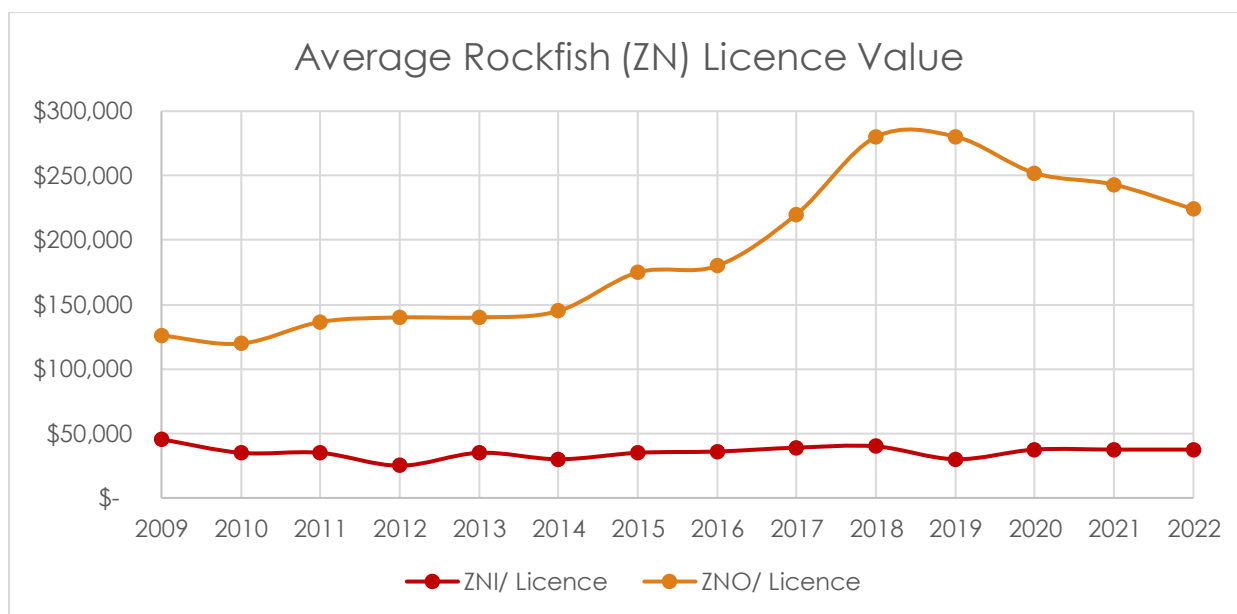
ZN Inside	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	3	\$ 80,640	\$ 241,920
Modern	5	\$ 210,735	\$ 1,053,675
Average Total	8	\$ 145,688	\$ 1,165,500

Aggregate value of ZN licences (\$ millions by year)



Licensing trends

Recent ZN licence valuations



Outlook/commentary

- ZN licences serve three primary purposes. The ZN Inside licence is intended for small vessels involved in live species fishery within the waters of Vancouver Island. The ZN Outside licence is used for larger vessels fishing for live and fresh species in coastal areas, excluding Vancouver Island. Lastly, the ZN Outside licence is primarily used on halibut or sablefish vessels to address bycatch concerns.
- A vessel can stack up to 8 ZNI licences, with the initial licence length not exceeding the maximum vessel length. However, the stacked licences can be of any size. ¹⁴
- The ZNO licence can either be a standalone licence, which should not exceed the maximum vessel length; or it can be added to a vessel that already holds another species licence, such as halibut, as long as the vessel meets the maximum length requirements. In the latter case, the ZNO licence is not subject to vessel length requirements. ¹⁵
- Both ZNI and ZNO licences primarily focus on live quillback, which are typically sold in the live Asian markets of Richmond for traditional rockfish feasts. In the past few years, COVID has had a significant impact on the ZN fishery due to restaurant closures following public health announcements. However, as restrictions were lifted, demand and prices increased again. The licence value has been most affected by the lack of demand for live quillback over the past three years due to COVID restrictions. As a result, there was often an abundance of available quillback quota for lease, because buyers were advising fishers not to fish since Asian consumers were not gathering for their traditional rockfish feast due to COVID restrictions. *
- Between 2020 and 2022, the value of ZN licences decreased considerably due to the drop in demand for live quillback caused by COVID restrictions on gatherings and restaurant closures. However, during the fall and winter of 2022, ZN fishermen began to witness a resurgence in demand for their live product. Therefore, we may expect an increase in the value of these licences soon. *

¹⁴ Integrated fisheries management plan summary: Groundfish - Pacific Region, 2023 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/ground-fond-ifmp-pgip-sm-eng.html>

¹⁵ (including asterisk) Please refer to last paragraph on page three of this report.

GROUND FISH – Lingcod and dogfish

Lingcod and dogfish are subject to an IVQ program and are not covered by specific licence categories. Nevertheless, they can be fished under the authority of any vessel-based licence.

Lingcod

Seven lingcod quota transactions were recorded for this report with values averaging around \$12/lb.

Quota value on December 31, 2022.

Category	Lbs of quota	Value (\$) /lb	Total value
Lingcod quota (H & L)	2,574,996	\$12	\$30,899,954

- In recent years, we have noticed an increase in the number of fishers who are directly catching lingcod to supplement their halibut fishing or replace salmon fishing to diversify their fishing activities.
- Fishing for lingcod occurs between April and November with 50% of the catch being sold live to the local Asian market.¹⁶
- The lease prices for lingcod in the hook and line fishery have decreased from last year's rates of \$0.25 to around \$0.20 per pound this year. On the other hand, quota prices have risen from \$9-10 per pound to \$12 per pound, driven by an increased market demand, as the values of halibut and sablefish have also increased.*
- This trend is making lingcod a more affordable choice for consumers. In 2022, the price of lingcod in the marketplace appeared to be increasing due to growing consumer demand, as the prices of halibut and sablefish have become unaffordable for some. As a result, lingcod is becoming a newly discovered protein for many consumers.*

¹⁶ (including asterisk) Please refer to last paragraph on page three of this report.

Dogfish

One dogfish quota transaction was uncovered for this report with values averaging at around \$0.11/lb.

Quota value on December 31, 2022.

Category	Lbs of quota	Value / lb	Total value
Dogfish quota (H & L)	20,987,982	\$0.11	\$2,308,678

- Since the UK export market for dogfish crashed in 2010, there has been little interest in dogfish on the BC Coast. While it is a MSC certified product and fishers discuss the large biomasses that are available, every year only one or two buyers attempt to explore alternative markets. Unfortunately, when fishers deliver dogfish, it is frequently relegated to the offal market instead of the food market.¹⁷
- Although fishers require some dogfish quota to address bycatch concerns, it is generally not a highly traded commodity.*

¹⁷ (including asterisk) Please refer to last paragraph on page three of this report.

SHELLFISH - Prawn trap (W)

Background to valuation

General	
Licence category	W
Nature of Licence	vessel-based
# commercial licences	185
# communal commercial licences	62
Area licencing?	no
Stacking?	yes
Competitive or quota mgmt.?	competitive

Valuation parameters	
Licence	per foot
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	med
Transactions reported for valuation	2
Confidence in current year valuation	med

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/foot \$	Avg value/licence \$	Total Value \$
W Licence	185	\$22,972	\$850,000	\$157,250,000
FW Licence - Communal commercial	62	n/a	n/a	n/a

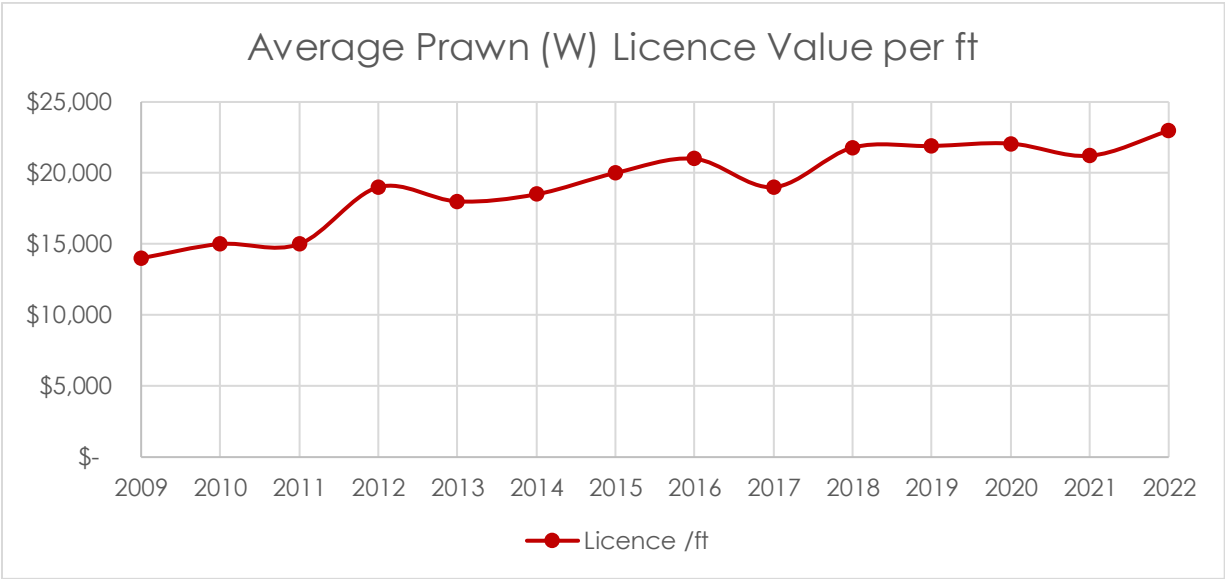
Valuation comments

- The average licence value per foot is determined based on insights from industry experts.
- Smaller licences are commonly leased and used as a “stacker” onto larger vessels. One stacker per licence is permitted.¹⁸

