



Castlemain

**ANALYSIS OF
COMMERCIAL
FISHING LICENCE,
QUOTA, AND
VESSEL VALUES**

**PREPARED FOR FISHERIES
AND OCEANS CANADA,
PACIFIC REGION**

AS AT DECEMBER 31, 2017

Table of Contents

Introduction	3
Methodology	10
SALMON – Salmon Seine	12
SALMON – Salmon Gillnet	15
SALMON – Salmon Troll	18
PELAGICS – Roe Herring Seine	21
PELAGICS – Roe Herring Gillnet	24
PELAGICS – Herring Spawn on Kelp	27
PELAGICS – Tuna and Sardine	30
GROUNDFISH - Halibut	33
GROUNDFISH - Sablefish	37
GROUNDFISH - Groundfish Trawl	40
GROUNDFISH - Rockfish Hook & Line	43
GROUNDFISH – Lingcod and Dogfish	47
SHELLFISH – Prawn by Trap	48
SHELLFISH – Crab	51
SHELLFISH – Shrimp by Trawl	54
SHELLFISH – Geoduck	57
SHELLFISH – Sea Cucumber	60
SHELLFISH – Red Sea Urchin	63
SHELLFISH – Green Sea Urchin	66
SHELLFISH – Euphausiid	69
SHELLFISH – Schedule II Species	72
Summary	75



Introduction

On an annual basis, with few exceptions, over the last two decades, the Treaty and Aboriginal Policy Directorate at Fisheries and Oceans Canada has undertaken a licence, quota, and vessel valuation study to determine valuations for commercial fishing licences, quota, and vessels, operating in the Pacific commercial fishery.

The information gathered by DFO over the last 20 years of studies has been used for a wide variety of purposes including:

- Informing licence retirement and reallocation programs
- Gauging and analyzing the economic health of the Pacific fishing industry
- Developing policies around First Nations participation in the fishery and licence redistribution
- Estimating the impacts of policy decisions on the Pacific fishery
- Estimation of potential treaty impacts on the commercial fishery

The continuity in methodology is important so that changes in values can be viewed in relation to changes in the fishery in general.

This year's report contains an assessment of commercial fishing licence and quota values between January 1, 2017 and December 31, 2017.

Where possible, the valuations in this report are based on individual market transactions. Where no or few market transactions could be uncovered, anecdotal information may have been used; and where no information could be uncovered, values from the 2016 study were relied upon. In short, this report is the contractor's best effort to summarize sometimes imprecise data into an existing time series of values.

Each valuation has a confidence level of the valuation, ranging from low to high. This is an attempt to quantify the contractor's "gut feeling" in regards to the accuracy of the valuation and is based on the number of individual transactions that were recorded, the quality of the information, and anecdotal information.



Summary: Year ending December 31, 2017

The following table summarizes the market capitalization of pacific commercial fishing licences and quota at December 31, 2017:

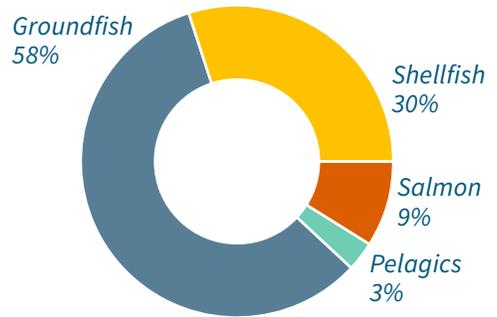
Fishing Grouping	Fishery	License Desc.	# of Licenses	Average Licence Value (\$)	Aggregate Licence Value (\$)	Aggregate Quota Value (\$)	Total License & Quota Value (\$)
Salmon	Salmon Seine	AS	208	\$423,197	\$88,025,000	\$ –	\$88,205,000
	Salmon Gillnet	AG	1074	\$68,301	\$73,355,000	\$ –	\$73,355,000
	Salmon Troll	AT	349	\$174,713	\$60,975,000	\$ –	\$60,975,000
Pelagics	Herring - Roe Seine	HS	241	\$99,793	\$24,050,113	\$ –	\$24,050,113
	Herring - Roe Gillnet	HG	987	\$33,739	\$33,300,000	\$ –	\$33,300,000
	Herring - Spawn on Kelp	J	34	\$175,00	\$5,950,000	\$ –	\$5,950,000
	Tuna	USA 68	45	\$225,000	\$10,125,000	\$ –	\$10,125,000
	Sardine	ZS	24	n/a	n/a	\$ –	n/a
Groundfish	Halibut	L	341	\$32,260	\$11,034,760	\$740,085,970	\$751,120,730
	Sablefish	K	41	\$250,000	\$10,250,000	\$238,904,490	\$249,154,490
	Groundfish Trawl	T	135	\$54,900	\$7,411,500	\$272,359,638	\$279,711,138
	Rockfish Inside	ZN	53	\$39,000	\$2,067,000	\$ –	\$2,067,000
	Rockfish Outside	ZN	158	\$220,000	\$34,760,000	\$ –	\$34,760,000
	Lingcod Hook & Line		n/a	n/a	n/a	\$27,186,456	\$27,186,456
	Dogfish Hook & Line		n/a	n/a	n/a	\$2,266,681	\$2,266,681
Shellfish	Prawn	W	186	\$697,300	\$129,697,800	\$ –	\$129,697,800
	Crab	R	189	\$542,500	\$102,532,500	\$ –	\$102,532,500
	Shrimp	S	186	\$41,900	\$7,793,400	\$ –	\$7,793,400
	Geoduck	G	50	\$250,000	\$12,500,000	\$337,500,000	\$350,000,000
	Sea Cucumber	ZD	84	\$925,000	\$77,700,000	\$ –	\$77,700,000
	Rea Sea Urchin	ZC	71	\$275,000	\$19,525,000	\$ –	\$19,525,000
	Green Sea Urchin	ZA	48	\$60,000	\$2,880,000	\$ –	\$2,880,000
	Euphausiid	ZF	11	\$40,000	\$440,000	\$ –	\$440,000
Schedule II	Schedule II Species	C	332	\$17,000	\$5,644,000	\$ –	\$5,644,000
					\$720,016,073	\$1,618,303,235	\$2,338,319,308



2017 Market Value by Fishery Grouping

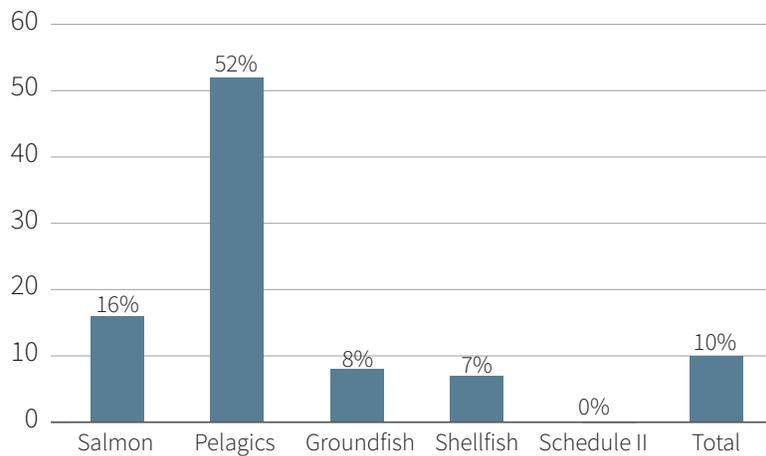
Percentage of market capitalization by fishing category are shown in the chart on the right.

Compared to 2016, total market capitalization increased by 10% in 2017. The following chart shows the percentage change for each fishery grouping shown:



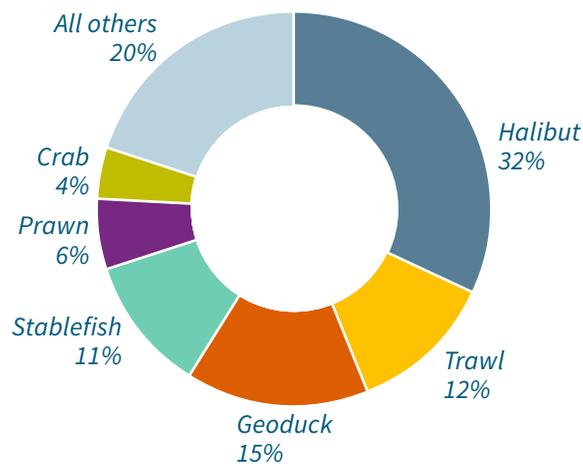
Percentage Change in Market Value by Fishery Grouping – 2017 vs 2016

As showing in the next chart, the six fisheries with the largest aggregate licence and quota valuations account for 80% of total value, while the remaining 18 fisheries make up 20%.

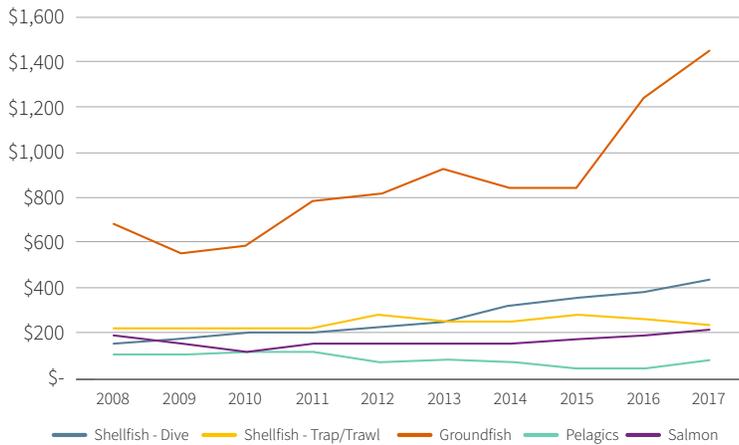


Top Six Fisheries Relative to Overall Licence and Quota Values (\$ millions)

Aggregate value trends are shown by fishery category in the chart above.



Aggregate Licence and Quota Value (\$ millions) By Major Fishery Groupings

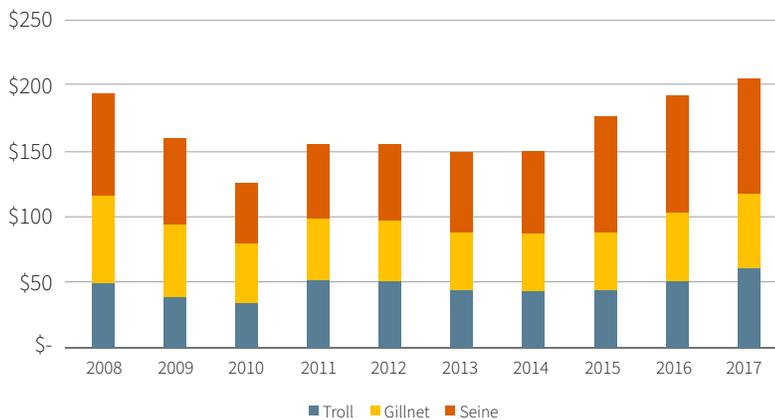


The total value of licences and quota at December 31, 2017 is about \$2.3 billion, which is about 10% higher than the \$2.1 billion valuation for 2016.

Salmon

Salmon licence values have seen steady growth over the last several years. Seine licence values had a spike in 2015 but have remained essentially the same through 2016 and 2017. Gillnet and troll licences, however, have risen 38% and 21% respectively in anticipation of a profitable fishery in 2018. The following table provides a snapshot of the salmon category:

Aggregate Salmon Licence Value (\$ millions)



Pelagics

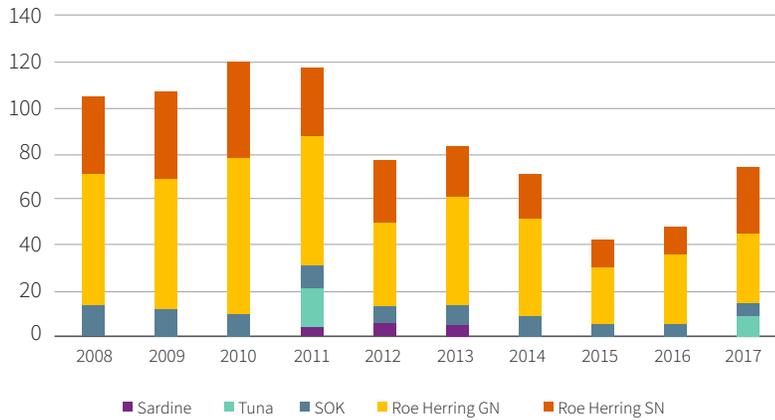
After three years of declining licence values in this fishery grouping through, 2016 saw a 16% gain in value, followed by a 52% gain in 2017. This growth was driven by a rise in seine licence values which have risen sharply despite the low profitability in the fishery.

Sardines have not shown up in BC waters for five straight years, and a lack of treaty between Canada and the USA, and the limited and tenuous rights associated with some of the USA 68 (tuna) licences, make this category difficult to evaluate.



