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# NEW SOUTH WALES FISHERIES AND AQUACULTURE INDUSTRY 2017/18: ECONOMIC CONTRIBUTIONS SUMMARY

Presented by the Fisheries Research and Development Corporation and the Institute for Marine and Antarctic Studies.  
Economic estimates provided by BDO EconSearch.



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*New South Wales Fisheries and Aquaculture Industry 2017/18: Economic Contributions Summary*  
FRDC project 2017-210  
2019

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## DESIGN AND IMAGE CREDITS

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Cover: Gregory J Smith. Inside cover: Olyjo.



# PREFACE

This report presents a summary of the economic contribution of New South Wales' fisheries and aquaculture industries to the New South Wales community.

The FRDC on behalf of the Australian Government funded the *National Fisheries and Aquaculture Industry Contributions Study (FRDC project 2017-210)* to produce evidence of industry's contributions. The project was undertaken by the Institute for Marine and Antarctic Studies, University of Tasmania. As part of this project, BDO EconSearch was commissioned to provide an estimate of the economic contribution of Australia's fisheries and aquaculture industries in each state and territory to the Australian community, and to the relevant state or territory community, that is aimed at helping industry tell the story of its contribution.

This summary presents the results of this study for New South Wales.

Estimates are based on the best available data and most appropriate methods given data availability. Full results are provided in the *Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report* and demonstrate the nationally consistent approach.

**Project Steering Committee, National Fisheries and Aquaculture Industry Contributions Study (FRDC project 2017-210)**

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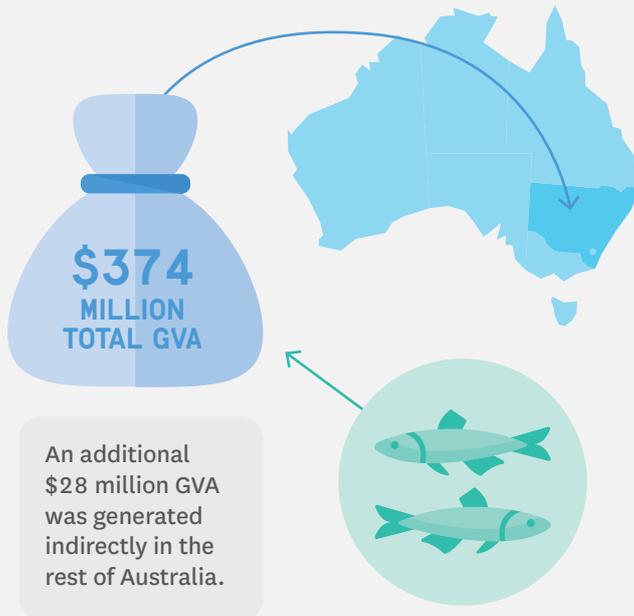
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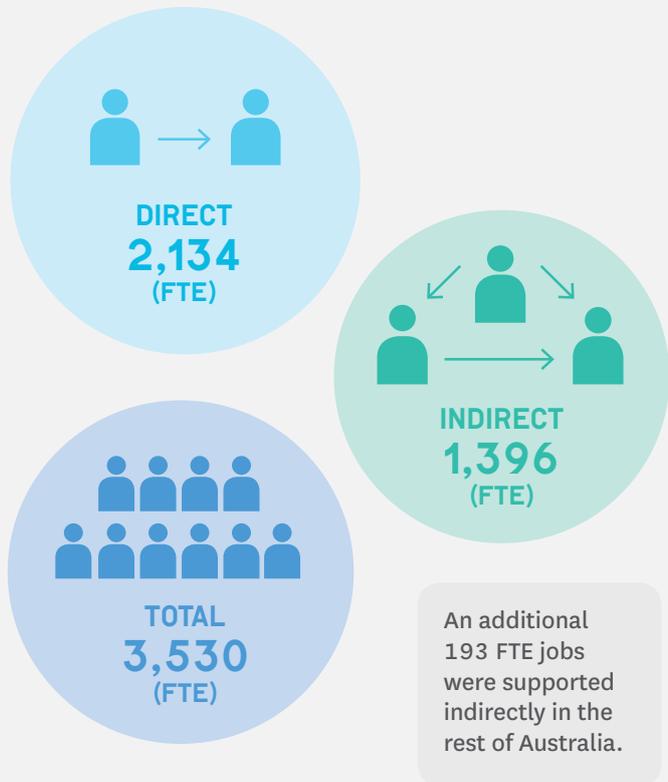
# CONTRIBUTING TO NEW SOUTH WALES' ECONOMIC PROSPERITY