¹⁸ Integrated fisheries management plan summary: Prawn and shrimp (Pandalus spp.) by trap - Pacific Region, 2022/ 2023 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/prawnshrimp-trap-crevette-casier-ifmp-pgip-sm-eng.html>

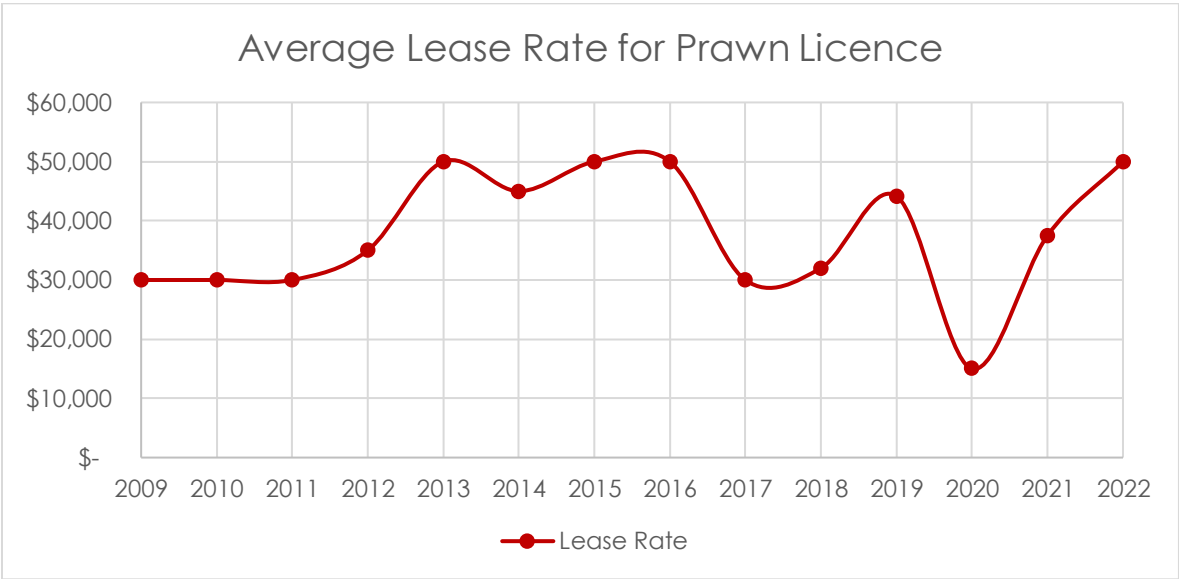
Licencing trends

Recent W licence valuation

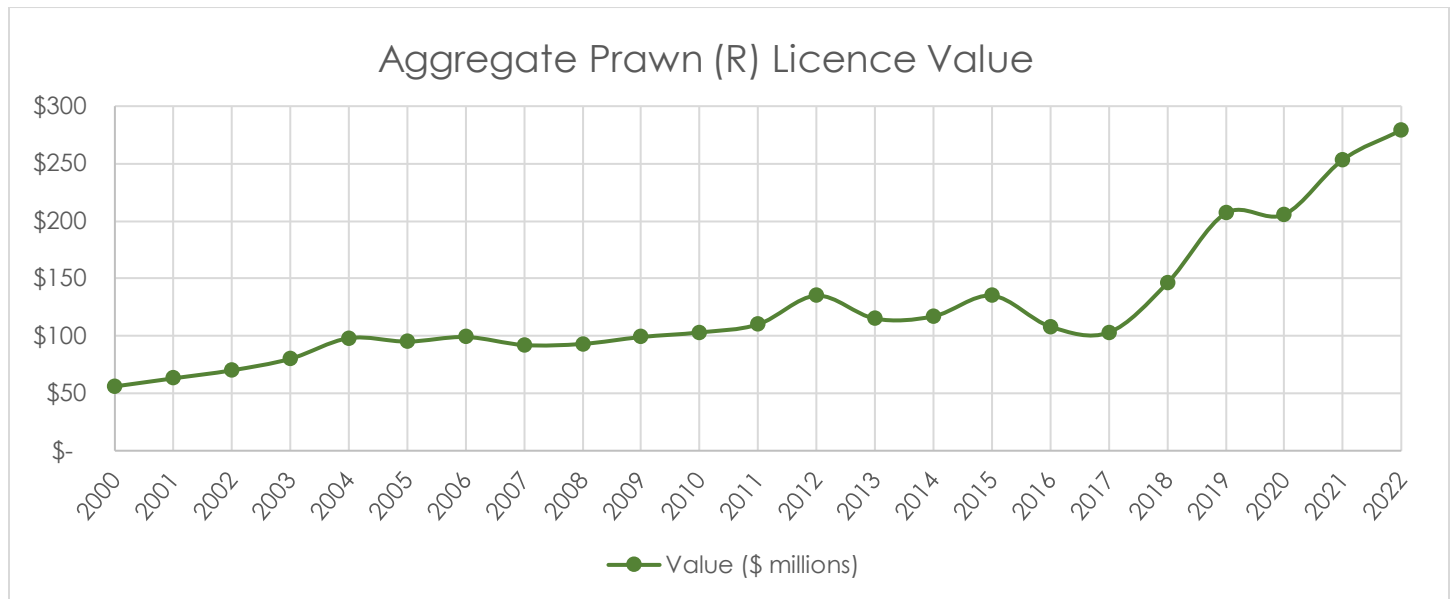


Recent W licence lease rates (\$)

The average lease price for a W licence was approximately \$45,000-50,000 and is based on 16 transactions.



Aggregate value of W licences (\$ millions by year)



Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Prawn by trap	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	56	\$ 174,195	\$ 9,754,920
Modern	74	\$ 349,440	\$ 25,858,560
Average Total	130 ¹⁹	\$ 261,818	\$ 34,036,275

¹⁹ Many vessels are not represented in this table due to the multilicences held on the vessel and stacked licences.

Outlook/commentary

According to the interviewees, the value of a prawn licence has experienced a considerable rise in the year 2022, which suggests a remarkable resurgence. They attribute this trend to the following factors:

- Prawn fishery is perceived as a promising option for young people to pursue.²⁰
- Due to COVID restrictions on dining out in Japan in 2020 and 2021, the export market to Japan crashed, compelling fishers to explore local sales at docks towards the end of their day.*
- The shift towards meeting the demand of fresh local markets, in contrast to primarily selling for the frozen-at-sea export market since COVID, prawn vessels now require smaller but high-powered vessels to reach their markets.*
- In British Columbia, the demand for live and fresh local markets has surged, with consumers queuing up for hours at the docks towards the end of the day. Most fishers report being sold out within an hour. This shift also reflects consumers' preference for "Farm to table" products, as they want to know their harvester.*

²⁰ (including asterisk) Please refer to last paragraph on page three of this report.

SHELLFISH - Crab (R)

Background to valuation

General	
Licence category	R
Nature of Licence	vessel-based
# commercial licences	186
# communal commercial licences	34
Area licencing?	7 areas
Stacking?	Allowed in Areas B,E,G,H No stacking in A,I and J
Competitive or quota mgmt.?	competitive

Valuation parameters	
Licence	per foot
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
# transactions reported for valuation	2
Confidence in current year valuation	low

Current valuation

Licence value on December 31, 2022

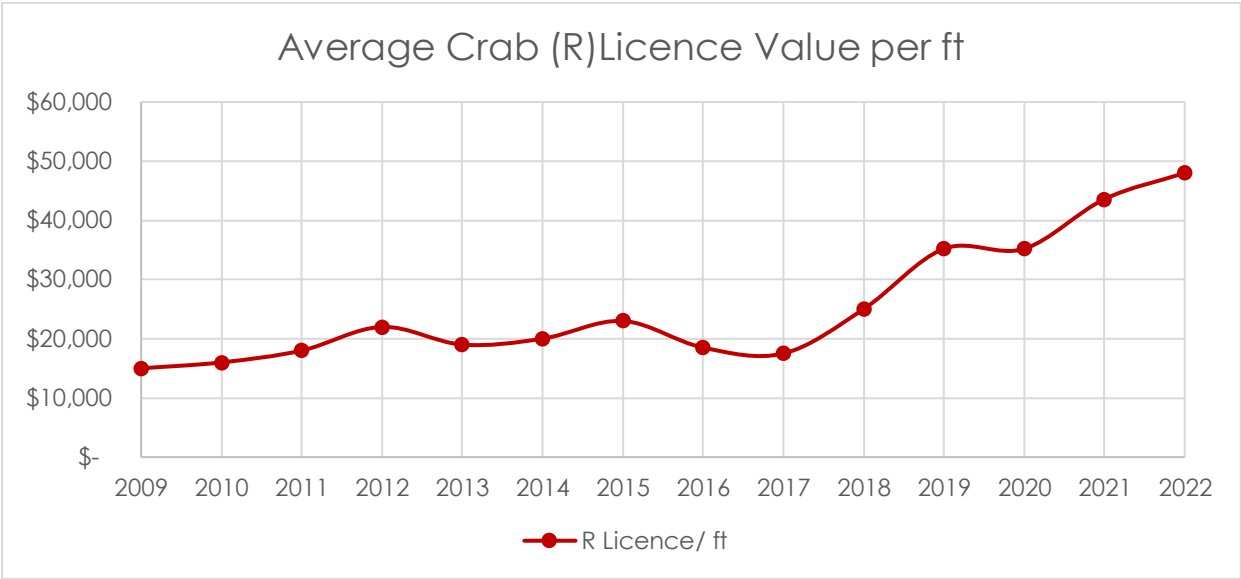
Category	# of Licences	Value/foot \$	Avg value/licence \$	Total Value \$
R Licence - Commercial	186	\$48,000	\$1,500,000	\$279,000,000
FR Licence - Communal commercial	34	n/a	n/a	n/a

