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Scotland's Marine Economic Statistics 2018



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Scotland's Marine Economic Statistics

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1. Introduction

This report presents statistics on the size (Gross Value Added¹ and turnover) and employment of Scotland's marine activities (hereafter collectively referred to as the marine economy). It is the third year of this report, which remains classed as experimental statistics until the content and methodology are fully established. The 2017 Aquaculture data has been updated as a result of additional 2017 survey returns that were received with the 2018 returns. See Annex B section 17.6 for more details.

The marine economy is defined as economic activity linked to the oceans, seas, bays, estuaries and other major water bodies, and the ecological and physical systems associated with them.

All of the economic data presented relates to the direct contributions of relevant activities to Scotland's economy and does not include activities of related supply chains.

The majority of the economic information in the report is based on [Scottish Annual Business Statistics](#) (SABS)². The data are sourced from the Annual Business Survey (ABS) conducted by the Office for National Statistics (ONS) and allows detailed analysis of the structure and performance of businesses in Scotland over the period 2009 to 2018.

Information for most of the marine economic sectors is extracted from SABS using selected Standard Industrial Categories (SIC). The abbreviated names shown below have been used as shorthand for the full SIC codes which are shown in Annex A – SABS SIC Codes.

- Commercial fishing
- Aquaculture
- Oil & gas support services
- Seafood processing
- Ship building
- Construction and water transport services
- Passenger water transport
- Freight water transport
- Renting & leasing
- Marine Tourism

¹ Gross Value Added (GVA) is a measure of the economic value generated by an industry or business. See the References and Glossary for more details.

² Scottish Annual Business Statistics (SABS) provides information on businesses' employment, turnover, and approximate gross value added. <https://www.gov.scot/publications/scottish-annual-business-statistics-2018/>

Economic data for aquaculture is sourced from [Marine Scotland aquaculture statistics](#) and business level data collected to meet the European Commission's Data Collection Framework requirements (DCF)³. Economic data for sea fisheries is sourced from the [Economics of the UK Fishing Fleet 2018](#)⁴ published by *Seafish* and from [Marine Scotland Sea Fisheries Statistics](#).

The sources and methods used in the report are set out in *Annex B: Methodology and source data*.

Other sectors that also contribute to the Scottish economy that are not covered by these statistics are discussed in Section 12 of this report. Work is ongoing to develop methods for covering the sectors in future reports.

1.1 Values in this publication

The economic values provided for each industry are:

Gross Value Added (GVA) - this represents the amount that individual businesses, industries or sectors contribute to the economy. It is the value generated by any unit engaged in the production of goods and services less any intermediate inputs into the production process.

Turnover - defined as total sales and work done. This is calculated by adding together the values of:

- sales of goods produced
- goods purchased and resold without further processing
- work done and industrial services rendered
- non-industrial services rendered.

Employment - a point in time estimate of the number of full and part time employees on the payroll plus the number of working proprietors employed on a set day. Total Employment is a head count and not a Full Time Equivalent (FTE) measure. This distinction is particularly important when comparing sectors which have high levels of part time employment (e.g. Marine Tourism).

³ The European Commission's Data Collection Framework (DCF) establishes a framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy (CFP).

⁴ Economics of the UK Fishing Fleet 2018, <https://www.seafish.org/document/?id=0748BE36-187C-4245-BCC9-753324BD1A19>

The GVA per person is also estimated by dividing the industry GVA by the employment headcount.

Each section of the report presents:

- The industry sector in a national context;
- A time series of turnover, GVA and employment;
- Supporting information about each sector, where it is relevant and available; and,
- A geographic breakdown, where it is available and non-disclosive.

To provide the national context, GVA and employment values are considered as a proportion of the Scotland total:

- the Scottish GVA, taken from the [National Accounts Scotland](#)
- Scottish employment, taken from the [Annual Population Survey](#)

To prevent repetition of notes beneath each table, generic notes are presented in the Annex B: Methodology and source data. Specific points about individual tables are noted as they arise in the report.

Throughout the report, prices are shown adjusted to 2018 prices.

The statistics are also published in spreadsheet format for further analysis and as a summary topic sheet presenting a high level summary of the latest single year of marine economic data.

1.2 Reference dates

The latest year of data in this economic statistics publication is for 2018. Time series are presented for ten years, 2009 to 2018. SIC codes changed in 2007, so data before 2008 is not comparable with this series. SABS figures for 2018 were released in June 2020.

To enable meaningful comparison of monetary values over time, all values have been adjusted to 2018 prices. Links to the ONS deflation tables used for these calculations are given in Annex B.

Web links to other relevant online information are provided in the *References* section and explanations of the terms used are presented in the References and Glossary section.

2. Marine Economy Overview

2.1 Marine economic key points

In 2018, the Scottish marine economy **generated £4.3 billion in GVA**: accounting for 3.0% of the overall Scottish economy. The Scottish marine economy provided **employment for 74,200 people** (headcount), contributing 2.8% of the total Scottish employment.

The oil and gas services sector is the biggest contributor to the marine economy in terms of turnover and GVA. However, marine tourism employs the most people of all the sectors covered in this report. Oil and gas services provide 42% of the marine economy GVA and 22% of the employment while marine tourism provides 13% of the GVA and 40% of the employment (see Table 1 and Figure 1).