## ECONOMY

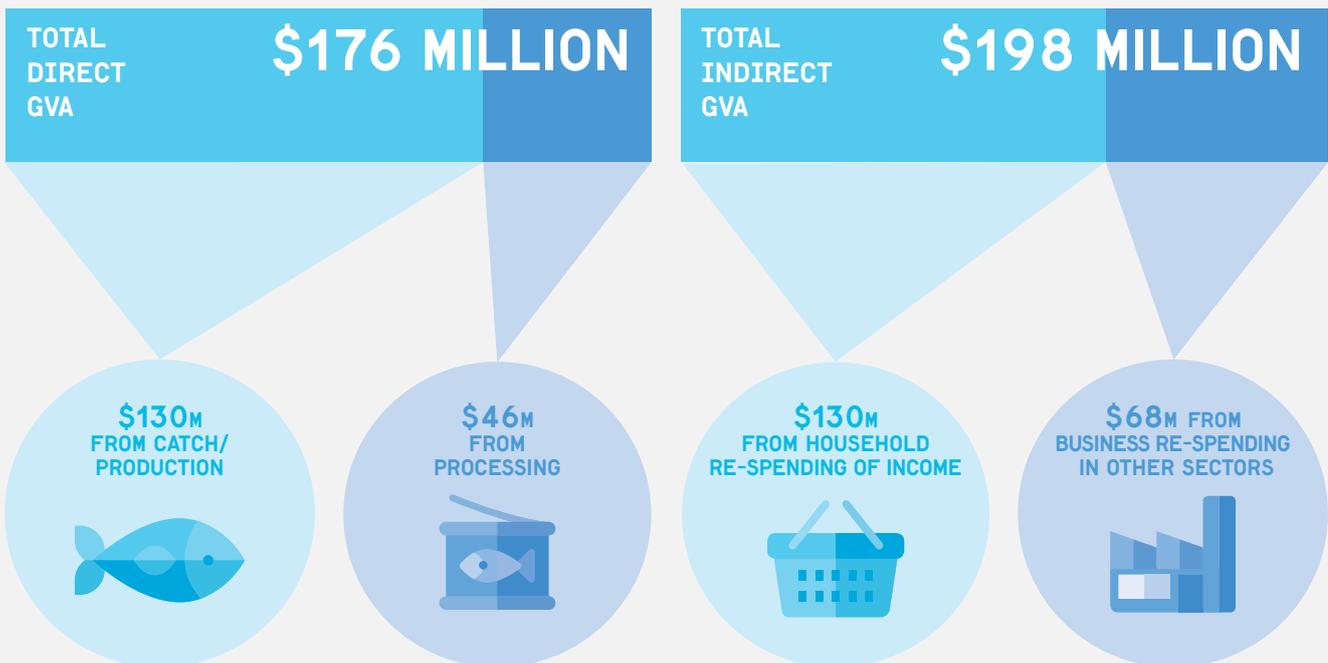
In 2017/18, NSW's fishing, aquaculture and associated processing industries contributed \$374 million dollars (total GVA) to the NSW economy.



## EMPLOYMENT



## ADDING VALUE



Note, totals may not sum due to rounding. Some sub-sectors have not been included in the estimates due to data not being available. See Table 3 for details.