Valuation comments

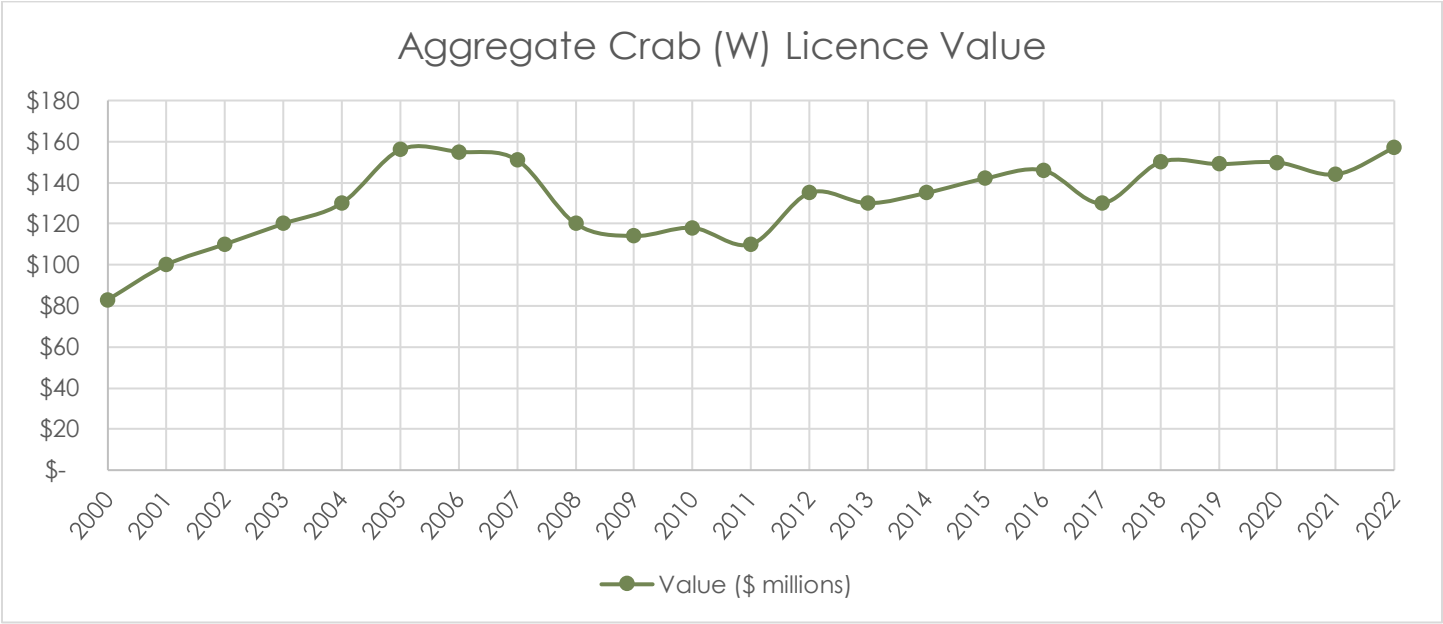
- The average licence value is calculated based on an average vessel length of 31.25 feet.
- Longer licences typically have a higher total value but a lower value per foot overall.

Licencing trends

Recent R licence valuation



Aggregate value of R licence (\$ millions by year)



Recent R licence lease rates

- R licences were leased at an average of \$36,000 for small licences less than 40 feet.
- Larger licences more than 40 feet, were leased in the range of \$45,000.

Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Category	#vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	22	\$ 154,875	\$ 3,407,250
Modern	100	\$ 376,320	\$ 37,632,000
Average Total	122	\$ 265,598	\$ 32,402,895

Outlook/commentary

- Under a crab licence, only Dungeness and Rock crabs are permitted for harvesting in Areas A, E, G, H, I, and J. Golden King crab and Red King crab fishing occasionally occurs in Area B where it is permitted under special arrangement. A significant percentage of licences are held by owner/operators. There are seven distinct areas for crab harvesting, each with its own maximum trap restrictions. Licence holders can reselect an area every three years. In Area E, they must additionally select one of three designated areas: Sooke, Tofino, or Quatsino. In certain areas (B, E-Tofino, E-Sooke, G, H, and J), stacking licences is permitted.²¹
- Industry experts commented that in 2021, there was a high demand for live crab exports to China from Vancouver. However, due to China's COVID restrictions in 2022, sales dropped substantially. Additionally, the US imported frozen King crab from Russia, which filled their freezers to capacity and reduced the demand for live Dungeness. Unlike other fisheries such as prawns, local Canadian markets did not see an increase in demand for live crab, resulting in a slow market in 2022 with less demand in the marketplace.²²
- Interviewees predict 2023 to be a strong year for the crab industry, with a resurgence in the export market demand from China as they recover from COVID lockdowns.

²¹ Integrated fisheries management plan summary: Crab by trap - Pacific Region, April 1, 2022 to March 31, 2023 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/crab-crabe-ifmp-pgip-sm-eng.html>

²² Please refer to last paragraph on page three of this report.

SHELLFISH – Shrimp trawl (S)

Background to valuation

General	
Licence category	S
Nature of Licence	Vessel-based
# commercial licences	205
# communal commercial licences	26
Area licencing?	No
Stacking?	No
Competitive or quota mgmt.?	Competitive

Valuation parameters	
Licence	per foot
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	0
Confidence in current year valuation	low

Current valuation

Licence value on December 31, 2022.

Category	# of Licences	Value/foot \$	Avg value/licence \$	Total Value \$
S Licence - Commercial	205	\$1,000	\$42,000	\$8,610,000
FS licence - Communal commercial	26	n/a	n/a	n/a

Valuation comments

- The average licence value is calculated using a \$1,000 per foot valuation and a 42-foot average vessel length. Although three licences were advertised for sale on Pacific Boat Brokers, no transactions were recorded in 2022.
- While the quoted price was based on industry expertise, it appears to be inflated considering the lack of demand for this fishery.

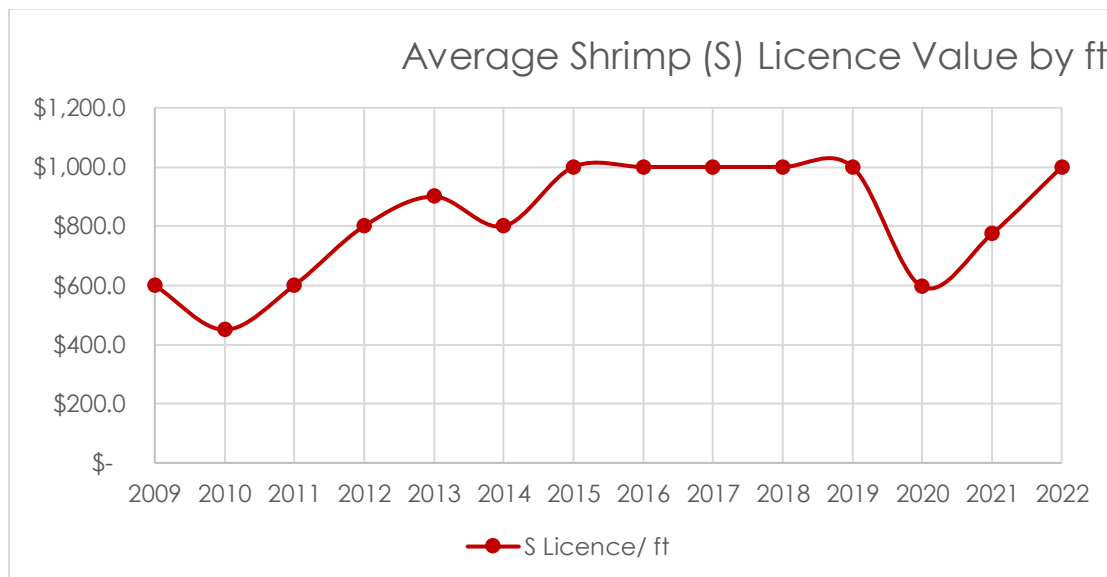
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

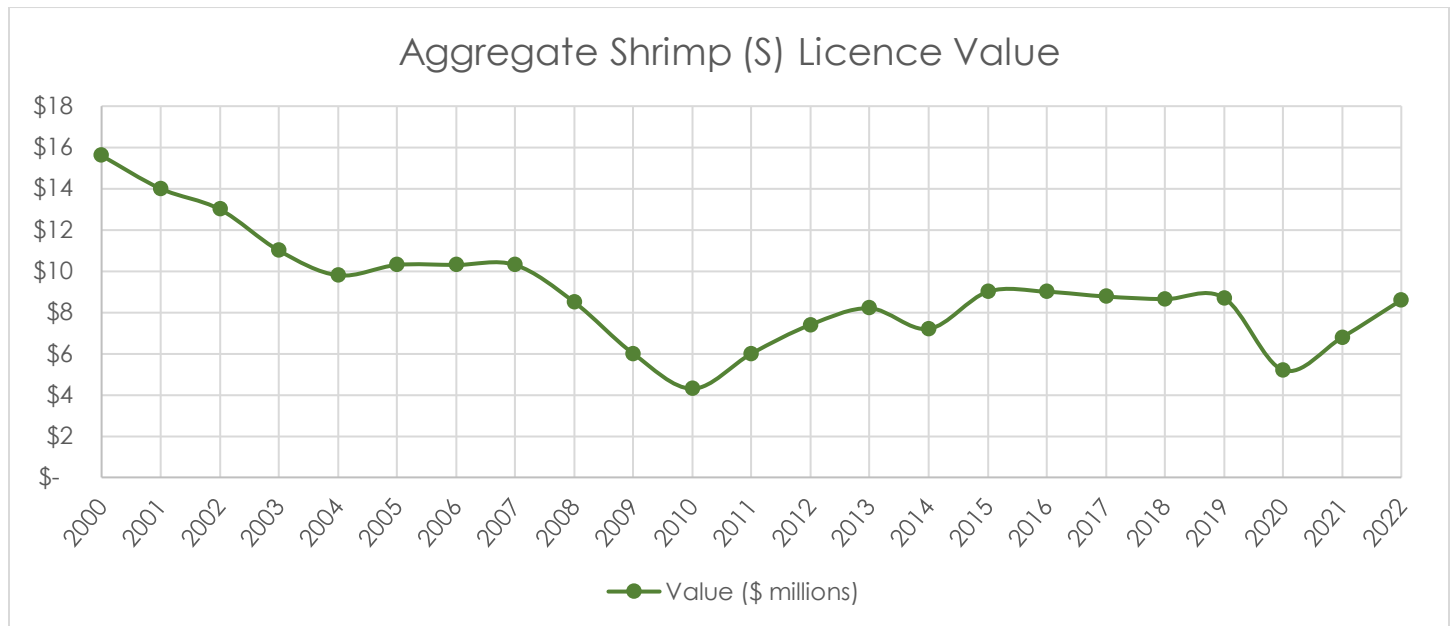
Shrimp trawl	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	119	\$ 89,229	\$ 10,618,251
Modern	58	\$ 179,550	\$ 10,773,000
Average Total	177	\$ 134,390	\$ 24,055,721