The following table provides a snap shot of the pelagics category:

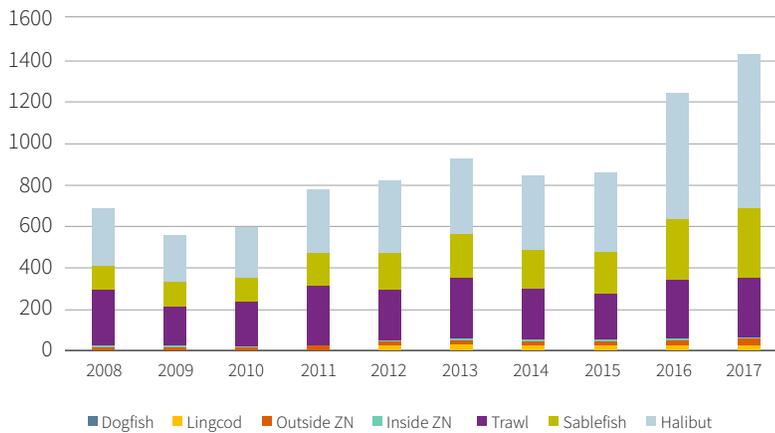
Aggregate Pelagics Licence Value (\$ millions)



Groundfish

Licence and quota values in the groundfish category grew by 8% in 2017 compared to 2016. This growth was driven by 24% growth in halibut value. Halibut achieved this growth despite a decrease in quota. The following table provides a snapshot of the groundfish category:

Aggregate Groundfish Licence and Quota Value (\$ millions)



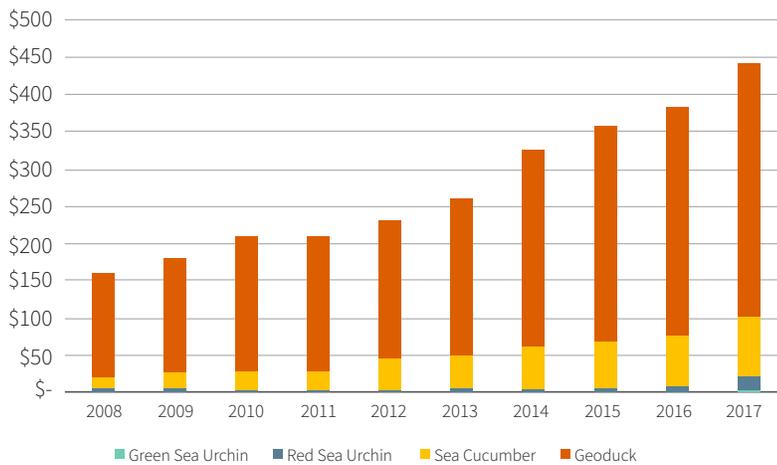
Shellfish

The shellfish dive fisheries showed accelerated growth in 2017, with gains seen in all four fisheries. Geoduck value grew by 15% and red and green sea urchin market capitalization exploded by 168% and 100% respectively. Part of this growth has been attributed to higher market prices being found by flying the product live to Asian markets. Demand is strong



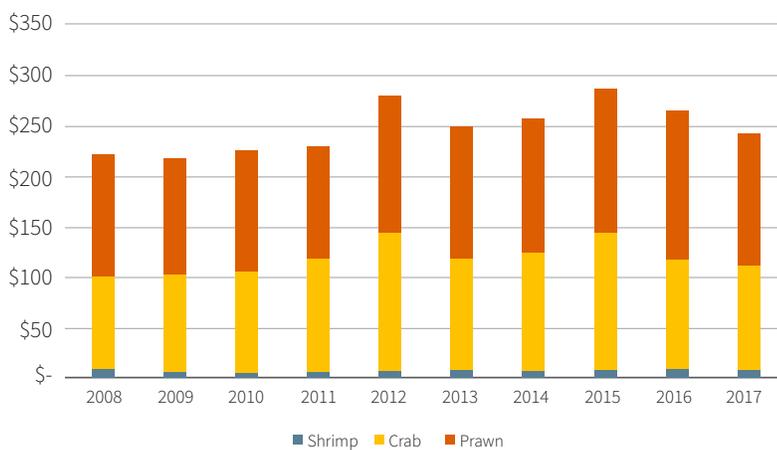
and supply is short for access to this fishery, but there is a definite disconnect between the profitability of the fishery and the prices being demanded for access. Sea cucumber also saw strong growth of 12% with indications this has been accelerating sharply through early 2018. The following table provides a snapshot of shellfish diver fisheries:

Shellfish Dive Fisheries – Aggregate Licence Value (\$ millions)



For the shellfish trap/trawl fisheries, prawn saw a significant pullback of 11% after another weak fishery, and the crab fishery dropped by 5% in 2017 after a 20% drop in 2016. The following table provides a snapshot of the shellfish trap and trawl fisheries:

Shellfish Trap/ Trawl Fisheries – Aggregate Licence Value (\$ millions)



Rates of Return – Leasing

The estimated rate of return for readily leased (typically non-vessel based or fisheries with IVQ) licences or quota for the valuation period is shown in the following table. Estimates are the contractor's best effort to capture a value for market lease rates that can vary widely:

Fishery	Lease Rate	Quota/Licence Valuation	Rate of Return
Herring - Roe Seine	\$ -	\$99,793.00	0.0%
Herring - Roe Gillnet	\$250.00	\$33,738.60	0.7%
Halibut	\$7.40	\$95.00	7.8%
Sablefish	\$5.25	\$75.00	7.0%
Trawl - Groundfish	\$0.13	\$2.00	6.5%
Trawl - Offshore Hake	\$0.0003	\$0.29	1.03%
Rockfish Inside	\$1,200.00	\$39,000.00	3.1%
Rockfish Outside	\$7,500.00	\$220,000.00	3.4%
Lingcod Hook & Line	\$0.30	\$9.40	3.2%
Dogfish Hook & Line	\$ -	\$0.10	0.0%
Prawn	\$35,000.00	\$697,300.00	5.0%
Crab	\$30,000.00	\$545,600.00	5.5%
Geoduck	\$560,000.00	\$7,000,000	8%
Sea Cucumber	\$80,000.00	\$925,000.00	8.6%
Red Sea Urchin	\$6,000.00	\$275,000.00	2.2%
Green Sea Urchin	\$3,500.00	\$60,000.00	5.8%



Methodology

Valuations Performed

The following table summarizes the scope of work and valuations carried out for this report:

Fishery Grouping	Fishery	Gear	Valuations				
			Average Vessel Value	Average Licence Value		Quota Value	Lease Value
				Full Fee	Reduced Fee		
Salmon	Salmon	Seine	x	x	x		
	Salmon	Gillnet	x	x	x		
	Salmon	Troll	x	x	x		
Pelagics	Herring - Roe	Seine	x	x	x		x
	Herring - Roe	Gillnet	x	x	x		x
	Herring - Spawn on Kelp			x			
	Tuna	Hook & Line		x			x
	Sardine	Seine		x			x
Groundfish	Halibut	Longline	x	x		x	x
	Sablefish	Longline/Trap	x	x		x	x
	Groundfish Trawl	Trawl	x	x		x	x
	Rockfish	Hook & Line	x	x			x
	Lingcod and Dogfish	Hook & Line				x	x
Shellfish	Prawn	Trap	x	x			
	Crab	Trap	x	x			
	Shrimp	Trawl	x	x			
	Geoduck	Dive	x	x		x	x
	Sea Cucumber	Dive	x	x			x
	Red Sea Urchin	Dive	x	x			x
	Green Sea Urchin	Dive	x	x			x
	Euphausiid	Trawl	x	x			
Schedule II	Schedule II Species			x			

Valuation Methodology

Information on commercial fishing licence and quota values were gained through interviews with individual licence holders, brokers, lawyers, processors, industry publications, and anyone with knowledge of specific market transactions. Most valuations are a synthesis of multiple sources listed above, or in some cases where information could not be



uncovered, data from the 2016 report was utilized. The following is a list of information sources starting with the most preferred:

- Information based on actual transactions
- Anecdotal information on transactions or industry expert opinions on price levels
- Prices listed (but not transacted) from boat brokers or trade publications
- Contractor's judgement

License/ Quota Stratification & Valuation Criteria

The valuation for each licence type, quota including units (per licence, per foot, etc.) an indication of the numbers of transactions uncovered, and the confidence in the valuation are presented for each licence valued.

A general description is also included for:

- Licence designation (AS, AG, AT, etc.)
- Nature of licence (vessel or party based)
- # of commercial licences available
- # of communal commercial licences available
- Licence management regime (Area licencing including # of areas, stacking, etc.).
- The type of stratification utilized (per licence, per lb, etc.)
- Vessel build (Classic or modern)
- # of vessels

Valuation Trends

The valuation trend graphs were updated for each commercial fishery. It should be noted that these graphs are not adjusted for inflation, and in some cases, no new data was uncovered.

Licensing Information

For more information than the brief synopses of licencing information provided in this report, please refer to the following sources:

- IFMP's: <http://www.pac.dfo-mpo.gc.ca/fm-gp/ifmp-eng.html>
- DFO Licencing: <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/licence-permis/index-eng.htm>



SALMON – Salmon Seine

Background to Valuation

General	
License Designation	AS
Nature of License	Vessel-based
# Commercial Licences	208
# Communal Commercial Licenses	21
Area Licensing?	2 areas
Stacking?	Yes
Competitive or Quota Management?	Competitive with pilot IVQ

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 3
Confidence in current year valuations	Low

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
Full Fee	193	425,000	82,025,000
Reduced Fee	15	400,000	6,000,000
All AS	208	423,197	88,025,000

Valuation Comments

- The valuation range for the period is \$400,000 - \$475,000 (full fee).
- There was a low amount of market activity for salmon seine licences.
- It is worth noting that some industry experts feel that these licences would be more fairly priced closer to \$200,000.



- Despite these high prices nobody wants to sell as the industry is expecting a big year this year
- No reduced fee licences were uncovered so valuation is an estimate.

Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

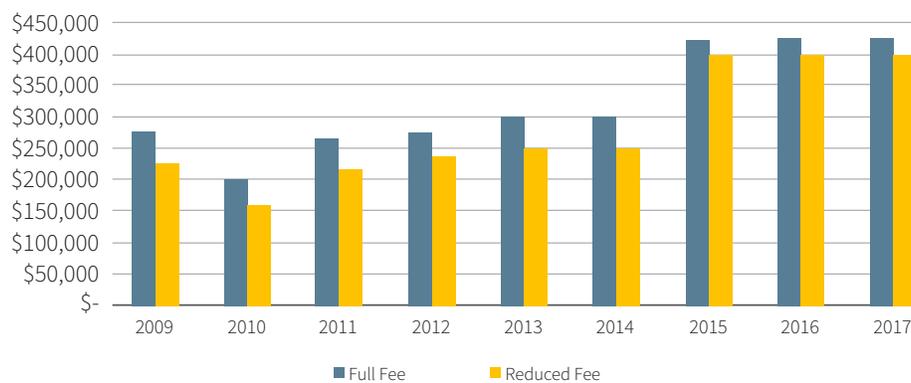
- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

Salmon Seine	# Vessels	Avg. Vessel	Aggregate Value
Classic Style	151	184,000	27,784,000
Modern Style	57	646,000	36,822,000
Total	208	310,606	64,606,000

Licensing Trends

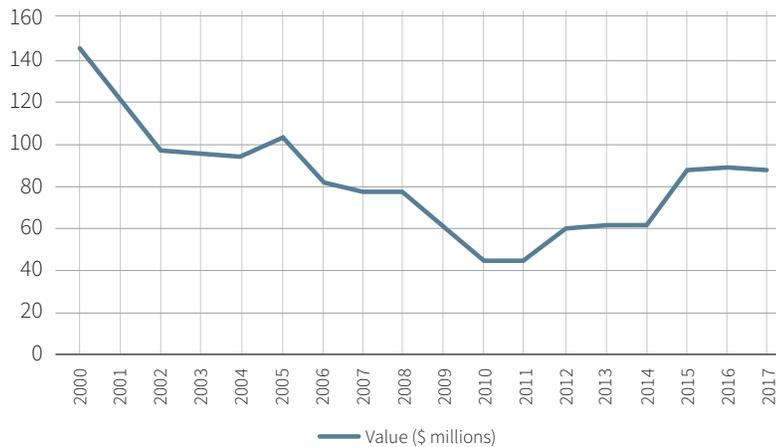
Recent AS License Valuations (Nominal \$s – not adjusted for inflation)

Salmon seine licence prices have remained steady over the last 3 years. This lofty valuation in licence values from 2015 onwards seems based on speculation about the future profitability of the fishery. Some industry experts have suggested



that current profits from the fishery would support a valuation closer to \$200,000, although industry is expecting a big salmon year this year.

Aggregate Value of AS Licences (\$ millions by year)



While there are buyers for AS licences out there, few people are wanting to sell in anticipation of a very profitable year in 2018. Some industry experts believe that after 2018, there will be a more activity in this licence category.

AS Licence Counts by Category



The number of AS licences went from 210 in 2016 to 208 in 2017.

Outlook/ Commentary

The outlook for the seine sector is uncertain, given:

- Everyone is expecting a big year in 2018 to offset the last few dismal years
- Some industry experts peg the value of a seine licence closer to \$200,000
- Current licence holders are likely in a position to wait for the fishery to return to higher profit levels, and some industry experts are expecting there will be more market activity in this licence category after the 2018 season
- The seine licences are highly dependent on salmon returns
- Currently many fishers are just making wages off of returns and not a lot more
- Current licence holders are likely in a position to wait for the fishery to return to higher profit level

SALMON – Salmon Gillnet

Background to Valuation

General	
License Designation	AG
Nature of License	Vessel-based
# Commercial Licences	824
# Communal Commercial Licenses	333
Area Licensing?	3 areas
Stacking?	Yes
Competitive or Quota Management?	Competitive with pilot IVQ

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	High
# Transactions underlying valuation	≈ 25
Confidence in current year valuations	Med

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
Full Fee	709	70,000	49,630,000
Reduced Fee	365	65,000	23,725,000
All AG	1074	68,301	73,355,000

Valuation Comments

- The substantial increase in market value for all AG licences is due to a substantial increase in available reduced fee AG licences
- This valuation does not include the 254 Northern Native Fishing (NNFC) licences (NAG designation)



- Valuation range for period: \$50,000 - \$75,000
- Few reduced fee licences were uncovered so the confidence in the valuation above is low

Vessel Value

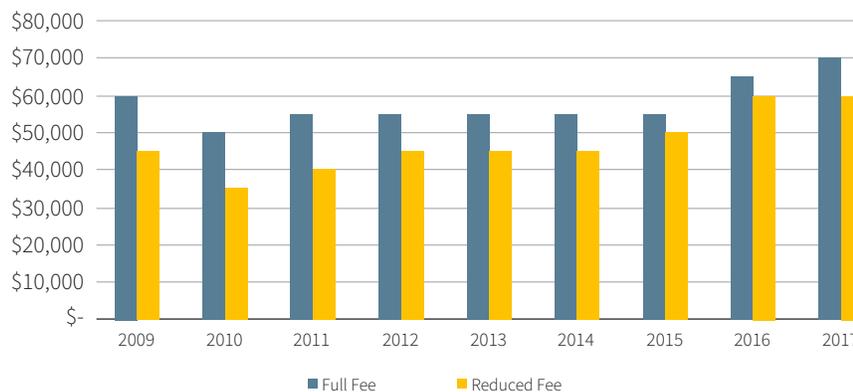
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

Salmon Gillnet	# Vessels	Avg. Vessel	Aggregate
Classic Style	429	73,000	31,317,000
Modern Style	367	162,000	59,454,000
Total	796	114,044	90,771,000

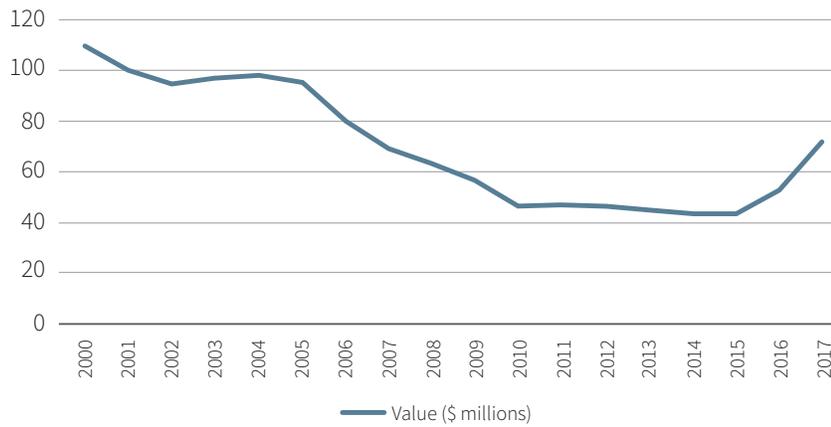
Licensing Trends

Recent AG License Valuations (Nominal \$s – not adjusted for inflation)



Gillnet prices seem to have been very stable in recent years, with this year's value showing an 8% increase over 2016's valuation.

