

Economic and Social Assessment of Tasmanian Fisheries and Aquaculture 2020/21

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1. Introduction

This report provides an assessment of the social and economic status and performance of Tasmanian fisheries and aquaculture, 2017/18 to 2020/21. Tasmania's fisheries and aquaculture sectors (i.e., commercial, recreational and Tasmanian Aboriginal businesses and users) are important parts of the Tasmanian economy and broader community and generate a diverse range of social and economic benefits.

Achieving economic and social benefits from marine resources is an objective of fisheries and marine farming (aquaculture) management in Tasmania, as outlined in the *Living Marine Resources Management Act 1995* (hereafter referred to as LMRMA) and the *Marine Farming Planning Act 1995* (hereafter referred to as the MFPA), as described in Figure 1 (below).

The indicators used in this assessment reflect this legislative objective as well as best-practice (for example, see [NOAA Fisheries Socioeconomics](#), [PIRSA Social and Economic Assessments](#)). They were chosen to be relevant to managing sector-wide and community outcomes from these fisheries and aquaculture activities.

This report does not attempt to benchmark performance. It is intended to inform industry and sector representative organisations, government agencies with policy and regulatory responsibilities, other marine research groups, and interested members of the Tasmanian community, of social and economic outcomes and change in those outcomes across time.

This is the first assessment report of this type. It follows from an initial pilot assessment of Tasmanian fisheries (Ogier et al. 2018) and is intended to be one of a series. The period of time covered by this assessment (2017/18 - 2020/21) encompasses both the period prior to and across the COVID-19 pandemic. The impacts of the pandemic on economic and social indicators for these sectors is therefore captured.

This assessment encompasses commercial, recreational, and Tasmanian Aboriginal community sectors using managed marine resources. The findings are based on a range of assessment and research activities undertaken by the Institute for Marine and Antarctic Studies (IMAS) of the University of Tasmania.

Tasmanian Legislation	Living Marine Resources Management Act 1995	Marine Farming Planning Act 1995	Resource Management and Planning System of Tasmania
Legislative objectives	The purpose of this Act is to achieve sustainable development of living marine resources having regard to the need to: take account of the community's needs in respect of living marine resources (Objective (c)) take account of the community's interests in living marine resources (Objective (d))	The purpose of this Act is to achieve well-planned sustainable development of marine farming activities having regard to the need to: take account of the community's right to have an interest in those activities (Objective (e))	The objectives of the resource management and planning system of Tasmania, as defined in the <i>Land Use Planning and Approvals Act 1993</i>, are to: promote the sustainable development of natural and physical resources (Objective (a)) facilitate economic development (Objective (d)) in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety (Clause 2)

Figure 1. Relevant objectives of public management of Tasmania's fisheries and aquaculture

Sectors

A range of communities or sectors are both directly affected by and have a direct effect on the economic and social performance of Tasmanian fisheries and aquaculture. These sectors are identified within the LMRMA and MFPA and are the focus of this assessment (see Table 1).

[Section 2](#) provides a whole-of-sector assessment.

In [section 3](#), the assessment is focused on commercial activities of specific sub-sectors. However, social indicators for recreational fishing are presented where data is available for that sub-sector.

Table 1. Definition of sectors used in the assessment.

Sector	Scope used in this assessment
Tasmanian Aboriginal fishing	Aboriginal fishing is described in the Living Marine Resources Management Act 1995 (LMRMA) as Aboriginal activity inclusive of non-commercial fishing, taking prescribed fish (inclusive of prescribed shells and marine plants), cultural fishing under permits , and sale of artefacts made from prescribed marine plants and shells. Broader Tasmanian Aboriginal rights and interests in cultural fisheries and in Caring for Sea Country are recognised in recent reviews (Warner and McCormack 2021) and realised in commercial fisheries investment programs (Indigenous Land and Sea Corporation 2022) and Indigenous Protected Area Sea Country planning programs (Tasmanian Aboriginal Centre Inc. 2020).
 Commercial fishing	Holders of any form of commercial fishing licence, or authorised to use any such licence, as well as crew employed on commercial fishing vessels, and holders of fishing quota units. Refers to seafood production activities (i.e., fishing) but excludes seafood processing and wholesale activities. Commercial fishing and licenced activities and licences are described in Part 4 of the Living Marine Resources Management Act 1995 and in management plans made under the LMRMA
 Commercial aquaculture	Holders and operators of any form of commercial marine farm licence. Includes employees. Refers to seafood production activities (i.e., marine farming) but excludes seafood processing and wholesale activities. Marine farming licences are described in Part 4 of the Living Marine Resources Management Act 1995. General provisions relating to marine farming leases are described in Division 4 of Part 4 of the Marine Farming Planning Act 1995.
 Recreational fishing	Any person fishing in Tasmanian coastal and marine waters for non-commercial purposes or as part of an Aboriginal activity, including those fishing under a recreational fishing licence of any form. This sector is defined in section 3 of the Living Marine Resources Management Act 1995.
The community	Residents of Tasmania, inclusive of those who are also members of the sectors listed above. This sector is referenced in Clause 2 of Schedule 1 of the Living Marine Resources Management Act 1995.

Assessment scale

This assessment includes fishing and aquaculture activities occurring primarily within Tasmanian State Coastal Waters or for marine species management under Tasmanian jurisdiction. For information on the Tasmanian marine estate see [The Tasmanian Marine Atlas \(https://tasmarineatlas.org/\)](https://tasmarineatlas.org/) and for information on licenced aquaculture activities see the [Land Information System Tasmania \(https://www.thelist.tas.gov.au/app/content/home\)](https://www.thelist.tas.gov.au/app/content/home).

Tasmania's fisheries and aquaculture are assessed at both the whole-of-sector level (see [section 2](#)) as well as by specific fisheries and aquaculture sub-sectors (see [section 3](#) and [section 4](#)).

The specific sub-sectors (see Table 2) are the scale at which these activities are managed by the Department of Natural Resources and Environment Tasmania (NRE Tas). Multiple species may be harvested or grown within a sub-sector. Species not reported in this assessment are those species which are managed under either Developmental Fishery Permits or for which the small size of the sector (measured in either volume of production or number of operators) means data is not available. If data should become available, these species will be reported in future assessments.

Table 2. Inclusion in assessment by species caught or produced in Tasmania's fisheries and aquaculture.

Species	Assessment scale
Angasi Oyster (Flat Oyster)	Not reported in this assessment
Atlantic salmon	Salmonid Aquaculture
Australian Sardine	Scalefish Fishery
Banded Morwong	Scalefish Fishery
Barracouta	Scalefish Fishery
Bastard Trumpeter	Scalefish Fishery
Blacklip Abalone	Abalone Fishery & Abalone Aquaculture
Blue mussels	Not reported in this assessment
Blue Warehou	Scalefish Fishery
Common Jack Mackerel	Scalefish Fishery
Eastern Australian Salmon	Scalefish Fishery
Eastern School Whiting	Scalefish Fishery
Flounder	Scalefish Fishery
Giant Crab	Giant Crab Fishery
Gould's Squid	Scalefish Fishery
Greenlip Abalone	Abalone Fishery (greenlip and hybrid abalone also farmed)

Species	Assessment scale
Jackass Morwong	Scalefish Fishery
King George Whiting	Scalefish Fishery
Leatherjacket	Scalefish Fishery
Longsnout Boarfish	Scalefish Fishery
Longspined Sea Urchin	Commercial Dive Fishery
Ocean Trout	Salmonid Aquaculture
Octopus*	Scalefish Fishery
Pacific Oyster	Pacific Oyster Aquaculture
Periwinkle	Commercial Dive Fishery
Rock Lobster	Rock Lobster Fishery
Scallop	Scallop Fishery
Seaweeds	Not reported in this assessment
Seaweeds (Bull Kelp)	Not reported in this assessment
Shortspined Sea Urchin	Commercial Dive Fishery
Snook	Scalefish Fishery
Southern Calamari	Scalefish Fishery
Southern Garfish	Scalefish Fishery
Southern Sand Flathead	Scalefish Fishery
Striped Trumpeter	Scalefish Fishery
Tiger Flathead	Scalefish Fishery
Wrasse	Scalefish Fishery
Yelloweye Mullet	Scalefish Fishery

Notes:

- * Grouped with Scalefish due to low number of licenced operators and similarity in management arrangements

Performance indicators

Numerous possible social, economic and socio-economic indicators for fisheries and aquaculture have been proposed (Andersen et al. 2015; Brooks et al. 2015; Morison et al. 2021) and implemented in a number of government-based programs (e.g., [NOAA Fisheries Socioeconomics](#)). While the importance of social and economic objectives is widely acknowledged, economic and social performance reporting from most jurisdictions has been either limited or absent, and there is increasing interest in developing basic frameworks for the routine collection and reporting of fisheries and aquaculture economic data (Ogier et al. 2020).

No social and economic performance indicators are specifically identified in current policy documents for Tasmanian fisheries and aquaculture. However, the need to take account of social and economic performance is evident in legislative objectives and other public policy (Figure 1). The social and economic indicators used in the assessment (see Table 3 and Table 4) were selected on the basis that they are:

- Consistent with the scope and intent of the legislative objectives of the LMRMA or the MFPA;
- Measures of social or economic characteristics and benefits directly linked to the marine resources and sectors under management;
- Sector-wide in scope (and not firm-level indicators) as these are public marine resources; and
- Assessable with secondary data or indirectly, and not necessarily requiring primary data collection and therefore public expense.

Indicators for Cultural fishing by Tasmanian Aboriginal communities have not been included. Inclusion of appropriate indicators in future assessment reports is being discussed with Tasmanian Aboriginal community organisations (see section 2.1).

Additional indicators for recreational fishing will be included in future assessments and these will be selected on the basis of pilot assessment reporting and relevance to the [Recreational Sea Fishing Strategy 2021-2030](#).

Data

Detail of data sources used for each performance indicator and each sub-sector is provided in [Appendix A](#) of the report. Data was not available in many cases, and this is noted in the assessment reporting sections.

Assessment Methods

Detail of how indicator values were obtained is provided in [Appendix B](#) (fisheries) and [Appendix C](#) (aquaculture) of the report. This description includes definitions, assumptions and calculations.

Table 3. Fisheries indicators and metrics used in this assessment of key fisheries (see [Appendix A](#) and [Appendix B](#) for more information).

Performance area	Indicator	Metric
Fishing activity indicators 	Utilisation of Total Allowable Catch	Proportion (%) of Total Allowable Catch (TAC) which is harvested in the financial year. Where there is a formal allocation to the recreational fishery, this is reported as Total Allowable Commercial Catch (TACC) and Total Allowable Recreational Catch (TARC). If the TAC is not harvested, this implies forgone economic yield.
	Number of active commercial harvest operations	Number of active supervisors (identified by ClientID) for whom there is at least one catch landing record in the financial year.
	Commercial production volume	Total tonnage (t) produced through commercial fishing.
	Commercial harvest value	Total revenue (\$'000) from first sale of product. Also referred to as Gross Value of Production or GVP.
	Export market share	Estimated share (%) of sales of annual production into export markets.
Economic indicators 	Market capitalisation	Value (\$'000) of the commercial fishery as indicated by its quota market, measured by average market value of a quota unit by the total number units in the fishery. Licence capitalisation is measured for non-quota fisheries where possible.
	Share of ownership of market capitalisation by Tasmanian businesses	Proportion (%) of total market capitalisation that is estimated to be owned by Tasmanian-based businesses. A Tasmanian-based business is a business whose main business location is in Tasmania.
	Economic profit	Economic profit (\$'000) generated from production in the commercial sector. Economic profit is the difference between revenue from production (production value) and production cost, taking account of the opportunity cost of investment in the sector. This may differ from standard measures of profit due to unpaid opportunity costs of labour and rental charges, as well as interest and borrowing costs. Economic profit is referred to as 'economic rent' when it is greater than zero.
	Economic return to the Tasmanian harvest sector	Estimated total economic return (\$'000) through direct harvest-linked wage or business earnings by Tasmanian commercial harvesters. This measure differs from economic profit in that it considers wages as a component of return, rather than a cost.
	Gross payment to Tasmanian Government for cost / rent recovery	Total licence (renewals only) and production-based fee revenue (\$'000) received by the Tasmanian Government from operators and investors in the commercial sector.
Socio-economic indicators	Gross Value Added	Value (\$ million) of the goods and services produced by commercial harvesting minus the value of intermediate consumption. Total Gross Value Added is the sum of direct and indirect contributions to the Tasmanian economy.
	Household Income	Value (\$ million) of wages and salaries paid in the commercial harvest sector in cash and in kind, as well as drawings by owner operators and other payments to labour (i.e., overtime payments, employer's superannuation contributions and income

Performance area	Indicator	Metric
		tax), but excludes payroll tax. Total Household Income is the sum of direct and indirect contributions to households in Tasmania.
	Employment	Estimated number of jobs (total persons) directly engaged in commercial harvesting, and the number of indirect jobs created in other parts of the Tasmanian economy due to the production activity associated with this resource. Total Employment is the sum of direct and indirect number of jobs associated with commercial harvesting in Tasmania.
Social indicators 	Workforce size	Number of people working in active commercial harvesting operations, inclusive of part-time and casual workers, and sole operators. Excludes unpaid labour.
	Recreational fishing population	Total number of people who participate (Active Fishers)
	Recreational fishing participation	Total number of days fished (Fisher Days)
	Local seafood supply	Estimated volume of seafood product (Kg) available for Tasmanian consumers from harvest. Reported separately for commercial and recreational harvest sectors.
	Share of Tasmanian annual seafood consumption	Estimated proportion (%) of total seafood consumed in Tasmania which is supplied by the fishery. Reported separately for commercial and recreational harvest sectors.

Table 4. Aquaculture indicators and metrics used in this assessment of key aquaculture sectors (see [Appendix A](#) and [Appendix C](#) for more information).

Performance area	Indicator	Metric
Aquaculture activity indicators 	Number of active production operations	Number of active aquaculture growing firms (excludes hatchery production)
	Production volume	Total tonnage (t) or dozen (doz) produced (excludes hatchery production)
	Production value	Total revenue (\$) from first sale of product (excludes hatchery production). Also referred to as Gross Value of Production or GVP.
	Export market share	Estimated share (%) of sales of annual production into export markets (excludes hatchery production)
Economic indicators* 	Economic profit	Economic profit (\$'000) generated from production in the commercial sector. Economic profit is the difference between revenue from production (production value) and production cost, taking account of the opportunity cost of investment in the sector. This may differ from standard measures of profit due to unpaid opportunity costs of labour and rental charges, as well as interest and borrowing costs. Economic profit is referred to as 'economic rent' when it is greater than zero.
	Economic return to the Tasmanian production sector	Estimated total economic return (\$'000) through production-linked wages and business earnings by the primary production sector in Tasmania. This measure differs from economic profit in that it considers wages as a component of return, rather than a cost.
	Gross payment to Tasmanian Government for cost / rent recovery	Total licence (renewals only) and production-based fee revenue (\$'000) received by the Tasmanian Government from operators and investors in the commercial sector.
Socio-economic indicators 	Gross Value Added	Value (\$ million) of the goods and services produced by commercial harvesting minus the value of intermediate consumption. Total Gross Value Added is the sum of direct and indirect contributions to the Tasmanian economy.
	Household Income	Value (\$ million) of wages and salaries paid in the commercial harvest sector in cash and in kind, as well as drawings by owner operators and other payments to labour (i.e., overtime payments, employer's superannuation contributions and income tax), but excludes payroll tax. Total Household Income is the sum of direct and indirect contributions to households in Tasmania.
	Employment	Estimated number of jobs (total persons) directly engaged in marine-based commercial aquaculture production, and the number of indirect jobs created in other parts of the Tasmanian economy due to the production activity from this resource. Total Employment is the sum of direct and indirect number of Jobs associated with marine-based commercial aquaculture production in Tasmania.
Social indicators 	Workforce size	Number of people working in aquaculture sector operations, inclusive of part-time and casual workers, and sole operators. Excludes unpaid labour.
	Local seafood supply	Estimated volume of seafood product (Kg) available for Tasmanian consumers from commercial aquaculture production.
	Share of Tasmanian annual seafood consumption	Estimated proportion (%) of total seafood consumed in Tasmania which is supplied by commercial aquaculture production.

Notes: * Two economic indicators - Market capitalisation and Share of ownership of market capitalisation by Tasmanian businesses - are not reported as data is generally not available

2. Overview: Tasmanian fisheries and aquaculture communities and sectors

2.1. Tasmanian Aboriginal Fishers

Fishing and aquaculture activities are connected to Sea Country and to the concerns, rights and responsibilities which Tasmanian Aboriginal people hold for Country.

Tasmanian Aboriginal people and businesses are active across recreational, commercial and cultural fishing. Recognition of Aboriginal Fishing Activities and access to Aboriginal cultural fishing activities is through permits issued by [NRE Tas](#) (see [Aboriginal Fishing | Fishing Tasmania](#)). Information on cultural fishing activities is not published.

Any absence of information about Tasmanian Aboriginal people's connection to Sea Country in this assessment does not indicate an absence of connection or significance.

IMAS respects the right of Tasmanian Aboriginal people to self-determination and affirm their right to decide what information is included in this assessment. Co-development of indicators with Tasmanian Aboriginal communities and organisations is being discussed with Cultural Fisheries Liaison Officers at NRE Tas

More information:

[Aboriginal Fishing | Fishing Tasmania](#)

[Sea Country Indigenous Protected Areas Program - DCCEEW](#) - [Tayaritja Sea Country](#)

2.2. Recreational Fishers

Recreational fishing in marine and coastal areas is an important recreational activity to many Tasmanians (see Table 5). In addition, the opportunity for saltwater recreational fishing attracts visitors to Tasmania.

Tasmanian recreational fishers typically participate in more than one type of recreational fishing activity within a season. Therefore, it is important to assess social and economic dimensions of the Tasmanian recreational fishing community at the whole-of-sector level.