Licencing trends

Recent shrimp (S) licence valuation



Aggregate value of shrimp (S) licence (\$ millions by year)



Recent S licence lease rates

- No leasing activities were found for S licences.

Outlook/commentary

- According to industry experts, it is expected that shrimp licences will maintain their current value in the foreseeable future, with no significant fluctuations in prices or licence availability.
- The shrimp fishery has not attracted new entrants at this point in time, and industry experts and fishermen believe that there is not enough financial incentive in the industry to attract young people.

SHELLFISH - Geoduck (G)

Background to valuation

General	
Licence category	G
Nature of Licence	vessel-based
# commercial licences	50
# communal commercial licences	5
Area licencing?	Quota blocks assigned to 3 areas
Stacking?	Yes up to 5 licences max 50 blocks/vessel
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	per block
Vessels	yes
Amount of trading activity in the category this year	low
Transactions reported for valuation	~ 1 (quota block) ~ 0 (licence, without quota block)
Confidence in current year valuation	med

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/Licence \$ Value/block	Total Value \$
G Licence - commercial	50	\$250,000/licence	\$12,500,000
FG Licence - communal commercial	5	n/a	n/a
Quota blocks (10 blocks/licence)	500	\$925,000/block	\$ 462,500,000
Total	55		\$475,000,000

Valuation comments

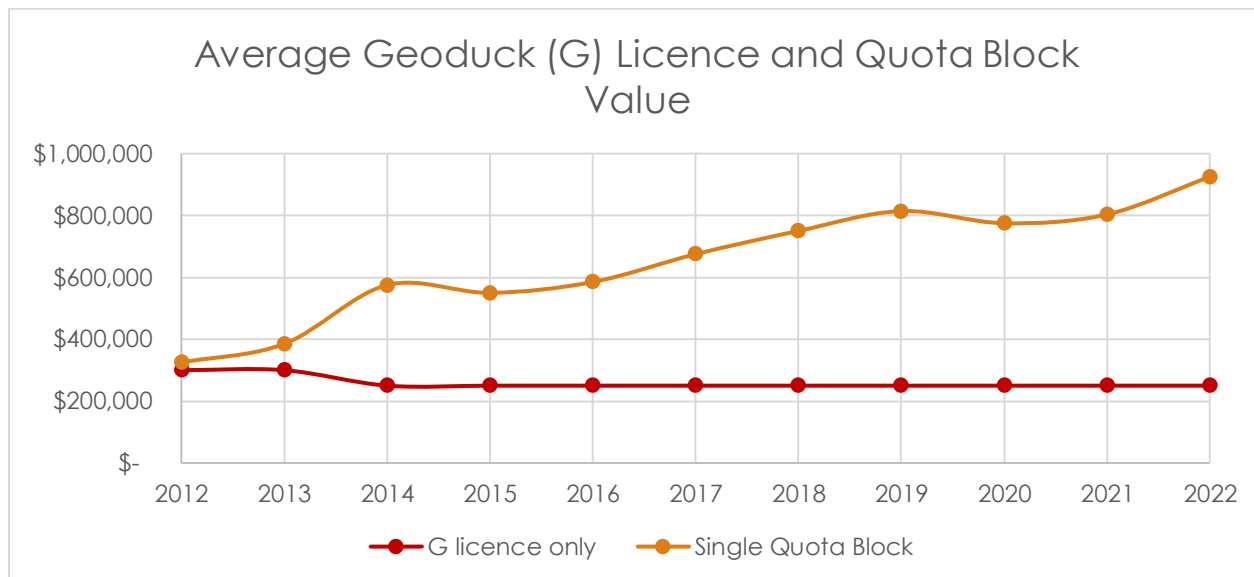
- The valuation did not reveal any transactions for G tabs (licence-only); therefore, the previous year's values along with speculative estimates from industry were utilized.
- The value of a quota block increased to \$925,000/block.

Recent G quota lease rates

- In 2022, the geoduck quota was leased for an average of \$93,600 per block, which equates to \$18 per pound. This price point is quite comparable to the previous year's average of \$90,100 for a block, or \$17 per pound. The lowest lease rate was in 2020, where the cost was \$12 per pound.

Licencing trends

Recent G licence/quota block valuation

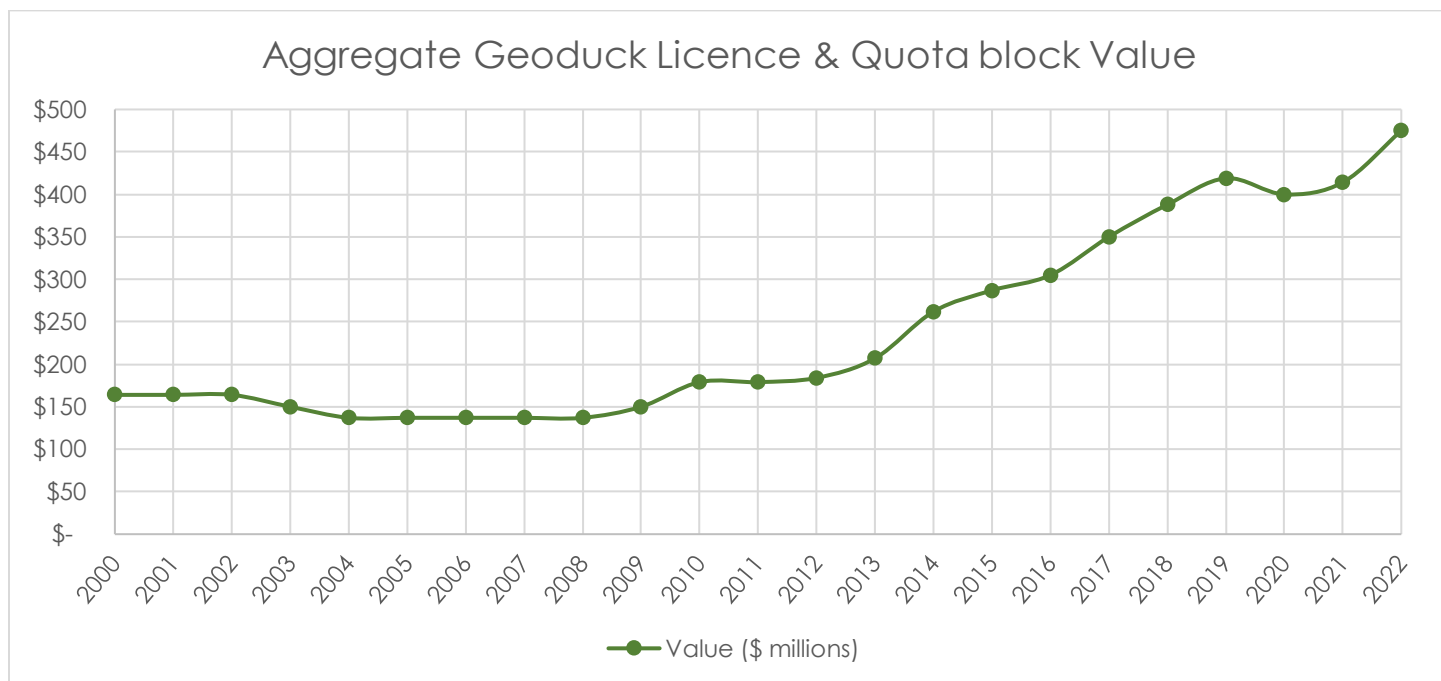


Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Geoduck	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	14	\$ 116,130	\$ 1,625,820
Modern	19	\$ 283,815	\$ 5,392,485
Average Total	33	\$ 199,973	\$ 6,599,093

Aggregate value of G licence (\$ millions by year)



Outlook/commentary

- Geoduck and horse clams are harvested by diving from a commercial fishing vessel and are typically sent by packers to the closest port for validation before being transported by truck to Vancouver. From there, they are flown live to various Asian markets. However, in recent years, some operations have opted to transport their harvested product via seaplanes, directly from the fishing grounds to larger ports, where they are then shipped to Vancouver.²³
- There are three fishing areas, namely WCVI (74 blocks), Inside waters (65 blocks), and North Coast (411 blocks), each assigned with a specific quota block allocation. The lease and purchase prices for WCVI and Inside waters tend to be higher as they require less shipping compared to the North Coast area.²⁴
- The geoduck fishery remains highly stable and sustainable, with a product that is consistently in demand in the Asian market. Local markets account for a small percentage of total sales and are primarily utilized by restaurants.