# ECONOMIC CONTRIBUTIONS

## GROSS VALUE ADDED

In 2017/18, total fishery and aquaculture GVA in NSW was **\$374 million**

**\$130 million** generated by fishing and aquaculture

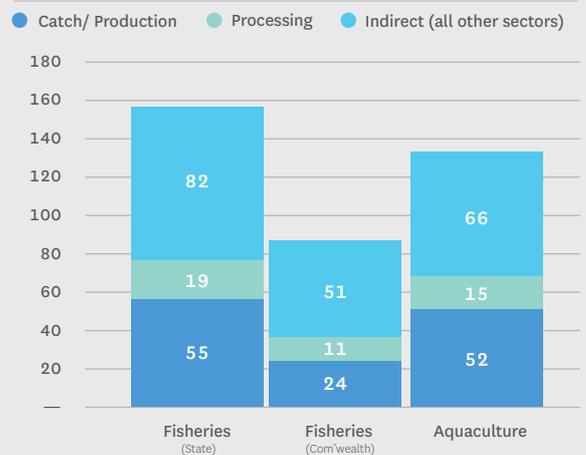
**\$46 million** generated by associated seafood processing activities

**\$198 million** generated by flow-on business activity in other sectors of the economy

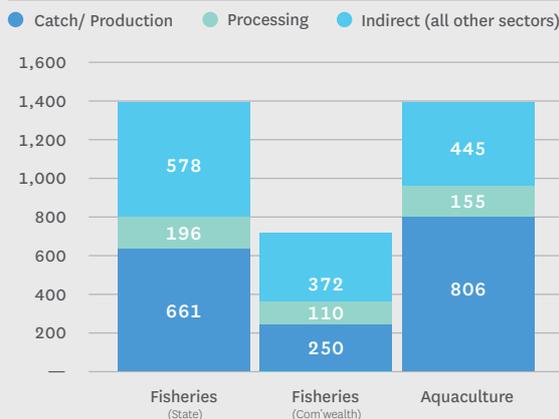
An additional **\$28 million** generated by NSW fishing, aquaculture and associated processing in other states and territories of Australia

**Gross Value Added (GVA)** represents the value of all goods and services produced in an industry, minus the cost of all inputs and raw materials used to produce that good or service. It provides a measure of the net contribution of an activity to the State/Territory economies, excluding net taxes.

GROSS VALUE ADDED 2017/18 (\$ MILLIONS)



EMPLOYMENT 2017/18 (FTE JOBS)



## EMPLOYMENT

In 2017/18, total employment contribution to NSW was **3,530 full-time equivalent (FTE) jobs**.

**1,672 FTE jobs** contributed by fisheries and aquaculture

**462 FTE jobs** contributed by associated seafood processing

**1,396 FTE jobs** contributed by flow-on business activity in other sectors

An additional **193 FTE jobs** generated by NSW fishing, aquaculture and associated processing indirectly in other states and territories of Australia

## HOUSEHOLD INCOME

In 2017/18, total household income contribution in NSW was **\$230 million**

**\$76 million** earned as income in fishing and aquaculture

**\$25 million** earned in associated seafood processing

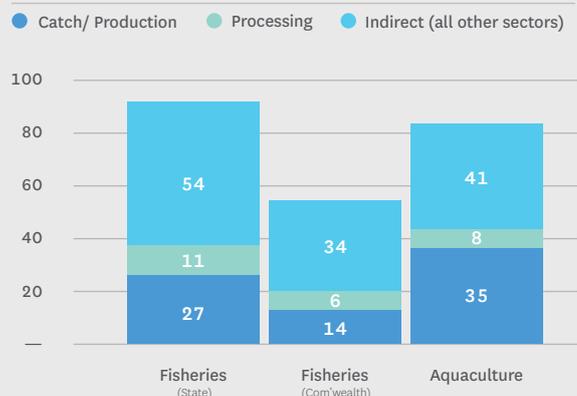
**\$129 million** earned in other businesses in NSW as a result of fishing, aquaculture and associated processing activities

An additional **\$15 million** generated by NSW fishing, aquaculture and associated processing indirectly in other states and territories of Australia

**Household income** is a measure of wages and salaries paid in cash and in kind, drawings by owner operators and other payments to labour. It includes overtime payments, employer's superannuation contributions and income tax, but excludes payroll tax.