Aggregate Value of AG Licenses (\$ millions by year)



AG Licence Counts by Category



Outlook/ Commentary

- The outlook for the Salmon Gillnet fishery is positive with the anticipation of a big year in 2018
- There was a lot of market activity in 2017 and sellers that are letting these licences go are realizing a great price
- Industry experts are anticipating a drop in AG licences prices next year



SALMON – Salmon Troll

Background to Valuation

General	
License Designation	AT
Nature of License	Vessel-based
# Commercial Licences	348
# Communal Commercial Licenses	35
Area Licensing?	3 areas
Stacking?	Yes
Competitive or Quota Management?	Competitive with pilot IVQ

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Med
# Transactions underlying valuation	≈ 18
Confidence in current year valuations	Med

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
Full Fee	339	175,000	59,325,000
Reduced Fee	10	165,000	1,650,000
All AT	349	174,713	60,975,000

Valuation Comments

- Values ranged from \$130,000 to \$195,000
- Values were seen as high as \$220,000 in early 2017
- Most of the activity was in area F
- Moderate level in area G and little to no activity in area H
- Shorter AT licences are discounted while longer licences (50+ feet) sell at a premium

Vessel Value

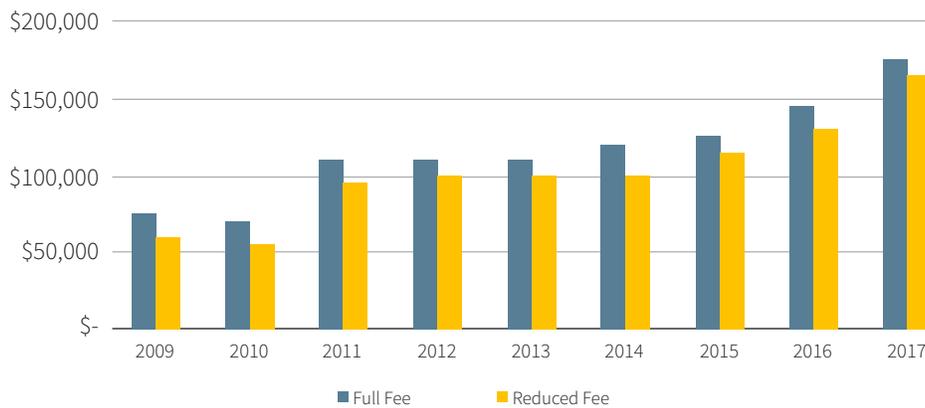
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

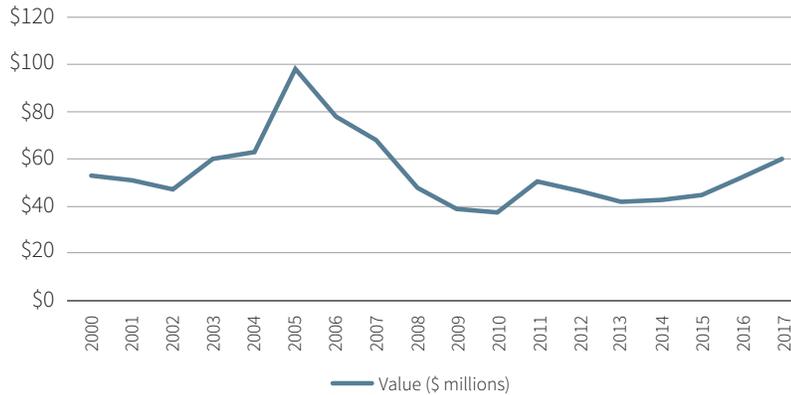
Salmon Troll	# Vessels	Avg. Vessel	Aggregate
Classic Style	290	136,000	39,440,000
Modern Style	59	262,000	15,458,000
Total	349	157,300	54,898,000

Licencing Trends

Recent AT License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of AT Licenses (\$ millions by year)



AT Licence Counts by Category



Outlook/ Commentary

- Area F (North Coast) is seen as the most desirable AT licence as there is less of a risk of DFO shutting down the fishery when Columbia or Northern California fish come through
- Fishing on the coast is seen as sporadic and tough to plan for which has lead to less interest in these licences
- The prices for area F licences in 2017 were seen as high as \$220,000 as a lot of people are looking to get up to the North Coast



PELAGICS – Roe Herring Seine

Background to Valuation

General	
License Designation	HS
Nature of License	Party-based
# Commercial Licences	241
# Communal Commercial Licenses	11
Area Licensing?	5 areas
Stacking?	Yes (limited)
Competitive or Quota Management?	Pools (equal sharing)

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 11
Confidence in current year valuations	Low

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
Full Fee	231	100,000	23,100,000
Reduced Fee	10	95,000	950,000
All HS	241	99,793	24,050,000

Valuation Comments

- Transaction values ranged between \$90,000 - \$120,000
- Typically, sales have been between \$40,000-\$50,000, but have seen a huge increase this year



- There are many cases where the seller may have paid \$500,000 for the licence and is not currently willing to sell for even as high as \$120,000
- Industry experts have indicated there are primarily 2 buyers, and there seems to be a disconnect with the licence values and the profitability of the fishery

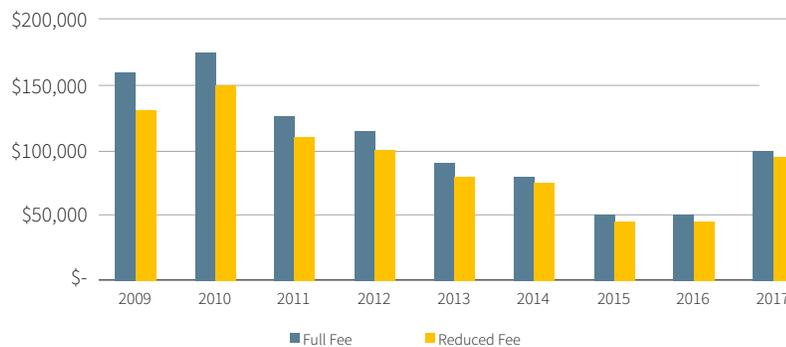
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced Herring Roe Seine vessels was drawn from 2015's valuation report and was not updated.

Herring Seine	# Vessels	Avg. Vessel	Aggregate
Classic Style	35	175,000	6,125,000
Modern Style	105	733,000	76,965,000
Total	140	593,500	83,090,000

Licencing Trends

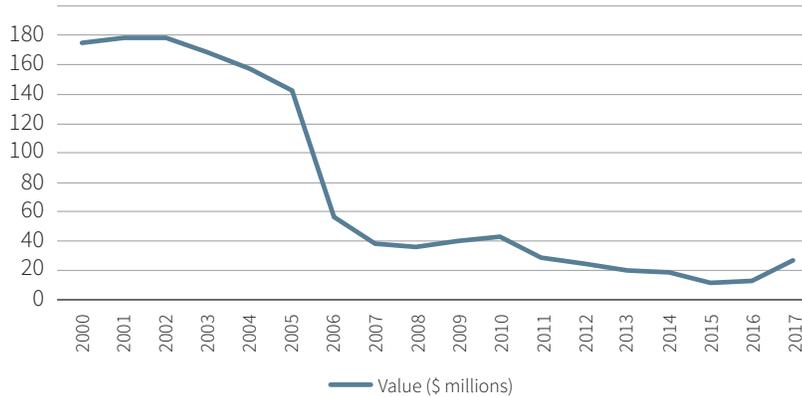
Recent HS License Valuations (Nominal \$s – not adjusted for inflation)



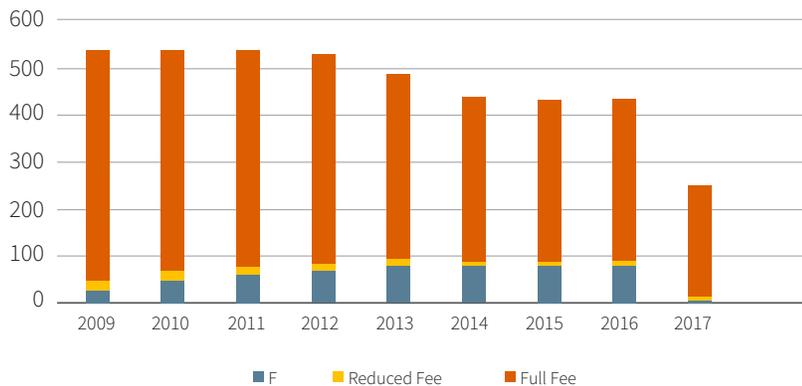
Recent HS License Lease Rates (\$)

HS licences have had virtually no lease value for the past 5 seasons. Lessors typically pay only the DFO licence fees, but many licences remain underutilized.

Aggregate Value of HS Licenses (\$ millions by year)



HS Licence Counts by Category



Outlook/ Commentary

- HS licence values increased by 100% over last years valuation and there seems to be a disconnect on this valuation with the profitability of the fishery
- Some participants predict that the future for herring fisheries lies in food and bait markets, though significant industry re-organization needs to occur to facilitate this
- Very tight market for licence sales right now as licence holders do not seem interested in selling for what buyers are willing to pay
- Some industry experts believe stocks are good but the fishery won't ever be as lucrative as it was due to international pressure from Alaska and Russia

PELAGICS – Roe Herring Gillnet

Background to Valuation

General	
License Designation	HG
Nature of License	Party-based
# Commercial Licences	987
# Communal Commercial Licenses	222
Area Licensing?	5 areas
Stacking?	yes
Competitive or Quota Management?	Pools (equal sharing)

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 6
Confidence in current year valuations	Med

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
Full Fee	738	35,000	25,830,000
Reduced Fee	249	30,000	7,470,000
All HG	987	33,739	33,300,000

Valuation Comments

- Values for this valuation ranged from \$30,000 - \$35,000
- There was very little activity in the market for HG licences
- Similar to HS, many licence holders are waiting for a rebound and are not willing to sell at current prices



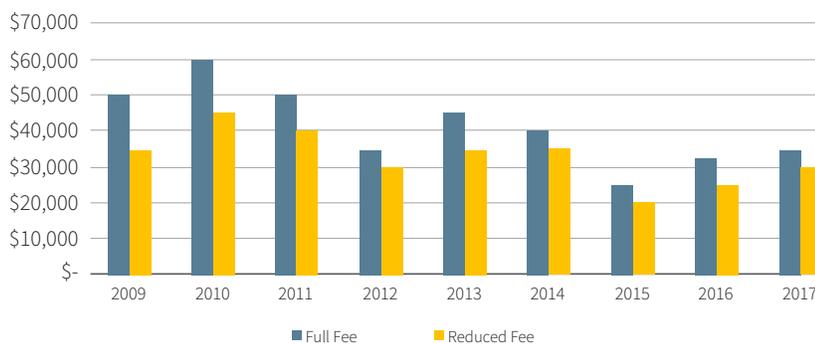
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced herring roe gillnet vessels was drawn from 2015's valuation report and was not updated.

Herring Gillnet	# Vessels	Avg. Vessel	Aggregate
Classic Style	90	38,000	3,420,000
Modern Style	210	132,000	27,720,000
Total	300	103,800	31,140,000

Licensing Trends

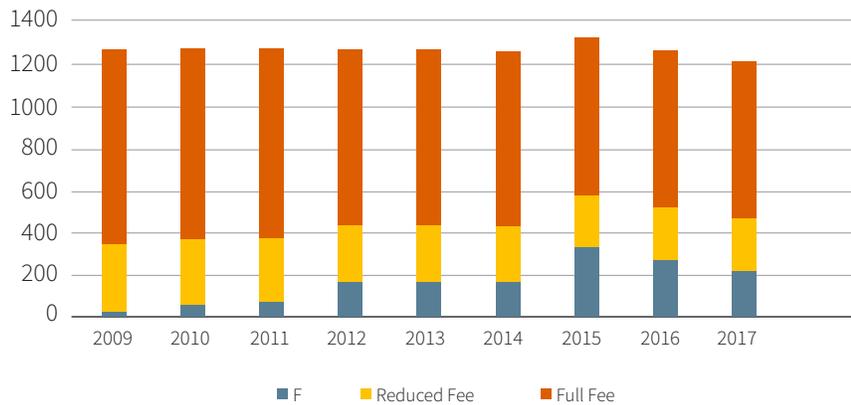
Recent HG License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of HG Licenses (\$ millions by year)



HG Licence Counts by Category



Outlook/ Commentary

- Similarly to herring roe seine but at less of an extreme, there seems to be a disconnect on the value of HG licences and the profitability of the fishery
- Also, similarly to herring roe seine, there is little optimism that this fishery will return to the lucrative status enjoyed in the past
- The market for HG licences is tight as current licence holders are not wanting to sell at current prices

PELAGICS – Herring Spawn on Kelp

Background to Valuation

General	
License Designation	J
Nature of License	Party-based
# Commercial Licences	34
# Communal Commercial Licenses	11
Area Licensing?	5 areas
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	Very Low
# Transactions underlying valuation	None
Confidence in current year valuations	Very Low

Current Valuation

Licence Value at December 31, 2017

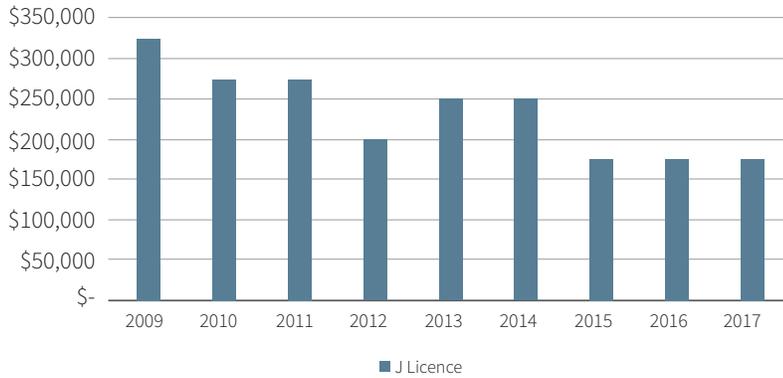
Category	# Licences	Value/ Licence (\$)	Total Value (\$)
J Licences	34	175,000	5,950,000

Valuation Comments

- No transactions were uncovered for this valuation for the 2nd year in a row
- This valuation relies on anecdotal information from the 2015 valuation
- The market activity for this licence is either very low or non-existent