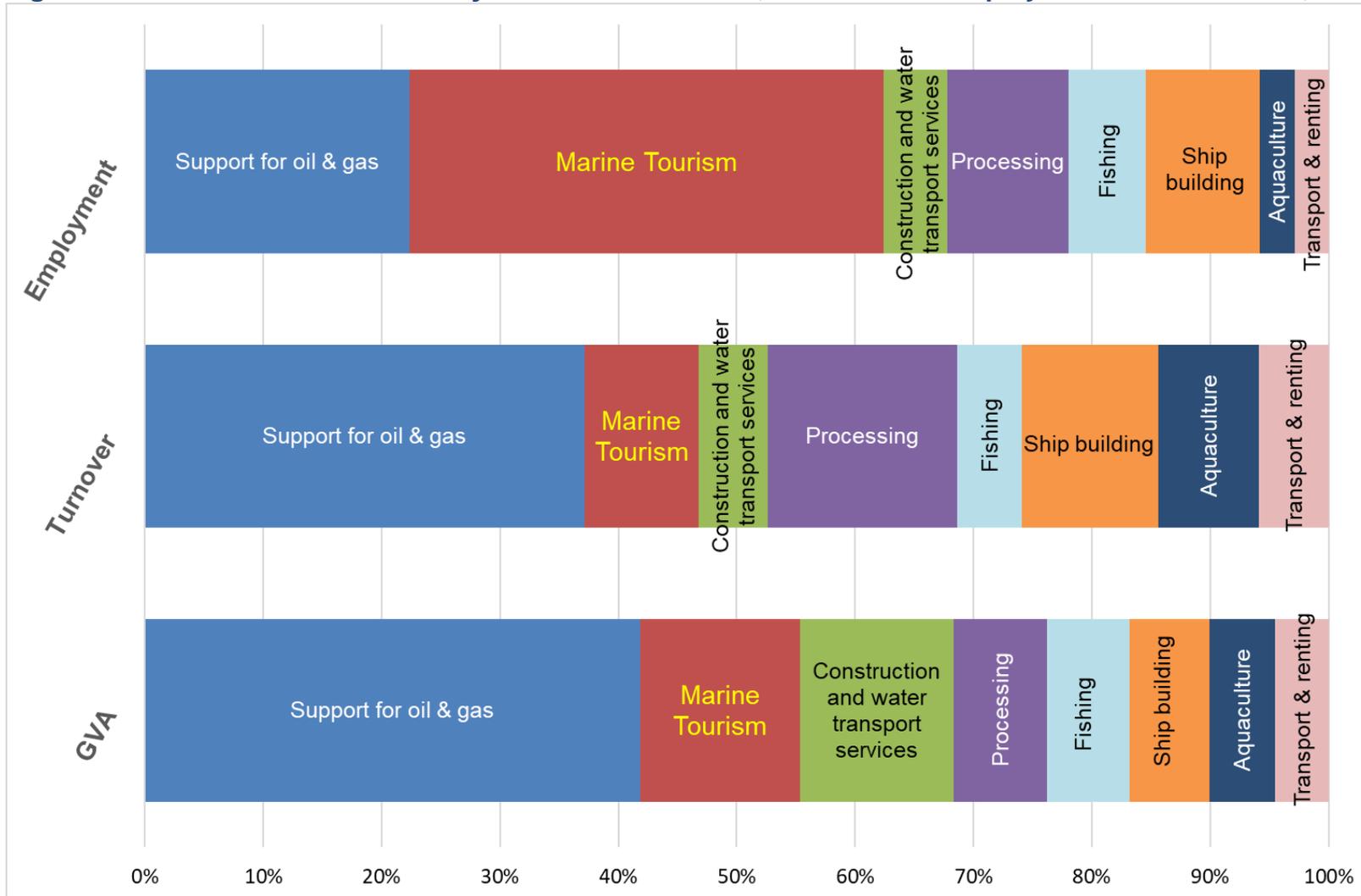
There are considerable variations in labour productivity (GVA per worker) across the marine economy, with freight water transport having the highest GVA per worker in 2018 (£235,000), and marine tourism producing the lowest at £19,000. In 2017, aquaculture had produced the highest GVA per employee.

Oil and gas extraction is not included in these figures, although support services for oil and gas are included. This broadly aligns the figures with those provided by the onshore values in the National Accounts for Scotland.

Table 1: Marine economic sectors – GVA, turnover, employment and GVA per head, 2018

Description	GVA £M	Turnover £M	Employment Headcount '000s	GVA Per Head £
Fishing	301	593	4.9	62,002
Aquaculture	238	921	2.2	106,551
Support for oil & gas	1,798	4,006	16.6	108,295
Processing	338	1,728	7.6	44,487
Ship building	289	1,238	7.1	40,676
Construction & water transport services	557	625	4.0	139,275
Passenger water transport	83	305	1.5	55,467
Freight water transport	94	300	0.4	235,000
Renting & leasing of water transport equipment	16	26	0.2	79,000
Marine Tourism	579	1,038	29.7	19,498
Total	4,294	10,780	74.2	57,867

Figure 1: Scotland's marine economy - distribution of GVA, turnover and employment across sectors, 2018



Sectors ranked in order of size (GVA). Sea and coastal freight and passenger transport and Renting and leasing of water transport equipment have been combined to make the chart more readable.