²³ Please refer to last paragraph on page three of this report.

²⁴ Integrated fisheries management plan summary: Geoduck and horse clam - Pacific Region, 2022/2023 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/geoduck-panope-ifmp-pgip-sm-eng.html>

SHELLFISH – Sea cucumber (ZD)

Background to valuation

General	
Licence category	ZD
Nature of Licence	party-based
# commercial licences	82
# communal commercial licences	3
Area licencing?	4 areas
Stacking?	yes
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
# transactions reported for valuation	1
Confidence in current year valuation	low

Current valuation

Licence value on December 31, 2022

Category	# of Licences	Value/Licence \$	Total Value \$
ZD	82	\$1,500,000	\$123,000,000

Valuation comments

- Valuation was based on one sea cucumber transaction in 2022.

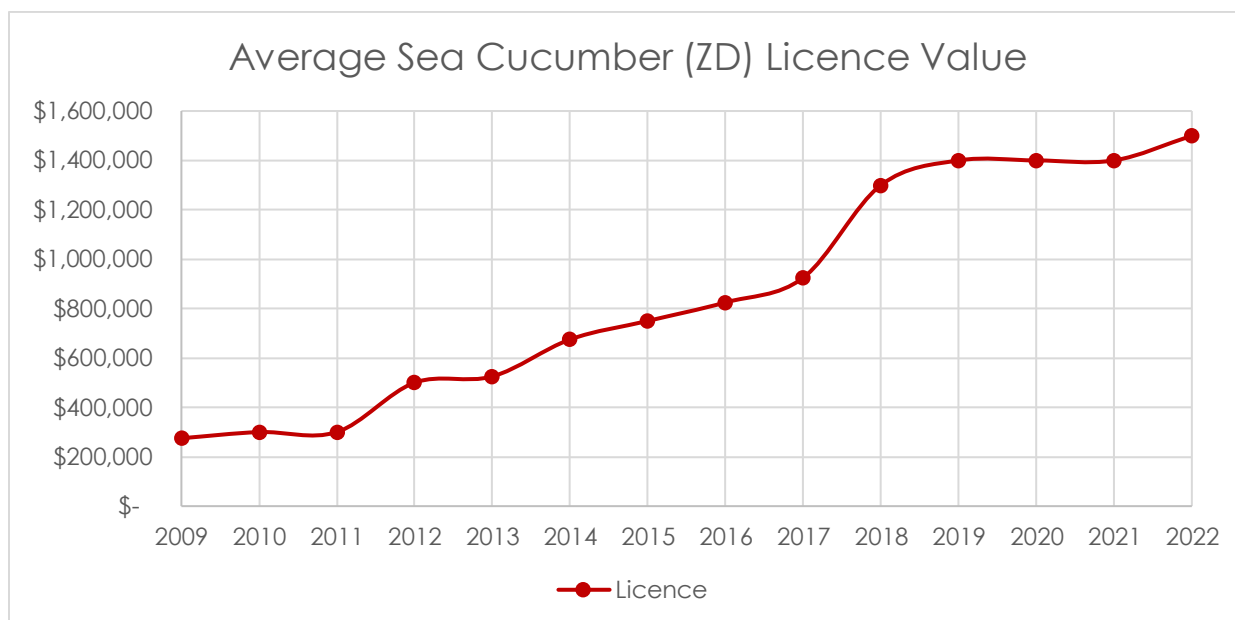
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

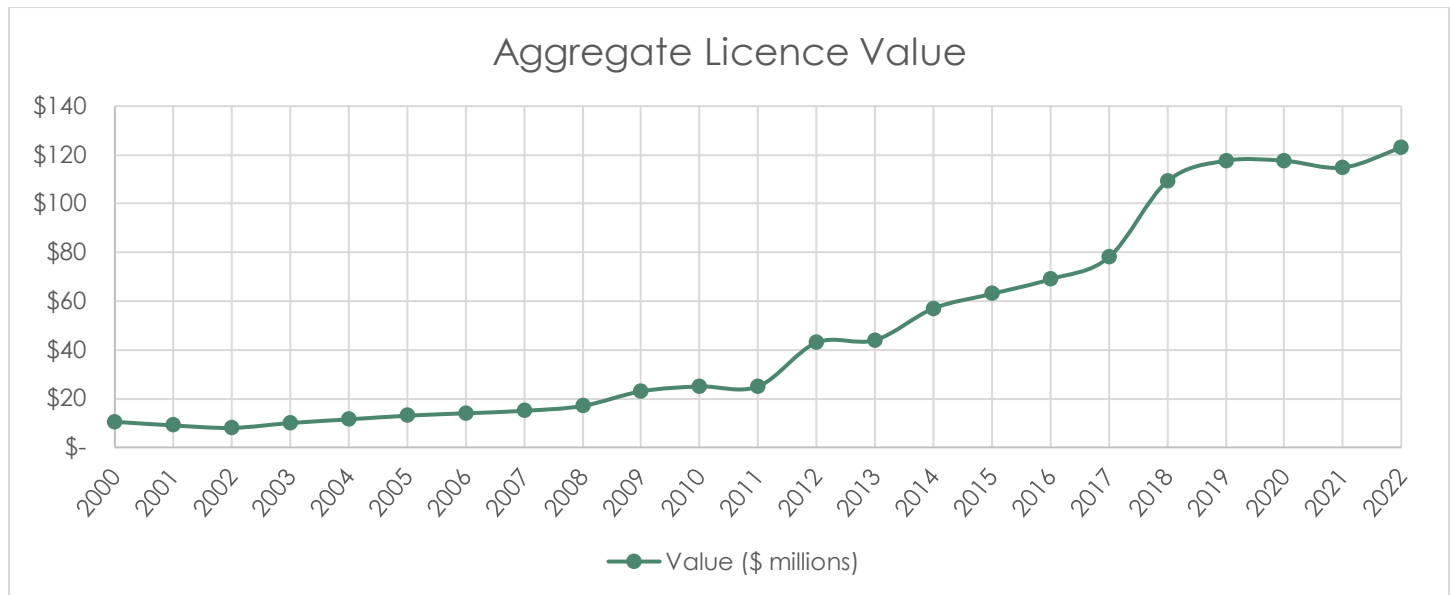
Sea cucumber	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	8	\$ 116,130	\$ 929,040
Modern	17	\$ 283,815	\$ 4,824,855
Average Total	25	\$ 199,973	\$ 4,999,313

Licencing trends

Recent ZD licence valuations



Aggregate value of ZD licences (\$ millions by year)



Recent ZD lease rates

5 lease transactions were known for ZD licences in 2022, for a lease price between \$80,000 to \$85,000.

Outlook/commentary

The sea cucumber fishery was subject to the following general observations by industry experts:

- Similar to 2021, the licensing transactions remained low in 2022.
- Commercial fishing vessels utilize divers to harvest sea cucumbers. The harvested sea cucumbers, which are handpicked from the sea floor, are then sent to the closest port for validation by packers before being transported by truck to Vancouver. In Vancouver, they are processed into two products - frozen muscle strips and dried skin - which are then exported to Asian markets.
- The harvesting of sea cucumbers primarily takes place during a short season in October after the spawning period in the summer months.
- The demand for sea cucumbers in the consumer market is concentrated mainly in Asia.
- Most licenced vessels engage in other dive fisheries, such as geoduck, green sea urchin, or red sea urchin, in addition to the sea cucumber fishery. The dive fleet earns slightly higher revenue from the harvest of non-sea cucumber species than from the sea cucumber harvest.

SHELLFISH – Red sea urchin (ZC)

Background to valuation

General	
Licence category	ZC
Nature of Licence	party-based
# commercial licences	79
# communal commercial licences	30
Area licencing?	2 areas
Stacking?	yes
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
# transactions reported for valuation	1
Confidence in current year valuation	low

Current valuation

Licence and quota value on December 31, 2022.

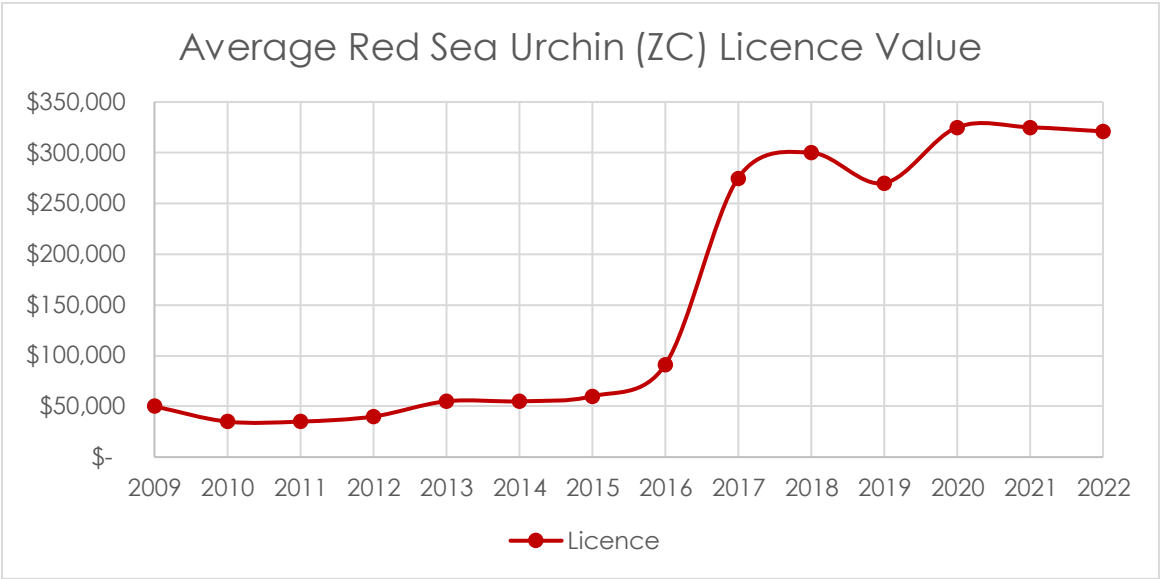
Category	# of Licences	Value/Licence \$	Total Value \$
ZC Licence – Commercial	79	\$321,000	\$25,359,000
FZC Licence – Communal Commercial	30	n/a	n/a