Licencing Trends

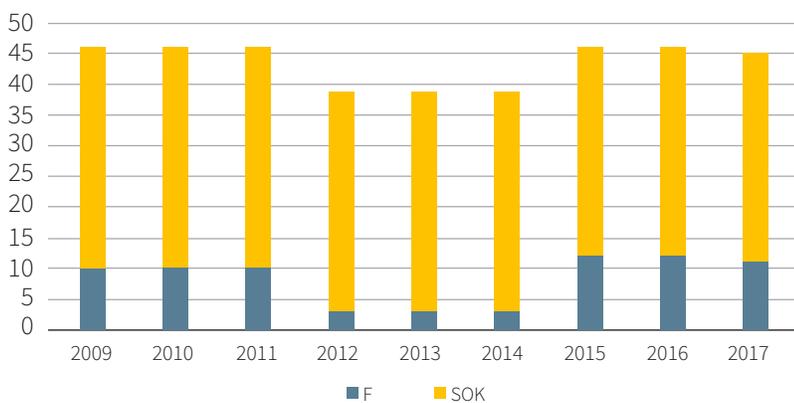
Recent J License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of J Licenses (\$ millions by year)



J Licence Counts by Category



Outlook/ Commentary

- The outlook for this fishery is weak
- The economics of this fishery remain challenging, as low profitability drives some licence holders to not operate
- Similar to the Roe Herring fishery, the SOK fishery has been weakened by weak Japanese demand, and international pressure from Alaska and Russia



PELAGICS – Tuna and Sardine

Two fisheries that now feature permanent licence categories that trade on the open market are Tuna and Sardine. Current year partial valuations are provided for these fisheries:

Tuna (Category USA 68)

General	
License Designation	USA 68
Nature of License	Party-based
# Commercial Licences	45
# Communal Commercial Licenses	0
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Competitive

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	Low
# Transactions underlying valuation	= 0
Confidence in current year valuations	Low

Current Valuation

Licence Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
USA 68	45	225,000	10,125,000

Valuation Comments

- The tuna fishing Treaty between Canada and the USA has lapsed
- Most tuna fishers do not rely on the USA 68 licence rather, seek a tuna permit at a substantial savings

Sardine (ZS)

General	
License Designation	ZS
Nature of License	Party-based
# Commercial Licences	24
# Communal Commercial Licenses	0
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	n/a
Amount of trading activity in category this year	None
# Transactions underlying valuation	None
Confidence in current year valuations	No valuation provided

Current Valuation

Licence Value at December 31, 2017

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

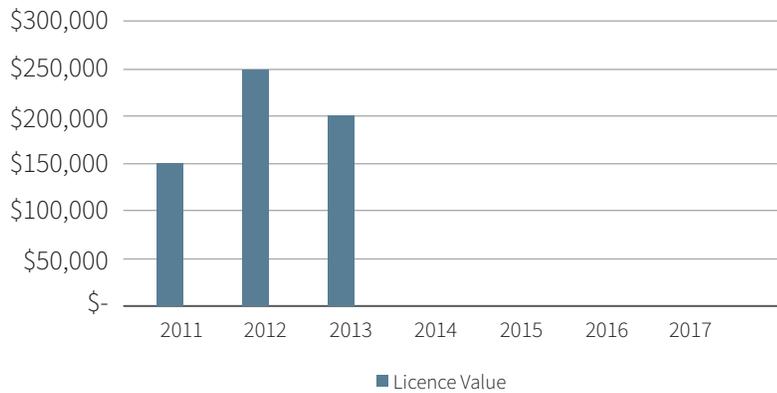
Valuation Comments

- 2017 marked the fourth consecutive season that sardines failed to materialize in BC waters, resulting in no harvest for the season
- No transactions uncovered for this licence and likely no transactions at all took place



Licencing Trends

Recent ZS License Valuations (Nominal \$s – not adjusted for inflation)



Outlook/ Commentary

- For the fourth straight year, sardine numbers remained below the cut-off level where directed fishing for the species could again be allowed
- There are some indications of stronger sardine reproduction in the last year that could eventually lead to improvements in West Coast sardine numbers

GROUND FISH - Halibut

Background to Valuation

General	
License Designation	L
Nature of License	Vessel-based
# Commercial Licences	341
# Communal Commercial Licenses	78
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Foot
Quota	Per lb (dressed)
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 9 (licences)
Confidence in current year valuations	Low - Med

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value per ft/ lb quota (\$)	Avg Licence (\$)	Total Value (\$)
L Licences	341	800	\$32,360	11,034,760
Quota	6,271,915	118.00		740,085,970
Total Value				751,120,730

Valuation Comments

- Average licence value based on \$800 per foot and 40.45' vessel = \$32,360
- Price on halibut quota ranged from \$105/lb - \$130/lb
- Value per foot in the 2016 valuation was likely too high



- Reluctance to sell and an abundance of buyers have also been driving prices up
- Halibut quota prices in early 2017 were seen pushing \$130/lb but have since dropped

Vessel Value

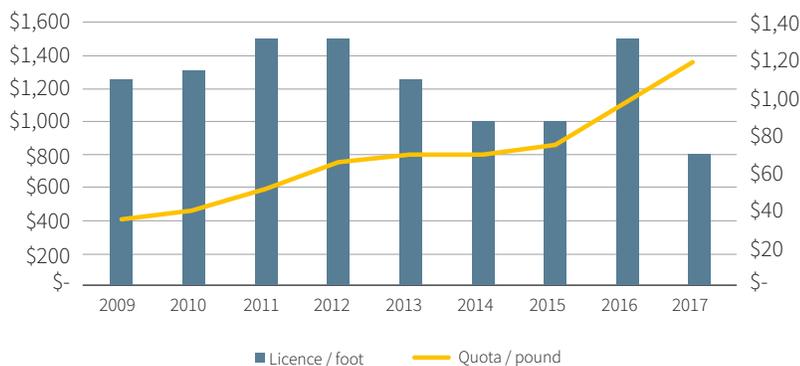
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO’s Detailed Vessel Info Database
- DFO’s Pacific Region Commercial Fishing Licences Database

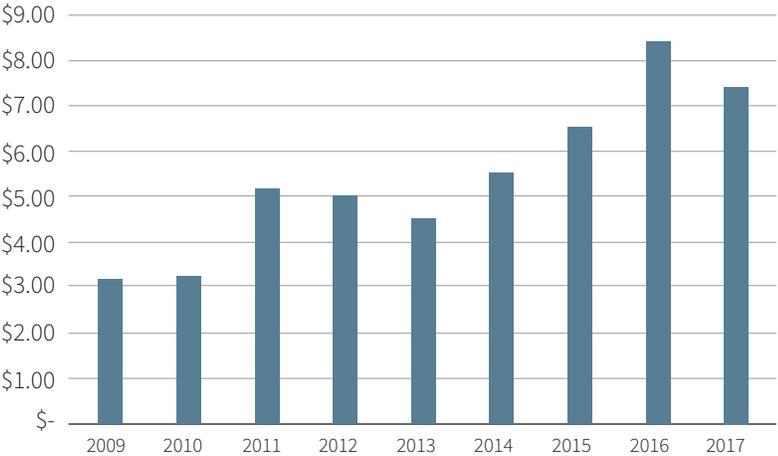
Halibut	# Vessels	Avg. Vessel	Aggregate
Classic Style	252	147,000	37,044,000
Modern Style	89	268,000	23,852,000
Total	341	178,581	60,896,000

Licencing Trends

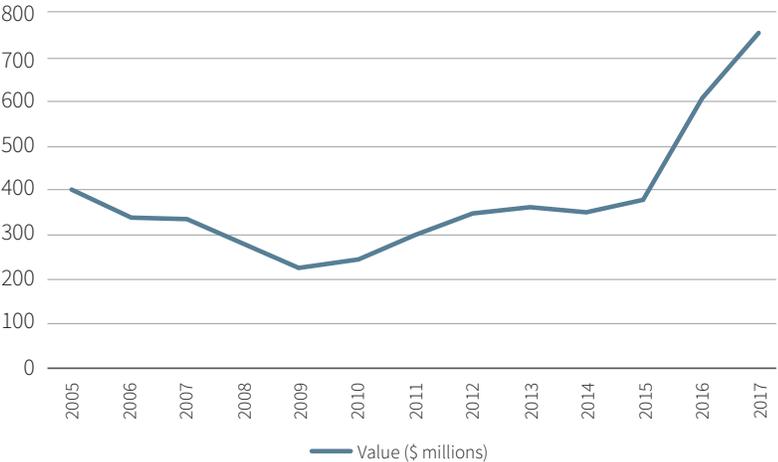
Recent L License and Halibut Quota Valuations (Nominal \$s – not adjusted for inflation)



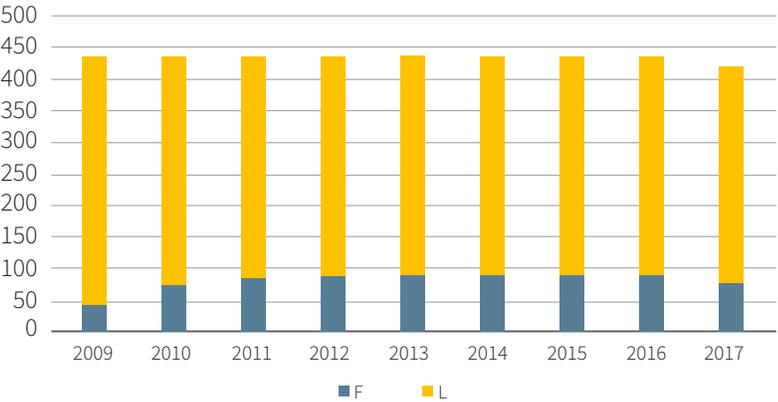
Recent Halibut Quota Lease Rates (\$ per lb)



Aggregate Value of L Licenses and Halibut Quota (\$ millions by year)



L Licence Category by Category



Outlook/ Commentary

- Halibut is seen as a very well managed, sustainable fishery
- Some industry experts indicated that a potential “ceiling” was hit or at least tested in the early parts of 2017 and subsequently the price of halibut quota and licences have since fallen
- Lease rates could fall to as little as \$5/lb quota in 2018

GROUND FISH - Sablefish

Background to Valuation

General	
License Designation	K
Nature of License	Vessel-based
# Commercial Licences	41
# Communal Commercial Licenses	6
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Foot
Quota	Per lb (jcut)
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	= 1 (licences)
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
K Licence	41	250,000	10,250,000
Quota	3,102,656	77.00	238,904,490
Total Value			249,154,490

Valuation Comments

- Only one K licence transaction was uncovered for this year's valuation
- The range on sablefish quota was \$75/lb - \$85/lb j-cut, or \$54/lb - \$61/lb round
- Some industry experts believe that, like halibut, sablefish has hit a ceiling; however, others are of the opinion that we can see sablefish quota go into the \$90/lb range



Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO’s Detailed Vessel Info Database
- DFO’s Pacific Region Commercial Fishing Licences Database

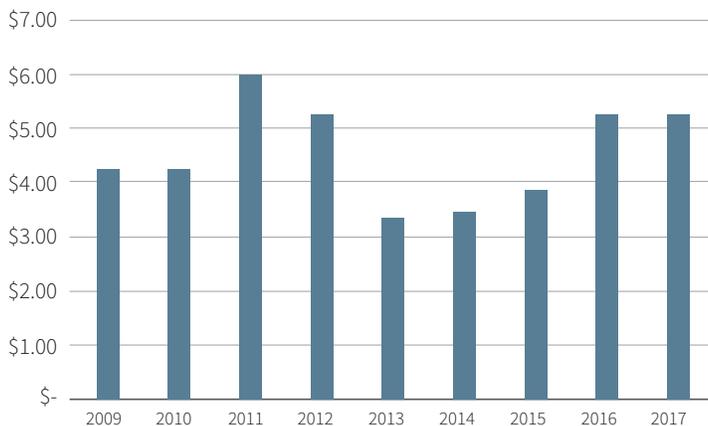
Sablefish	# Vessels	Avg. Vessel	Aggregate
Classic Style	28	200,000	5,600,000
Modern Style	13	650,000	8,450,000
Total	41	342,683	14,050,000

Licencing & Quota Trends

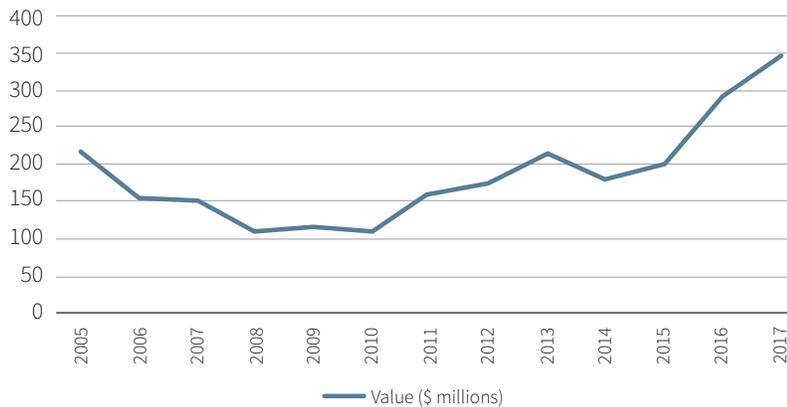
Recent K License and Sablefish Quota Valuations (Nominal \$s – not adjusted for inflation)



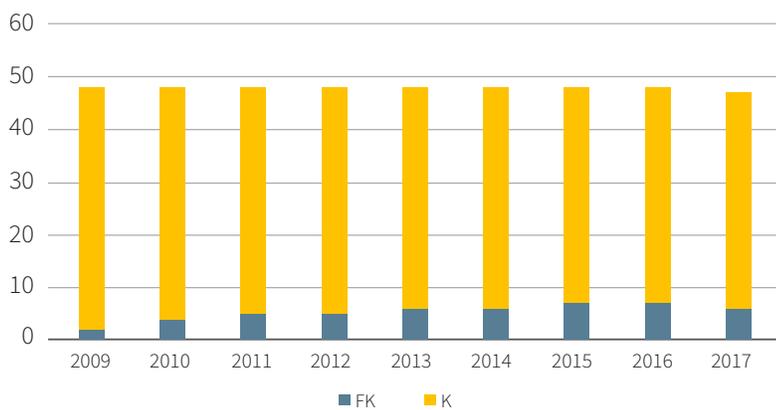
Recent Sablefish Quota Lease Rates



Aggregate Value of K Licenses and Sablefish Quota (\$ millions by year)



K Licence Counts by Category



Outlook/ Commentary

- The upward trend for Sablefish continues with a 18% rise over last year's market capitalization – mostly due to an increase in the TAC
- There is not a lot of movement on K licences and people just do not get rid of them
- The landed fish price of sablefish continues to be strong (comparable to halibut), but the costs associated with the fishery are higher. Further, there are fewer K licences, limiting the number of vessels that can actively fish