2.2 Marine economy trends

Between 2017 and 2018, the marine economy's GVA decreased by 17% from £5.2 billion to £4.3 billion (2018 prices). Employment fell by 0.5%.

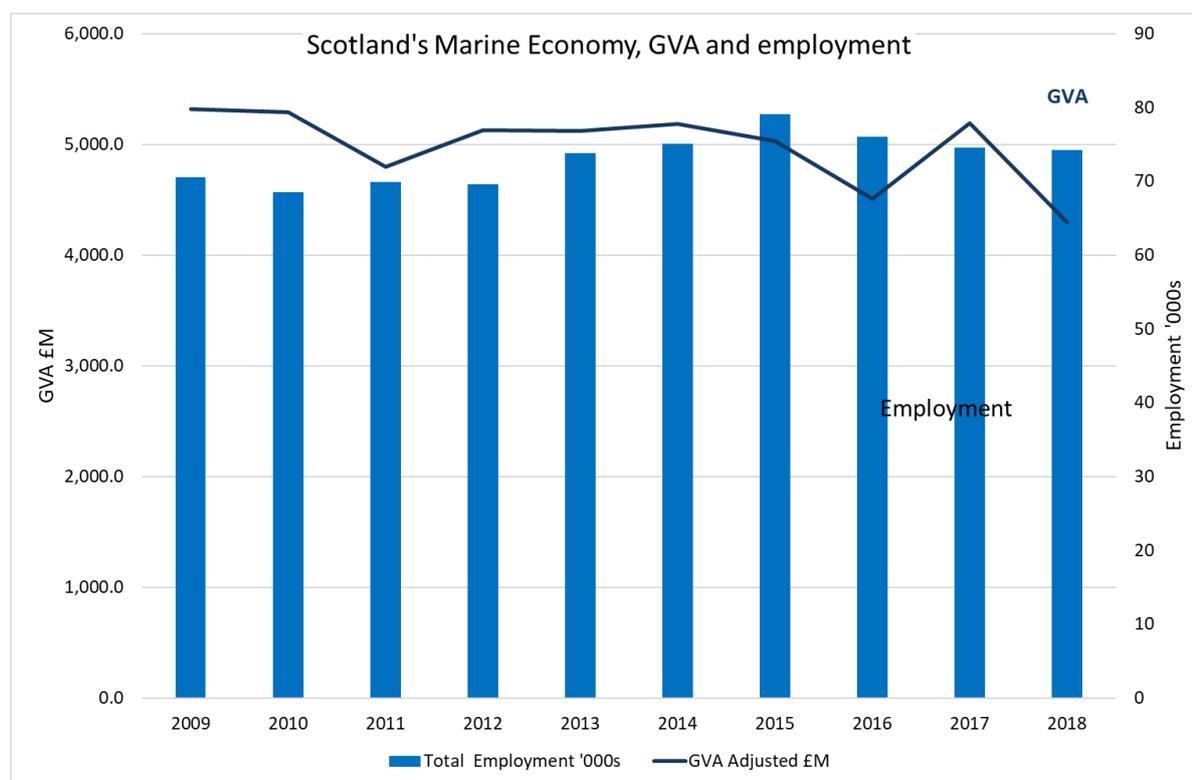
Table 2: Marine sector - GVA, turnover and employment, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s
2009*	5,319	13,943	70.6
2010*	5,293	12,935	68.5
2011	4,800	12,882	69.9
2012	5,131	13,299	69.5
2013	5,118	13,844	73.9
2014	5,183	14,536	75.0
2015	5,031	14,091	79.1
2016	4,508	11,026	76.0
2017	5,194	11,889	74.5
2018	4,294	10,780	74.2

* SABS categories for oil and gas services changed in 2011 see Annex B section 17.7.