Valuation comments

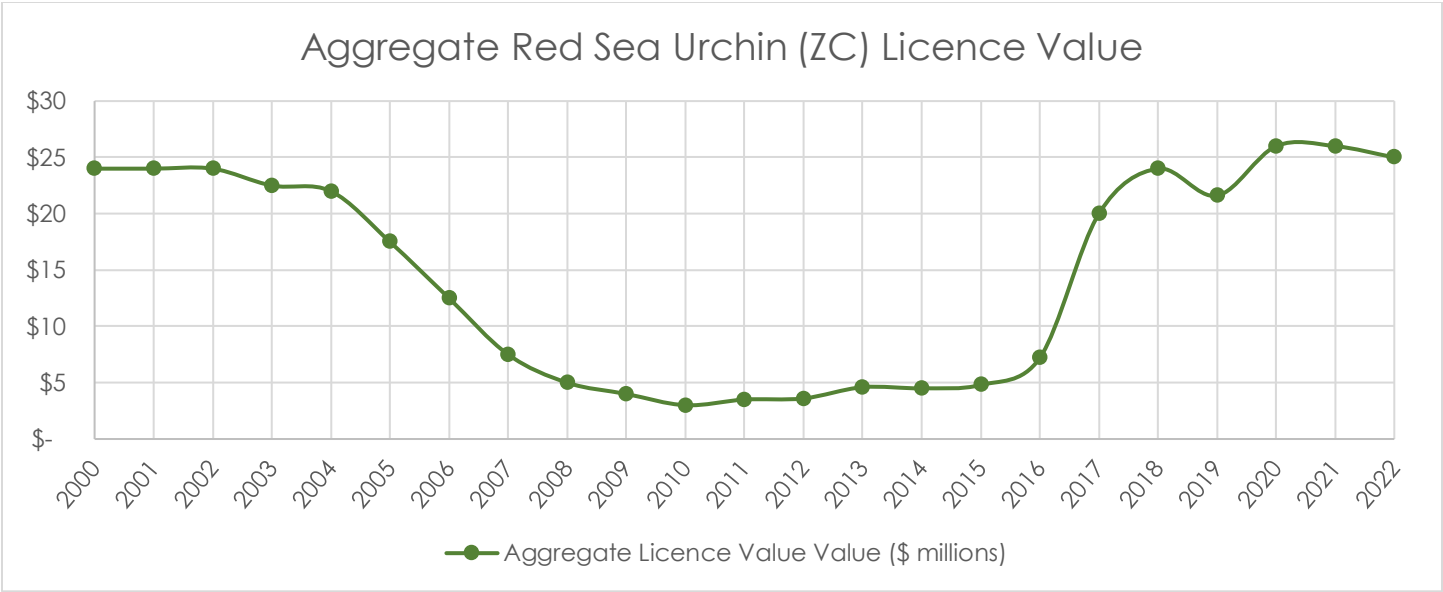
- It was discovered that there were no transactions for red sea urchin licence in 2022 but 4 are listed for sale with 2 at \$297,000 and one as high as \$350,000.

Licencing trends

Recent ZC licence valuation



Aggregate value of ZC licences (\$ millions by year)



Recent ZC lease rates

Two lease transactions were uncovered for ZC licences, placing lease values at an average of \$1,875.

Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

Red sea urchin	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	13	\$ 87,045	\$ 1,131,585
Modern	20	\$ 215,040	\$ 4,300,800
Average Total	33	\$ 151,043	\$ 4,984,403

Outlook/commentary

- Red sea urchins are harvested by divers and then sent to processing facilities in Vancouver. The gonads are then removed, processed, and packaged fresh for sale as "Uni" in Japan, Europe, and North America.
- According to DFO's *Red Urchin Integrated Fisheries Management Plan*, many of the vessels that participate in the red sea urchin fishery also engage in other dive fisheries such as sea cucumber and geoduck. Out of the 41 active vessels in the 2018 fishery, 30 of them held licences for other species in addition to red sea urchin. The most common licences held, aside from red sea urchin, were for sea cucumber, green sea urchin, salmon, prawn, and geoduck (in that order). ²⁵
- Due to COVID-related restrictions in China and Japan over the past few years, harvesters have seen a slight decline in demand and prices for product, however, adverse weather conditions, which make harvesting challenging, and labor shortages have affected the quantity of the TAC harvested in recent years.
- Licence values have decreased from a high of \$330,000 earlier in 2022 to the current price of \$297,000.

²⁵ Red sea urchin by dive, Pacific Region 2022 to 2023 Integrated Fisheries Management Plan summary <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/urchin-oursin-red-rouge-ifmp-pgip-sm-eng.html>

SHELLFISH – Green sea urchin (ZA)

Background to valuation

General	
Licence category	ZA
Nature of Licence	party-based
# commercial licences	48
# communal commercial licences	1
Area licencing?	1
Stacking?	yes
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
# transactions reported for valuation	0
Confidence in current year valuation	low

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
ZA Licence - Commercial	48	\$80,000	\$3,840,000
FZA Licence - Communal commercial	1	n/a	n/a

Valuation comments

- Unable to confirm any transactions in 2022.

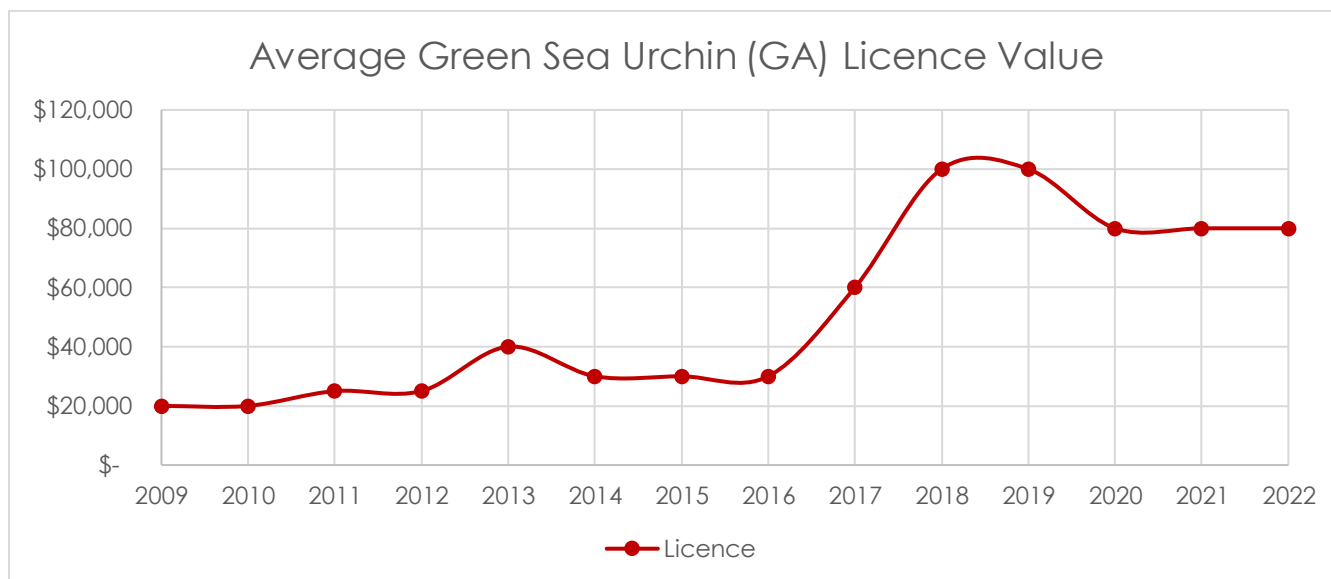
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

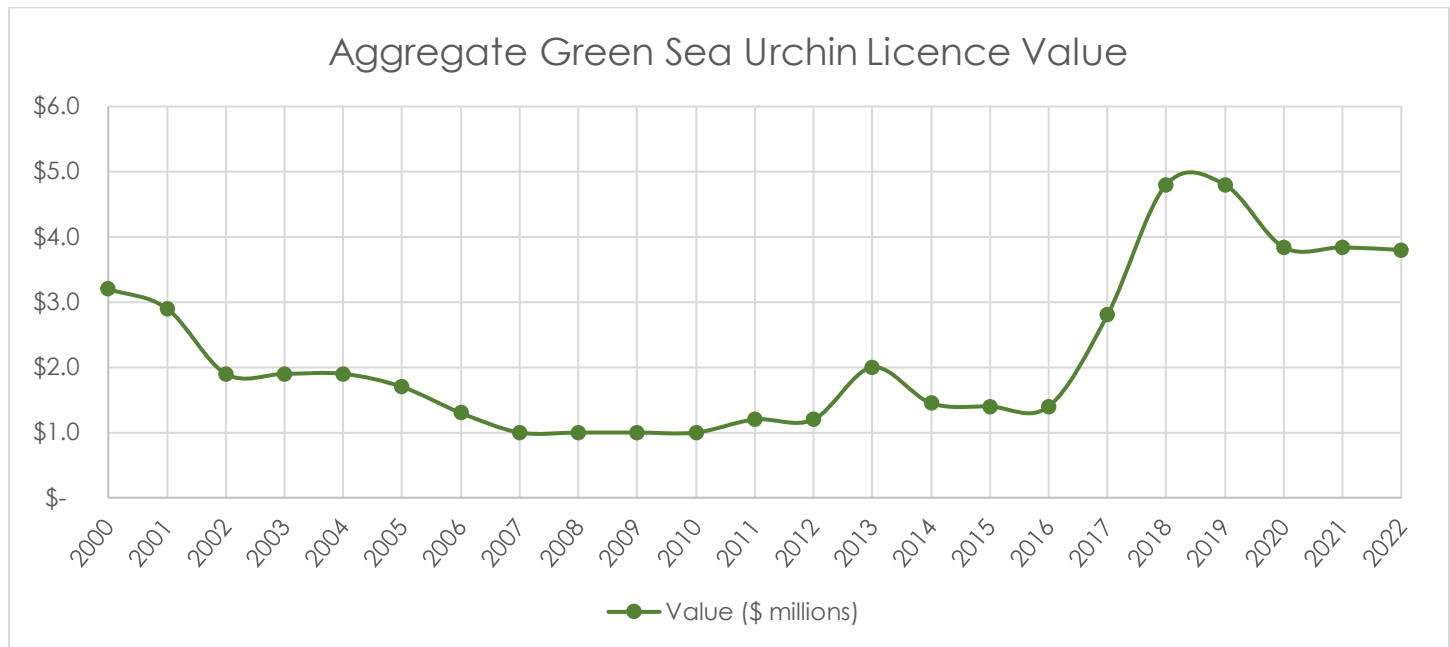
Green sea urchin	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	3	\$ 87,045	\$ 261,135
Modern	6	\$ 215,040	\$ 1,290,240
Average Total	9	\$ 151,043	\$ 1,359,383