GROUND FISH - Groundfish Trawl

Background to Valuation

General	
License Designation	T
Nature of License	Vessel-based
# Commercial Licences	135
# Communal Commercial Licenses	3
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Foot
Quota	Per lb
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 4 (licences)
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value per ft/ lb quota (\$)	Avg Licence (\$)	Total Value (\$)
T Licence	135	900	54,900	7,411,500
Uncut Quota	106,305,180	1.85		196,664,583
Hake Outside	344,068,430	0.22		75,695,055
Total Value				279,771,138



Valuation Comments

- Average licence value based on \$900 per foot and 61' vessel = \$54,900
- The specific holding caps assigned to each T Licences greatly affect their value
- Smaller T licences in the \$40,000 - \$50,000 range are often purchased just to hold quota where larger ones in the \$200,000 - \$400,000 range are sought after for larger holding caps and sold at a premium

Vessel Value

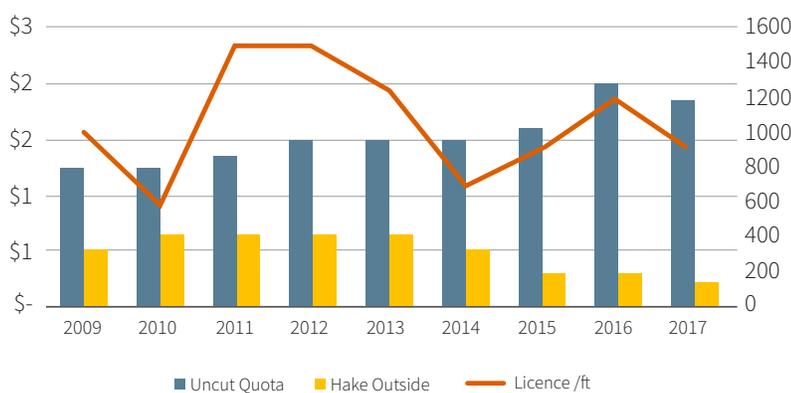
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced groundfish trawl vessels was drawn from 2015's valuation report and was not updated. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

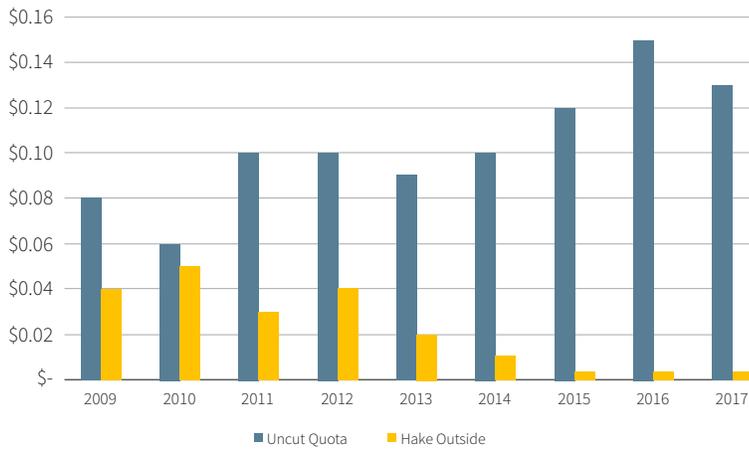
Trawl	# Vessels	Avg. Vessel	Aggregate
Classic Style	100	440,000	44,000,000
Modern Style	35	1,375,000	48,125,000
Total	135	682,407	92,125,000

Licencing & Quota Trends

Recent T License and Trawl Quota Valuations (Nominal \$s – not adjusted for inflation)



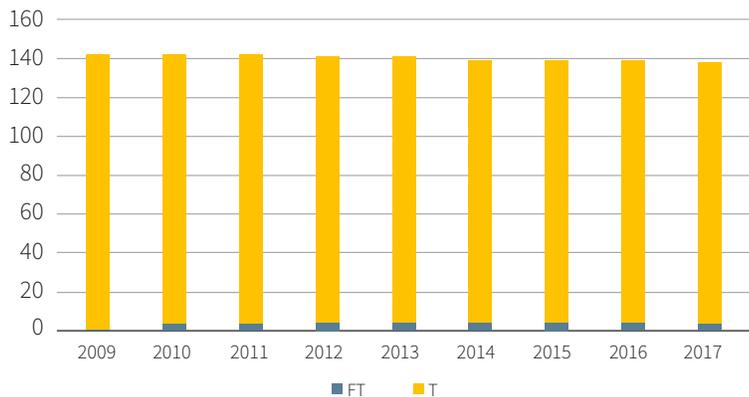
Recent Trawl Quota Lease Rates (\$ per lb)



Aggregate Value of T Licenses and Trawl Quota (\$ millions by year)



T Licence Counts by Category



Outlook/ Commentary

- Some industry experts have attributed the drop in quota prices to groundfish from the US market flooding the Canadian market



GROUND FISH - Rockfish Hook & Line

Background to Valuation

General	
License Designation	ZN
Nature of License	Party-based
# Commercial Licences	211
# Communal Commercial Licenses	36
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 2
Confidence in current year valuations	Low

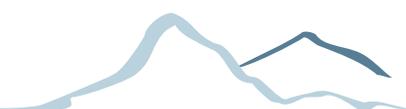
Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
ZN Inside	53	39,000	2,067,000
ZN Outside	158	220,000	34,760,000
ZN Total	211	174,536	36,827,000

Valuation Comments

- Very few ZN licence transactions were uncovered as not many typically change hands
- The outside ZN in particular often does not move as it is coveted for its bycatch quota



Vessel Value

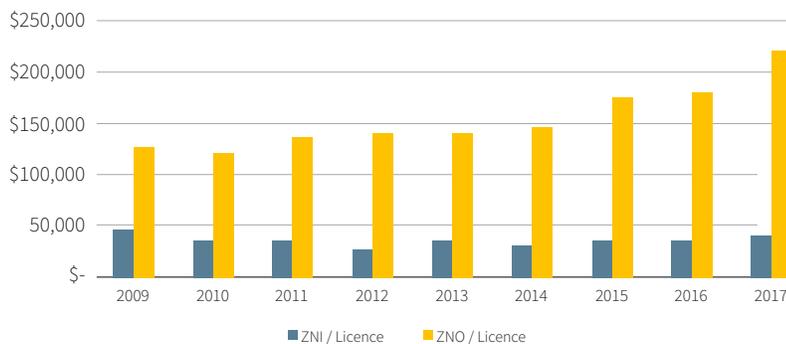
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced rockfish vessels was drawn from 2015's valuation report and was not updated.

ZN Outside	# Vessels	Avg. Vessel	Aggregate
Classic Style	116	136,000	15,776,000
Modern Style	62	286,000	17,732,000
Total	178	188,247	33,508,000

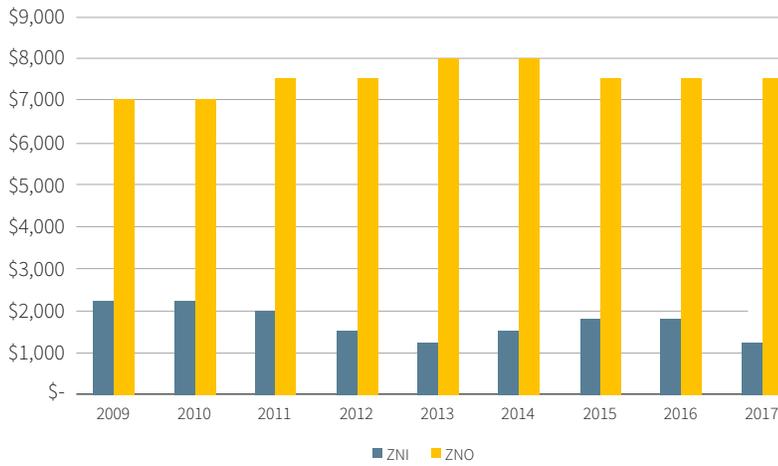
ZN Inside	# Vessels	Avg. Vessel	Aggregate
Classic Style	12	75,000	900,000
Modern Style	7	196,000	1,372,000
Total	19	119,579	2,272,000

Licencing Trends

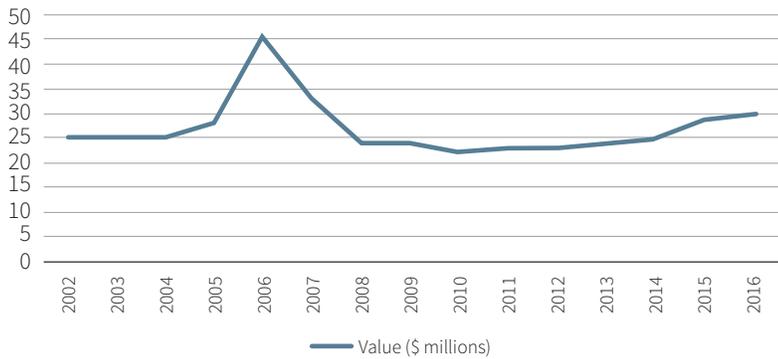
Recent ZN License Valuations (Nominal \$s – not adjusted for inflation)



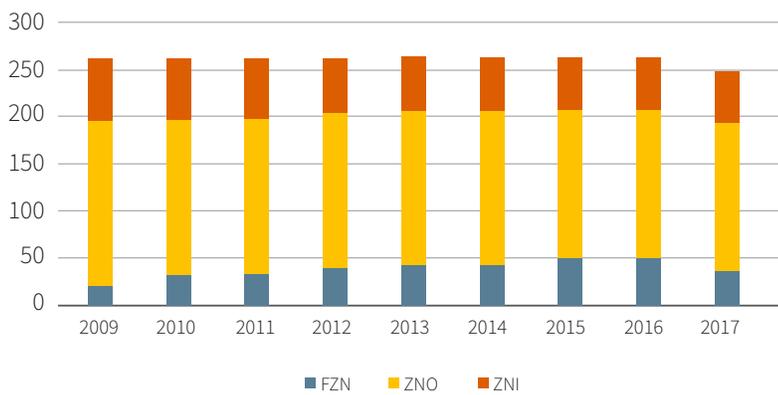
Recent ZN Lease Rates (\$ per lb)



Aggregate Value of ZN Licenses (\$ millions by year)



ZN Licence Counts by Category



Outlook/ Commentary

- Due to stock concerns for some rockfish species, ZN outside licences (and their bycatch) are highly coveted and basically a requirement to fish halibut
- No licence holders let the ZN outside licences go as they need them to protect their other fisheries
- This licence is particularly important in the halibut fishery – and for anybody that does long lining
- Demand is very high for these licences, but not many come up as most licence holders need them



GROUND FISH – Lingcod and Dogfish

Background to Valuation

Lingcod and dogfish are managed under an IVQ program in where permanent and temporary trades of quota are permitted. These fisheries do not have dedicated licence categories, however they can be executed under the authority of any vessel-based licence. This makes these fisheries difficult to estimate for valuation purposes.

Lingcod

About 8 transactions were uncovered for this report with values ranging between \$10 - \$12 per lb

Quota Value at December 31, 2017

Category	Lbs of quota	Value/ Lb	Total Value
Lingcod Quota (H&L)	2,471,496	\$11	\$27,186,456

- Lingcod leases in the hook and line fishery were in the 20-40 cents per lb range
- The difference in lease rates can be attributed to the difference in cost of catching lingcod in different areas
- The WCVI is the most efficient lingcod harvest area for the hook and line fleet, while the north coast poses logistical challenges

Dogfish

About 5 transactions were uncovered for this report with values ranging between \$0.11 – \$ 0.12

Quota Value at December 31, 2017

Category	Lbs of quota	Value/ Lb	Total Value
Dogfish Quota (H&L)	18,889,012	\$0.12	\$2,266,681

- The dogfish fishery has not been very active and there was virtually no lease value again this year. The dogfish fishery struggles with challenging economics including logistics of getting product to market as well as low demand
- The east coast holds a competitive advantage in this fishery because of the higher volume and proximity to market



SHELLFISH – Prawn by Trap

Background to Valuation

General	
License Designation	W
Nature of License	Vessel-based
# Commercial Licences	186
# Communal Commercial Licenses	56
Area Licensing?	No
Stacking?	Yes (traps)
Competitive or Quota Management?	Competitive

Valuation Parameters	
License	Per Foot
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Med
# Transactions underlying valuation	≈ 6
Confidence in current year valuations	Med

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Foot (\$)	Avg. Licence (\$)	Total Value (\$)
W Licences	186	19,000	697,300	129,697,800

Valuation Comments

- Average licence value based on \$19,000 per foot and 36.7' vessel = \$697,300
- There is a wide range in values in W licence transactions because they often include vessels and fishing gear
- Short licences trade for higher-per-foot values than longer ones, though longer licences still have a higher overall value

Licence Length	Value	Value per foot
30 feet	\$660,000	\$22,000
42 feet	\$756,000	\$18,000

Vessel Value

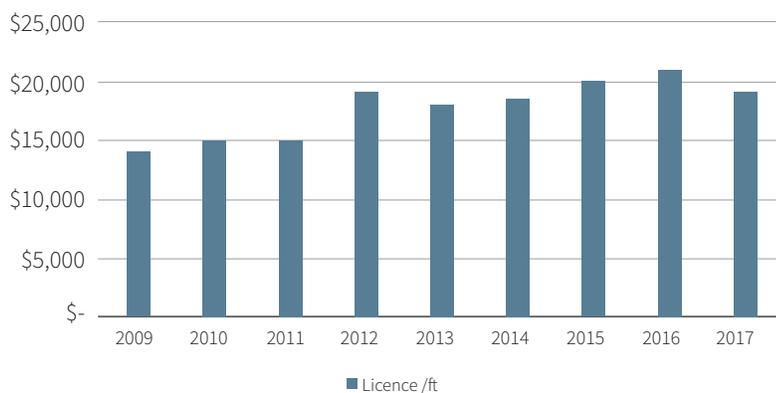
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

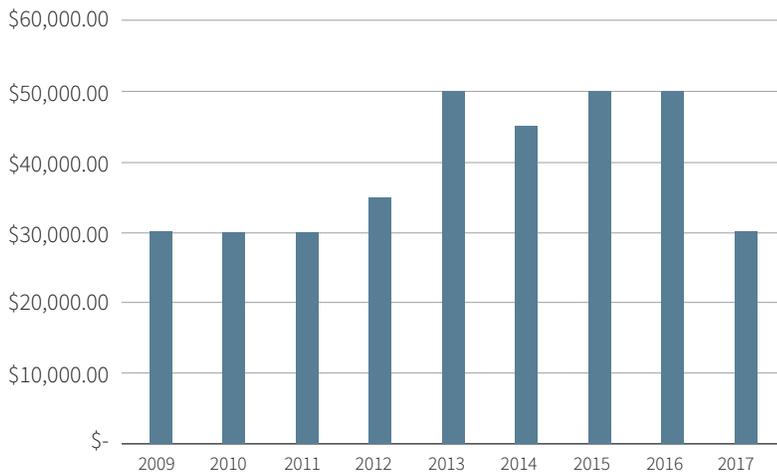
Prawn	# Vessels	Avg. Vessel	Aggregate
Classic Style	112	162,000	18,144,000
Modern Style	74	325,000	24,050,000
Total	186	226,849	42,194,000