Sector-wide social indicators

Participation by Tasmanian fishers in saltwater recreational fishing in coastal and marine areas is measured via general fishing surveys and was estimated to be approximately 79,378 people in the last published survey (Lyle et al. 2019a, see Table 5).

Recreational fishers (inclusive of those fishing in both fresh and saltwater) range from those who fish occasionally to those who are avid fishers. For instance, 20% of fishers contribute 55% - 56% of the total effort (and the remainder fish for less than five days per year). This information is based on the results of the general fishing survey for the 2016/17-2017/18 period (Lyle et al. 2019a).

Demographically, men are more likely to recreational fish (fresh and saltwater) than women (33% of the statewide male population participate in some form of recreational fishing, compared with 15% of the statewide female population). People who recreationally fish in Tasmania include those from diverse cultural, ethnic and language backgrounds. Online information about recreational fishing is translated and used in over 10 different languages (NRE Tas 2023).

Line fishing is the most popular fishing method for the Tasmanian recreational fishing population, including those who fish in fresh and salt water, and accounts for 88% of total fishing days, followed by fishing with pots (7.5%), diving (4.4%), and gillnetting (1.1%).

Regionally, the east and southeast coast of Tasmania is the focus of half (50%) of the total fishing effort by those who fish recreationally in fresh and salt water in Tasmania, with the D'Entrecasteaux Channel, Derwent Estuary, and Norfolk-Frederick Henry Bay regions accounting for 31% of the state-wide effort. Over 20% of the overall fishing effort is off the north coast, while the west and south coast and Central Plateau regions attract lower levels of effort.

More information:

Updated measures from the latest general fishing survey are available in the [IMAS 2022/23 Survey of Recreational Fishing report](#).

Further information about flathead fishing is available in this IMAS report: [Understanding flathead fishers to develop acceptable management options](#).

Table 5. General social characteristics of state-wide recreational fishing (saltwater) in Tasmania, 2016/17-2017/18.

Indicator	Estimated annual level (based on 2016/17-2017/18 survey data)
Recreational fishing population	
Total number of persons to have fished at least once	79,378
Recreational fishing participation	
Total number of fisher days	355, 058

Notes:

- Source: Lyle et al. 2019a.

Sector-wide socio-economic indicators

Economic contributions to the 'whole of State' Tasmanian economy were estimated for 2020/21 financial year for recreational fishing. The results relate to all types of saltwater recreational fishing including rock lobster fishing, but also abalone, scalefish, and scallops, and exclude recreational fishing undertaken by interstate residents due to their exclusion from the survey.

Gross Value Added (GVA) measures total level of economic activity associated with recreational fishing expenditure by Tasmanian resident fishers for the 2020/21 year (Table 6). Household Income (HI) measures the component of this activity that is estimated to have translated into wages for Tasmanian households, while Employment measures (both 'full time equivalent' and total persons) represent the effects of this expenditure on jobs (Table 6). More detailed information about the data and method used is available in Appendix A.

These estimates cannot be directly compared to the indicators presented for commercial fisheries. The two activities are fundamentally different and require different input-output modelling approaches, and comparison can only be made where estimates for both sectors 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, generating comprehensive estimates requires that only expenditures that are directly attributable to fishing are included in the estimate. This level of detail is not included in estimates presented in the report.

Table 6. Economic contribution of general recreational fishing undertaken by Tasmanian residents, Whole of Tasmania – 2020 21 financial year.

	Gross Value Added (\$'000)	Household Income (\$'000)	Employment (full-time equivalent (FTE))	Employment (total)
Direct effects				
Total Direct	38,300	30,400	488	571
Flow-on effects				
By component				
<i>Production induced</i>	14,000	8,400	126	133
<i>Consumption induced</i>	27,300	13,300	197	227
Total Flow-on	41,300	21,700	322	360
Total	79,600	52,000	811	931
<i>Total/Direct</i>	2.1	1.7	1.7	1.6

Notes:

- Source: Rust et al. 2023a
- Estimates relate to expenditures based on a pooled dataset of the previous three iterations of the Tasmanian General Recreational Fishing Survey, information on the place of usual residence and vessel storage for Tasmanian recreational fishers.
- Expenditure margins based on information supplied by BDO EconSearch consistent with a model 'small-state economy'.

In February 2023, the [National Recreational Fishing Survey project](#) (the NRFS) reported on results from its three-year investigation on the social and economic dimensions of recreational fishing in Australia.

The NRFS project took place from 2019 to 2021 which was inclusive of Christmas (2019) and New Years (2020) and one quarter (Apr, May, Jun 2020) of the initial lockdown caused by the COVID-19 pandemic which began in early 2020. The survey provided estimates of economic contribution for Australian recreational fishing to Tasmania for the period from 1 July 2018 – 30 Jun 2020 (Table 7). These estimates included contributions to Gross Regional Product (GRP), Household Income, and Employment in Tasmania provided by the final consumption expenditure of recreational fishers nationally.

The NRFS results are relevant for Tasmania as they include the effects on the Tasmanian economy of fishing in other states and territories, as well as the effects on the Tasmanian economy of both national and international visiting fishers and their expenditures both within and outside of Tasmania. The NRFS results comprise both freshwater (e.g., trout) and saltwater fishing; it paints a universal picture of the contribution of Australian recreational fishing (all types) to Tasmania.

The NRFS estimates of economic contribution are measured using a different indicator and scope from the IMAS estimates and thus cannot be directly compared to the IMAS estimate presented in Table 6 above. Additionally, this renders it is less directly relatable to management settings for Tasmanian saltwater recreational fishing. A detailed description of differences between IMAS estimates and NRFS estimates is available in Appendix D.

Table 7. Estimates of economic contributions of recreational fishing (saltwater and freshwater) to the Tasmanian Economy.

	Gross Regional Product (\$'000)	Employment (full-time equivalent (FTE))
Direct effects		
Total Direct	90,000	1,225
Flow-on effects		
By component		
<i>Production induced</i>	71,000	597
<i>Consumption induced</i>	110,000	848
Total Flow-on		1,445
Total	270,000	2,670
<i>Total/Direct</i>	3.0	2.2

Notes:

- Source: Moore et al. 2023
- Some totals in the table may not sum to column entries due to rounding.

More information:

Information on the NRFS survey for Tasmania can be found [here](#).

2.3. Commercial Fishers

Many people in the Tasmanian workforce engage in commercial fishing business activities as operators of, or deckhands working on, commercial fishing vessels under commercial fishing licences. These commercial fishing operations are located in or landing fish in multiple ports around Tasmania. More information on commercial fishing activities is available from [Seafood Industry Tasmania](#) and from [Commercial Fishing | Fishing Tasmania](#). A more detailed assessment of the specific fisheries is provided in sections 3.1 to 3.6.

Sector-wide social indicators

People engaged in commercial fishing in Tasmania include those who harvest fish and those who harvest or retail other seafood products. The availability of employment in commercial fisheries is important to the livelihoods of people in the Tasmanian community. Employment in commercial fishing includes fishing vessel skipper or supervisor as well as fishing vessel deckhands (typically 1-2 per vessel).

Standard employment indicators are measured by the Australian Bureau of Statistics and give an overview of the social value of employment in Tasmania's commercial fisheries. This data is obtained from the ABS Census which collects data on the self-identified employment characteristics and industry of employment of the Australian population at a point in time in 2021. This data is not used in IMAS assessment of employment in commercial fishing due to the under reporting of employment when matched with active fishing personal licences numbers. However, data on employment in seafood processing (inclusive of both wild caught and aquaculture-produced seafood) is more representative and indicates that in 2021, 457 people reported working in seafood processing and wholesaling in Tasmania (Tuynman, et al. 2023).

Sector-wide fishing activity indicators

In 2020/21, the total number of commercial fishing businesses operating in Tasmania was approximately 600 (Table 8). This number includes businesses operating under dual licences in multiple fisheries, including those operating under jurisdictions other than Tasmania (i.e., Commonwealth-licenced fishing businesses). In the same year, 63% of those businesses had less than \$200,000 per year in turnover, 35% had between \$200,000-\$2 million, and 2% earned more than \$2 million (Table 9).

Table 8. Count of fishing businesses by Industry sub-classification operating in Tasmania, 2017/18-2020/21.

Industry sub-classification	2017/18	2018/19	2019/20	2020/21
Rock lobster and crab potting	231	233	233	227
Line fishing	48	48	48	44
Fish trawling, purse seining and netting	48	47	44	38

Industry sub-classification	2017/18	2018/19	2019/20	2020/21
Other fishing*	309	301	287	284

Notes:

- Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2017 to June 2021
- * Inclusive of: Other fishing, Not further defined (nfd); Prawn fishing.
- ABS data on Tasmanian-based commercial fishing businesses uses Industry sub-classifications which are not equivalent to defined management units used in managing commercial fisheries. Data should be used with caution.

Table 9. Count of fishing businesses by Industry sub-classification operating in Tasmania for different turnover classes, 2020/21.

Industry sub-classification*	Annual turnover (\$'000)					
	0 - <50	50 - <200	200 - <2,000	2,000 - <5,000	5,000 - <10,000	>10,000
Rock lobster and crab potting	43	68	113	0	3	0
Line fishing	16	15	1	3	0	0
Fish trawling, purse seining and netting	10	25	7	0	0	0
Other fishing*	77	113	91	3	0	3

Notes:

- Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2017 to June 2021
- * Inclusive of: Other fishing, Not further defined (nfd); Prawn fishing.
- ABS data on Tasmanian-based commercial fishing businesses uses Industry sub-classifications which are not equivalent to defined management units used in managing commercial fisheries. Data should be used with caution.

2.4. Aquaculture

Tasmania is home to Australia's largest aquaculture industry, both in terms of volume and gross value of annual production (Tunynman et al. 2022). More information on aquaculture activities is available from [Seafood Industry Tasmania](#) and [Aquaculture | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](#). A more detailed assessment of the specific aquaculture sectors is provided in sections 4.1 to 4.3.

Sector-wide social indicators

People working in the aquaculture industry in Tasmania include those who grow fish and those who harvest or retail other seafood products. Standard employment indicators are measured by the Australian Bureau of Statistics and give an overview of the social value of employment in Tasmania's aquaculture sector.

In 2021, 2,221 people reported working in aquaculture production in Tasmania and 457 people in seafood processing and wholesaling in Tasmania (inclusive of both wild caught and aquaculture-produced seafood) (Tuynman, et al. 2023). In the same year, 142 of those people who reported participation in aquaculture production sector also indicated Indigenous Status (ABS 2021).

Sector-wide aquaculture activity indicators

In 2020/21, the total number of aquaculture businesses operating in Tasmania was approximately 68 (Table 10). In the same year, 37% of those businesses earned less than \$200,000 per year in turnover, 35% earned between \$200,000-\$2,000,000, and 28% earned more than \$2,000,000 (Table 11).

Table 10. Count of aquaculture businesses operating in Tasmania, 2017/18-2020/21.

Industry sub-classification	2017/18	2018/19	2019/20	2020/21
Offshore longline and rack aquaculture	68	61	70	62
Offshore caged aquaculture	6	8	6	6
Onshore aquaculture	34	37	29	30

Notes:

- Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2017 to June 2021
- ABS data on Tasmanian-based aquaculture businesses uses Industry sub-classifications which are not equivalent to defined management units used in managing aquaculture activity, therefore data should be used with caution.

Table 11. Count of aquaculture businesses by Industry sub-classification operating in Tasmania by turnover size, 2020/21.

Industry sub-classification*	Annual turnover (\$'000)					
	0 - <50	50 - <200	200 - <2,000	2,000 - <5,000	5,000 - <10,000	>10,000
Offshore longline and rack aquaculture	12	16	26	3	3	0
Offshore caged aquaculture	0	0	0	3	0	3
Onshore aquaculture	10	3	12	3	3	3

Notes:

- Source: ABS 8165.0 Counts of Australian Businesses, including Entries and Exits, June 2017 to June 2021
- ABS data on Tasmanian-based aquaculture businesses uses Industry sub-classifications which are not equivalent to defined management units used in managing aquaculture activity, therefore data should be used with caution.

3. Fisheries

3.1. Tasmanian Abalone Fishery

The target species of this fishery are Blacklip Abalone (*Haliotis rubra*) and, to a lesser extent, Greenlip Abalone (*Haliotis laevis*). Belonging to the phylum of molluscs, abalone are large marine snails or gastropods with a hard ear-shaped shell and a muscular foot. They inhabit Australia's rocky reef, from shallow water down to depths of 40-50 metres. Abalone can be found along the majority of Tasmania's coastal waters, including around the Bass Strait islands.

The Tasmanian Abalone Fishery is accessed for commercial, recreational, charter tourism, and cultural fishing, although currently no formal allocation policy is in place. In all sectors, abalone are hand-harvested by divers. Abalone holds significant commercial value and is highly valued among recreational and Aboriginal fishers.

The Tasmanian Abalone wild catch commercial fishery is the largest single abalone wild catch fishery globally by volume. The most recent survey of recreational abalone fishing catch was undertaken for the 2020-21 season and estimated that the recreational catch was equivalent to just over 2% of the total Tasmanian commercial wild catch abalone catch (Lyle et. al., 2021). Recreational abalone fishing is managed through a combination of licensing, size and bag limits and area restrictions in Tasmania. In 2020/21, 1.1% of the commercial Abalone quota was held by a Tasmanian Aboriginal corporation.

The commercial component of the abalone fishery is quota managed. Commercial access to the Abalone fishery is granted through Deeds of Agreement and managed by licence and permit requirements for divers and vessel operators, plus a combination of input and output controls on fishing (diving) effort and catch. These include spatial management arrangements, size limits, and setting a total allowable catch for commercial fishery (TACC), as well as commercial catch caps and other operational rules that govern the commercial harvest of abalone in Tasmania. Abalone harvested by commercially-licensed divers are kept live in tanks on dive boats, then transferred into live holding tanks operated by licenced abalone seafood processors. Following this, depending on size, quality and market demands they are either live-exported, canned, snap-frozen or dried. Abalone seafood processors and exporters are part of the abalone supply chain, separate to the dive services (harvesting) sector. Some abalone divers also operate in the Tasmanian Commercial Dive Fishery.

More information:

Assessment of the biological and ecological sustainability of Tasmanian Abalone stocks is provided in the [Tasmanian Abalone Fishery Assessment 2023](#), and can also be accessed here by species; [Blacklip Abalone](#) and [Greenlip Abalone](#). Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Abalone Fishery 2020/21 – Snapshot

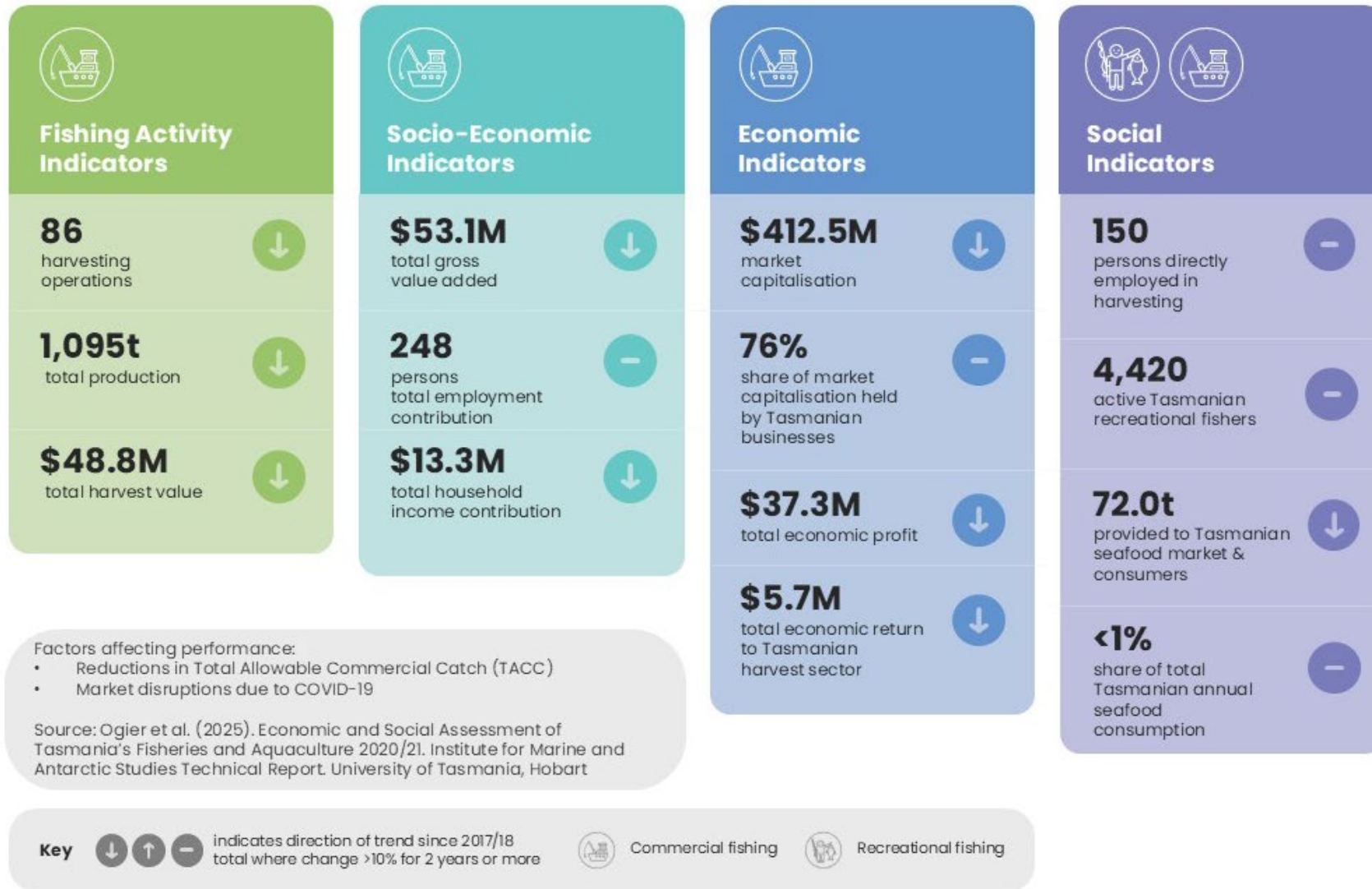


Table 12. Tasmanian Abalone Fishery - Fishing activity indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch* (%)	100	89	90	100
Number of active commercial harvesting operations	97	88	89	86
Commercial production volume (tonnes)	1,473	1,158	1,029	1,095
Commercial harvest value (\$000)	86,436	79,437	61,115	48,790
Export market share** (%)	NA	NA	NA	NA