Licencing trends

Recent ZA licence valuation



Aggregate value of ZA licences (\$ millions by year)



Recent ZA lease rates

- One lease transaction was uncovered for \$6,000.

Outlook/commentary

General observations on the outlook for the green sea urchin fishery include:

- Green sea urchins are primarily harvested by divers by handpicking them off the seabed in the South Coast of BC. They are shipped live and whole to Japan, where the Japanese are the largest consumers of this species. In recent years, there has been an increase in sales to the public and local restaurants.²⁶
- The fishery's value in Canada has stayed static over the past few years due to competition from the Russian fishery. However, industry experts have noted little movement in the market and speculate that licence holders are holding onto their licences in anticipation of a potential rebound in profitability.²⁷

²⁶ Integrated Fisheries Management Plan summary Green sea urchin - Pacific Region 2022 to 2023 <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/urchin-oursin-green-vert-ifmp-pgip-sm-eng.html>

²⁷ Please refer to last paragraph on page 3 of this report.

SHELLFISH - Euphausiid (ZF)

Background to valuation

General	
Licence category	ZF
Nature of Licence	party-based
# commercial licences	16
# communal commercial licences	1
Area licencing?	no
Stacking?	no
Competitive or quota mgmt.?	quota

Valuation parameters	
Licence	per licence
Quota	n/a
Vessels	yes
Amount of trading activity in category this year	low
Transactions reported for valuation	~0
Confidence in current year valuation	Very low

Current valuation

Licence and quota value on December 31, 2022.

Category	# of Licences	Value/Licence \$	Total Value \$
ZF Licence – Commercial	16	\$40,000	\$640,000

Valuation comments

- No transaction activity was recorded since 2015. Anecdotal information from 2015 indicated values in the \$40,000 to \$50,000 range.
- Currently, there is a licence that has been for sale for several years and is valued at \$50,000 without a vessel.

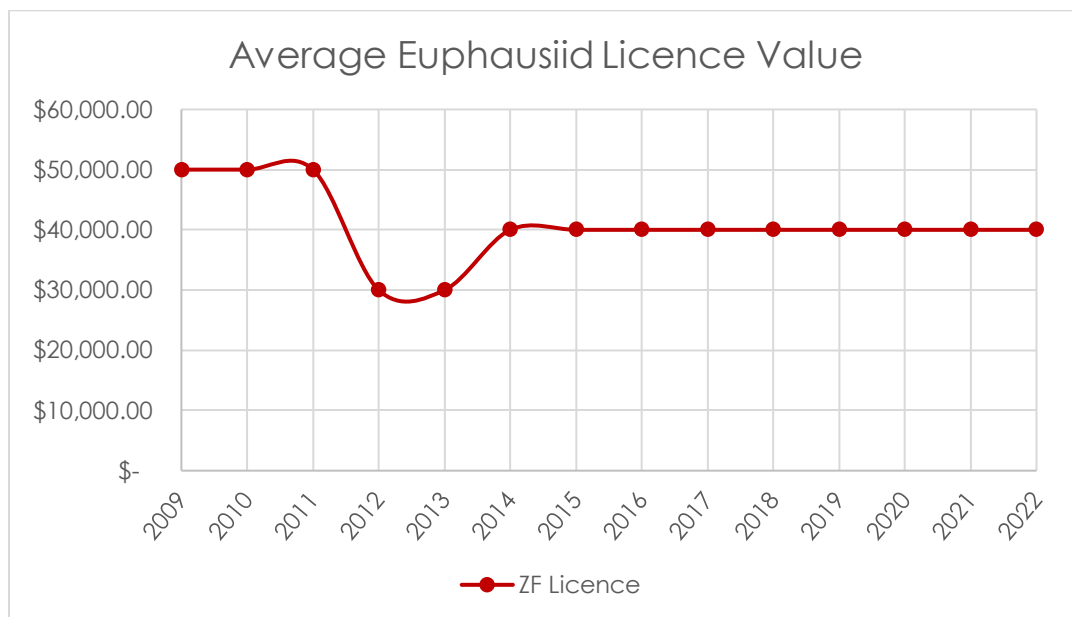
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the *Pacific Region Commercial Fishing Database* from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

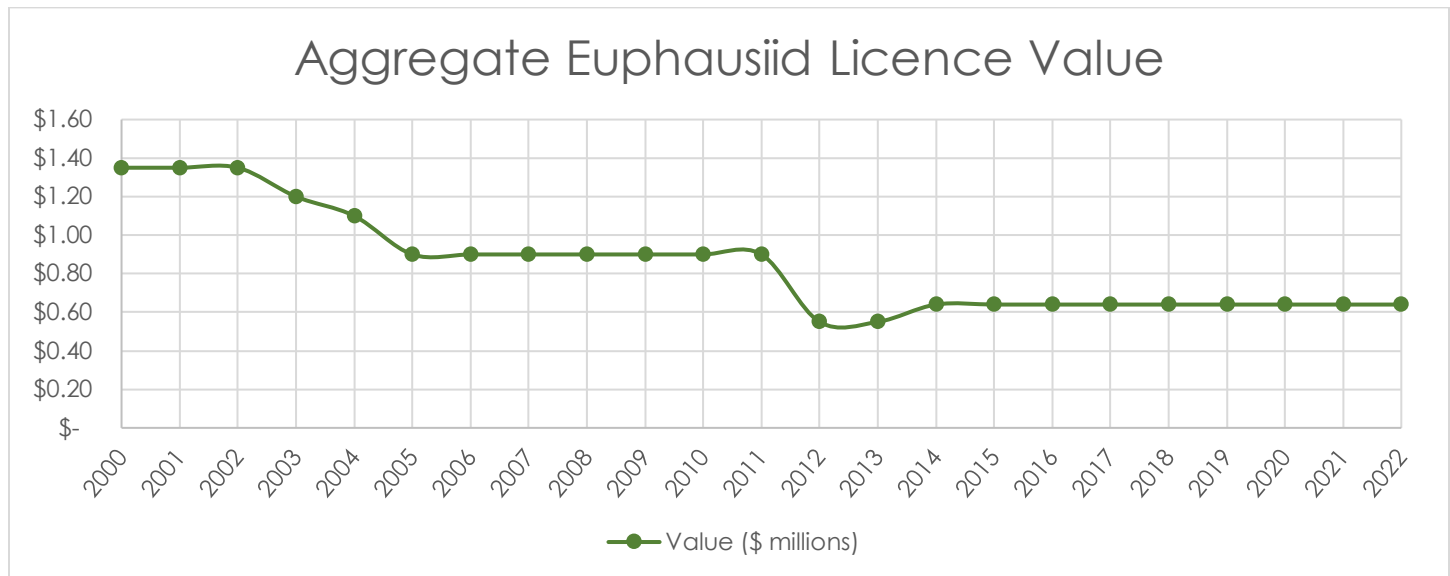
Euphausiid	# Vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	3	\$ 193,200	\$ 579,600
Modern	0	\$ 694,575	\$ -
Average Total	3	\$ 193,200	\$ 579,600

Licencing trends

Recent ZF licence valuation



Aggregate value of ZF licences (\$ millions by year)



Outlook/commentary

- The euphausiid fishery, also known as "krill," uses fine-meshed plankton trawl nets for trawling and began in the Strait of Georgia in 1970 to supply the aquarium with food for aquatic mammals.²⁸
- The season for this fishery is from November to March, aimed at minimizing the incidental catch of larval and juvenile fish, with a Total Allowable Catch (TAC) of 500 tonnes.
- According to industry experts, to avoid significant deterioration of the market product and a corresponding reduction in quality and value, the catch must be frozen as soon as possible after landing, usually within seven to twelve hours. Processing takes place in either Vancouver or French Creek.
- The fishery operates at a small scale with limited participation and profitability. The outlook for this fishery is uncertain, as industry experts did not provide sufficient information to make any predictions.

²⁸ Euphausiids, Pacific Region 2023 to 2027 Integrated Fisheries Management Plan summary <https://www.pac.dfo-mpo.gc.ca/fm-gp/mplans/krill-euphausiids-ifmp-pgip-sm-eng.html>

Schedule II species (C)

Background to valuation

General	
Licence category	C
Nature of Licence	Vessel-based
# commercial licences	307
# communal commercial licences	14
Area licencing?	No
Stacking?	No
Competitive or quota mgmt.?	Various

Valuation parameters	
Licence	per foot
Quota	n/a
Vessels	no
Amount of trading activity in category this year	low
# transactions reported for valuation	~ 0
Confidence in current year valuation	low

Current valuation

Licence values on December 31, 2022.