Licencing Trends

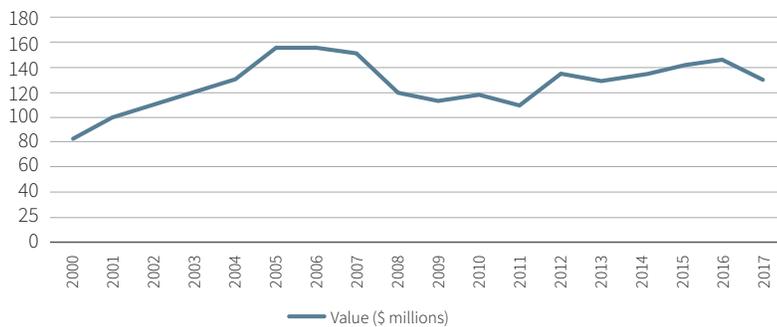
Recent W License Valuations (Nominal \$s – not adjusted for inflation)



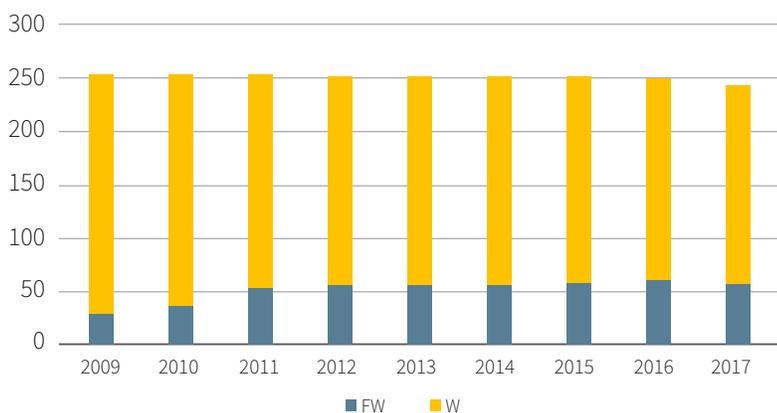
Recent W Licence Lease Rates (\$ per lb)



Aggregate Value of W Licenses (\$ millions by year)



W Licence Country by Category



Three W licences were relinquished in 2017.

Outlook/ Commentary

- There is a lot of uncertainty in this licence category this year after a poor year last year. There has been a lot of interest in selling considering the still lofty prices that can be realized for a W licence



SHELLFISH – Crab

Background to Valuation

General	
License Designation	R
Nature of License	Vessel-based
# Commercial Licences	189
# Communal Commercial Licenses	29
Area Licensing?	7 areas
Stacking?	No
Competitive or Quota Management?	Competitive

Valuation Parameters	
License	Per Foot
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low-Med
# Transactions underlying valuation	≈ 2
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Foot (\$)	Avg. Licence (\$)	Total Value (\$)
R Licences	189	17,500	542,500	102,532,500

Valuation Comments

- Average licence value based on \$17,500 per foot and 31' vessel = \$542,500
- The transactions researched ranged from \$10,500/ ft - \$20,000/ ft
- Values range widely by area for crab licences
 - » Areas A, E, and I were closer to \$19,000 /ft - \$20,000/ ft
 - » Areas B, G, and H were closer to \$15,000 /ft



- » Area J was closer to \$10,000/ ft
- Crab licences lease in the \$25,000 to \$35,000 range, however due to restrictions associated with vessel-based licences, they can be difficult to lease in general.

Vessel Value

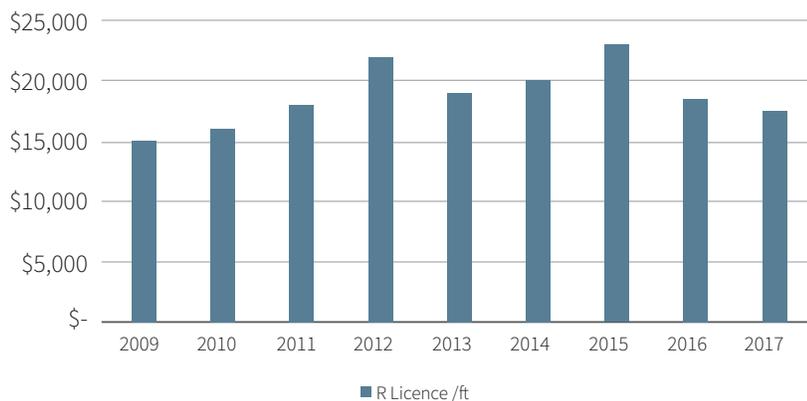
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

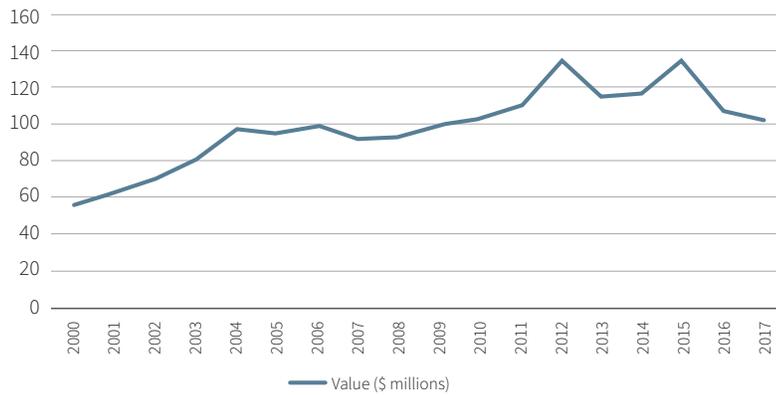
Crab	# Vessels	Avg. Vessel	Aggregate
Classic Style	88	144,000	12,672,000
Modern Style	101	350,000	35,350,000
Total	189	254,085	48,022,000

Licensing Trends

Recent R License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of R Licenses (\$ millions by year)



R Licence Counts by Category



Outlook/ Commentary

- Area A has been slow, but industry experts are expecting a good return on the cycle this coming year
- All R licences will remain difficult to come by as most people who own them are fishing them



SHELLFISH – Shrimp by Trawl

Background to Valuation

General	
License Designation	S
Nature of License	Vessel-based
# Commercial Licences	186
# Communal Commercial Licenses	3
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Competitive

Valuation Parameters	
License	Per Foot
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Med
# Transactions underlying valuation	≈ 8
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Foot (\$)	Avg. Licence (\$)	Total Value (\$)
S Licences	186	1,000	41,900	7,793,400

Valuation Comments

- An average licence value based on a \$1,000 per foot valuation and a 41'9 average vessel length is \$41,900
- The value per foot remains unchanged from last years valuation, but the market capitalization has decreased by 12% due to a decrease in available licences
- The lease market for shrimp licences was all but non-existent in 2017 and 2016



Vessel Value

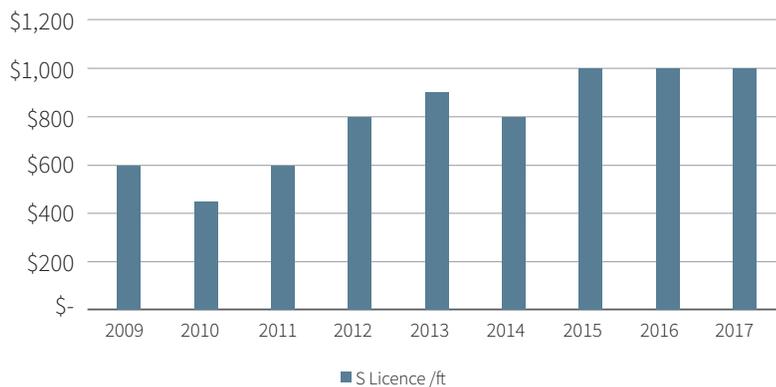
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO’s Detailed Vessel Info Database
- DFO’s Pacific Region Commercial Fishing Licences Database

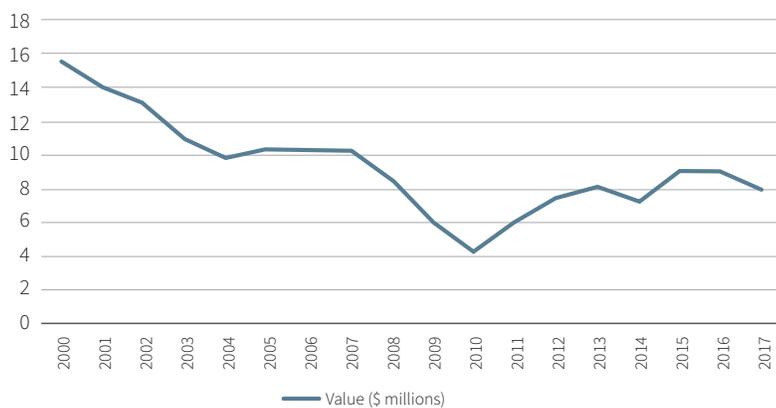
Shrimp Trawl	# Vessels	Avg. Vessel	Aggregate
Classic Style	131	83,000	10,873,000
Modern Style	55	167,000	9,185,000
Total	186	107,839	20,058,000

Licencing Trends

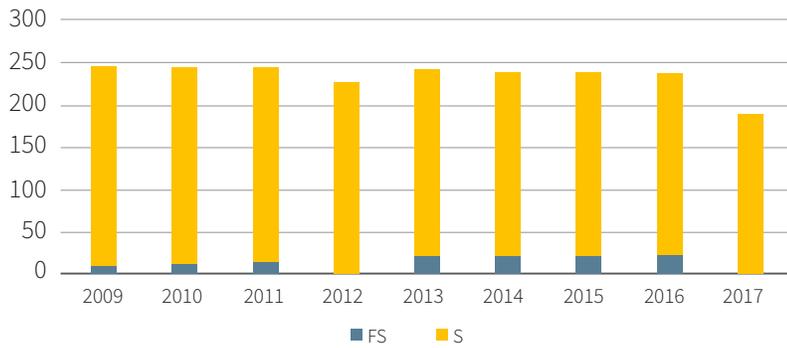
Recent S License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of S Licenses (\$ millions by year)



S Licence Counts by Category



Outlook/ Commentary

- Industry experts have indicated they believe that shrimp is going to be quiet for the foreseeable future citing disputes between DFO and industry on the management of the fisher



SHELLFISH – Geoduck

Background to Valuation

General	
License Designation	G
Nature of License	Vessel-based
# Commercial Licences	50
# Communal Commercial Licenses	5
Area Licensing?	3 areas
Stacking?	Yes
Competitive or Quota Management?	quota

Valuation Parameters	
License	Per Licence
Quota	Per Block
Vessels	Yes
Amount of trading activity in category this year	Low (Licences w/ 10 blocks)
# Transactions underlying valuation	≈ 7
Confidence in current year valuations	Med

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence/ quota block (\$)	Total Value (\$)
G Licences (tab)	50	250,000	12,500,000
Quota Blocks	500	675,000	337,500,000
Total Value			350,000,000

Valuation Comments

- G tabs (licence only) have a \$250,000 average valuation
- Quota block (1/10) values range from \$600,000 - \$700,000
- By the contractors estimate, a G licence with 10 blocks of quota would have an approximate value of \$7M (\$250,000 licence plus \$6.75M for 10 quota blocks)



Vessel Value

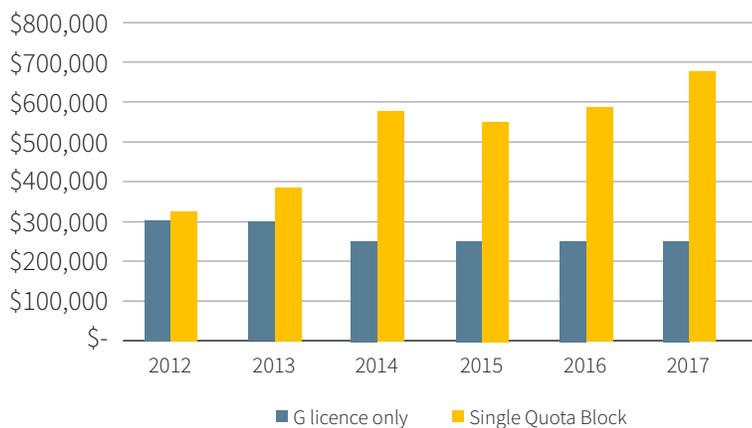
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

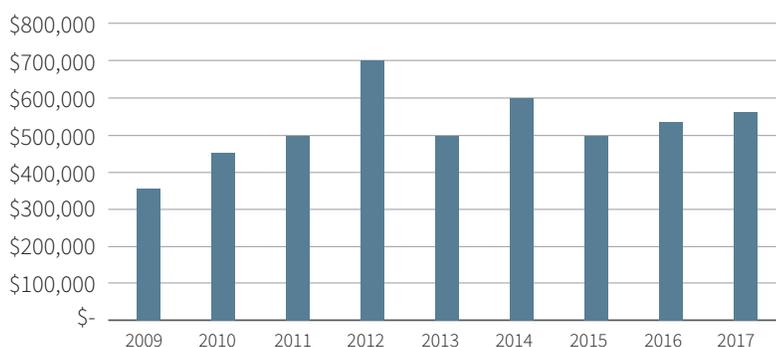
Geoduck	# Vessels	Avg. Vessel	Aggregate
Classic Style	26	108,000	2,808,000
Modern Style	24	264,000	6,336,000
Total	50	182,880	9,144,000

Licensing Trends

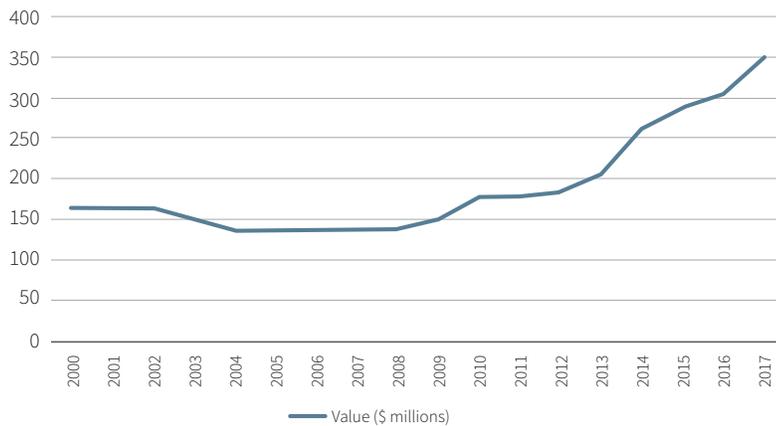
Recent G License and Geoduck Quota Block Valuations (Nominal \$s – not adjusted for inflation)