Notes:

- * The abalone quota year runs from Jan-Dec. The TAC for each financial year has been proportioned as one half of the lesser calendar year TAC (e.g., 2017 for the 2017-18 period) plus one half of the greater calendar year TAC (e.g., one half of the 2018 TACC for the 2017-18 period)
- ** Reported exports of Abalone products from Tasmania include Abalone products produced by both the Tasmanian Abalone Fishery and Aquaculture sectors, as product codes do not distinguish production method. Tasmanian-produced Abalone may also be exported from other non-Tasmanian ports within Australia. Tasmania Abalone Council estimate is 95% export share (see [Tasmanian Abalone Council](#))

Table 13. Tasmanian Abalone Fishery - Economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation* (\$'000)	841,431	881,570	675,480	412,514
Estimated share (%) of market capitalisation held by Tasmanian businesses**	77	76	76	76
Estimated economic profit (\$'000)	70,910	66,353	50,020	37,296
Estimated economic return to the Tasmanian harvest sector (\$'000)	7,306	6,031	5,359	5,703
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals (\$'000)	NA	14***	NA	20***
– Total revenue from production-based fees (\$'000)	NA	5,175****	NA	3,525

Notes:

- * Value (\$'000) of the commercial fishery as indicated by its quota market, measured by average market value of a quota unit by the total number units in the fishery. The quota market capitalisation values shown are calculated using a formula-based approach based on historical benchmark price multiples. However, actual asset prices can vary significantly from year to year due to the volume and frequency of trades during the relevant period, which can result in substantial differences from the calculated values
- ** Based on addresses provided to NRE Tas which were further sorted based on location information obtained (see [Appendix B](#) Table B1 which details the methods used to attribute quota holdings to within/without Tasmanian entities).
- *** Estimated value of licence fee renewals does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers. Fees and charged relating to the biotoxin testing are not included.
- **** Estimated based on average beach price and total catch, and assuming a fee rate of 7% applied uniformly. This fee is described in Clause 5, Section 99B (1) and (4), Schedule 3 – Abalone Deed of Agreement, LMRMA

Table 14. Tasmanian Abalone Fishery - Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	66.7	NA	41.7
– Indirect	NA	14 .1	NA	11.4
– Total	NA	80.8	NA	53.1
Household Income (\$ million)				
– Direct	NA	7.5	NA	6.5
– Indirect	NA	8.3	NA	6.7
– Total	NA	15.8	NA	13.3
Employment (Persons)				
– Direct	NA	132	NA	150
– Indirect	NA	116	NA	98
– Total	NA	248	NA	248

Notes:

- More information on the indicators of socio-economic contributions and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b)
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 15. Tasmanian Abalone Fishery - Social indicators (commercial and recreational sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	NA	132	NA	150
Recreational fishing population (Active fishers)	3,313	3,990	3,341	4,420
Recreational fishing participation (Fisher Days)	10,079	10,081	8,064	11,302
Local seafood supply (Kg)				
– Commercially-caught**	73,650	57,900	51,400	54,750
– Recreationally-caught	22,124	20,963	12,642	17,212
Estimate share (%) of Tasmanian annual seafood consumption***				
– Commercially-caught**	1	<1	<1	<1
– Recreationally-caught	<1	<1	<1	<1

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of share of Tasmanian-harvested Abalone fishery species (95%), which is sent out of state, and which is applied to all years reported (source: Industry Background - Tasmanian Abalone Council (tasabalone.com.au))
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

3.2. Tasmanian Commercial Dive Fishery

The Tasmanian Commercial Dive Fishery is a hand harvest fishery in which three main species are caught. Traditionally, this fishery targeted two native species: the shortspined sea urchin (*Heliocidaris erythrogramma*) and wavy periwinkles (*Lunella undulata*). In recent years, the fishery has expanded by also harvesting the longspined sea urchin (*Centrostephanus rodgersii*).

The longspined sea urchin is a range-extending species and its population in Tasmanian waters has grown exponentially in recent decades. Commercial harvest is the primary means of controlling this species, which is a priority given its grazing effects on rocky reefs (Cresswell et al. 2023).

This fishery operates nearly all year due to the differing spawn times of the two urchin species. This allows for optimal harvesting of quality roe before spawning occurs. The fishery was established in the mid-1980s, and formalised with a management plan in 2005. The fishery primarily operates on the Tasmanian east coast, although periwinkles can be found Statewide. A number of commercial divers also operate in the Tasmanian Abalone Fishery.

The Tasmanian Commercial Dive Fishery is regulated under the *Living Marine Resources Management Act 1995* and *Fisheries (Commercial Dive) Rules 2021*. While recreational bag and size limits do not apply to urchins, there is a personal daily limit of 100 periwinkles. Commercial limits are in place for shortspined sea urchin and periwinkles, but these limits do not apply to longspined sea urchin. Minimum size limits apply to catches of shortspined sea urchins and periwinkles in the commercial fishery, and these ensure that animals can spawn at least twice before being harvested. A total catch limit for these two species is distributed across the five zones of the Commercial Dive Fishery to manage fishing effort. Once the catch limit for a zone is reached, that zone is closed for the rest of the licensing year.

Commercially-harvested product is received by Tasmanian seafood processors and sold to Tasmanian restaurants, as well as seafood wholesalers and restaurants in Melbourne and Sydney. In the case of longspined sea urchin product, much of this product is exported to markets in Asia, Europe, and America.

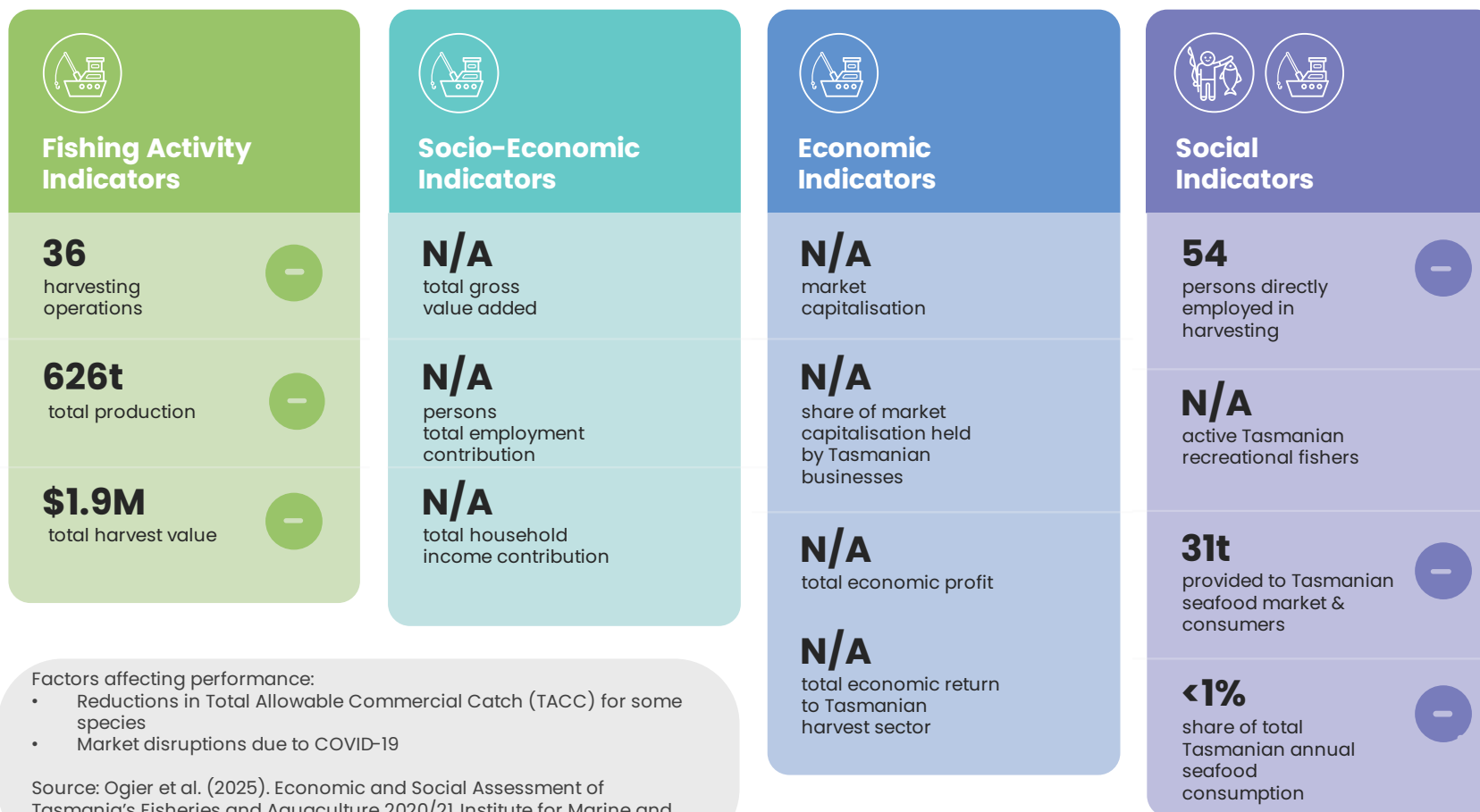
More information:

Assessment of the biological sustainability of Longspined Sea Urchin stocks is provided in the [Tasmanian Longspined Sea Urchin Fishery Assessment 2021/22](#), and can also be accessed here by species; [Longspined Sea Urchin](#), [Shortspined Sea Urchin](#) and [Periwinkles](#), on the [Tasmanian Wild Fisheries](#) assessment website and [Fishing Tasmania \(fishing.tas.gov.au\)](#) website. Also available is the [Social-Economic Analysis of the Tasmanian Dive Sector: Snapshot Report 2024](#).

Information about the commercial fishery can be access here: [Tasmanian Commercial Divers Association](#), [Urchins and Periwinkles | Seafood Industry Tasmania \(sit.org.au\)](#)

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Commercial Dive Fishery 2020/21– Snapshot



Key



indicates direction of trend since 2017/18
total where change >10% for 2 years or more



Commercial fishing



Recreational fishing

Table 16. Tasmanian Commercial Dive Fishery - Fishing activity indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch (%)	NA	NA	NA	NA
Number of active commercial harvesting operations	36	36	39	36
Commercial production volume* (tonnes)	686	541	640	626
Commercial harvest value* (\$000)	NA	NA	1,682	1,910
Export market share** (%)	NA	NA	NA	NA

Notes:

- * Includes Longspined Sea urchin (*Centrostephanus rodgersii*), Shortspined Sea urchin (*Heliocidaris erythrogramma*) and periwinkles (*Lunella undulata*). Excludes other species caught in this fishery. Harvest value and production volume shown in this table are indicative for the financial years shown as they are calculated from fisheries data that relate to licensing years (1 September – 31 August) for the Commercial Dive fishery. Shortspined Sea Urchin harvest is valued at a constant price of \$3.80 per kilogram for the years shown. Totals do not include the dive subsidy payable on Longspined Sea Urchin.
- ** Available trade data doesn't match species caught in fishery. Industry estimate of export share is 95%

Table 17. Tasmanian Commercial Dive Fishery - Economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation* (\$'000)	NA	NA	NA	NA
Estimated share (%) of market capitalisation held by Tasmanian businesses	NA	NA	NA	NA
Estimated economic profit (\$'000)	NA	NA	NA	NA
Estimated economic return to the Tasmanian harvest sector (\$'000)	NA	NA	NA	NA
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals** (\$'000)	NA	NA	NA	34
– Total revenue from production-based fees*** (\$'000)	0	0	0	0

Notes:

- * Licence market capitalisation not calculated due to lack of sufficient market value data
- ** Estimated value of licence fee renewals for 2020/21, does not include payments to industry bodies (SIT, previously TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers
- *** No production-based fee exists for this activity

Table 18. Tasmanian Commercial Dive Fishery - Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	NA	NA	NA
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA
Household Income (\$ million)				
– Direct	NA	NA	NA	NA
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA
Employment (Persons)				
– Direct	36	36	39	36
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA

Notes:

- More recent estimation of economic contribution of the Tasmanian Commercial Dive Fishery production sector for 2022/23 is published here: [Social-Economic Analysis of the Tasmanian Dive Sector: Snapshot Report 2024](#)

Table 19. Tasmanian Commercial Dive fishery - Social indicators (commercial and recreational sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	54	54	59	54
Recreational fishing population (Active fishers)	NA	NA	NA	NA
Recreational fishing participation (Fisher Days)	NA	NA	NA	NA
Local seafood supply (Kg)				
– Commercially-caught**	15,700	36,975	31,975	31,285
– Recreationally-caught	NA	NA	NA	NA
Estimate share (%) of Tasmanian annual seafood consumption***				
– Commercially-caught**	<1	<1	<1	<1
– Recreationally-caught	NA	NA	NA	NA

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of share of Tasmanian-harvested Commercial dive fishery species (5%), which is sold into local markets, and which is applied to all years reported.
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

3.3. Tasmanian Giant Crab Fishery

The Tasmanian Giant Crab Fishery primarily targets the giant crab species (*Pseudocarcinus gigas*). This fishery employs traps and pots. Commercial harvesting of giant crabs began in the early 1990s using an open-access system which transitioned to a limited-entry model. Most fishing occurs in deeper waters at the edge of the continental shelf. While both east and west coast waters were fished in the past, recent fishing activity has been focused off the west coast of Tasmania.

The Tasmanian Giant Crab Fishery is divided into eight management areas and operates under an individual transferable quota (ITQ) system which is regulated by the *Living Marine Resources Management Act 1995* and the *Fisheries (Giant Crab) Rules 2023*. Management regulations include minimum and maximum size limits, and seasonal closures for female giant crabs during peak spawning periods to protect egg production, reduce fishing mortality on spawning or berried female giant crabs, and ensure that a sufficient number of large males and females are returned to the water.

A number of Tasmanian Giant Crab fishers also fish in the Tasmanian Rock Lobster Fishery. Giant crabs are tanked live and sold to Melbourne and Sydney wholesale seafood markets for on selling into restaurants.

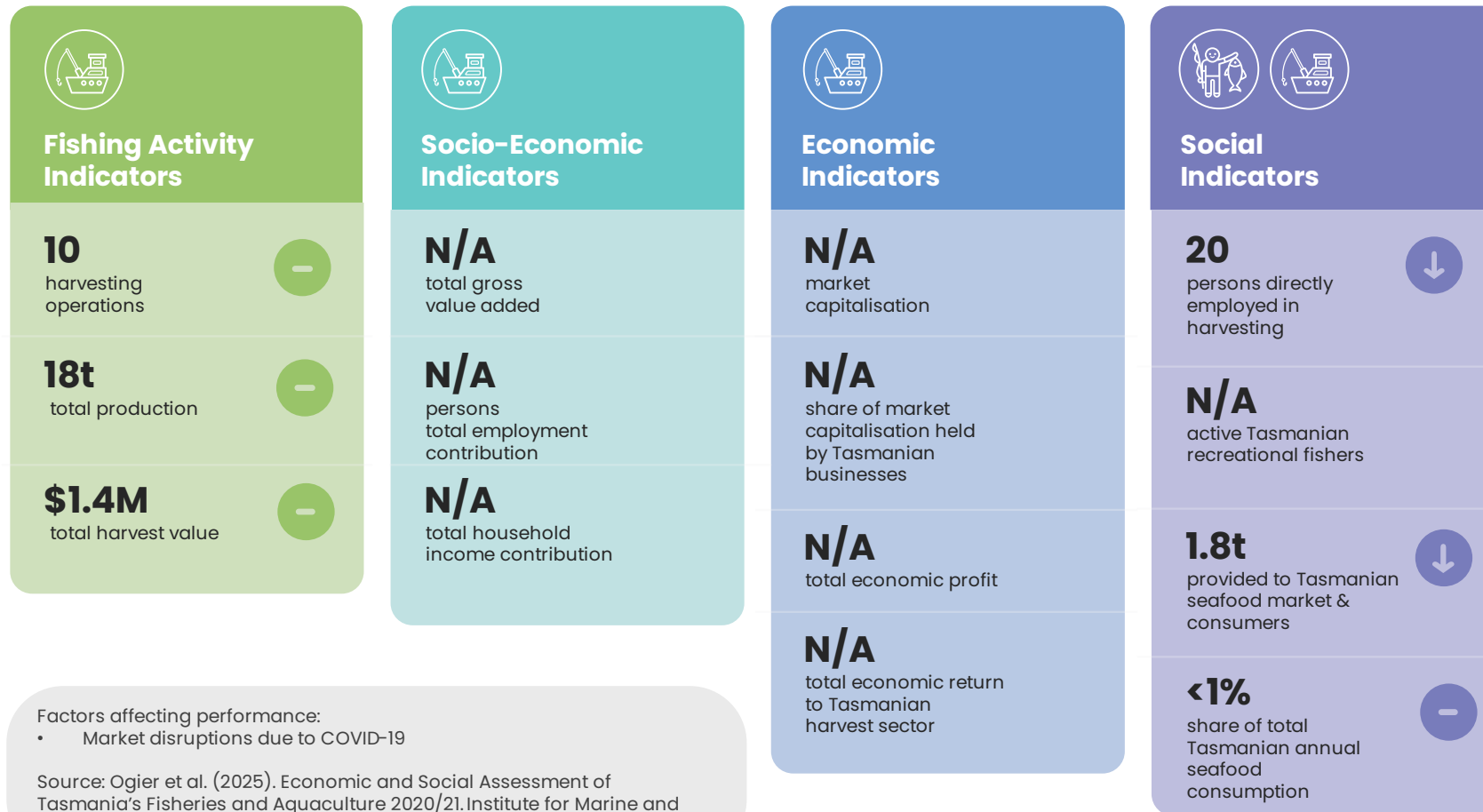
More information:

Assessment of the biological and ecological sustainability of Tasmanian Giant Crab stocks is provided in the [Tasmanian Giant Crab Assessment 2019](#), and can also be accessed here: [Giant Crab - Tasmanian Wild Fisheries Assessments \(tasfisheriesresearch.org\)](#)

Information about the commercial fishery can be accessed here: [Giant Crab Fishery | Fishing Tasmania](#).