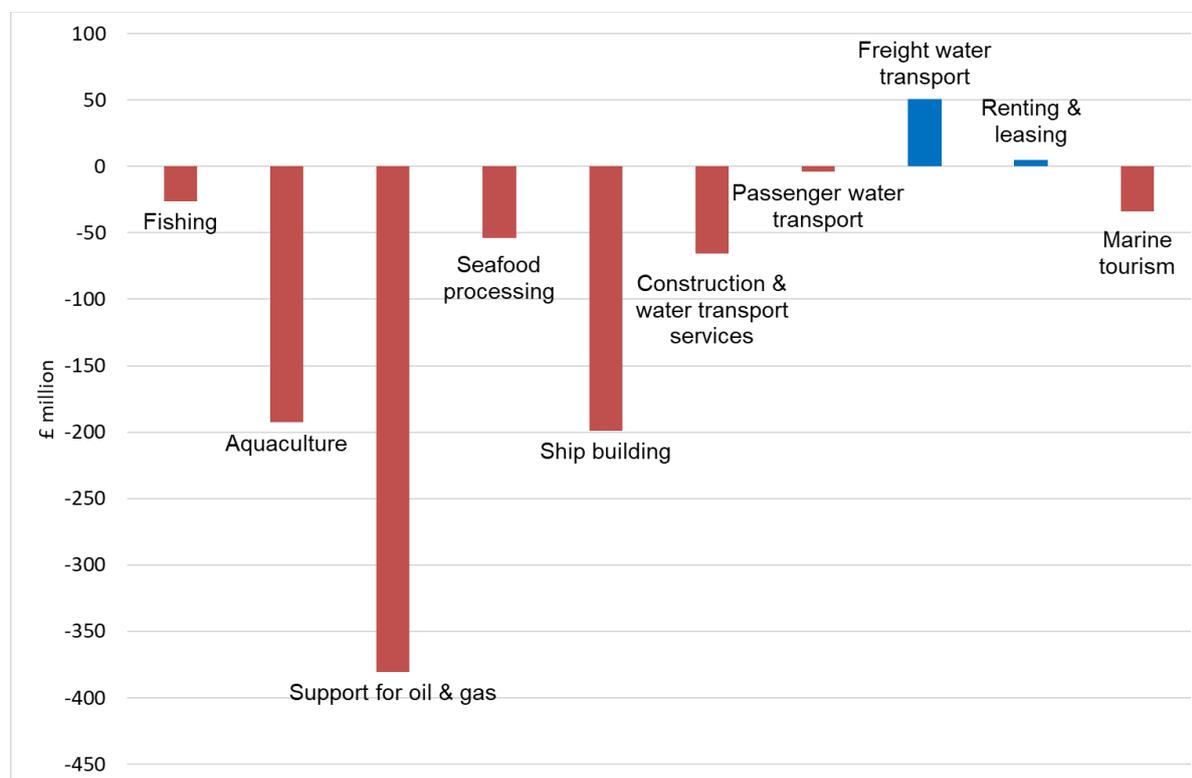
The longer term trend shows that between 2009 and 2018 the marine economy GVA (adjusted to 2018 prices) fell by 19% while employment increased by 5%.

Figure 2: Marine sector - GVA and employment, 2009 to 2018 (2018 prices)



The change in GVA from 2017 to 2018 is shown in Figure 3. The figures for the marine economy by industry are shown in Table 19 on page 50.

Figure 3: Marine sector – Change in GVA by sector, 2017 to 2018 (2018 prices)



2.3 Marine economy by geography

The values presented at local authority level are mostly based on SABS data. Most values can be provided by local authority, though some become disclosive at this level and are aggregated into the ‘unallocated’ category. The methodology for combining values from the different sources is detailed in *Annex B: Methodology and source data*.

Aberdeen City accounted for £1.7 billion (39%) of the marine economy’s GVA for 2018, with Aberdeenshire the next highest with £949 million (22%) (Table 3). Glasgow City contributed 6% of the marine GVA and employment in 2018. While Highland contributed 5% of the marine GVA and 12% of the employment.

The biggest change in GVA (value not percentage) from 2017 to 2018 was in the Aberdeen City local authority (Table 22). This is due to changes in oil prices causing a reduction in turnover for the for oil and gas support services. The second biggest change was in Fife local authority and is likely due to ship building. This is discussed in more detail in the Shipbuilding chapter.

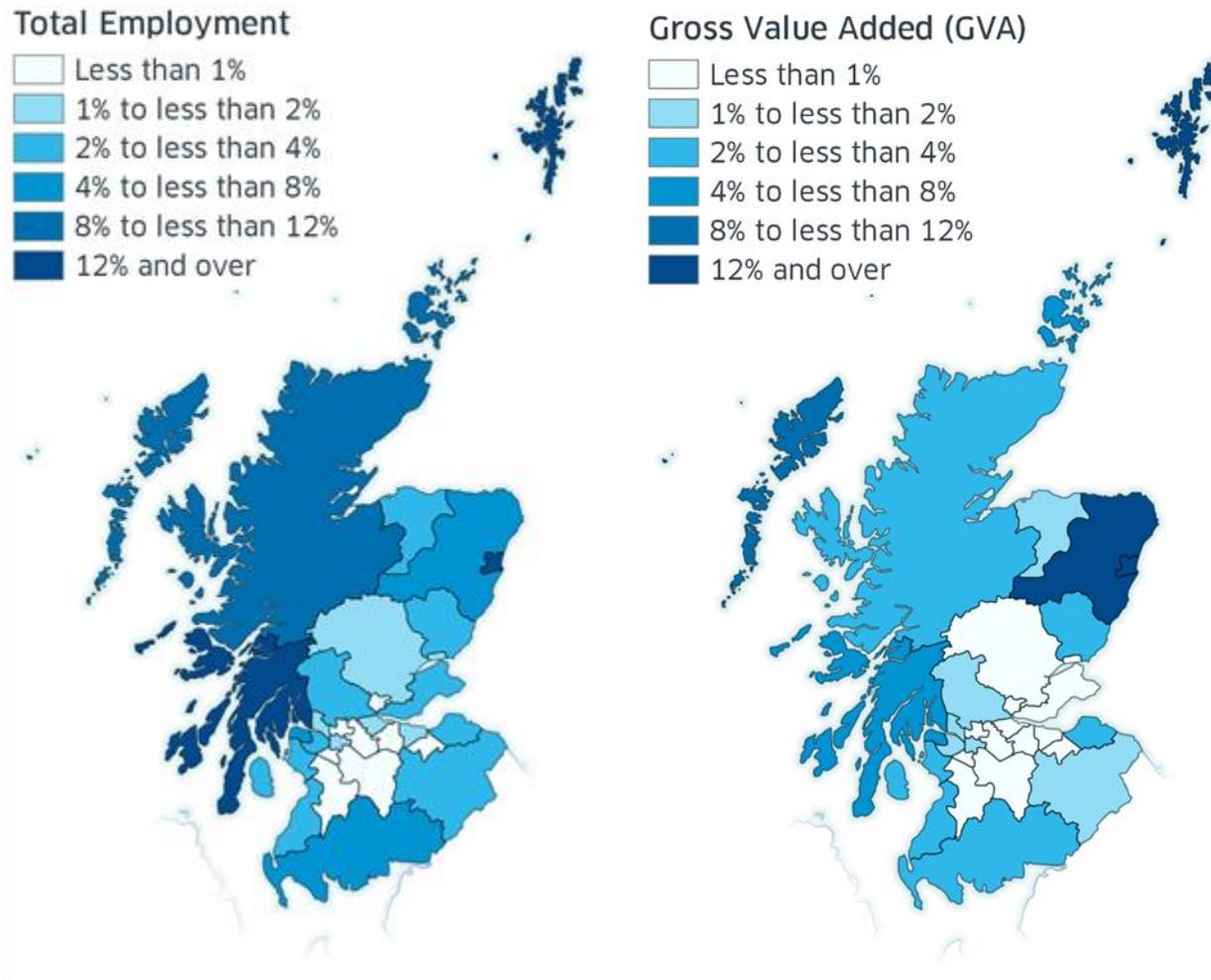
Table 3: Marine sector - GVA, turnover and employment (headcount), by local authority, 2018