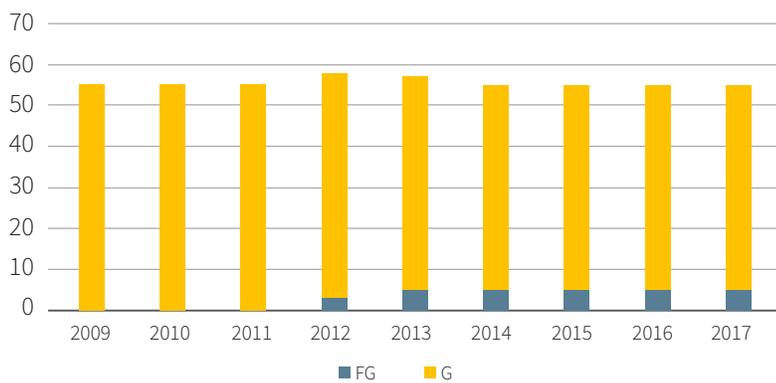
Recent G Licence Lease Rates



Aggregate Value of G Licenses (\$ millions by year)



G Licence Counts by Category



Outlook/ Commentary

- This fishery's sustained levels of high profitability have been attracting large amounts of investment capital, and foreign buyers have been finding loop holes to invest in geoduck licences and quota blocks
- Demand is remaining high for the purchase of access to this fishery, but the market has remained relatively tight as not many people are looking to sell

SHELLFISH – Sea Cucumber

Background to Valuation

General	
License Designation	ZD
Nature of License	Part-based
# Commercial Licences	84
# Communal Commercial Licenses	0
Area Licensing?	4 areas
Stacking?	Yes
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 2
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
ZD Licences	84	925,000	77,700,000

Valuation Comments

- Transactions researched for this report varied widely from \$850,000 - \$1,200,000
- There are a lot of people looking to purchase but not a lot of licence holders looking to sell

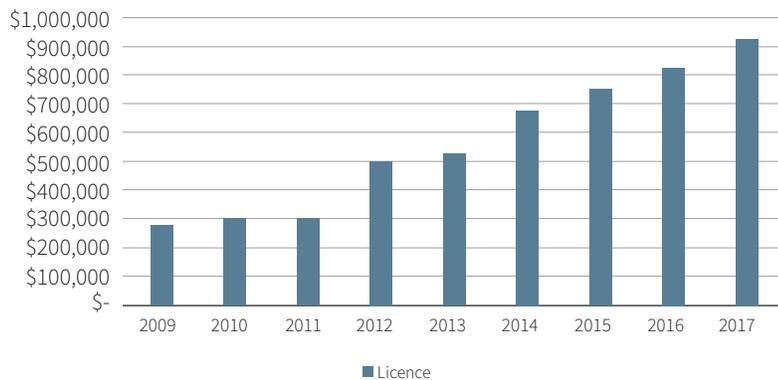
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced sea cucumber vessels was drawn from 2015's valuation report and was not updated.

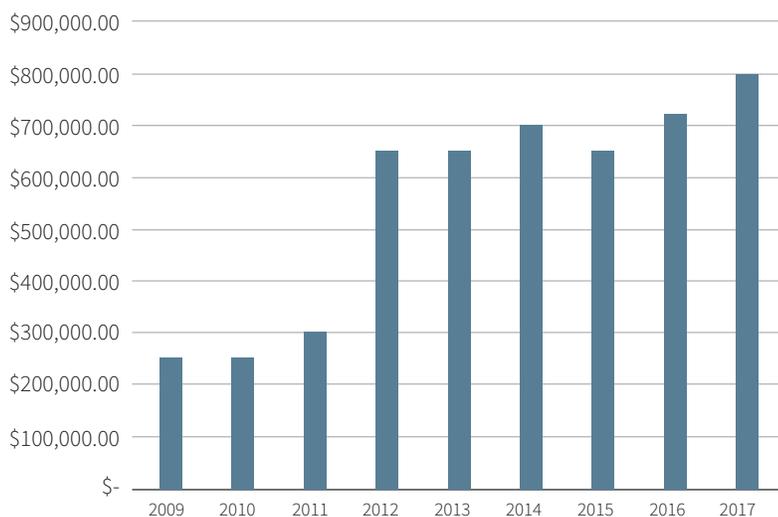
Sea Cucumber	# Vessels	Avg. Vessel	Aggregate
Classic Style	14	108,000	1,512,000
Modern Style	16	264,000	4,224,000
Total	30	191,200	5,736,000

Licencing Trends

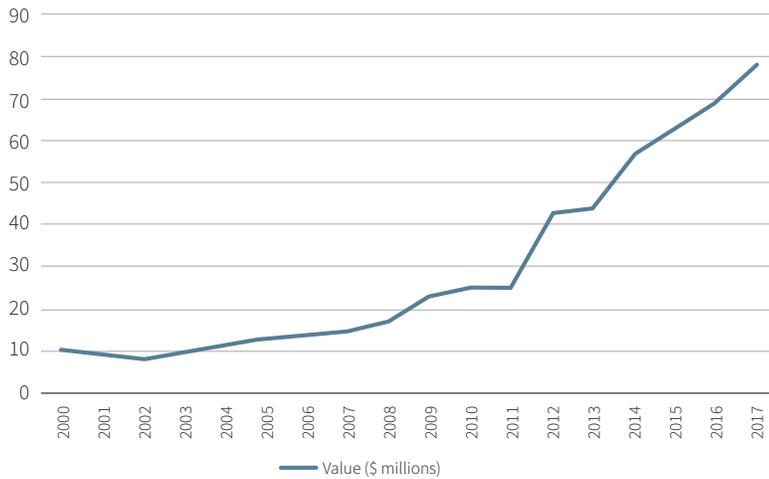
Recent ZD License Valuations (Nominal \$s – not adjusted for inflation)



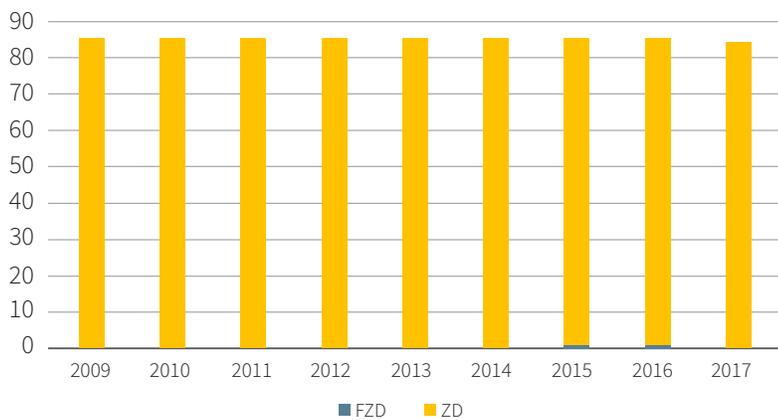
Recent ZD Licence Lease Rates



Aggregate Value of ZD Licenses (\$ millions by year)



ZD Licence Counts by Category



There were no relinquished ZD licences in 2017.

Outlook/ Commentary

- The market for sea cucumber licences is notoriously tight and there are lots of people looking to buy but not many licence holders looking to sell
- Some industry experts see a disconnect between the price of the licence and the profitability of the fishery
- Demand remains strong for access to this fishery



SHELLFISH – Red Sea Urchin

Background to Valuation

General	
License Designation	ZC
Nature of License	Part-Based
# Commercial Licences	71
# Communal Commercial Licenses	25
Area Licensing?	2 Areas
Stacking?	Yes
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	≈ 4
Confidence in current year valuations	Very Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
ZC Licences	71	275,000	19,525,000

Valuation Comments

- Transactions for ZC licences uncovered were much higher than 2016 values
- Transactions varied widely from a low of \$200,000 to as high as \$350,000
- The report writer has a low confidence level in the valuation due to a combination of the # of underlying transactions in the valuation and the wide range in recorded transactions



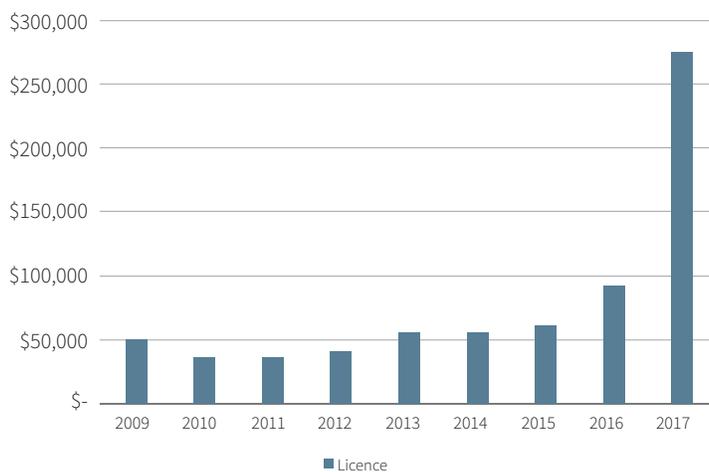
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced vessels was drawn from 2015's valuation report and was not updated.

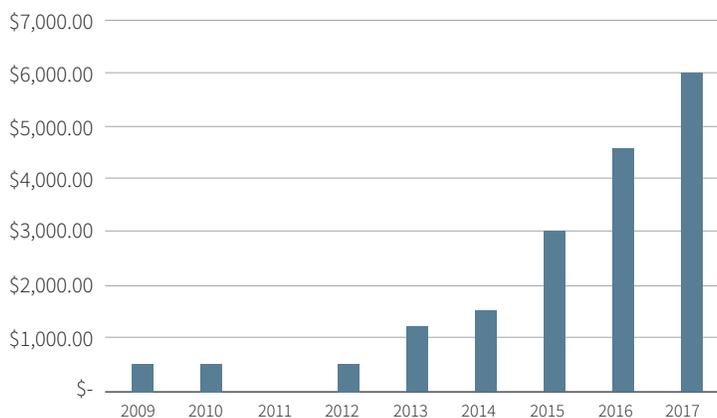
Red Sea Urchin	# Vessels	Avg. Vessel	Aggregate
Classic Style	16	81,000	1,296,000
Modern Style	24	200,000	4,800,000
Total	40	152,400	6,096,000

Licensing Trends

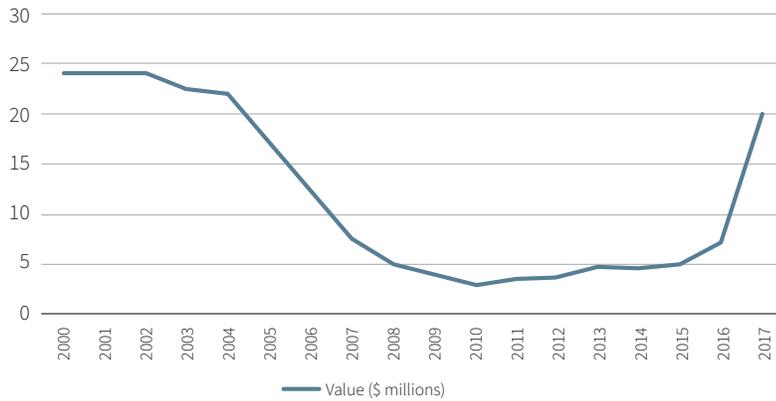
Recent ZC License Valuations (Nominal \$s – not adjusted for inflation)



Recent ZC Licence Lease Rates



Aggregate Value of ZC Licenses (\$ millions by year)



ZC Licence Counts by Category



Outlook/ Commentary

- Despite a decrease in available licences, the market capitalization of ZC licences has exploded by 168%
- There seems to be a disconnect with the profitability of this fishery and current licence values
- Lease rates have continued increasing through 2017
- Few licences are being placed on the market resulting in upward price pressure in this licence category



SHELLFISH – Green Sea Urchin

Background to Valuation

General	
License Designation	ZA
Nature of License	Party-Based
# Commercial Licences	48
# Communal Commercial Licenses	0
Area Licensing?	Yes
Stacking?	Yes
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	Low
# Transactions underlying valuation	= 1
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
ZA Licences	48	60,000	2,880,000

Valuation Comments

- Only one market transactions was uncovered for the purposes of this report
- There was very limited to no transaction activity during the valuation period for green sea urchin licences. There is demand to buy these licences, but nobody is looking to sell



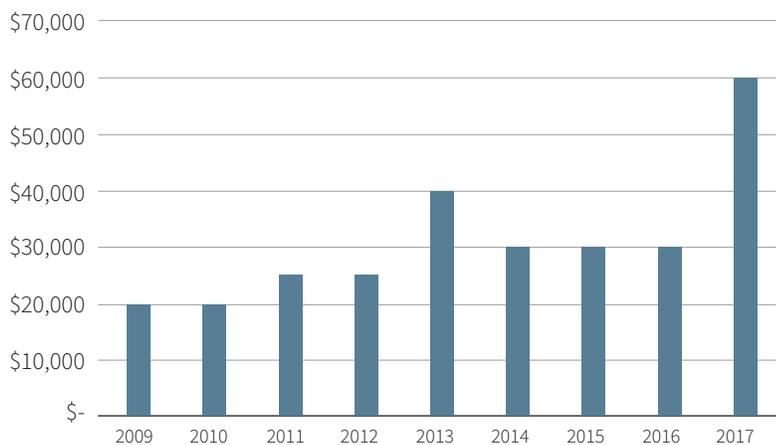
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced vessels was drawn from 2015's valuation report and was not updated.