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Giant Crab Fishery 2020/21– Snapshot



Key    indicates direction of trend since 2017/18 total where change >10% for 2 years or more



Commercial fishing



Recreational fishing

Table 20. Tasmanian Giant Crab Fishery - Fishing activity indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch (%)	97	87	73	86
Number of active commercial harvesting operations	16	16	16	10
Commercial production volume (tonnes)	20	18	15	18
Commercial harvest value (\$'000)	1,482	1,504	1,300	1,398
Export market share (%)	0	0	0	0

Table 21. Tasmanian Giant Crab Fishery - Economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation* (\$'000)	NA	NA	NA	NA
Estimated share (%) of market capitalisation held by Tasmanian businesses	NA	NA	NA	NA
Estimated economic profit (\$'000)	NA	NA	NA	NA
Estimated economic return to the Tasmanian harvest sector (\$'000)	NA	NA	NA	NA
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals (\$'000)	NA	NA	NA	226**
– Total revenue from production-based fees*** (\$'000)	0	0	0	0

Notes:

- * Licence market capitalisation not calculated due to lack of sufficient market value data
- ** Estimated value of licence fee renewals for 2020/21, does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers
- *** No production-based fee exists for this activity

Table 22. Tasmanian Giant Crab Fishery – Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	NA	NA	NA
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA
Household Income (\$ million)				
– Direct	NA	NA	NA	NA
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA
Employment (Persons)				
– Direct	30	30	28	20
– Indirect	NA	NA	NA	NA
– Total	NA	NA	NA	NA

Notes:

- Data on indirect and total contributions to the Tasmanian economy and households through business activity and employment is not estimated due to the small size and low level of activity of this fishery

Table 23. Tasmanian Giant Crab Fishery - Social indicators (commercial and recreational sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	30	30	28	20
Recreational fishing population (Active fishers)	NA	NA	NA	NA
Recreational fishing participation (Fisher Days)	NA	NA	NA	NA
Local seafood supply (Kg)				
– Commercially-caught**	2,008	1,810	1,532	1,794
– Recreationally-caught	NA	NA	NA	NA
Estimate share (%) of Tasmanian annual seafood consumption***				
– Commercially-caught**	<1	<1	<1	<1
– Recreationally-caught	NA	NA	NA	NA

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of share of Tasmanian-harvested Giant crab fishery (10%) which is sold in local markets, and which is applied to all years reported
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and s

3.4. Tasmanian Rock Lobster Fishery

The Tasmanian Rock Lobster Fishery predominantly targets Southern Rock Lobster (*Jasus edwardsii*), with occasional captures (less than 1% of total catches) of Eastern Rock Lobster (*Sagmariasus verreauxi*). Southern Rock Lobster holds significant commercial value and is highly valued among recreational and Tasmanian Aboriginal fishers.

The total annual allowable catch is formally shared between the commercial sector and the recreational fishery, with the total allowable recreational catch (TARC) being capped at 170 tonnes when the total allowable catch is less than 1,700 tonnes, or 10% of the total allowable catch when it is more than 1,700 tonnes. The total allowable commercial catch has been set at 1,050.7 tonnes, and the TARC has been 170 tonnes, since 2014. Both commercial and recreational fishers utilise various techniques, such as pots, ring nets, and diving to harvest lobsters in Tasmanian waters, including the waters surrounding major islands.

The majority of commercial catch is caught from the western region of the state. Additionally, the East Coast represents a key region for both commercial and recreational fishing activities. For the East Coast region a strategy was introduced to rebuild stocks to greater than 20% of an unfished stock and in excess of the peak biomass levels of the mid 2000s by limiting the amount of lobsters harvested each year from this region.

The management of the Tasmanian Rock Lobster Fishery is governed by the *Living Marine Resources Management Act 1995* and the *Fisheries (Rock Lobster) Rules 2022*. The regulatory measures include limited entry, seasonal restrictions, gear regulations, a Total Allowable Catch (TAC), Individual Transferable Quota units (ITQs), minimum size limits, and reporting requirements. Recreational fishers are also subject to specific catch, bag and possession limits as well as seasonal closures.

Commercially harvested lobsters are received by Tasmanian seafood processors who hold live fish in tanks before export of live product to Asian seafood markets. Some product is sold into local markets. A number of commercial lobster fishers are also active in the Tasmanian Scalefish Fishery and harvest scalefish for bait.

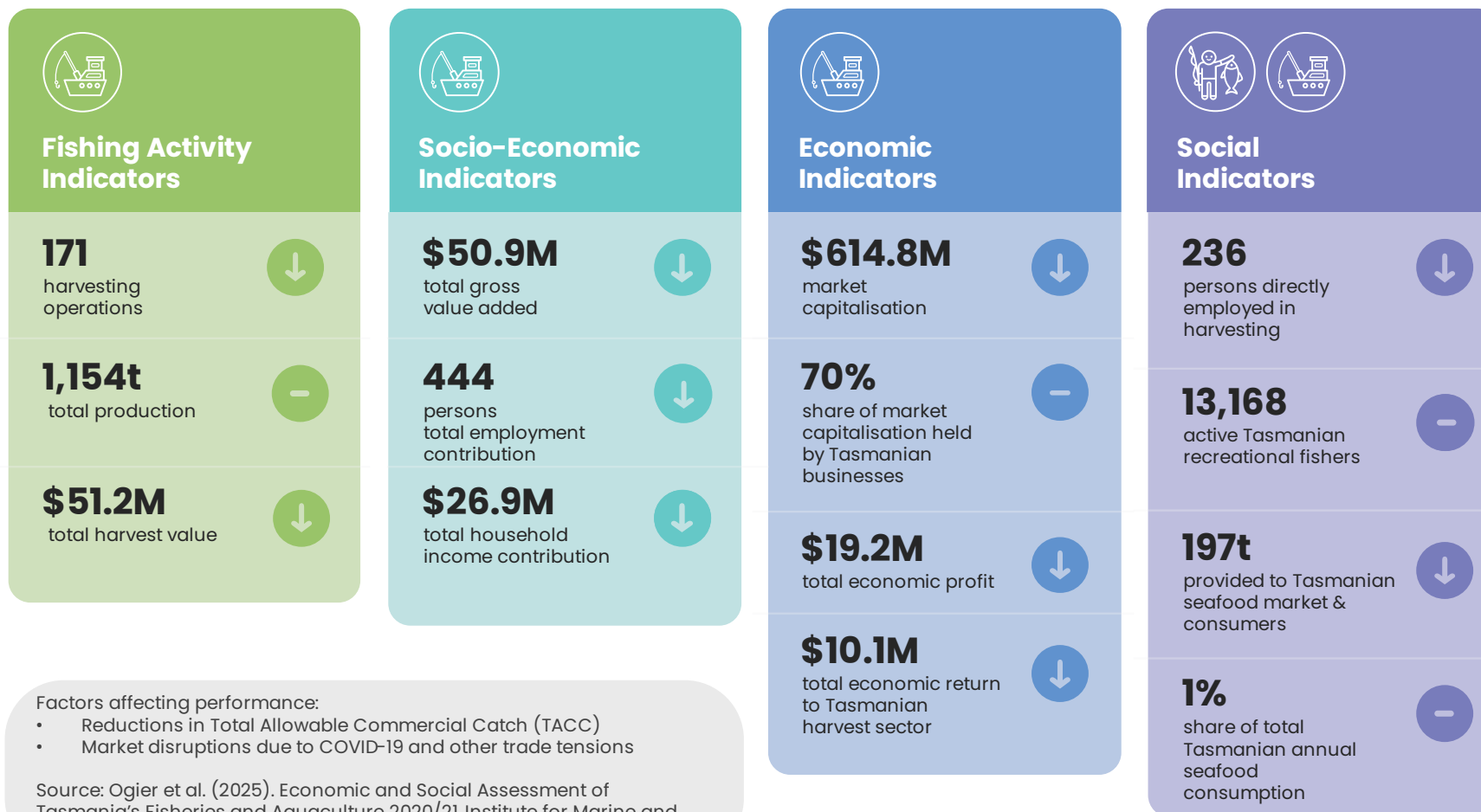
More information:

Assessment of the biological and ecological sustainability of Tasmanian Rock Lobster stocks can be accessed here: [Rock Lobster \(tasfisheriesresearch.org\)](https://tasfisheriesresearch.org). Information about the commercial fishery can be accessed here: [Rock Lobster Fishery | Fishing Tasmania](#) and [Southern Rock Lobster | Seafood Industry Tasmania \(sit.org.au\)](https://sit.org.au)

Assessment of recreational fishing for Rock Lobster is reported in the [Tasmanian Recreational Rock Lobster and Abalone Fisheries:2022-23 Fishing Season](#).

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Rock Lobster Fishery 2020/21– Snapshot



Key



indicates direction of trend since 2017/18
total where change >10% for 2 years or more



Commercial fishing



Recreational fishing

Table 24. Tasmanian Rock Lobster Fishery - Fishing activity indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch* (%)	100	97	85	100
Number of active commercial harvesting operations	202	183	177	171
Commercial production volume (tonnes)	1,148	1,010	891	1,154
Commercial harvest value (\$000)	97,121	93,865	73,603	51,196
Export market share (%)	12	13	32	17

Notes:

- * The rock lobster quota year runs from Feb-March. TACC each financial year has been proportioned as two thirds of the lesser calendar year TACC (e.g., 2017 for the 2017-18 period) and one third of the greater calendar year TACC (e.g., 2018 for the 2017-18 period)

Table 25. Tasmanian Rock Lobster Fishery - Economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation (\$'000)	840,000	959,000	882,000	614,775
Estimated share (%) of market capitalisation held by Tasmanian businesses**	71	71	72	70
Estimated economic profit (\$'000)	48,528	53,648	39,886	19,165
Estimated economic return to the Tasmanian harvest sector (\$'000)	19,402	19,365	15,445	10,089
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals (\$'000)	NA	NA	NA	3,288*
– Total revenue from leasing of research quota*** (\$'000)	0	0	0	216****

Notes:

- * Estimated value of licence fee renewals for 2020/21 - does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers
- ** Based on addresses provided to NRE Tas which were further sorted based on location information obtained (see [Appendix B](#) Table B1 which details the methods used to attribute quota holdings to within/without Tasmanian entities).
- *** No production-based fee exists for this activity
- **** In 2020/21 there was also \$216,386 revenue earned by IMAS from the research quota

Table 26. Tasmanian Rock Lobster Fishery - Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	66.4	NA	26.3
– Indirect	NA	34.0	NA	24.6
– Total	NA	100.4	NA	50.9
Household Income (\$ million)				
– Direct	NA	18.9	NA	12.9
– Indirect	NA	20.0	NA	14.0
– Total	NA	38.9	NA	26.9
Employment (Persons)				
– Direct	NA	341	NA	236
– Indirect	NA	270	NA	208
– Total	NA	611	NA	444

Notes:

- More information on the indicators of socio-economic contributions and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b)
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 27. Tasmanian Rock Lobster Fishery - Social indicators (commercial and recreational sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	351	341	238	236
Recreational fishing population (Active fishers)	12,004	13,239	12,090	13,168
Recreational fishing participation (Fisher Days)	77,209	73,327	70,473	74,453
Local seafood supply (Kg)				
– Commercially-caught**	114,800	101,000	89,100	115,400
– Recreationally-caught	73,187	74,982	54,345	81,606
Estimate share (%) of Tasmanian annual seafood consumption***				
– Commercially-caught**	2	1	1	1
– Recreationally-caught	1	1	<1	1

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of share of Tasmanian-harvested Rock lobster fishery (90%), which is sent out of state, and which is applied to all years reported (source: DPIPWE (2018) & NRE Tas (2021))
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES Australian fisheries and aquaculture statistics 2021) to the Tasmanian population and summing

3.5. Tasmanian Scalefish Fishery

The Tasmanian Scalefish Fishery (TSF) is a multi-gear and multi-species fishery. The commercial sector is predominantly made up of small owner operated fishing businesses. Species targeted by the commercial fishery include a range of finfish (e.g., banded morwong, tiger flathead, school whiting, various small pelagic species), and cephalopod (e.g., squid, octopus, calamari) species. Catching scalefish species is also highly valued among recreational and Tasmanian Aboriginal fishers. Species targeted by recreational fishers include southern sand flathead, Australian salmon, King George whiting, calamari, morwong and trumpeter species.

Fishers commercially harvesting Tasmanian scalefish use vessels of various sizes and types, using a range of fishing gears such as gillnets, hook and line, longlines, spears, drop lines, squid jigs, automatic squid jig machines, fish traps, purse seine nets, beach seine nets, dip nets, octopus pots, and Danish seines.

The TSF is managed under the *Living Marine Resources Management Act 1995* and the *Fisheries (Scalefish) Rules 2015*, with the mackerel fishery regulated under the *Fisheries (Mackerel) Rules 2019*. The commercial sector of the TSF is primarily managed using input controls, including species and/or gear specific licensing, limited entry, gear restrictions, and spatial and temporal fishing closures. Output controls apply in the Banded Morwong fishery, which is managed using an Individual Transferable Quota system, and there are also trip catch limits for selected species (e.g., Striped Trumpeter). Recreational fishers are also subject to catch and possession limits, and spatial and temporal fishing closures.

Commercial fishers sell their catches into a range of supply chains, including direct sales off the boat to local consumers and restaurateurs. Other supply chains involve sale of live, fresh or frozen fish to Tasmanian seafood processors who supply local seafood retailers and consumers, as well as sales to seafood wholesale markets in Melbourne and Sydney.

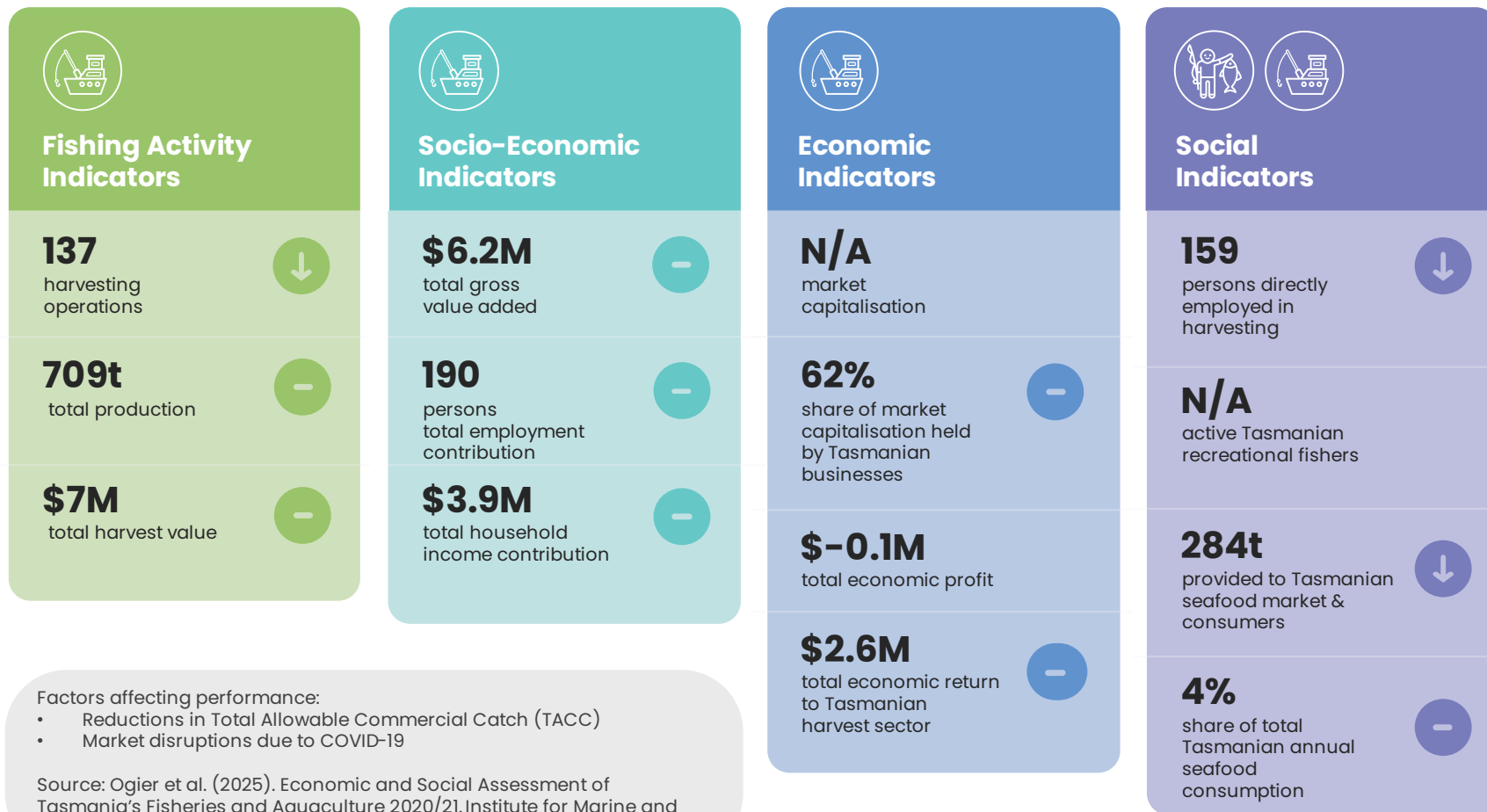
More information:

Assessment of the biological and ecological sustainability of Tasmanian Scalefish stocks is provided in the [Tasmanian Scalefish Fishery Assessment 2021/22](#) and the [Tasmanian Banded Morwong Fishery Assessment 2021/22](#). Assessment by species is available via the [Tasmanian Wild Fisheries Assessments](#).