Local authority	GVA £M	Turnover £M	Employment 000's	% of Scotland		
				GVA	Turnover	Employment
Aberdeen City	1,669	3,457	15.5	39%	32%	21%
Aberdeenshire	949	2,238	10.1	22%	21%	14%
Angus	59	83	1.2	1%	1%	2%
Argyll & Bute	131	349	5.2	3%	3%	7%
City Of Edinburgh	35	119	1.5	1%	1%	2%
Clackmannanshire	*	*	*	*	*	*
Dumfries & Galloway	84	258	2.7	2%	2%	4%
Dundee City	8	14	0.5	0%	0%	1%
East Ayrshire	0	1	*	0%	0%	*
East Dunbartonshire	*	*	*	*	*	*
East Lothian	27	60	1.4	1%	1%	2%
East Renfrewshire	*	*	*	*	*	*
Falkirk	*	*	0.7	*	*	1%
Fife	8	250	4.4	0%	2%	6%
Glasgow City	236	*	4.1	6%	*	6%
Highland	218	614	9.2	5%	6%	12%
Inverclyde	42	139	1.7	1%	1%	2%
Midlothian	*	*	*	*	*	*
Moray	26	66	0.9	1%	1%	1%
Na H-Eileanan Siar	49	123	1.4	1%	1%	2%
North Ayrshire	66	101	1.6	2%	1%	2%
North Lanarkshire	8	22	0.2	0%	0%	0%
Orkney Islands	33	97	1.4	1%	1%	2%
Perth & Kinross	2	24	0.4	0%	0%	1%
Renfrewshire	37	71	1.6	1%	1%	2%
Scottish Borders	27	5	1.2	1%	0%	2%
Shetland Islands	141	308	2.1	3%	3%	3%
South Ayrshire	34	62	1.3	1%	1%	2%
South Lanarkshire	9	*	0.3	0%	*	0%
Stirling	14	24	0.7	0%	0%	1%
West Dunbartonshire	22	35	0.5	1%	0%	1%
West Lothian	3	9	0.2	0%	0%	0%
<i>Unallocated</i>	358	2,250	2.2	8%	21%	3%
Scotland	4,294	10,780	74.2	100%	100%	100%

* Denotes disclosive data

GVA and employment in the marine sector is particularly important to rural economies. Figure 4 shows the proportion that the marine sector contributes to each local authority's GVA and employment. The marine sector contributes most to the Shetland Islands, accounting for 18% of the total GVA in Shetland and 16% of employment in 2018.

Figure 4: Percentage of overall employment and GVA accounted for by the marine sector by local authority, 2018



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3. Commercial fishing

3.1 Introduction

Scotland's commercial fishing fleet and sea fisheries are significant contributors to Scotland's rural and coastal economies. The commercial fishing industry contributes significantly to Scotland's food and drink economy, in particular playing an important part in many remote and potentially fragile communities.

In this section the economic contribution of the commercial fishing sector is sourced from the *Seafish*⁵ survey, with employment figures from [Scottish Sea Fisheries Statistics](#). This approach provides more reliable estimates of economic activity than the SABS figures, primarily because the source data covers the entire population of commercial fishing vessels and the *Seafish* survey provides financial data that is used to estimate GVA for the UK fleet. *Seafish* provide bespoke extracts of economic values for the Scottish fleet for this publication.

3.2 Key economic points

In 2018, fishing **generated £301 million GVA**: accounting for 0.21% of the overall Scottish economy and 7% of the marine economy GVA. The commercial fishing industry provided **employment for a headcount of 4,860 people**, contributing 0.18% of the total Scottish employment and 7% of the marine economy employment.