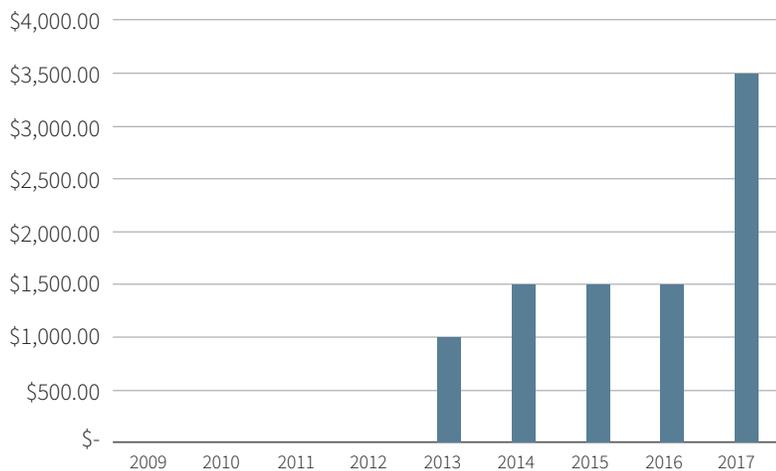
Green Sea Urchin	# Vessels	Avg. Vessel	Aggregate
Classic Style	5	81,000	405,000
Modern Style	7	200,000	1,400,000
Total	12	150,417	1,805,000

Licensing Trends

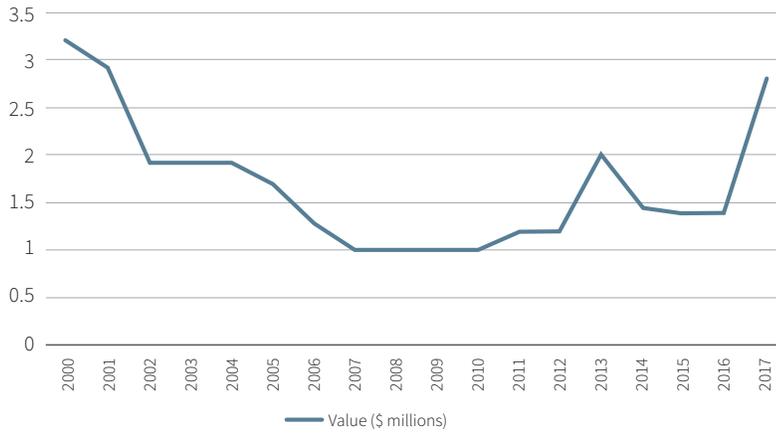
Recent ZA License Valuations (Nominal \$s – not adjusted for inflation)



Recent ZA Licence Lease Rates (\$ per lb)



Aggregate Value of ZA Licenses (\$ millions by year)



ZA Licence Counts by Category



There were no new relinquishments of ZA licences in 2017

Outlook/ Commentary

- Prices have spiked in this fishery and lease rates have followed suite
- Flying green sea urchins live into Asian markets have allowed industry to fetch better prices
- ZA licence prices are continuing to rise into 2018



SHELLFISH – Euphausiid

Background to Valuation

General	
License Designation	ZF
Nature of License	Party-Based
# Commercial Licences	11
# Communal Commercial Licenses	0
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Quota

Valuation Parameters	
License	Per Licence
Quota	n/a
Vessels	Yes
Amount of trading activity in category this year	None
# Transactions underlying valuation	None
Confidence in current year valuations	Very Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Licence (\$)	Total Value (\$)
ZF Licences	11	40,000	440,000

Valuation Comments

- No transaction activity recorded for 2016 or 2017. Anecdotal information from 2015 indicated values in the \$40,000 to \$50,000 range
- Value per licence has remained the same but market capitalization has decreased due to relinquished licences

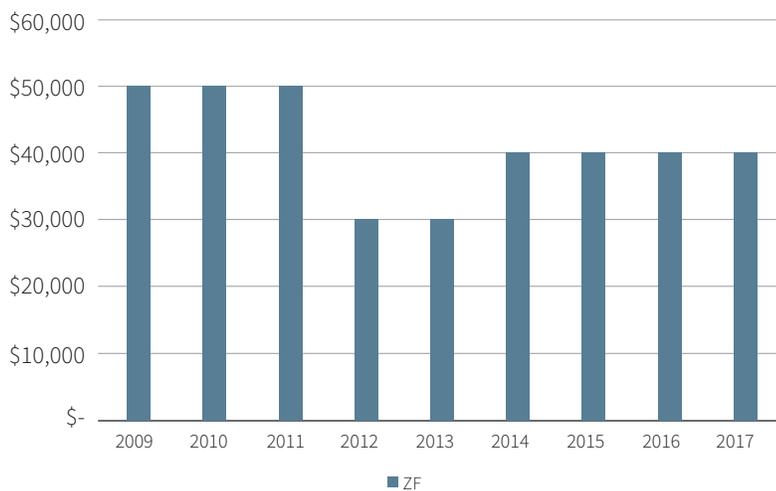
Vessel Value

Aggregate fleet value is arrived at by using past data for average vessel value as a baseline. Fleet vessel valuation is imprecise and uses imprecise and incomplete DFO datasets. The number of licenced vessels was drawn from 2015's valuation report and was not updated.

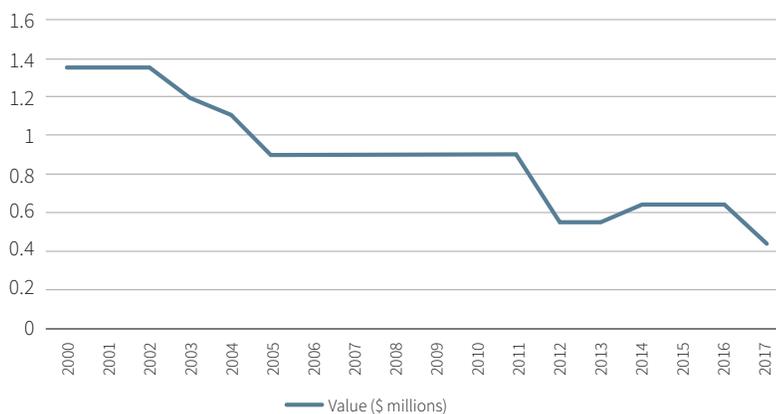
Euphausiid	# Vessels	Avg. Vessel	Aggregate
Classic Style	6	184,000	1,104,000
Modern Style	10	646,000	6,460,000
Total	16	472,750	7,564,000

Licensing Trends

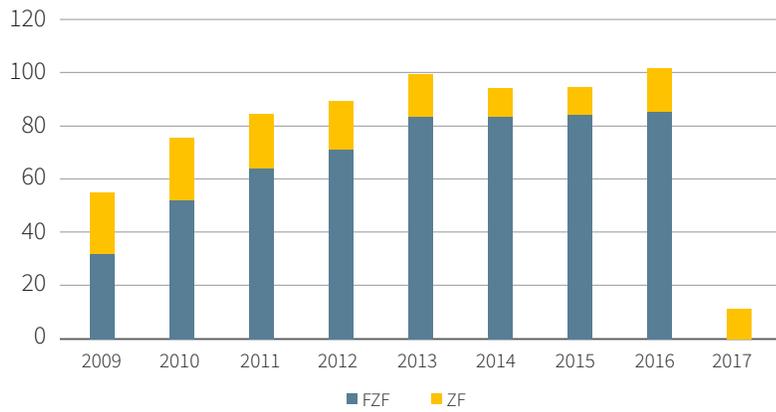
Recent ZF License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of ZF Licenses (\$ millions by year)



ZF Licence Counts by Category



There were four relinquished ZF licences in 2017, and no registered communal commercial licences

Outlook/ Commentary

- This is a very small-scale fishery with low participation and low profitability
- Outlook is uncertain as little information could be provided by industry experts

SHELLFISH – Schedule II Species

Background to Valuation

General	
License Designation	C
Nature of License	Vessel-based
# Commercial Licences	332
# Communal Commercial Licenses	14
Area Licensing?	No
Stacking?	No
Competitive or Quota Management?	Various

Valuation Parameters	
License	Per Foot
Quota	n/a
Vessels	No
Amount of trading activity in category this year	Med
# Transactions underlying valuation	≈ 8
Confidence in current year valuations	Low

Current Valuation

Licence & Quota Value at December 31, 2017

Category	# Licences	Value/ Foot (\$)	Avg. Licence (\$)	Total Value (\$)
C Licences	332	500	17,000	5,644,000

Valuation Comments

- Transactions for C licences range from about \$200 - \$1,000 per foot
- Average licence value based on \$500 per foot and a 34' vessel = \$17,000
- These licences are sometimes acquired and then relinquished to allow un-marrying of vessel-based licences
- The drop in licences in 2015 to 2016 from 367 to 332 could have had an effect on the upward pressure in C licence prices



Vessel Value

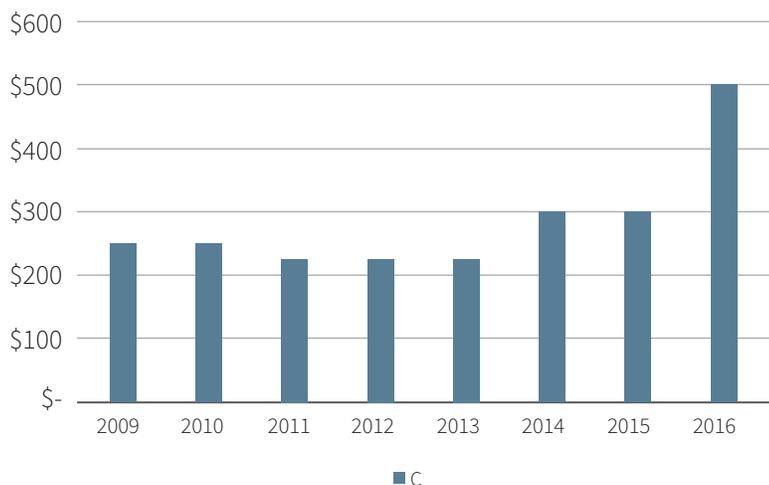
Aggregate fleet value is arrived at by using past data for average vessel value as a baseline, however the number of vessels has been updated. Fleet vessel valuation is imprecise, and uses imprecise incomplete DFO datasets. The number of licenced vessels is drawn from two data sources:

- DFO's Detailed Vessel Info Database
- DFO's Pacific Region Commercial Fishing Licences Database

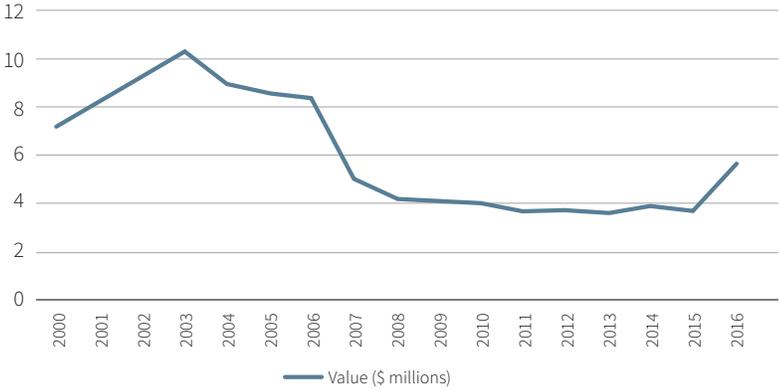
Schedule II	# Vessels	Avg. Vessel	Aggregate
Classic Style	209	40,000	8,360,000
Modern Style	199	143,000	28,457,000
Total	408	90,238	36,817,000

Licensing Trends

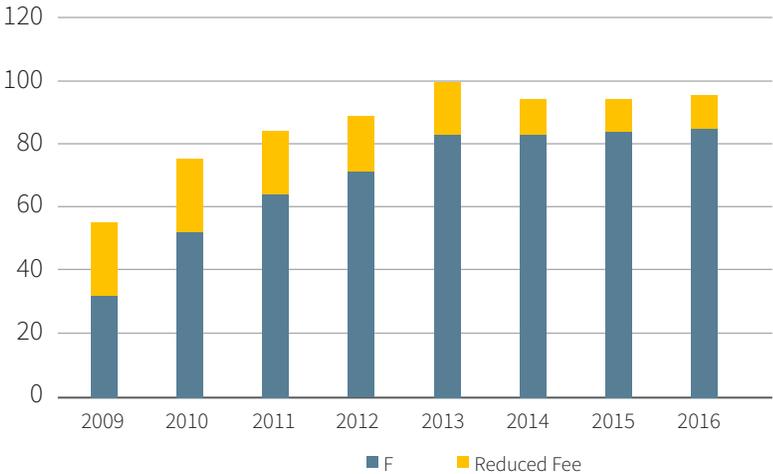
Recent C License Valuations (Nominal \$s – not adjusted for inflation)



Aggregate Value of C Licenses (\$ millions by year)



C Licence Counts by Category



Outlook/ Commentary

- As the pool of C licences declines, there may be upward pressure on prices



Summary

Aggregate Value of Licences and Quota at December 31, 2017

Fishing Grouping	Fishery	License Desc.	# of Licenses	Average Licence Value (\$)	Aggregate Licence Value (\$)	Aggregate Quota Value (\$)	Total License & Quota Value (\$)
Salmon	Salmon Seine	AS	208	\$423,197	\$88,025,000	\$ -	\$88,205,000
	Salmon Gillnet	AG	1074	\$68,301	\$73,355,000	\$ -	\$73,355,000
	Salmon Troll	AT	349	\$174,713	\$60,975,000	\$ -	\$60,975,000
Pelagics	Herring - Roe Seine	HS	241	\$99,793	\$24,050,113	\$ -	\$24,050,113
	Herring - Roe Gillnet	HG	987	\$33,739	\$33,300,000	\$ -	\$33,300,000
	Herring - Spawn on Kelp	J	34	\$175,000	\$5,950,000	\$ -	\$5,950,000
	Tuna	USA 68	45	\$225,000	\$10,125,000	\$ -	\$10,125,000
	Sardine	ZS	24	n/a	n/a	\$ -	n/a
Groundfish	Halibut	L	341	\$32,260	\$11,034,760	\$740,085,970	\$751,120,730
	Sablefish	K	41	\$250,000	\$10,250,000	\$238,904,490	\$249,154,490
	Groundfish Trawl	T	135	\$54,900	\$7,411,500	\$272,359,638	\$279,711,138
	Rockfish Inside	ZN	53	\$39,000	\$2,067,000	\$ -	\$2,067,000
	Rockfish Outside	ZN	158	\$220,000	\$34,760,000	\$ -	\$34,760,000
	Lingcod Hook & Line		n/a	n/a	n/a	\$27,186,456	\$27,186,456
	Dogfish Hook & Line		n/a	n/a	n/a	\$2,266,681	\$2,266,681
Shellfish	Prawn	W	186	\$697,300	\$129,697,800	\$ -	\$129,697,800
	Crab	R	189	\$542,500	\$102,532,500	\$ -	\$102,532,500
	Shrimp	S	186	\$41,900	\$7,793,400	\$ -	\$7,793,400
	Geoduck	G	50	\$250,000	\$12,500,000	\$337,500,000	\$350,000,000
	Sea Cucumber	ZD	84	\$925,000	\$77,700,000	\$ -	\$77,700,000
	Rea Sea Urchin	ZC	71	\$275,000	\$19,525,000	\$ -	\$19,525,000
	Green Sea Urchin	ZA	48	\$60,000	\$2,880,000	\$ -	\$2,880,000
	Euphausiid	ZF	11	\$40,000	\$440,000	\$ -	\$440,000
Schedule II	Schedule II Species	C	332	\$17,000	\$5,644,000	\$ -	\$5,644,000
					\$720,016,073	\$1,618,303,235	\$2,338,319,308