Information about the commercial fishery can be accessed here: [Scalefish Fishery | Fishing Tasmania](#); and [Fish and Calamari | Seafood Industry Tasmania \(sit.org.au\)](#).

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Scalefish Fishery 2020/21 – Snapshot



Key



indicates direction of trend since 2017/18
total where change >10% for 2 years or more



Commercial fishing



Recreational fishing

Table 28. Tasmanian Scalefish Fishery - Fishing activity indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch* (%)	96	99	83	67
Number of active commercial harvesting operations	153	153	138	137
Commercial production volume (tonnes)	705	491	419	709
Commercial harvest value (\$000)	6,807	4,851	4,136	6,960
Export market share (%)	0	0	0	0

Notes:

- * Banded Morwong catch only. No other species caught in this fishery had TACs determined during the reference period

Table 29. Tasmanian Scalefish Fishery - Economic indicators (commercial fisheries), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation* (\$'000)	NA	NA	NA	NA
Estimated share (%) of market capitalisation held by Tasmanian businesses	NA	NA	NA	NA
Estimated economic profit (\$'000)	NA	NA	NA	-101**
Estimated economic return to the Tasmanian harvest sector (\$'000)	NA	2,500	NA	2,600
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals*** (\$'000)	NA	NA	NA	234
– Total revenue from production-based fees**** (\$'000)	0	0	0	0

Notes:

- * Licence market capitalisation not calculated due to market values only being available for package trades in which multiple licence types are bundled
- ** Economic profit for the Scalefish fishery is estimated based on the building block model, which is consistent with the Net Economic Return of the fishery
- *** Estimated value of licence fee renewals for 2020/21, does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers
- **** No production-based fee exists for this activity

Table 30. Tasmanian Scalefish Fishery - Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	2.5	NA	2.6
– Indirect	NA	2.8	NA	3.6
– Total	NA	5.3	NA	6.2
Household Income (\$ million)				
– Direct	NA	1.9	NA	1.8
– Indirect	NA	1.6	NA	2.1
– Total	NA	3.5	NA	3.9
Employment (Persons)				
– Direct	NA	171	NA	159
– Indirect	NA	22	NA	31
– Total	NA	193	NA	190

Notes:

- More information on the indicators of socio-economic contributions and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b)
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 31. Tasmanian Scalefish Fishery - Social indicators (commercial and recreational sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	192	171	175	159
Recreational fishing population (Active fishers)	90,000**	NA	NA	NA
Recreational fishing participation (Fisher Days)	NA	NA	NA	NA
Local seafood supply (Kg)				
– Commercially-caught***	282,164	196,384	167,467	283,803
– Recreationally-caught**	391,300	NA	NA	NA
Estimate share (%) of Tasmanian annual seafood consumption****				
– Commercially-caught***	4	3	2	4
– Recreationally-caught***	5	NA	NA	NA

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimated derived from recreational fishing activity of responding diarists reported between December 2017 and November 2018 and results expanded to represent the private dwelling resident population of Tasmania. Includes fishing for freshwater species and marine species not managed under the Tasmanian Scalefish Fishery, although the majority of fishing activity is attributed to saltwater fishing for species managed in this fishery (source: Lyle et al. 2019)
- *** Estimate based on research estimate of share of Tasmanian-harvested Scalefish fishery species (40%) which is sold in local markets, and which is applied to all years reported (source: Ogier et al., 2023)
- **** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

3.6. Tasmanian Scallop Fishery

The Tasmanian Scallop fishery primarily targets commercial scallop (*Pecten fumatus*), which is one of three scallop species occurs in the region. Commercial harvesting of scallops uses a benthic scallop dredge, which is dragged along the seabed to capture scallops. Diving for scallops is also highly valued among recreational and Tasmanian Aboriginal fishers.

Commercial scallop dredges only operate in waters more than 20 metres deep. This rule separates commercial activity from the shallower areas dived by recreational and Tasmanian Aboriginal fishers.

The Tasmanian Scallop Fishery is managed under the provisions of the *Living Marine Resources Management Act 1995* and *Fisheries (Scallop) Rules 2020*. The regulatory framework includes individual transferable quotas (ITQs) alongside various other measures such as seasonal closures, gear restrictions, and size limits.

Annually, the scallop fishery is subjected to a systematic process of scallop surveys. This process begins with exploratory surveys conducted by scallop fishers to identify potential commercial scallop beds. The scallop fishery was closed for the fishing seasons across 2017/18 and 2018/19.

Commercially caught scallops are processed and sold fresh in Tasmania to local consumers and wholesalers, as well as to Melbourne and Sydney seafood wholesale markets.

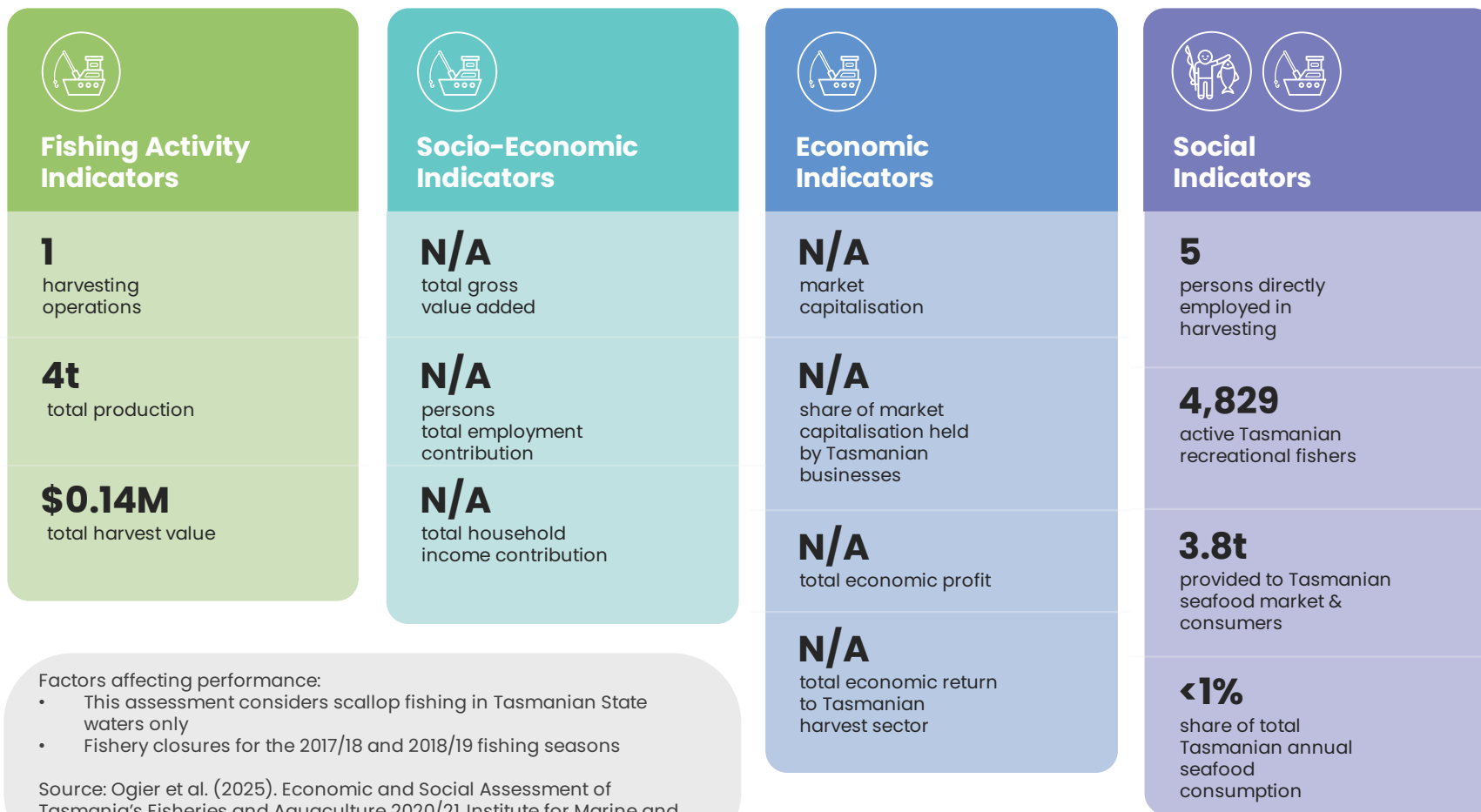
More information:

Assessment of the biological and ecological sustainability of Tasmanian Scallop stocks is provided in the [Tasmanian Scallop Fishery Assessment 2020](#), and can also be accessed via the Tasmanian Wild Fisheries Assessments website - [Scallop \(tasfisheriesresearch.org\)](https://tasfisheriesresearch.org)

Information about the commercial fishery can be accessed here: [Scallop Fishery | Fishing Tasmania](#) and [The Scallop Fishermen's Association of Tasmania Inc](#), and [Scallops | Seafood Industry Tasmania \(sit.org.au\)](https://scallops.seafoodindustry.tas.gov.au)

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix B](#) (methods and calculations).

Tasmanian Scallop Fishery 2020/21– Snapshot



Key



Commercial fishing



Recreational fishing

Table 32. Tasmanian Scallop Fishery - Fishing activity indicators (commercial sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Utilisation of total allowable catch (%)	NA	NA	NA	NA
Number of active commercial harvesting operations	0	0	2	1
Commercial production volume (tonnes)	0	0	146	4
Commercial harvest value (\$000)	0	0	245	140
Export market share (%)	0	0	0	0

Notes:

- The Scallop Fishery was closed for the fishing seasons reportable across 2017/18 and 2018/19
- This assessment considers scallop fishing in Tasmanian State waters only.

Table 33. Tasmanian Scallop Fishery - Economic indicators (commercial sector), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Market capitalisation* (\$'000)	NA	NA	NA	NA
Estimated share (%) of market capitalisation held by Tasmanian businesses**	68	57	57	62
Estimated economic profit* (\$'000)	NA***	NA***	NA***	NA***
Estimated economic return to the Tasmanian harvest sector (\$'000)	NA***	NA***	NA***	NA***
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals*** (\$'000)	NA	NA	NA	137****
– Total revenue from production-based fees***** (\$'000)	0	0	0	0

Notes:

- The Scallop Fishery was closed for the fishing seasons reportable across 2017/18 and 2018/19
- * Licence market capitalisation not calculated due to lack of sufficient market value data
- ** Based on addresses provided to NRE Tas which were further sorted based on location information obtained (see [Appendix B](#) Table B1 which details the methods used to attribute quota holdings to within/without Tasmanian entities).
- *** Financial and economic data has not been collected for this fishery due to the extended period of closure during this time period
- **** Estimated value of licence fee renewals for 2020/21, does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers.
- ***** No production-based fee exists for this activity. Occasional fees and charges relating to the biotoxin testing are not included in this total.

Tasmanian Scallop Fishery – Socio-economic indicators (commercial sector), 2017/18 - 2020/21.

Data on contributions to the Tasmanian economy and households through business activity and employment has not been collected due to the multiple years of fishery closure.

Table 34. Tasmanian Scallop Fishery - Social indicators (commercial and recreational sectors), 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	0	0	10	5
Recreational fishing population (Active fishers)	NA	NA	NA	4,829**
Recreational fishing participation (Fisher Days)	NA	NA	NA	NA
Local seafood supply (Kg)				
– Commercially-caught***	0	0	131,400	3,780
– Recreationally-caught	NA	NA	NA	NA
Estimate share (%) of Tasmanian annual seafood consumption****				
– Commercially-caught***	0	0	2	<1
– Recreationally-caught	NA	NA	NA	NA

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Based on estimating using NRE Tas Recreational Licencing trend data (source: [NRE Tas Recreational Sea Fishing Licences: Status and Trends 2021/22](#)). Closure of the D'Entrecasteaux Fishing Areas for last few seasons has limited participation
- *** Estimate based on industry-provided estimate of share of Tasmanian harvested Scallop fishery (90%), which is sold in local markets, and which is applied to all years reported.
- **** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

4. Aquaculture sectors

4.1. Tasmanian Abalone Aquaculture

Abalone farming is a developing sector of the Tasmanian aquaculture industry. The species farmed are *Haliotis rubra* (Blacklip abalone) and *Haliotis laevis* (Greenlip abalone) and Tiger abalone which is a hybrid of *H. rubra* x *H. laevis*. Although small numbers of Blacklip and Greenlip are sold, the primary purpose of the pure species is as broodstock to produce hybrids which are always an F1 cross. Broodstock have been selectively bred on farms for several generations.

Abalone larvae are spawned in hatcheries and reared in purpose-built nurseries, where they feed on algae for approximately six months. They are transferred to a grow-out system for the next two to three years before being harvested. Four companies produce farmed abalone in Tasmania, all of which are vertically integrated.

All abalone farming operations in Tasmania are land-based, pump ashore and access seawater from Tasmania's marine waters. These aquaculture operations in Tasmania take place under licensing arrangements. Businesses operate under land-based marine farming licences to cultivate abalone in designated terrestrial areas.

Farmed abalone are harvested and sent live to domestic and export markets, or to processors for freezing, canning or retort pouches. One farm snap freezes abalone on site. The main export markets are in southeast Asia and North America.

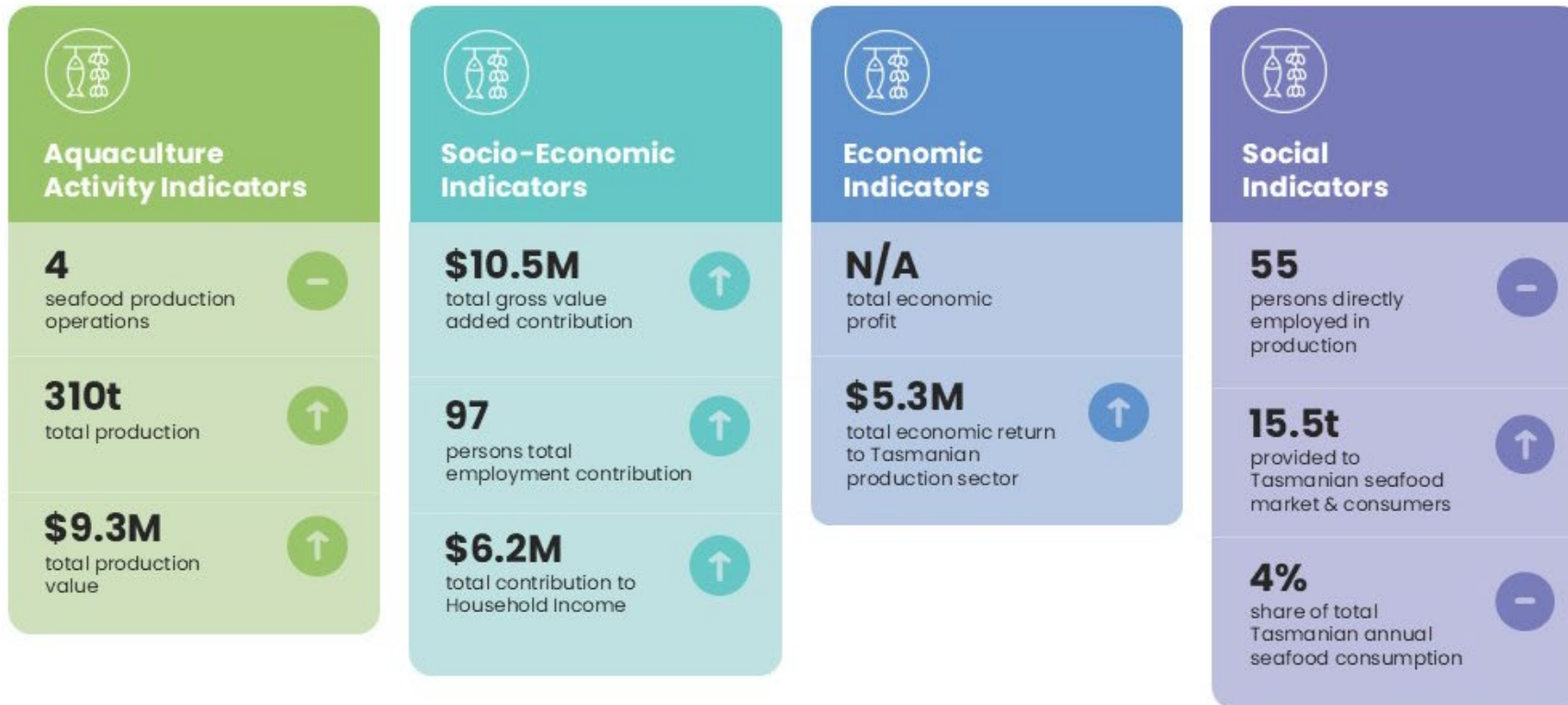
More information:

Information about management of abalone farming is provided here [Abalone Farming | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](http://nre.tas.gov.au/Abalone-Farming).

Information about the abalone farming industry and product can be accessed here: [Farmed Abalone | Seafood Industry Tasmania \(sit.org.au\)](http://sit.org.au/Farmed-Abalone).

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix C](#) (methods and calculations).