3.3 Sea fishing trends

From 2017 to 2018, the GVA from fishing (adjusted to 2018 prices) decreased by 8%. The longer term trend from 2009 to 2018, showed that fishing GVA increased by 27% and GVA per person increased 42% from £44 thousand per person to £62 thousand per person.

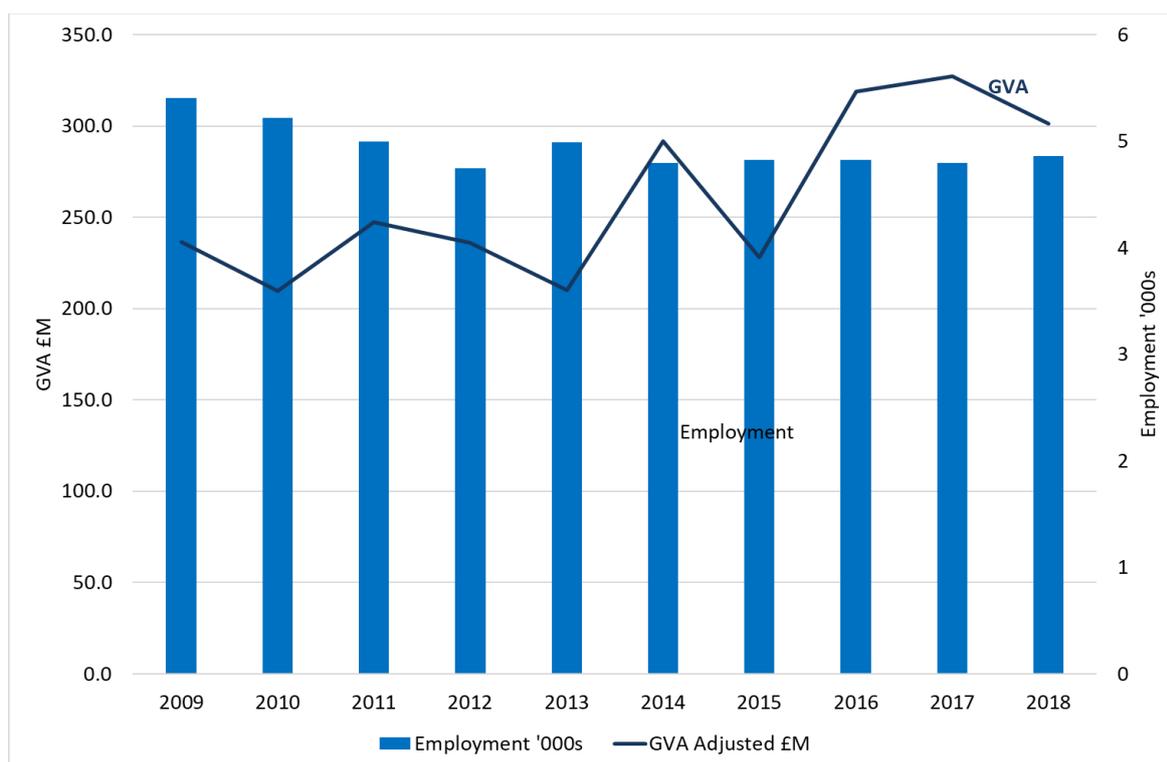
From 2009 to 2018, employment fell by 10%, though it has been stable in recent years.

⁵ Economics of the UK Fishing Fleet 2018. <https://www.seafish.org/document/?id=0748BE36-187C-4245-BCC9-753324BD1A19>

Table 4: Fishing - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment Headcount 000's	GVA Per Head £
2009	237	537	5.41	43,755
2010	210	518	5.22	40,173
2011	247	578	5.00	49,503
2012	236	541	4.75	49,742
2013	210	500	4.99	42,123
2014	292	565	4.80	60,845
2015	228	472	4.82	47,267
2016	319	593	4.82	66,136
2017	327	602	4.80	68,235
2018	301	593	4.86	62,002