Category	# of Licences	Value/Licence \$/ft	Avg. Licence \$	Total Value \$
C Licence - Commercial	307	\$587	\$18,490	\$5,676,430
FC Licence – Communal commercial	14	n/a	n/a	n/a

Valuation comments

- Total licence value is based on an average licence price of \$19,000 and average vessel length of 31.5 feet.

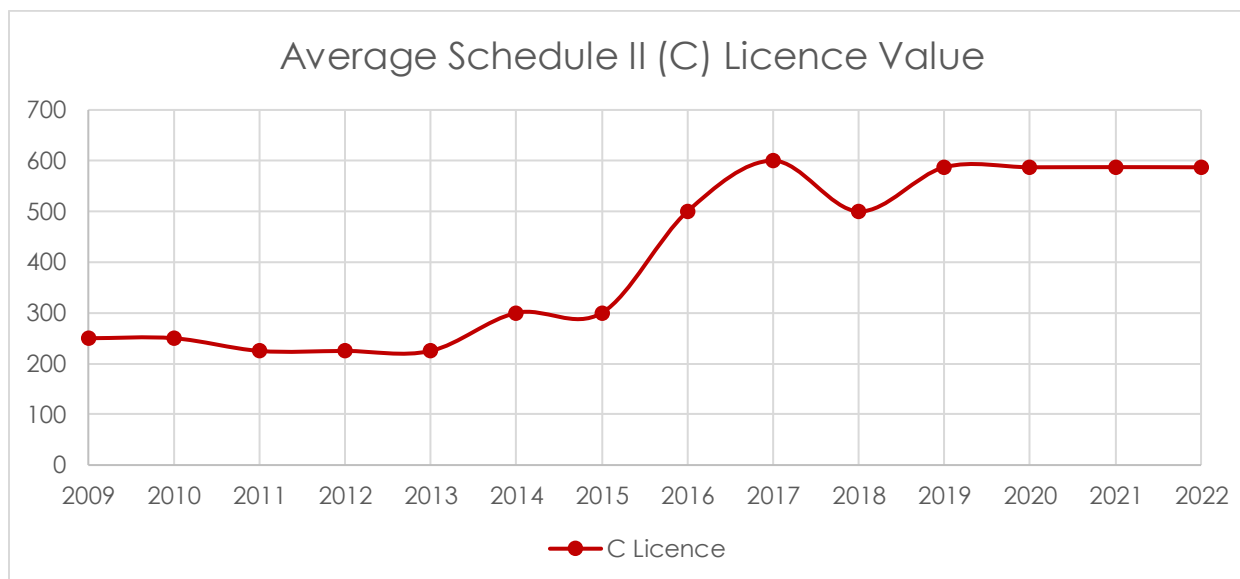
Vessel value

To determine the vessel value, historical data on average vessel value is used as a baseline, and the value is adjusted for inflation. The number of vessels has been updated using the Pacific Region Commercial Fishing Database from DFO. However, this report only includes vessels for which a vessel age was provided. Therefore, the aggregate value represents only a portion of the total fleet. For further details on the limitations of this analysis, please refer to the Valuation methodology on page 16 of this report.

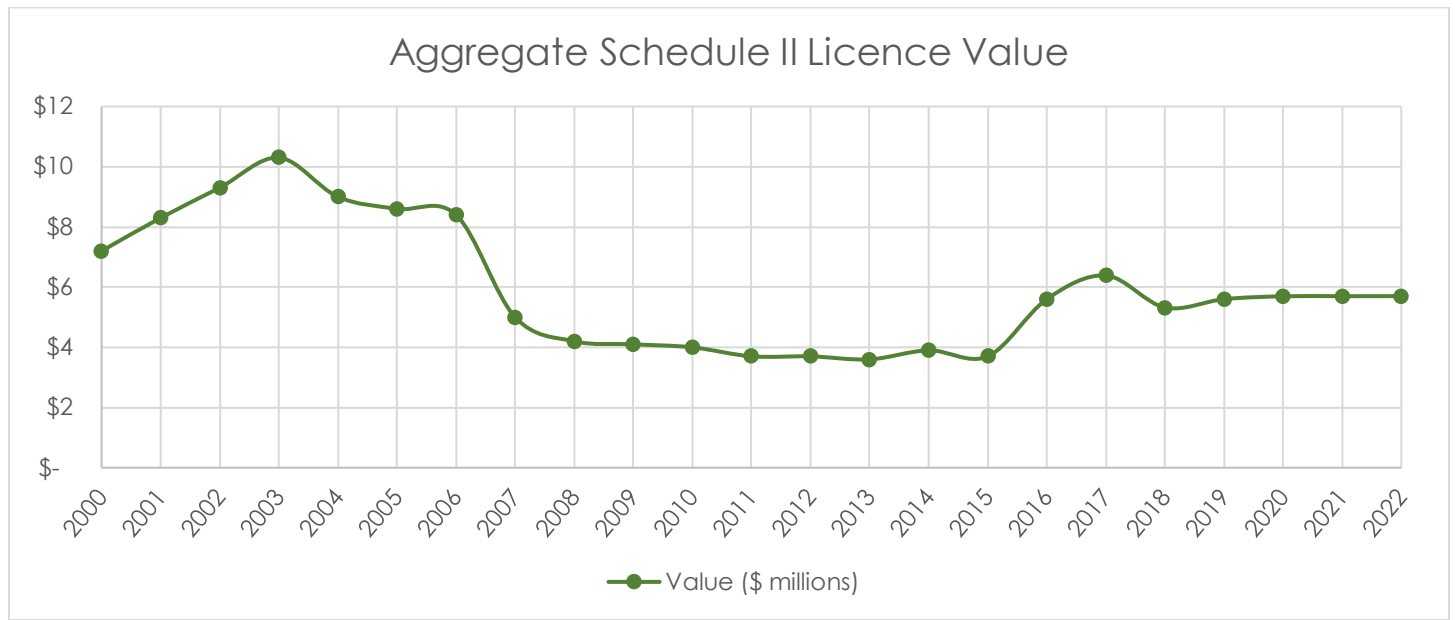
Schedule II	#vessels	Avg. Vessel Value (\$)	Aggregate Value (\$)
Classic	151	\$ 43,050	\$ 6,500,550
Modern	101	\$ 153,720	\$ 15,525,720
Average Total	252	\$ 98,385	\$ 24,793,020

Licencing trends

Recent C licence valuations



Aggregate value of C licences (\$ millions by year)



Outlook/commentary

Vessels of larger sizes are considered more valuable since they are eligible to fish tuna along with the USA 68 privileges. On the other hand, smaller vessels may only be utilized as moorage or “stick boats” to hold other licences unless their owner/operator holds another licence, such as an L-tab.

Valuation summary

Industry perception of the commercial fishing industry in British Columbia, Canada, is that it is facing various challenges that impact the market value (e.g. landed value, retail market price, licence and quota values) of seafood types such as salmon, halibut, sablefish, prawn, crab, and geoduck. These factors may include demand, supply, predation, seismic activity, and COVID-19 restrictions. It was noted that the export market to Asia such as crab, geoduck, sablefish, and prawns, have been heavily affected by COVID-19 restrictions, therefore, resulting in a decreased demand for these delicacies. However, the emergence of new local markets catering to consumers' demand for harvest-to-table products has contributed to the stability of fisheries that heavily rely on export markets.²⁹

The salmon fishing industry is facing a decline in demand for licences due to uncertainty surrounding government policies and regulations, which has led to a perception that salmon fisheries are at high-risk. Gillnet, seine, and troll licences have all experienced a decrease in their licence value, with gillnet licences decreasing by 1%, and seine and troll licences decreasing by 10%, compared to 2021. However, the 2021 launched Pacific Salmon Strategy Initiative (PSSI), which aims to address the decline in Pacific salmon populations, can support sustainable salmon fisheries in Canada. PSSI involves working collaboratively with Indigenous peoples, stakeholders, and the public to conserve and rebuild Pacific salmon populations, and it is hoped this will increase the value and sustainability of the salmon fishery in the future.

Amid the COVID-19 pandemic, the halibut and lingcod fisheries have been regarded as a triumph. The industry managed to pivot its attention from export market to local direct-to-consumer, which played a crucial role in sustaining its value. On the other hand, rockfish particularly outside rockfish, has been consistently volatile due to fluctuations in market prices; the reopening of the market; and a decrease in the number of fish available for consumption.*

The crab licences and prawn licences in the shellfish trap fisheries have experienced significant increases. Shrimp licence values appear to have increased, but some experts believe they were undervalued in the past. Despite a decrease in revenue due to decreased demand from China, licence values have increased with expectations of a better year in 2023. The shellfish dive fishery licences are generally stable and experiencing slight growth, except for the sea urchin fisheries where red sea urchin licence values decreased by 4%. Geoduck and sea cucumber licences had increases, while green urchin licence values remained unchanged.

The commercial fishing industry of salmon and herring in the Pacific Region is currently facing uncertainties, which has led to a decrease in demand for licences due to concerns about the policy and regulatory environment. However, other fisheries aggregates such as groundfish and shellfish dive and trap fishery have remained relatively stable or have experienced slight growth and are becoming strong leaders in the industry. Although some fisheries are facing fluctuations in their quota and/or licence values, the industry is optimistic about the future and expects to see better results in the coming year despite the challenges they are currently facing.*

²⁹ (Including asterisk) Please refer to last paragraph on page three of this report.