Tasmanian Abalone Aquaculture 2020/21 – Snapshot



Factors affecting performance:

- Market disruptions due to COVID-19

Source: Ogier et al. (2025). Economic and Social Assessment of Tasmania's Fisheries and Aquaculture 2020/21. Institute for Marine and Antarctic Studies Technical Report. University of Tasmania, Hobart

Key



indicates direction of trend since 2017/18 total where change >10% for 2 years or more



Aquaculture

Table 35. Tasmanian Abalone Aquaculture – Aquaculture activity indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Number of active commercial aquaculture operations	NA	3	NA	4
Commercial production volume (tonnes)	103	183	264	310
Commercial production value (\$'000)	4,138	7,303	10,030	9,307
Export market share* (%)	NA	NA	NA	NA

Notes:

- Data on utilisation of marine areas (hectares) for licenced marine aquaculture activity is available in the [The LIST Marine Farm Leases data set](#) and in the Human Dimensions / Aquaculture data layer in the [Tasmania's Marine Atlas \(tasmarineatlas.org\)](#)
- * Reported exports of Abalone products from Tasmania include Abalone products produced by the Tasmanian Abalone Aquaculture industry as product codes do not distinguish production method. Tasmanian-produced Abalone may also be exported from other non-Tasmanian ports within Australia. NRE Tas estimate is 95% export share.

Table 36. Tasmanian Abalone Aquaculture - Economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Estimated economic profit (\$'000)	NA	NA	NA	NA
Estimated economic return to the Tasmanian production sector (\$'000)	NA	3,300	NA	5,300
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals* (\$'000)	19	19	20	20
– Total revenue from production-based fees** (\$'000)	NA	NA	NA	NA

Notes:

- * Values are theoretical based on fee schedule as gazetted for that financial year. Fee relief or any other government subsidies are not considered. Levies collected on behalf of industry bodies are not included. Fees and charged relating to the biotoxin testing are not included.
- ** No production-based fee exists for this activity

Table 37. Tasmanian Abalone Aquaculture - Socio-economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	3.3	NA	5.3
– Indirect	NA	3.7	NA	5.2
– Total	NA	7.0	NA	10.5
Household Income (\$ million)				
– Direct	NA	2.2	NA	3.5
– Indirect	NA	2.0	NA	2.7
– Total	NA	4.2	NA	6.2
Employment (Persons)				
– Direct	NA	57	NA	55
– Indirect	NA	27	NA	42
– Total	NA	84	NA	97

Notes:

- More information on the indicators of socio-economic contributions and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b).
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 38. Tasmanian Abalone Aquaculture - Social indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	33	57	64	55
Local seafood supply** (Kg)	5,150	9,150	13,200	15,500
Estimated share (%) of Tasmanian annual seafood consumption***	<1	2	4	4

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on agency-provided estimate of share of Tasmanian-produced Farmed Abalone species (5%), which is sold in local markets, and which is applied to all years reported (source: [Abalone Farming | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](https://www.dnre.tas.gov.au/abalone-farming))
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

4.2. Tasmanian Pacific Oyster Aquaculture

Oyster species currently being farmed in Tasmania include Pacific oysters (*Cassostrea gigas*) and Australian flat oysters (*Ostrea angasi*). Tasmanian oyster aquaculture primarily focuses on the cultivation of the Pacific oyster (*Crassostrea gigas*).

Oyster farming operations across Tasmania include both hatcheries (on land) and in-water farms where spat are grown into mature oysters for consumption. Oyster aquaculture operations operate under leases for access to designated marine farming areas and also require species licences. Multiple companies produce oysters in Tasmania, including some which are vertically integrated and others which specialise in the grow-out marine farming phase of production.

Oyster seed is spawned in a hatchery facility before being transported to a marine farm to mature. The hatcheries cultivate various types of microalgae, which serve as food for the growing oysters. On the marine farm, oysters are typically placed in mesh baskets or trays which are attached to racks and rails. Being filter-feeders, oysters derive their nutrition from the surrounding marine environment.

Once the oysters reach the desired condition, they are harvested. The Tasmanian oyster growing sector sells mature oysters to local consumers, retailers and restaurants as well as shipping fresh oysters to Melbourne and Sydney wholesale seafood markets. Tasmanian oyster growers also sell spat to oyster growers in other regions of Australia.

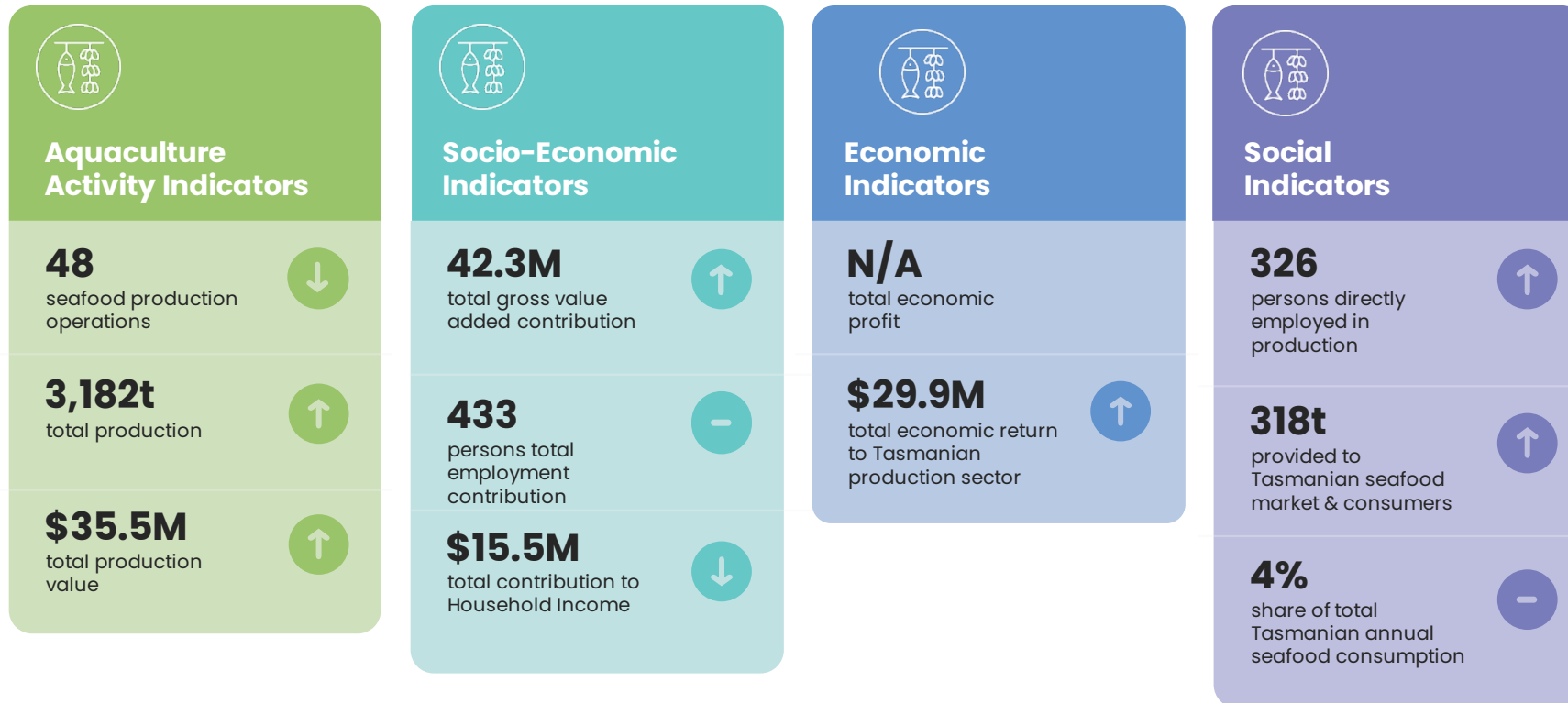
More information:

Information about management of oyster farming is provided here [Oyster Farming | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](https://nre.tas.gov.au/oyster-farming).

Information about the oyster farming industry and product can be accessed here: [Oysters and Mussels | Seafood Industry Tasmania \(sit.org.au\)](https://sit.org.au/oysters-and-mussels) and here [Oysters Tasmania \(oysterstasmania.org\)](https://oysterstasmania.org)

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix C](#) (methods and calculations).

Tasmanian Pacific Oyster Aquaculture 2020/21– Snapshot



Factors affecting performance:

- Production disruptions due to POMS and HABs
- Market disruptions due to COVID-19

Source: Ogier et al. (2025). Economic and Social Assessment of Tasmania's Fisheries and Aquaculture 2020/21. Institute for Marine and Antarctic Studies Technical Report. University of Tasmania, Hobart

Key



indicates direction of trend since 2017/18
total where change >10% for 2 years or more



Aquaculture

Table 39. Tasmanian Pacific Oyster Aquaculture – Aquaculture activity indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Number of active commercial aquaculture operations	63	65	53	48
Commercial production volume (tonnes)	2,976	3,098	2,833	3,182
Commercial production value (\$'000)	28,723	31,724	30,758	35,482
Export market share (%)	<1	<1	<1	<1

Notes:

- Data on utilisation of marine areas (hectares) for licenced marine aquaculture activity is available in the [The LIST Marine Farm Leases data set](#) and in the Human Dimensions / Aquaculture data layer in the [Tasmania's Marine Atlas \(tasmarineatlas.org\)](#)

Table 40. Tasmanian Pacific Oyster Aquaculture - Economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Estimated economic profit (\$'000)	NA	NA	NA	NA
Estimated economic return to the Tasmanian production sector (\$'000)	NA	19,700	NA	29,900
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals* (\$'000)	136	140	143	143
– Total revenue from production-based fees** (\$'000)	NA	NA	NA	NA

Notes:

- * Values are theoretical and based on fee schedule as gazetted for that financial year. Fee relief or any other government subsidies are not considered. Levies collected on behalf of industry bodies are not included. Recoveries relating to the ShellMAP programme are not included.
- ** No production-based fee exists for this activity

Table 41. Tasmanian Pacific Oyster Aquaculture - Socio-economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	19.7	NA	29.9
– Indirect	NA	15.0	NA	12.4
– Total	NA	34.7	NA	42.3
Household Income (\$ million)				
– Direct	NA	10.5	NA	8.9
– Indirect	NA	8.2	NA	6.7
– Total	NA	18.6	NA	15.5
Employment (Persons)				
– Direct	NA	301	NA	326
– Indirect	NA	118	NA	107
– Total	NA	419	NA	433

Notes:

- More information on the indicators of socio-economic contributions and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b).
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 42. Tasmanian Pacific Oyster Aquaculture - Social indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	260	301	310	326
Local seafood supply** (Kg)	297,600	309,800	283,300	318,200
Estimated share (%) of Tasmanian annual seafood consumption***	4	4	4	4

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of Tasmanian-produced Pacific oyster (10%), which is sold in local markets, and which is applied to all years reported (source: Schrobback et al. 2020)
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

4.3. Tasmanian Salmonid Aquaculture

The Tasmanian salmonid aquaculture industry farms two species, Atlantic salmon (*Salmo salar*) and Rainbow trout (*Oncorhynchus mykiss*), in Tasmanian waters. The salmonid aquaculture sector is the Tasmanian (and Australian) seafood industry's largest sector in terms of both production and value.

Three main companies are involved in the Tasmanian salmon industry. Salmon farming operations are vertically integrated and consist of land-based hatcheries, marine grow-out farms, and land-based harvesting, processing, and distribution facilities. Facilities are located in southeast, north and mid-west coastal areas of Tasmania.

Salmon farming is regulated under various laws, including the *Marine Farming Planning Act 1995*, the *Living Marine Resources Management Act 1995*, the *Environmental Management and Pollution Control Act 1995*, the *Inland Fisheries Act 1995*, and the *Biosecurity Act 2019*. The Environment Protection Authority (EPA) oversees the environmental regulation of both marine and land-based salmon farms.

Farmed salmon products include fresh, canned, frozen and value-added products. They are sold to local seafood retailers and major food retailers within Tasmania, as well as Melbourne and Sydney seafood wholesale markets and major food retailers directly. Some salmon product is also exported to Asian markets.

More information:

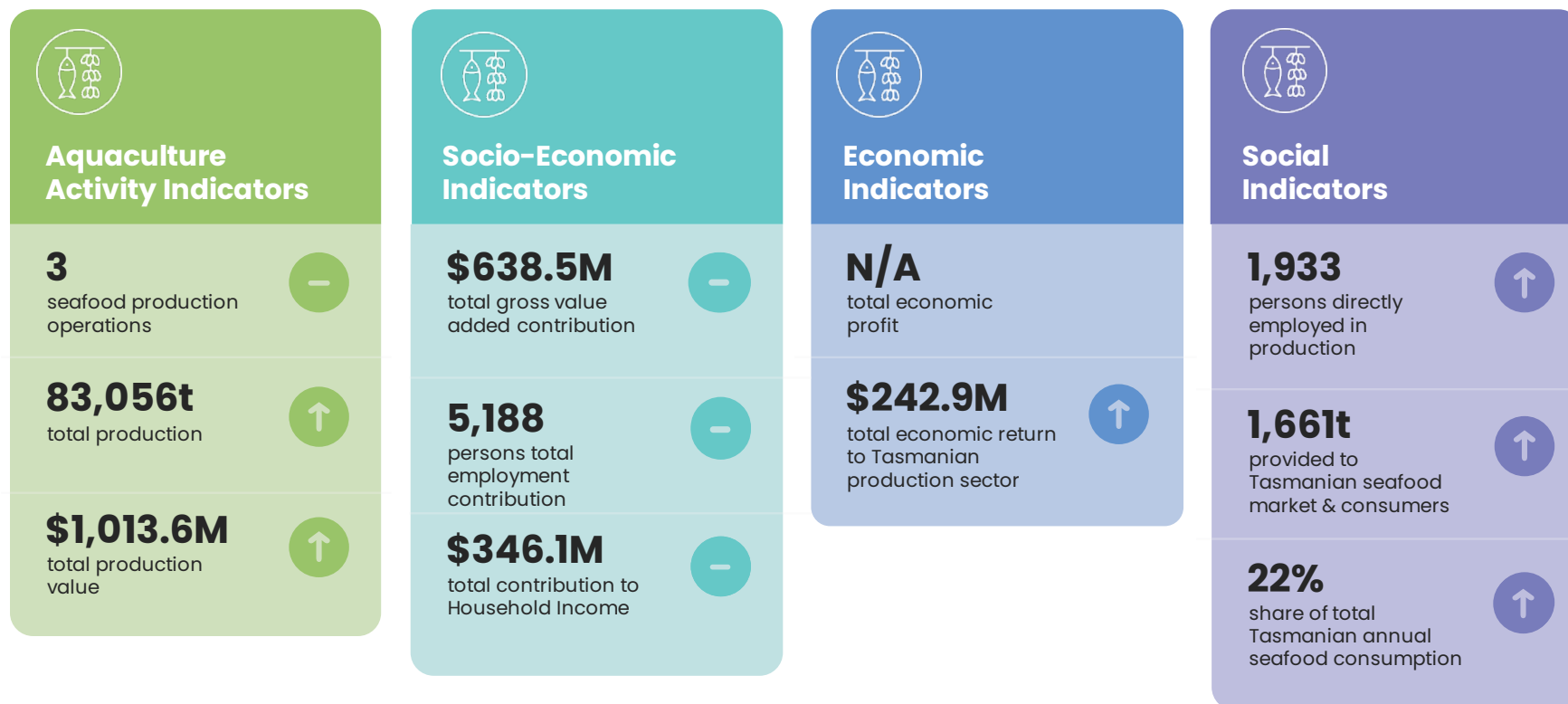
Information about management of salmon farming is provided here [Salmon Farming | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](https://nre.tas.gov.au/salmon-farming) and [Salmonid Aquaculture | EPA Tasmania](https://www.epa.tas.gov.au/salmonid-aquaculture). The Tasmanian Government's [Tasmanian Salmon Industry Plan 2023](#) outlines a strategic vision to guide the state's priorities for the Tasmanian Salmon industry's future.

Information about the commercial sector and product can be accessed here: [Salmon Tasmania \(salmontasmania.au\)](https://salmontasmania.au) and here [Salmon | Seafood Industry Tasmania \(sit.org.au\)](https://sit.org.au)

The Salmon economic estimates in this report do not include contributions from processing, marketing, transport, and other post-harvest land-based activities. The total Gross Value Added (GVA) of Salmonid Aquaculture to the Tasmanian economy for the 2022 year is available: [The Tasmanian Salmon Industry: A Vital Social and Economic Contributor](#). GVA estimates in this section are provided because they are directly comparable with those for wild catch fisheries presented elsewhere in this report.

Details of data and methods used in this assessment of social and economic performance are provided in [Appendix A](#) (data) and [Appendix C](#) (methods and calculations).

Tasmanian Salmonid Aquaculture 2020/21– Snapshot



Factors affecting performance:

- Market disruptions due to COVID-19

Source: Ogier et al. (2025). Economic and Social Assessment of Tasmania's Fisheries and Aquaculture 2020/21. Institute for Marine and Antarctic Studies Technical Report. University of Tasmania, Hobart

Key



indicates direction of trend since 2017/18
total where change >10% for 2 years or more



Aquaculture

Table 43. Tasmanian Salmonid Aquaculture – Aquaculture activity indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Number of active commercial aquaculture operations	3	3	3	3
Commercial production volume (tonnes)	60,048	56,989	65,800	83,056
Commercial production value (\$'000)	838,276	824,066	887,649	1,013,633
Export market share (%)	18	15	19	17

Notes:

- Data on utilisation of marine areas (hectares) for licenced marine aquaculture activity is available in the [The LIST Marine Farm Leases data set](#) and in the Human Dimensions / Aquaculture data layer in the [Tasmania's Marine Atlas \(tasmarineatlas.org\)](#)

Table 44. Tasmanian Salmonid Aquaculture - Economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Estimated economic profit (\$'000)	NA	NA	NA	NA
Estimated economic return to the Tasmanian production sector (\$'000)	NA	230,300	NA	242,900
Gross payment to Tasmanian Government for cost / rent recovery:				
– Total revenue from licence fee renewals* (\$'000)	993	2,037	2,543	2,511
– Total revenue from production-based fees**(\$'000)	0	0	0	0

Notes:

- * Values are theoretical and based on fee schedule as gazetted for that financial year. Fee relief or any other government subsidies are not considered. Levies collected on behalf of industry bodies are not included.
- ** No production-based fee exists for this activity

Table 45. Tasmanian Salmonid Aquaculture - Socio-economic indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Gross Value Added (\$ million)				
– Direct	NA	230.3	NA	242.9
– Indirect	NA	419.3	NA	395.6
– Total	NA	649.6	NA	638.5
Household Income (\$ million)				
– Direct	NA	122.5	NA	127.1
– Indirect	NA	239.2	NA	219.0
– Total	NA	361.7	NA	346.1
Employment (Persons)				
– Direct	NA	1,812	NA	1,933
– Indirect	NA	3,191	NA	3,255
– Total	NA	5,003	NA	5,188

Notes:

- More information on the indicators of socio-economic contributions (reported bi-annually) and on data and methods is available here: [Tasmanian Fisheries and Aquaculture Industry 2020/21: Economic Contributions Technical Report](#) (Rust et al. 2023b). The economic estimates in this report do not include contributions from processing, marketing, transport, and other post-harvest land-based activities. In 2022, the total Gross Value Added (GVA) of Salmonid Aquaculture to the Tasmanian economy, including these activities, was \$770 million (further details, see: [The Tasmanian Salmon Industry: A Vital Social and Economic Contributor](#)). The GVA shown in this table (\$638.5 million and \$649.6 million) are provided because they are directly comparable with the estimates for wild catch fisheries included elsewhere in this report (which do not include fish processing).
- Economic contribution analysis requires additional detailed cost structure data for each sector in addition to total revenues. Reporting for all sectors is undertaken on a biennial basis currently.