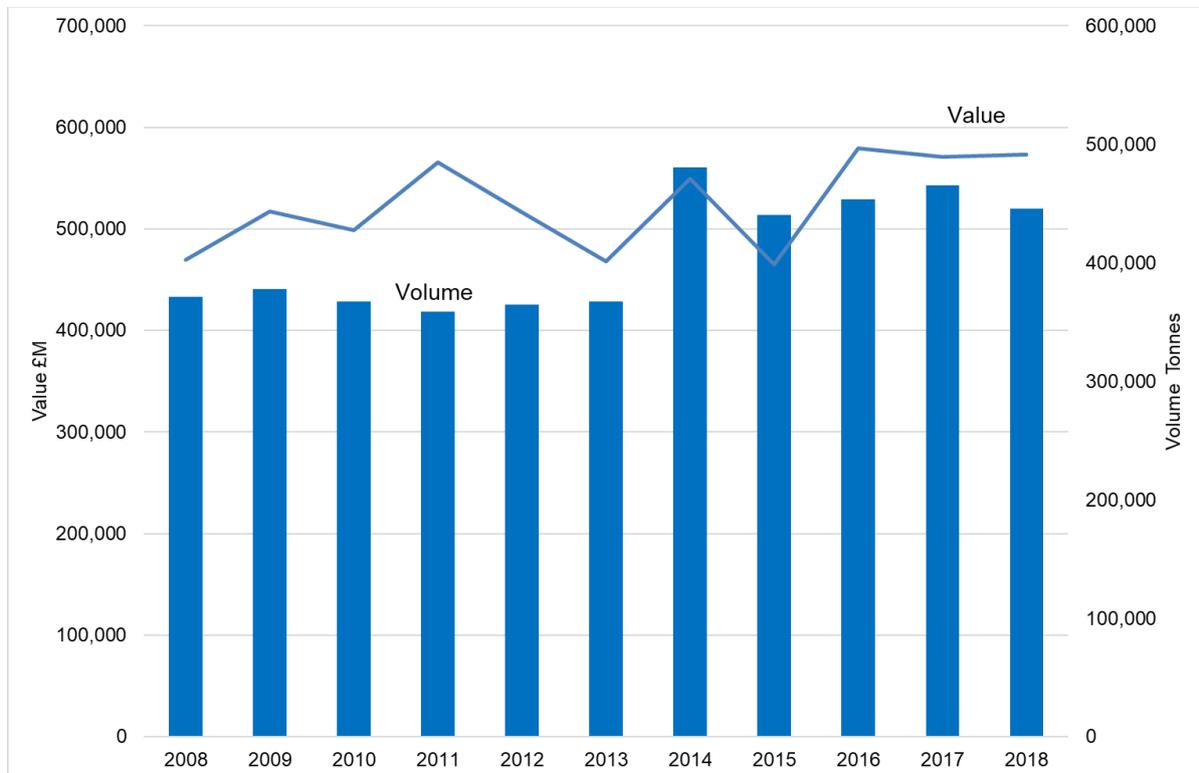
Figure 5: Fishing - GVA and employment (headcount), Scotland, 2009 to 2018 (2018 prices)



Fishing GVA is mostly driven by the volume of landings and price. However, total volume of landings can be influenced by quota changes, such as the 31% increase in quantity of landings in 2014 (see Figure 6). Between 2009 and 2018, the quantity of fish landed increased by 18% and value by 11%.

Figure 6 shows landings volume and value for Scottish registered vessels from 2008 to 2018.

Figure 6: Fishing - volume and value of all landings by Scottish vessels, 2008-2018 (2018 prices)



Source: [Scottish Sea Fisheries Statistics 2018](#)

Full data tables are shown in the Tables section on page 49.

3.4 Sea fishing by geography

The table below presents the value of landings at local authority level based on the vessel's registered port. Table 23 shows the time series from 2015 to 2018 for the value of landings by local authority areas. While the methodology used allocates value to the port of register, it does not relate to the area of catch.

Sixteen local authorities are reported here. The other 16 either have no reported value of landings from fishing or have so few vessels registered that their statistics are disclosive. The suppressed statistics are reported in the table as 'unallocated'.

Employment on Scottish registered vessels is regularly reported in the Marine Scotland *Scottish Sea Fisheries Statistics*. The employment figures are currently reported by regions, which are broadly local authority areas, with the island local authorities combined.

With fishers, Aberdeenshire has the largest number of people employed in sea fishing in Scotland and accounted for 25% of the total number of fishers on Scottish vessels in 2018. The Highland region accounted for 20% of the employment.

Table 5: Fishing – value of landings and employment by Local Authority of vessel registration, 2018

Local authority	Value of landings £M	Employment headcount
Aberdeenshire	267.1	1,231
Shetland Islands	116.9	456
Highland	56.3	960
Argyll and Bute	28.6	496
Orkney Islands	23.3	291
Moray	16.4	160
Dumfries and Galloway	16.2	274
Na h-Eileanan Siar	13.9	303
South Ayrshire	11.9	221
Fife	5.7	148
Scottish Borders	5.3	106
Angus	3.1	53
East Lothian	3.0	94
North Ayrshire	2.2	34
Aberdeen City	0.4	16
City of Edinburgh	*	17
<i>Unallocated</i>	<i>22.4</i>	
Scotland Total	592.7	4,860

Ranked in order of value of landings.

Source:

Landings: Seafish Fleet Economic Survey,

Employment: Marine Scotland Sea Fisheries Statistics.

* Denotes disclosive data.

4. Aquaculture

4.1 Introduction

Aquaculture is the breeding, growing and harvesting of plants and animals in water. It can take place in natural water bodies such as ponds, lakes, marshland or brackish water and the ocean. It can also be conducted in tanks, commonly found in fish hatcheries. Aquaculture production provides a range of seafood products:

Finfish – salmon, rainbow trout, brown trout and halibut

Shellfish – mussels, Pacific oysters, native oysters, queen scallops and king scallops

In 2018, Atlantic salmon accounted for around 95% of the aquaculture farm gate value, similar to previous years. This proportion may be affected by privacy issues, meaning that reporting values of other marine fin fish species discloses details of individual companies.

In this section the economic contribution of aquaculture has been estimated using two main data sources: Marine Scotland [Aquaculture survey statistics](#) for 2018 and economic data collected to meet DCF requirements. This approach allows for more reliable estimates of economic activity than SABS figures, primarily because the aquaculture survey collects data for every production site registered as active during the survey year.