**Note**, totals may not sum due to rounding.

HOUSEHOLD INCOME 2017/18 (\$ MILLIONS)



# ECONOMIC ACTIVITY

## GROSS VALUE OF PRODUCTION

In 2017/18, GVP of NSW fisheries, aquaculture and associated seafood processing was **\$323 million**

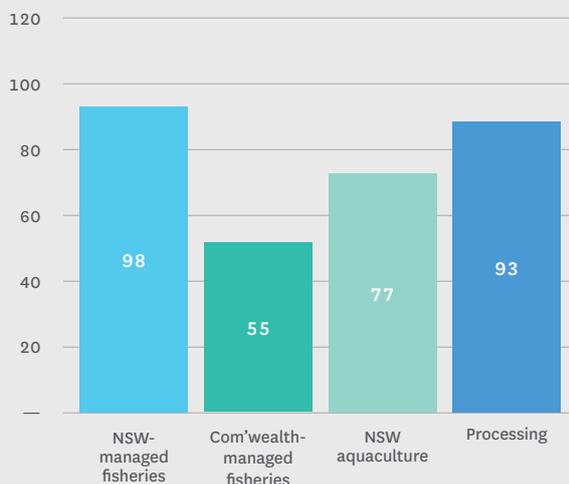
**30%** from NSW-managed fisheries catch

**17%** from Commonwealth-managed fisheries landed in NSW

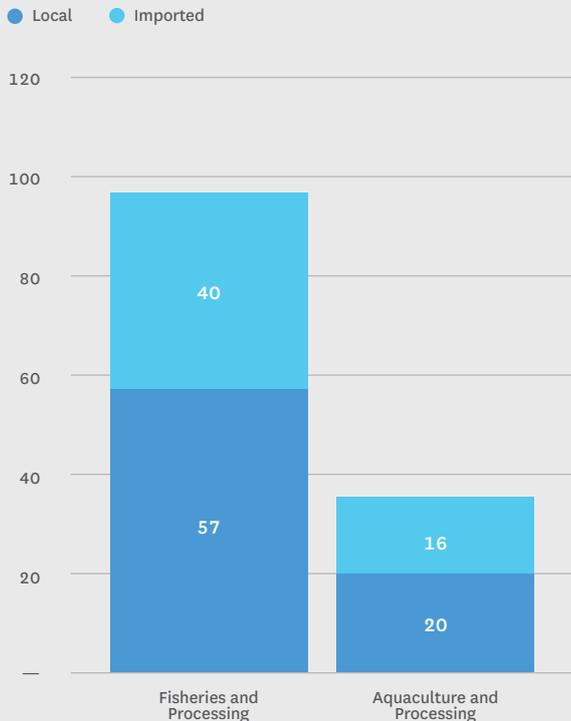
**24%** from NSW aquaculture production

**29%** from associated seafood processing

GVP OF CATCH/PRODUCTION AND PROCESSING (\$ MILLIONS)



EXPENDITURE (\$ MILLIONS)



## EXPENDITURE

In 2017/18, total (non-wage) expenditure by NSW fishing, aquaculture and processing businesses was **\$133 million**

**59%** of total initial expenditure by fisheries and associated seafood processing was local

**55%** of total initial expenditure by aquaculture and associated seafood processing was local

Major sectors receiving payments from NSW fisheries, aquaculture and associated processing were:



Machinery and equipment



Professional Scientific and Technical Services



Personal and other services



Road transport



Retail trade

**Local expenditure excludes:** wages, imports (i.e. diesel), indirect taxes (i.e. fuel excise), intra-industry purchases (i.e. fish for bait or processing) and items that represent a return to capital (i.e. quota leasing, insurance and interest). A margin was included for some of these items. Defining expenditure this way avoids overstating flow-on economic contributions.