Table 46. Tasmanian Salmonid Aquaculture - Social indicators, 2017/18 - 2020/21.

Indicator	2017/18	2018/19	2019/20	2020/21
Workforce size*	1,689	1,812	1,850	1,933
Local seafood supply** (Kg)	1,200,960	1,139,780	1,316,000	1,661,120
Estimated share (%) of Tasmanian annual seafood consumption***	17	15	19	22

Notes:

- * Inclusive of people working under a range of employment conditions, including part-time/casual/sub-contractor
- ** Estimate based on industry-provided estimate of Tasmanian-produced Salmonid (2%), which is sold in local markets, and which is applied to all years reported (source: NRE Tas (2021))
- *** Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (source: ABARES *Australian fisheries and aquaculture statistics 2021*) to the Tasmanian population and summing

5. Conclusion

The importance of assessing the economic and social performance of Tasmania's fisheries and aquaculture has never been more evident. Tasmania's fisheries and aquaculture sectors operate in a complex environment of changing oceanic conditions and increasing use of the marine environment by a range of ocean users. The commercial sector also operates in an environment of global economic instability, which affect seafood markets and financial conditions for seafood businesses.

Multiple economic and social benefits for producers and the Tasmanian community

Tasmania's fisheries and aquaculture sectors and activities generate a range of economic and social outcomes and benefits which are important to those within the fisheries and aquaculture communities and important to the broader Tasmanian community and economy.

This assessment highlights the contrasting types and levels of outcomes and benefits generated by different sectors and activities across the period 2017/18 - 2020/21. This includes those activities with comparatively higher levels of economic performance which generate economic rent (for example, commercial abalone and rock lobster fishing) and those which generate socio-economic and social benefits including relatively higher levels of employment and supply of seafood to local consumers (for example, commercial scalefish fishing, oyster farming). The assessment also highlights the increase in production volumes and employment levels in Tasmania's aquaculture sub-sectors, while these indicators were stable or declining slightly for most of Tasmania's commercial fishing sub-sectors.

Impacts of the COVID-19 pandemic on economic and social indicators

The assessment period overlaps with the COVID-19 pandemic. This analysis has shown that the events and disruptions associated with the COVID-19 pandemic had variable and largely negative impacts on the different sub-sectors (see Ogier et al. 2023 and [Impacts of COVID19 on the Australian Seafood Industry: Extending the assessment to prepare for uncertain futures | FRDC](#) for more detail).

For example, Tasmania's export oriented commercial sectors (abalone and lobster) as well as Tasmania's live scalefish harvesters experienced immediate negative impacts which resulted in lower levels of production volume and value in 2019/20. Other sub-sectors, particularly aquaculture sub-sectors, experienced some growth in volume and in value, while nonetheless experiencing disruptions to production and domestic supply chains across this period.

Some areas of economic performance may have been more impacted by other events or factors not directly linked to the pandemic. In general, increases in the costs of production for all commercial sectors has negatively affected profitability. Specifically, the abalone fishery was also affected by changes in access to fish stocks, the scalefish fishery was affected by loss of access to higher value species within the scalefish fishery suite, the lobster fishery was affected by sustained trade tensions with major high-value export markets – all contributing to lower economic performance.

Assessment gaps

Notable gaps in data include most economic indicators for smaller fisheries and aquaculture sub-sectors (giant crab, scallop, farmed abalone) and more comprehensive indicators for recreational fishers. Data on post-production sales and supply chains for Tasmanian-produced seafood is also very limited. In the case of data on exports there are also recognised data quality issues.

These gaps limit the ability to assess all sub-sectors across the full suite of indicators. Future data collection or design of approaches to address data gaps or quality issues by IMAS across 2024-2026 is planned. This data collection and assessment activity is funded under the [Sustainable Marine Research Collaboration Agreement](#) with the Tasmanian Government. Discussions with Tasmanian Aboriginal community organisations will determine whether indicators can be co-developed and included for Tasmanian Aboriginal fishers and community fishing rights and interests.

Scope and benefits of monitoring economic and social indicators

Assessment and benchmarking of overall performance has not been undertaken given the need for further clarity in policy as to how overall economic and social performance should be assessed. However, the data presented can be used by NRE Tas, as well as by industry and sector representative organisations, to identify:

- the types of economic and social benefits that arise from specific fisheries or aquaculture sub-sectors;
- recent historical baselines in key areas of economic and social performance, which can be used for further assessment of impact; and
- where performance in specific economic and social outcomes of fisheries or aquaculture sub-sectors is changing (i.e., trends over time).

Continued long-term monitoring of the economic and social indicators and subsequent assessment will support the Tasmanian Government, industry, sector representative organisations in navigating future conditions in the interests of these sectors and the broader Tasmanian community.

Appendix A – Data sources

Table A 1. Datasets accessed in this assessment.

Dataset ID	Data resource	Point of Truth URL	Organisation (data owner)	Use limitations
DS0001	Agricultural commodities: March 2022	https://daff.ent.sirsidynix.net.au/client/en_AU/search/asset/1033321/3	Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)	as per Creative Commons 4.0. licence terms, noting https://www.abs.gov.au/website-privacy-copyright-and-disclaimer#copyright-and-creative-commons
DS0002	ListMAP layers: Aquaculture Marine lease & Marine Farming Licenses	https://maps.thelist.tas.gov.au/listmap/app/list/map	Land Tasmania, Department of Natural Resources and Environment Tasmania	Open data
DS0003	Seafood Import and Export by Commodity	https://www.frdc.com.au/seafood-import-and-export-commodity	Fisheries Research and Development Corporation (FRDC)	as per Creative Commons 4.0. licence terms, noting https://www.abs.gov.au/website-privacy-copyright-and-disclaimer#copyright-and-creative-commons
DS0004	Data cube 2: Businesses by main state by industry class by employment size ranges Data Downloads Counts of Australian Businesses, including Entries and Exits ABS	https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release#data-downloads	Australian Bureau of Statistics (ABS)	as per Creative Commons 4.0. licence terms, noting https://www.abs.gov.au/website-privacy-copyright-and-disclaimer#copyright-and-creative-commons
DS0005	Data cube 3: Businesses by main state by industry class by turnover size ranges Data downloads Counts of Australian Businesses, including Entries and Exits ABS	https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/latest-release#data-downloads	Australian Bureau of Statistics (ABS)	as per Creative Commons 4.0. licence terms, noting https://www.abs.gov.au/website-privacy-copyright-and-disclaimer#copyright-and-creative-commons

Dataset ID	Data resource	Point of Truth URL	Organisation (data owner)	Use limitations
DS0006	Fishing catch and effort logbook data extract: Fisheries Information and Licensing Management System (FILMS)	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA
DS0007	Fishing catch and price disposal record data extract: Fisheries Information and Licensing Management System (FILMS)	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA
DS0008	Fishing personal, vessel, species and quota licensing data extract: Fisheries Information and Licensing Management System (FILMS)	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA
DS0009	Abalone Fee revenue data extract: NRE Tas Quarterly fee payment records	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA
DS0010	Abalone diving cost of production data: Tasmanian Abalone Fishery economic survey data records	Not Available	Institute for Marine Antarctic Studies (IMAS)	Confidential
DS0011	Rock Lobster fishing cost of production data: Tasmanian Rock Lobster Fishery economic survey data records	Not Available	Institute for Marine Antarctic Studies (IMAS)	Confidential
DS0012	Scalefish fishing cost of production data: Tasmanian Scalefish Fishery economic survey data records	Not Available	Institute for Marine Antarctic Studies (IMAS)	Confidential
DS0013	Aquaculture employment, production volume and average price data extract: NRE Tas Aquaculture Branch quarterly returns records	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA

Dataset ID	Data resource	Point of Truth URL	Organisation (data owner)	Use limitations
DS0014	Marine Farm Licence data: NRE Tas Aquaculture Branch Marine Farm Licence data records	Not Available	Department of Natural Resources and Environment Tasmania (NRE Tas)	Extract provided to IMAS for fisheries assessment purposes under the SMRCA
DS0015	Abalone aquaculture cost of production data: Tasmanian Abalone Aquaculture economic survey data records	Not Available	Institute for Marine Antarctic Studies (IMAS)	Confidential
DS0016	Pacific oyster cost of production data: Tasmanian Oyster Aquaculture economic survey data records	Not Available	Institute for Marine Antarctic Studies (IMAS)	Confidential

Appendix B – Methods and calculations: Fisheries

Table B 1. Methods and calculations: Fisheries

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Utilisation of Total Allowable Catch	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021.	Proportion (%) of prorated Total Allowable Catch (TAC) which is harvested in each financial year = Commercial Production per financial year/prorated TAC	
	DS0006 Fishing catch and effort logbook data extract; DC0007 Fishing catch and price disposal record data extract; & DS0008 Fishing personal, vessel, species and quota licensing and licence transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas TAC as reported in Tasmanian Wild Fisheries Assessments Home (tasfisheriesresearch.org)	Total Quota Docket or Reported Catch (Total Catch) (Kg) extracted by IMAS from FILMS records for each month. The TAC was prorated as follows: <i>Abalone fishery:</i> The abalone quota year runs from Jan-Dec. TAC each financial year has been proportioned as one half of the lesser calendar year TAC (e.g., 2017 for the 2017-18 period) and one half of the greater calendar year TAC (e.g., 2018 for the 2017-18 period). <i>Commercial dive fishery:</i> Data is not available as no TAC <i>Giant crab fishery:</i> Giant crab TAC each financial year has been proportioned as one half of the lesser calendar year TAC (e.g., 2017 for the 2017-18 period) and one half of the greater calendar year TAC (e.g., 2018 for the 2017-18 period). <i>Rock lobster fishery:</i> The rock lobster quota year runs from Feb-March. TAC each financial year has been proportioned as two thirds of the lesser calendar year TAC (e.g., 2017 for the 2017-18 period) and one third of the greater calendar year TAC (e.g., 2018 for the 2017-18 period).	

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
		<i>Scalefish Fishery</i>: calculated for Banded Morwong catch only. No other species caught in this fishery had TACs determined during the reference period. Banded Morwong TAC each financial year has been proportioned as one half of the lesser calendar year TAC (e.g., 2017 for the 2017-18 period) and one half of the greater calendar year TAC (e.g., 2018 for the 2017-18 period). <i>Scallop fishery</i>: Data is not available as no TAC	
Number of active commercial harvest operations	DS0006 Fishing catch and effort logbook data extract & DS0008 Fishing personal, vessel, species and quota licensing and licence transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas	Size = Number of active supervisors (identified by ClientID) for whom there is at least one catch landing record in the financial year.	
Commercial production volume	Tuynman and Dylewski (2022). Australian fisheries and aquaculture statistics 2021. Tasmanian Wild Fisheries Assessments Home (tasfisheriesresearch.org). DS0006 Fishing catch and effort logbook data extract & DC0007 Fishing catch and price disposal record data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas	None - direct reporting of published values or calculation based on summing reported catches in the case of multi-species fisheries	<i>Commercial dive fishery</i> : Includes Longspined Sea urchin (<i>Centrostephanus rodgersii</i>), Shortspined Sea urchin (<i>Heliocidaris erythrogramma</i>) and periwinkles (<i>Lunella undulata</i>). Excludes other species caught in this fishery.
Commercial harvest value	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021. DS0006 Fishing catch and effort logbook data extract & DC0007 Fishing catch and price disposal record data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas	Abalone fishery: Rock lobster fishery, Scallop fishery Where GVP was reported for a fishery in Tuynman and Dylewski (2022), this value was used. For fisheries where GVP was not reported at the fishery level (Scalefish fishery), the harvest value was used. Harvest value was calculated by imputing total value (AUD\$) from fisher logbook catch records and average price by product form (transfer records) for a given financial year.	Fishery reporting and logbook records can be highly variable for non-quota managed fisheries, and hence the harvest value estimates for Scalefish should be treated with some caution.

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
		<i>Giant Crab Fishery and Commercial Dive fishery:</i> Values are reported directly from Tasmanian Wild Fisheries Assessments Home (tasfisheriesresearch.org). It includes Longspined Sea urchin (<i>Centrostephanus rodgersii</i>), Shortspined Sea urchin (<i>Heliocidaris erythrogramma</i>) and periwinkles (<i>Lunella undulata</i>). Excludes other species caught in this fishery	

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Export market share	DS0003 Seafood Import and Export by Commodity: Fisheries Research and Development Corporation	Share estimated using the formula = Total export volume (t) / Commercial production volume (t) in FY <i>Abalone fishery:</i> Total export volume was calculated by aggregating of all types of reported exported products of live, fresh, chilled, frozen, prepared or preserved abalone <i>Commercial dive fishery:</i> Available trade data doesn't match species caught in fishery. Industry estimate of export share is 95% <i>Rock lobster fishery:</i> Total export volume was calculated by aggregating of all types of reported exported products of live, fresh, chilled, and frozen rock lobster <i>Scallop fishery:</i> Total export volume was calculated by aggregating of all types of reported exported products of frozen scallops whether in shell or not	Data quality issues exist for reported exports volumes of abalone and rock lobster. <i>Abalone fishery:</i> Data should be treated with caution. Reported exports of Abalone products from Tasmania include Abalone products produced by the Tasmanian Abalone Aquaculture industry as product codes do not distinguish production method. Tasmanian-produced Abalone may also be exported from other non-Tasmanian ports within Australia. Tasmania Abalone Council estimate is 95% export share (see Tasmanian Abalone Council). <i>Rock lobster fishery:</i> Lobster caught in Tasmania is sent live to other Australian states and re-tanked live, and then exported from that state in many cases. This has resulted in the reported exports of lobster from Tasmania being under representative. NRE Tas (2022) estimates 90% export share.

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Market capitalisation	DC0007 Fishing catch and price disposal record data extract & DS0008 Fishing personal, vessel, species and quota licensing and licence transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas TAC as reported in Tasmanian Wild Fisheries Assessments Home (tasfisheriesresearch.org)	The formula used was: Quota capital value = Fishery TAC(t) * 1000* Beach Price (\$/Kg) Number of quota shares was extracted from FILMS licencing data. <i>Abalone fishery:</i> Quota market values were modelled using a multiple of 10:1 to beach price. TAC estimate was extracted from Tasmanian Wild Fisheries Assessments website and beach price from S. Larby (per. comm.) <i>Commercial Dive Fishery:</i> Data is not available. Licence market capitalisation not calculated due to only a limited number of market values being publicly available and those values being package trades in which multiple licence types and/or quota units are bundled. <i>Rock lobster fishery:</i> Quota market values were modelled using a multiple of 10:1 to beach price. TAC estimate was extracted from Tasmanian Wild Fisheries Assessments website and beach price was determined from processor and catch records extracted from FILMS. <i>Scalefish fishery:</i> Data is not available. Licence market capitalisation not calculated due to only a limited number of market values being publicly available and those values being package trades in which multiple licence types and/or quota units are bundled. <i>Scallop fishery:</i> Data is not available. Licence market capitalisation not calculated due to only a limited number of market values being publicly available and those values being package trades in which multiple licence types and/or quota units are bundled.	<i>Abalone and Rock Lobster fishery:</i> Market capitalisation is best represented by the total value of the quota market for these fisheries. Modelling of quota market value is representative of real traded values.

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Share of market capitalisation held by Tasmanian businesses	DS0008 Fishing personal, vessel, species and quota licensing and licence transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas	The following formula was used: $\frac{\text{Total number of quota units held by Tasmanian-based entities}}{\text{Total number of quota unit}}$ This analysis was applied for Abalone, Rock Lobster and Scallop fisheries only. Quota holding attributed to the licence holder to whom the quota units were permanently attached at the end of the licencing year. Data was extract from FILMS by licence and year (licenceID) and permanent attached units was then summed by licence type by clientID. Data validation undertaken to determine if Tasmanian or Not Tasmanian by checking FILMS client Organisation and Natural Persons (NP) name and location data with: ABN business location data using ABN Lookup; ASIC Connect search for A.C.N. (where a trust or superfund has no ABN); Whitepages to verify the existence of the NP	Assumes FILMS data accurately reflects licence holdings and entities. The quota holdings are allocated to the financial year in which the fishing season ended (i.e., quota holdings at the end of the 2018 fishing season are used for the 2018/19 financial year).