**TABLE 1. ECONOMIC CONTRIBUTION OF NSW COMMERCIAL FISHING AND AQUACULTURE TO NSW, 2017/18**

	GROSS VALUE ADDED (\$M)	EMPLOYMENT (FTE JOBS)	HOUSEHOLD INCOME (\$M)	GVP (\$M)
<b>FISHING (NSW MANAGED)</b>				
<b>DIRECT</b>				
Fishing	55	616	27	98
Processing	19	196	11	39
<b>INDIRECT (ALL OTHER SECTORS)<sup>A</sup></b>				
Production induced	30	227	25	—
Consumption induced	52	351	29	—
<b>Total indirect</b>	<b>82</b>	<b>578</b>	<b>54</b>	<b>—</b>
<b>TOTAL<sup>B</sup></b>	<b>156</b>	<b>1,391</b>	<b>92</b>	<b>137</b>
<b>FISHING (COMMONWEALTH MANAGED)</b>				
<b>DIRECT</b>				
Fishing	24	250	14	55
Processing	11	110	6	22
<b>INDIRECT (ALL OTHER SECTORS)<sup>A</sup></b>				
Production induced	20	167	17	—
Consumption induced	30	205	17	—
<b>Total indirect</b>	<b>51</b>	<b>372</b>	<b>34</b>	<b>—</b>
<b>TOTAL<sup>B</sup></b>	<b>85</b>	<b>733</b>	<b>53</b>	<b>77</b>
<b>AQUACULTURE</b>				
<b>DIRECT</b>				
Production	52	806	35	77
Processing	15	155	8	31
<b>INDIRECT (ALL OTHER SECTORS)<sup>A</sup></b>				
Production induced	18	118	14	—
Consumption induced	48	327	27	—
<b>Total indirect</b>	<b>66</b>	<b>445</b>	<b>41</b>	<b>—</b>
<b>TOTAL<sup>B</sup></b>	<b>133</b>	<b>1,406</b>	<b>85</b>	<b>108</b>
<b>FISHING AND AQUACULTURE TOTAL</b>				
<b>DIRECT</b>				
Catch and Production	130	1,672	76	230
Processing	46	462	25	93
<b>INDIRECT (ALL OTHER SECTORS)<sup>A</sup></b>				
Production induced	68	513	56	—
Consumption induced	130	883	73	—
<b>Total indirect</b>	<b>198</b>	<b>1,396</b>	<b>129</b>	<b>—</b>
<b>TOTAL<sup>B</sup></b>	<b>374</b>	<b>3,530</b>	<b>230</b>	<b>323</b>

A The GVP of seafood processing has been modified to exclude the value of fish caught or produced. This has been done so the value of production attributed directly to fish processing is shown and the value of production attributable to fishing and aquaculture is excluded.

B Indirect GVP effects are excluded to avoid double counting.

C Totals may not sum due to rounding.

Source: NSW DPI, Barclay et al. (2016), BDO EconSearch (2019 2019b,c,d,g,i,j), Mobsby and Bath (2018), Bath et al. (2018) and BDO EconSearch analysis.

# TECHNICAL SUMMARY

This is a summary of the economic contributions of New South Wales' fisheries, aquaculture and associated processing industries to the New South Wales economy. The full national report of economic estimates is the *Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report*.

## SCOPE

The estimates reported includes economic contributions of: commercial fishing activity; aquaculture activity; associated processing activity.

These estimates are for economic contributions of these activities in New South Wales to the New South Wales economy.

Commercial activities by Indigenous fishing and aquaculture businesses are included in commercial fishing and aquaculture. Commercial charter fishing activity is excluded. Fishery and aquaculture sector management activity (other than where these costs are recovered through licence fees) is excluded. Seafood processing of locally produced seafood is included where it occurs within New South Wales. Processing of imported seafood is excluded.

The economic activity of sectors that supply goods and services to the commercial fishing and aquaculture industry are included in the analysis as the flow-on effects from the expenditures by the commercial fishing and aquaculture industry. This includes fishing support services and aquaculture support services. Contributions of New South Wales fisheries and aquaculture to the rest of Australia are also reported.