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Economic profit	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021. DS0010 Abalone diving cost of production data: IMAS Tasmanian Abalone Fishery economic survey data records; DS0011 Rock Lobster fishing cost of production data: IMAS Tasmanian Rock Lobster Fishery economic survey data records; & DS0012 Scalefish fishing cost of production data: IMAS Tasmanian Scalefish Fishery economic survey data records Industry and NRE Tas officers (pers. comm) Ogier et al. (2023). Socio-economic characterisation of a small-scale commercial fishery: Opportunities to improve viability and profitability in the Tasmanian Scalefish Fishery.	<i>Abalone & Rock Lobster Fishery</i>: The following formula was used: (Harvest (t) * Beach price * 1000) – less cost of catching (harvest cost) Where possible, harvest cost is measured from market data. This may differ from standard economic measures due to exclusion of unpaid opportunity costs of labour and rental charges, as well as interest and borrowing costs. <i>Commercial Dive fishery</i>: Data is not available. IMAS economic surveys are underway. <i>Scalefish fishery</i>: The measure of profitability used for this fishery is EBITDA (earnings before interest, tax, depreciation, and amortisation). Note that skipper wages are treated as part of profit, as is quota rental payments. Crew wages are a cost. <i>Scallop fishery</i>: Data is not available. IMAS economic surveys have not been conducted for this fishery.	Harvest (t) used for this calculation is based on data available by fishing year (season) and not by financial year. Adjustments are made to a financial year basis, however, might differ slightly from measures calculated directly for financial year data. <i>Abalone fishery</i>: The Dive rate was used as the harvest cost. Rock lobster fishery: Cost of production was calculated by using 2017/18 survey data and adjusting for CPI. <i>Scallop fishery</i>: Scallop fishing was closed in Tasmanian waters for 2017/18 and 2018/19.

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Economic return to the Tasmanian harvest sector	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021. DS0010 Abalone diving cost of production data: IMAS Tasmanian Abalone Fishery economic survey data records; DS0011 Rock Lobster fishing cost of production data: IMAS Tasmanian Rock Lobster Fishery economic survey data records; & DS0012 Scalefish fishing cost of production data: IMAS Tasmanian Scalefish Fishery economic survey data records Industry and NRE Tas officers (pers. comm)	Abalone, Rock Lobster and Scalefish fisheries: This is the total return to capital and labour calculated for the harvest sector and so based off the dive rate or beach price (whichever is applicable to the catcher), but does not include quota rental returns (which are reported separately as <i>Economic profit</i>). The following formula was used: Harvest(t) * 1000* Beach price or dive rate * (Profit % + Crew wages%) Note: in the case of Scalefish this measure closely matches that of direct GVA since the Scalefish fishery is mostly input-controlled. <i>Commercial Dive fishery</i>: Data is not available. IMAS economic surveys are underway. <i>Scallop fishery</i>: Data is not available. IMAS economic surveys have not been conducted for this fishery.	Harvest (t) used for this calculation is based on data available by fishing year (season) and not by financial year. Adjustments are made to a financial year basis, however, might differ slightly from measures calculated directly for financial year data. Abalone fishery: Earnings by divers (harvest operators) who own the quotas they are catching are included in this estimated return. Assumptions regarding the dive sector were drawn on Knuckey and Sen (2017). Rock lobster fishery: Earnings by fishers (harvest operators) who own the quotas they are catching are included in this estimated return.
Gross payment to Tasmanian Government for cost / rent recovery	DS0008Fishing personal, vessel, species and quota licensing and licensing transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas Licence Fee Schedule - Fisheries (General and Fees) Regulations 2016 Tasmanian Wild Fisheries Assessments Home (tasfisheriesresearch.org)	Formula = Number of licence renewals * Fee as per Licence Fee Schedule - Fisheries (General and Fees) Regulations 2016 in the FY <i>Abalone fishery</i>: For the Abalone Fishery where there is an additional production-based fee. Estimated revenue from production-based fee based on average beach price and total catch, and assuming a fee rate of 7% applied uniformly. This fee is described in Clause 5, Section 99B (1) and (4), Schedule 3 – Abalone Deed of Agreement, LMRMA. Commercial dive/Giant Crab/Rock Lobster/Scalefish/Scallop fishery: No production-based fee exists.	All fisheries: Estimated value of licence fee renewals for 2020-21. Does not include payments to industry bodies (TSIC, etc.) or research organisations (FRDC), and exclusive of personal (FLP) and vessel (FLV) licence renewals by fishers. <i>Rock lobster fishery</i>: In 2020/21 there was also \$216,386 revenue earned by IMAS from the research quota.

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
Gross Value Added	Rust et al. (2021; 2023b) Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b) <i>Commercial Dive fishery: Data is not available.</i> <i>Giant Crab fishery: Data is not available.</i> <i>Scallop fishery: Data is not available. IMAS economic surveys have not been conducted for this fishery.</i>	Reported in Rust et al. (2021; 2023b)
Household Income	Rust et al. (2021; 2023b). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b) <i>Commercial Dive fishery: Data is not available.</i> <i>Giant Crab fishery: Data is not available.</i> <i>Scallop fishery: Data is not available. IMAS economic surveys have not been conducted for this fishery.</i>	Reported in Rust et al. (2021; 2023b)
Employment	Rust et al. (2021; 2023b). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b) <i>Giant Crab fishery: Only direct employment data is available.</i> <i>Scallop fishery: Data is not available. IMAS economic surveys have not been conducted for this fishery.</i>	Reported in Rust et al. (2021; 2023b)
Workforce size	DS0008 Fishing personal, vessel, species and quota licensing and licensing transfer data extract, Fisheries Information and Licensing Management System (FILMS), NRE Tas DS0010 Abalone diving cost of production data: IMAS Tasmanian Abalone Fishery economic survey data records; DS0011 Rock Lobster fishing cost of production data: IMAS Tasmanian Rock Lobster Fishery economic survey data records; &	Formula = Active Supervisors + Crew in that FY Number of Crew is calculated as a rate per active supervisor. This rate is obtained from social and economic industry surveys undertaken by IMAS.	<i>All fisheries: Inclusive of people working part-time in the fishery</i> <i>Abalone Fishery: Estimates of workforce relate to skippers and crew but do not capture operators of mother boats.</i>

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
	DS0012 Scalefish fishing cost of production data: IMAS Tasmanian Scalefish Fishery economic survey data records		
Recreational fishing population	Lyle et al. (2018; 2019a; 2019b; 2020; 2021) <i>Survey of recreational fishing (various)</i> NRE Tas Recreational Sea Fishing Licences: Status and Trends 2021/22	None - direct reporting of published values.	<i>Rock lobster fishery:</i> Recreational rock lobster fishing season on west coast extends beyond the FY to 31 August. However, the fishing season has been treated as falling within a single FY (i.e., the survey data 2017/18 recreational rock lobster fishing season is reported for the 2017/18 FY). Scalefish fishery: Estimate derived from recreational fishing activity of responding diarists reported between December 2017 and November 2018 and results expanded to represent the private dwelling resident population of Tasmania. Includes fishing for freshwater species and marine species not managed under the Tasmanian Scalefish Fishery, although the majority of fishing activity is attributed to saltwater fishing for species managed in this fishery. <i>Scallop fishery:</i> Closure of the D'Entrecasteaux Fishing Areas for last few seasons has limited participation
Recreational fishing participation	Lyle et al. (2018; 2019a; 2019b; 2020; 2021) <i>Survey of recreational fishing (various)</i>	None - direct reporting of published values.	<i>Rock lobster fishery:</i> Recreational rock lobster fishing season on west coast extends beyond the FY to 31 August. However, the fishing season has been treated as falling within a single FY (i.e., the survey data 2017/18 recreational rock

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
			lobster fishing season is reported for the 2017/18 FY). <i>Scalefish fishery</i>: Estimate derived from recreational fishing activity of responding diarists reported between December 2017 and November 2018 and results expanded to represent the private dwelling resident population of Tasmania. Includes fishing for freshwater species and marine species not managed under the Tasmanian Scalefish Fishery, although the majority of fishing activity is attributed to saltwater fishing for species managed in this fishery
Local seafood supply	DPIPWE (2018; 2019) & NRE Tasn (2021), <i>Tas Agri-Food Scorecard (various)</i> Industry Background - Tasmanian Abalone Council Ogier et al. (2023) Socio-economic characterisation of a small-scale commercial fishery: Opportunities to improve viability and profitability in the Tasmanian Scalefish Fishery. Lyle et al. (2018; 2019a; 2019b; 2020; 2021) <i>Survey of recreational fishing (various)</i>	Commercial fishing: Commercial production volume * estimated local retention % <i>Abalone fishery</i>: Based on industry-provided estimate of share of Tasmanian-harvested Abalone fishery species (95%), which is sent out of state, and which is applied to all years reported. <i>Commercial dive fishery</i>: Based on industry-provided estimate of share of Tasmanian-harvested Commercial dive fishery species (5%), which is sold into local markets, and which is applied to all years reported. <i>Giant Crab fishery</i>: Based on industry-provided estimate of share of Tasmanian-harvested Giant crab fishery species (10%), which is sold in local markets, and which is applied to all years reported. <i>Rock lobster fishery</i>: Based on industry-provided estimate of share of Tasmanian-harvested Rock lobster (90%), which is sent out of state, and which is applied to all years reported. <i>Scalefish fishery</i>: Based on research estimate of share of Tasmanian-harvested Scalefish fishery species (40%), which is sold in local markets, and which is applied to all years reported.	<i>Commercial fishing data</i>: Industry estimates of share retained in Tasmania are estimates only and don't reflect inter-annual variation in share exported or retained in Tasmania. <i>Recreational fishing data</i>: Values reported are sample-based estimates

Indicator / Metric	Data source	Method and calculation	Assumptions and caveats
		<i>Scallop fishery</i>: Based on industry-provided estimate of share of Tasmanian-harvested Scallop (90%), which is sold in local markets, and which is applied to all years reported. Recreational fishing: Estimated recreational production (Kg retained in Tasmania) = total annual catch by recreational fishers of that species, as reported in IMAS assessments.	
Share of Tasmanian annual seafood consumption	Steven et al. (2021) ABARES Australian fisheries and aquaculture statistics 2020. Australian Bureau of Statistics 2021 Census of Population and Housing Time Series Profile: Tasmania (6): 2021 Tasmania, Census Community Profiles Australian Bureau of Statistics (abs.gov.au)	Commercial fishing: Local seafood supply (see row above) / Total apparent seafood consumption by Tasmanian population Formula = Local seafood supply from commercial production / Total apparent seafood consumption by Tasmanian population* Recreational fishing: Local seafood supply (see row above) / Total apparent seafood consumption by Tasmanian population Formula = Local seafood supply from recreational fishing / Total apparent seafood consumption by Tasmanian population Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (ABARES 2020) to the Tasmanian population and summing. Formula = 12.4kg*Tasmanian population in that FY	<i>Total apparent seafood consumption in Tasmania</i>: Assumes Tasmanian population consumes seafood at the same per capita rate as the whole of Australia.

Appendix C – Methods and calculations: Aquaculture

Table C 1. Methods and calculations: Aquaculture

Indicator / Metric	Data source	Methods and calculations	Assumptions and caveats
Number of active production operations	DS0014 Marine Farm Licence data: NRE Tas Aquaculture Branch Marine Farm Licence data records	Formula = Number of holders of active unique Marine Farm Licence (MFL) by species in the FY.	
Commercial production volume	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021.	None - direct reporting of published values.	
Commercial production value	Tuynman, H. and Dylewski, M. (2022). Australian fisheries and aquaculture statistics 2021.	None - direct reporting of published values.	
Export market share	DS0003 Seafood Import and Export by Commodity: Fisheries Research and Development Corporation	Share estimated using the formula = Species export volume (t) / Commercial production volume (t) in FY <i>Salmonid aquaculture:</i> Total export volume was calculated by aggregating of all types of reported exported products of live, fresh, chilled, frozen, smoked salmon, and fresh, chilled or frozen fillets <i>Pacific Oyster aquaculture:</i> Total export volume was calculated by aggregating of all types of reported exported products of live, fresh, chilled and frozen oyster	Data quality issues exist for reported exports volumes of abalone product. <i>Abalone aquaculture:</i> Exports of Abalone products from Tasmania Aquaculture cannot be distinguished from the Abalone products produced by the Tasmanian Abalone Fishery.
Economic profit	Data is not available		
Economic return to the Tasmanian production sector	Rust et al. (2021; 2023bb). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	<i>All aquaculture:</i> Direct GVA values are reported	

Indicator / Metric	Data source	Methods and calculations	Assumptions and caveats
Gross payment to Tasmanian Government for cost / rent recovery	NRE Tas – data directly supplied	Direct values relating to aquaculture activities provided by NRE Tas Values were calculated by NRE Tas based on fee schedule as gazetted for that financial year and data on production levels by species.	Values are theoretical based on fee schedule as gazetted for that financial year. Fee relief or any other government subsidies are not considered. Levies collected on behalf of industry bodies are not included.
Gross Value Added	Rust et al. (2021; 2023b). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b)	Reported in Rust et al. (2021; 2023b)
Household Income	Rust et al. (2021; 2023b). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b)	Reported in Rust et al. (2021; 2023b)
Employment	Rust et al. (2021; 2023b). Tasmanian Fisheries and Aquaculture Industry: Economic Contributions Technical Report (various)	Estimation methods described in detail in Rust et al. (2021; 2023b)	Reported in Rust et al. (2021; 2023b)
Workforce size	DS00013 Aquaculture employment, production volume and average price data extract: NRE Tas Aquaculture Branch quarterly returns records	Annual workforce size = Mean of workforce size of the 4 quarters of the FY Workforce size is inclusive of casual and permanent, as well as part-time, staff.	
Local seafood supply	DS00013 Aquaculture employment, production volume and average price data extract: NRE Tas Aquaculture Branch quarterly returns records NRE Tas (2021) Tasmanian Agri-Food Score Card 2020-21 Tuynman, H and Dylewski, M. (2022), Australian fisheries and aquaculture statistics 2021. Australian Bureau of Statistics 2021 Census of Population and Housing Time Series Profile: Tasmania (6): 2021 Tasmania, Census Community Profiles Australian Bureau of Statistics (abs.gov.au) Abalone Farming Department of Natural Resources and Environment Tasmania (nre.tas.gov.au)	Formula for local seafood supply: Commercial production (t) * estimated local retention % <i>Abalone aquaculture:</i> Based on industry-provided estimate of share of Tasmanian-produced Farmed Abalone species (5%), which is sold in local markets, and which is applied to all years reported. <i>Pacific Oyster aquaculture:</i> Based on industry-provided estimate of share of Tasmanian-produced Pacific oyster (10%), which is sold in local markets, and which is applied to all years reported.	Industry estimates of share retained in Tasmania are estimates only and don't reflect inter-annual variation in share exported or retained in Tasmania.

Indicator / Metric	Data source	Methods and calculations	Assumptions and caveats
	Schrobbach et al. (2020)	<i>Salmonid aquaculture: Based on industry-provided estimate of share of Tasmanian-produced Salmonid (2%), which is sold in local markets, and which is applied to all years reported.</i>	
Share of Tasmanian annual seafood consumption	Steven et al. (2021) ABARES Australian fisheries and aquaculture statistics 2020. Australian Bureau of Statistics 2021 Census of Population and Housing Time Series Profile: Tasmania (6): 2021 Tasmania, Census Community Profiles Australian Bureau of Statistics (abs.gov.au)	Formula: Local seafood supply = Commercial production (t) * estimated local retention % / Total apparent seafood consumption by Tasmanian population Total apparent seafood consumption in Tasmania estimated by applying the annual per capita apparent seafood consumption for Australia (ABARES 2020) to the Tasmanian population and summing. Formula = 12.4kg*Tasmanian population in that FY	Total apparent seafood consumption in Tasmania: Assumes Tasmanian population consumes seafood at the same per capita rate as the whole of Australia.

Appendix D – Comparison of IMAS and NRFS estimates of recreational fishing economic contribution

Table D 1. Comparison of IMAS 2020/21 estimate to 2019/20 NRFS estimate for Tasmanian recreational fishing.

	IMAS estimate 2020/21	NRFS estimate 2019/20
Indicators	– Gross Value Added (GVA), – Household Income – Employment due to final consumption locally from recreational fishing. GVA is used as a State estimate. (The difference between GRP and GVA is GVA excludes the contribution of tax, which is applied by the Australian Government)	– Gross Regional Product (GSP) – Household Income – Employment due to final consumption nationally from recreational fishing. GRP is used as a national estimate, regionalised to Tasmania.
Modelling scale and approach	Tasmanian state model (RISE model).	National model (including the effect of rec fishing in other states on Tasmania).
Geographic scope	Expenditure by Tasmanian residents (excludes national and international visiting RF). Estimates are of final consumption locally from recreational fishing. The estimate is a state estimate.	Expenditure by national and international visiting RF. Estimates are of final consumption nationally from recreational fishing. The estimate is a national estimate, regionalised to Tasmania.

	IMAS estimate 2020/21	NRFS estimate 2019/20
Activity scope	Saltwater RF (excludes freshwater). Modelling to separate freshwater fishing from saltwater fishing data from the IMAS General Fishing Surveys was based largely on fishing effort and was undertaken in collaboration with BDO until satisfied that the RISE model inputs met the scope requested for the TAS-only estimate.	Saltwater and freshwater RF
Temporal scope	2020-21	The NRFS took place 2019-2021, and the estimates provided for 1 Jul 2019 – 30 Jun 2020 period. This inclusive of Christmas/New Years for 2019 and one quarter (Apr, May, Jun) of the initial lockdown. BDO (who have provided both estimates) have advised that that this visitation component is significant for the NRFS estimates for the 2019-20 year for Tasmania.
Data source	Modelled expenditure profile developed with BDO, utilising IMAS General Fishing Survey of Tasmanian Recreational Fishing, and adjustments advised by BDO (such that this would be comparable with the national estimate for the parts of the scope common to both studies). The modelling of 'direct' effects was reviewed by BDO, and adjustments were made as advised for input to the RISE model.	Expenditure profile built on NRFS survey sample
Model and modelling components	Provided by BDO	Provided by BDO
Assumptions in relation to margins	Comparable assumptions used in both studies	Comparable assumptions used in both studies
Reference year	2020-21	2019-20

Appendix E – References

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