## DATA

Best available data for 2017/18 was used to produce estimates of GVP, and of direct employment, GVA, GSP/GDP and household income. Data was collected from primary sources (databases) and published sources, where available, for the individual fisheries/aquaculture sectors. This data included: wild catch/farm production, product prices, cost of production, licence fees, employment. Further information on data sources and validation is provided in the [Australian Fisheries and Aquaculture Industry Economic Contributions – Data Framework](#).

Where cost data was not available for a particular sub-sector, it was matched with an equivalent sub-sector for which data was available and cost data was then imputed based on available activity data (including: production, GVP, total days fished, average vessel length, active vessels).

Fisheries or aquaculture sub-sectors excluded from the analysis due to lack of data are listed in Table 4.

## MODEL APPROACH

The flow-on effects of State and Territory fisheries, Commonwealth fisheries and aquaculture sectors for each State or Territory were estimated using multi-region input-output (MRIO) analysis. An extended input-output model known as the RISE model (Regional Industry Structure and Employment) was used. The model includes one region for each state and territory in Australia and captures the interstate trade effects between them.

## LIMITATIONS

The main limitations are due to data gaps and issues with data quality for some sectors. These were identified in the process of building the national data framework which supports the estimation of contributions.

Limited data was available to estimate the contributions of the processing sector, and the estimates of the processing sector should be regarded as preliminary. Similarly, the estimates present an incomplete profile of economic contributions made along the seafood supply chain, as secondary processing and retail sectors are not included due to lack of data. Addressing this by collecting data on these sectors presents an opportunity to produce more comprehensive estimates in future.

## COMPARISON

Comparisons of these estimates can also be made with other productive industries (for example, beef or sheep). These will be less reliable due to differences in the number of sectors included (this study included only the catch/production and processing sectors), data availability and quality, and modelling across various studies.

The use of these estimates to predict the impact of changes in the level of activity of the fisheries and aquaculture industries is not advised. While results can be used to highlight the possible size and nature of impacts, further analysis would be required to estimate the actual impact on the economic measures of such changes.

Comparisons of the economic contributions of commercial fisheries and recreational fisheries (made as fishing-related expenditures generate direct and indirect economic impacts) need to be made very cautiously. The two activities are fundamentally different and require different input-output modelling approaches, and comparison can only be made where estimates are comprehensive.

For commercial fisheries this requires that estimates include backward and forward linked sectors (for example, boat building sectors, as well as seafood retail sectors). For recreational fisheries this requires that only expenditures that are directly attributable to fishing are included in the estimate.

The use of estimates of economic contributions to predict the impact on a state or territory economy of changes in resource allocation between commercial and recreational fisheries can complement economic benefit or efficiency analysis. However, it will require further knowledge to determine how inputs would be redeployed in the economy by other sectors were commercial fishing no longer occurring, and how recreational fishers would spend their discretionary income on substitutable activities were they not able to recreationally fish.

This project also supports the ability for individual industries and jurisdictions to monitor trends in the size of contributions over time.

# APPENDIX 1 BACKGROUND DATA

**TABLE 2: CATCH, PRODUCTION AND GVP OF THE TOP FIVE CONTRIBUTORS (BY GVP) TO NSW COMMERCIAL FISHING AND AQUACULTURE IN 2017/18**

RANK	DESCRIPTION	CATCH/ PRODUCTION (T) <sup>A</sup>	GVP (\$M)	VALUE PER UNIT (\$KG) <sup>B</sup>
<b>FISHERIES (NSW MANAGED)</b>				
1	Ocean Trawl	2,928	27	9.21
2	Estuary General	2,873	25	8.81
3	Lobster	166	12	69.89
4	Ocean Trap & Line	1,167	11	9.81
5	Ocean Hauling	2,004	7	3.56
	Other fisheries	1,843	15	8.31
	<b>Total wild caught</b>	<b>10,982</b>	<b>98</b>	—
<b>FISHERIES (COMMONWEALTH MANAGED)</b>				
1	Small Pelagic <sup>D</sup>	n.p.	n.p.	n.p.
2	Eastern Tuna and Billfish	1,922	17	8.58
3	Southern and Eastern Scalefish and Shark (Commonwealth Trawl Sector)	2,858	12	4.31
4	Southern and Eastern Scalefish and Shark (Gillnet Hook and Trap Sector)	1,044	7	6.33
	<b>Total wild caught</b>	<b>7,781</b>	<b>55</b>	—
<b>AQUACULTURE</b>				
1	Sydney Rock Oyster	5,989	49	8.14
2	Black Tiger Prawn	284	6	20.48
3	Hatchery Species	n.a.	5	n.a.
4	Murray Cod	266	5	18.38
5	Other Oyster	173	3	17.81
	Other sectors	467	9	19.94
	<b>Total production<sup>C</sup></b>	<b>1,017</b>	<b>77</b>	—

A Production of Sydney Rock Oyster and Other Oysters are reported per thousand dozen.

B Value per unit of Sydney Rock Oyster and Other Oysters are by dollars per dozen.

C Production totals excludes Sydney Rock Oyster and Other Oysters (reported by '000 dozen).

D Small Pelagic GVP and catch are confidential but have been estimated to the accuracy required for the purpose of this study. This estimate should not be used for any other purpose so has been marked not published (n.p.).

n.a. not available.

Source: NSW DPI, ABARES and BDO EconSearch analysis.

**TABLE 3: NSW OVERSEAS SEAFOOD EXPORTS, TOP CONTRIBUTORS BY EXPORT VALUE, 2017/18**

RANK	SEAFOOD CATEGORY <sup>A</sup>	EXPORT QUANTITY		EXPORT VALUE <sup>B</sup>		AVERAGE VALUE (\$/kg)
		(Tonnes)	(%)	(\$m)	(%)	
1	Southern bluefin tuna	373	21	5.5	26	14.86
2	Abalone	56	3	3.0	14	53.13
3	Rock lobster	34	2	2.5	12	72.76
4	Other frozen fish	526	29	2.3	11	4.41
5	Yellowfin tuna	137	8	1.9	9	13.58
6	Shrimp & prawns	205	11	1.0	5	4.84
7	Preserved fish	219	12	0.9	4	4.24
8	Bigeye tuna	67	4	0.8	4	12.00
9	Crabs	16	1	0.6	3	38.71
10	Swordfish	31	2	0.4	2	13.53
	Other <sup>C</sup>	134	7	2.1	10	—
	<b>Total<sup>D</sup></b>	<b>1,798</b>	<b>100</b>	<b>21.1</b>	<b>100</b>	<b>11.63</b>

A Ranked by export value. Seafood categories are defined in Appendix 3, Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report (BDO 2019). The analysis of exports was based on a customised report from the ABS for *International Merchandise Trade, 2017-18*. Exports (quantity and FOB value) were reported by species/category for each State of origin. The State of origin is the State/Territory in which the final stage of production or manufacture occurs and may not be the State/Territory where the fish was caught/produced.

B Export values are in terms of Free on Board (FOB) values. FOB values exclude the cost of freight and merchandise insurance involved in shipping the goods beyond the place of export up to the customs frontier of the importing country.

C "Other" includes Ornamental fish, of which export quantity is measured by number of specimens. The reported export quantity and export price figures exclude Ornamental fish due to differences in units of measurement.

D Totals may not sum due to rounding.

Source: ABS (2019) and BDO EconSearch analysis.

**TABLE 4: NSW FISHERIES AND AQUACULTURE SUB-SECTORS EXCLUDED FROM THE ANALYSIS**

FISHERY	REASON FOR EXCLUSION
NSW Inland, NSW S37 permit	No catch/effort data published or means to estimate it
AQUACULTURE SUB-SECTOR	REASON FOR EXCLUSION
NSW Other Aquaculture	No published production data or means to estimate it.

Source: Australian Fisheries and Aquaculture Industry 2017/18: Economic Contributions Estimates Report (BDO 2019).

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