The aquaculture survey statistics provide production and employment data, while the DCF survey provides financial data from a sample survey. These are combined to calculate GVA figures. It should be noted that the values reported here differ from the SABS values due to methodological differences and the use of different data sources.

4.2 Key economic points

In 2018, aquaculture **generated £238 million GVA**: accounting for 0.17% of the overall Scottish economy and 6% of the marine economy GVA. The aquaculture industry provided employment for 2,238 **people** (headcount), contributing 0.08% of the total Scottish employment and 3% of the marine economy employment.

4.3 Aquaculture trends

From 2017 to 2018, the GVA from aquaculture (adjusted to 2018 prices) decreased by 45% from £431 million to £238 million, while the longer term trend from 2009 to 2018 increased by 78% from £134 million. From 2009 to 2018, employment increased by 27%.

2017 was an exceptional year for aquaculture with the highest ever production level recorded in Scotland and good prices. The figures for 2017 have been updated in this publication following the receipt of additional 2017 DCF survey returns alongside the 2018 returns. For more information on this see Annex B, section 17.6 page 68. In 2018, a lower volume was produced and this is reflected in the lower turnover and GVA. The production of the main aquaculture species, salmon, is a process that takes several years. One of the main producers of salmon in Scotland confirmed that 2017 was a production year and 2018 a stock raising year. This means that the production costs in both years would be similar, but output would be lower in 2018 as the majority of the salmon were immature.

Table 6: Aquaculture - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment Headcount 000's	GVA Per Worker £
2009	134	510	1.8	76,082
2010	171	645	1.9	88,630
2011	182	686	1.8	100,630
2012	164	620	1.9	86,364
2013	229	762	1.9	123,105
2014	265	795	2.1	123,856
2015	115	712	2.2	52,849
2016	225	830	2.3	98,692
2017	431	1,109	2.2	192,163
2018	238	921	2.2	106,551

In 2015, the aquaculture GVA dipped (see Figure 7) due to a combination of lower turnover and higher costs as a result of disease challenges. Since that low point, GVA from aquaculture grew strongly to reach a peak of £431 million in 2017, before decreasing to £238 million in 2018

Figure 7: Aquaculture GVA and employment, 2009 to 2018 (2018 prices)

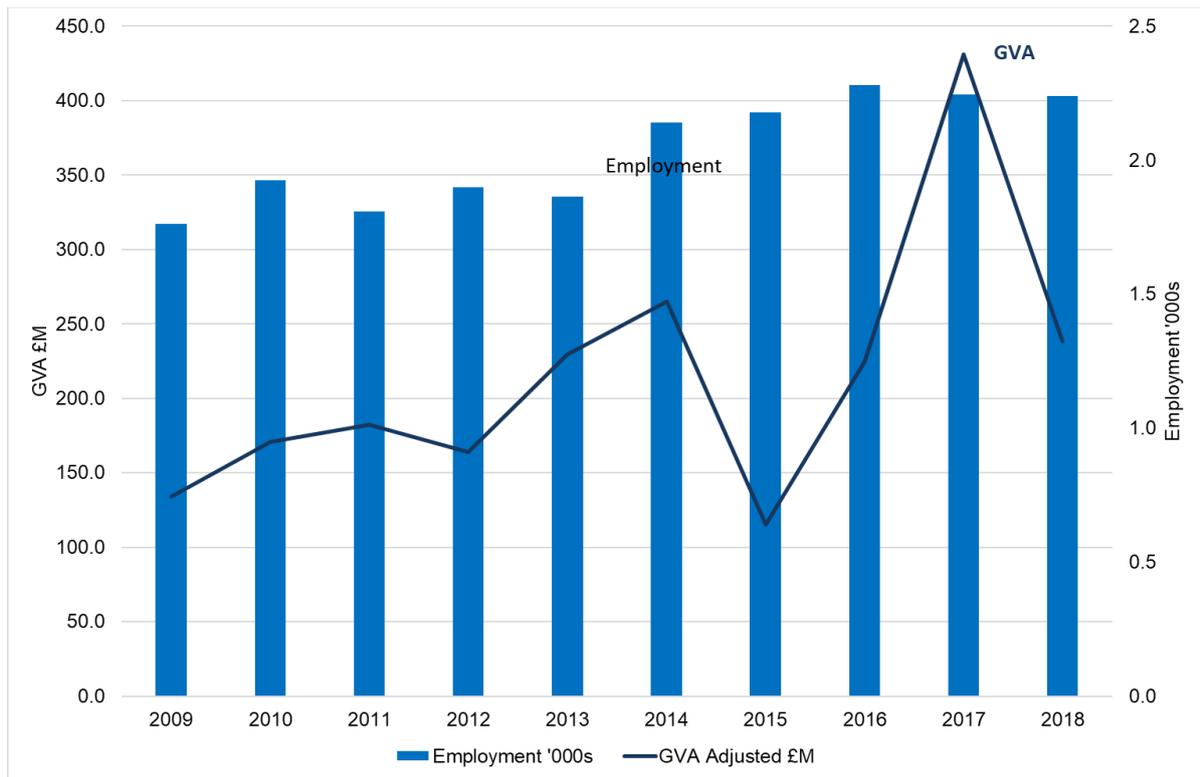
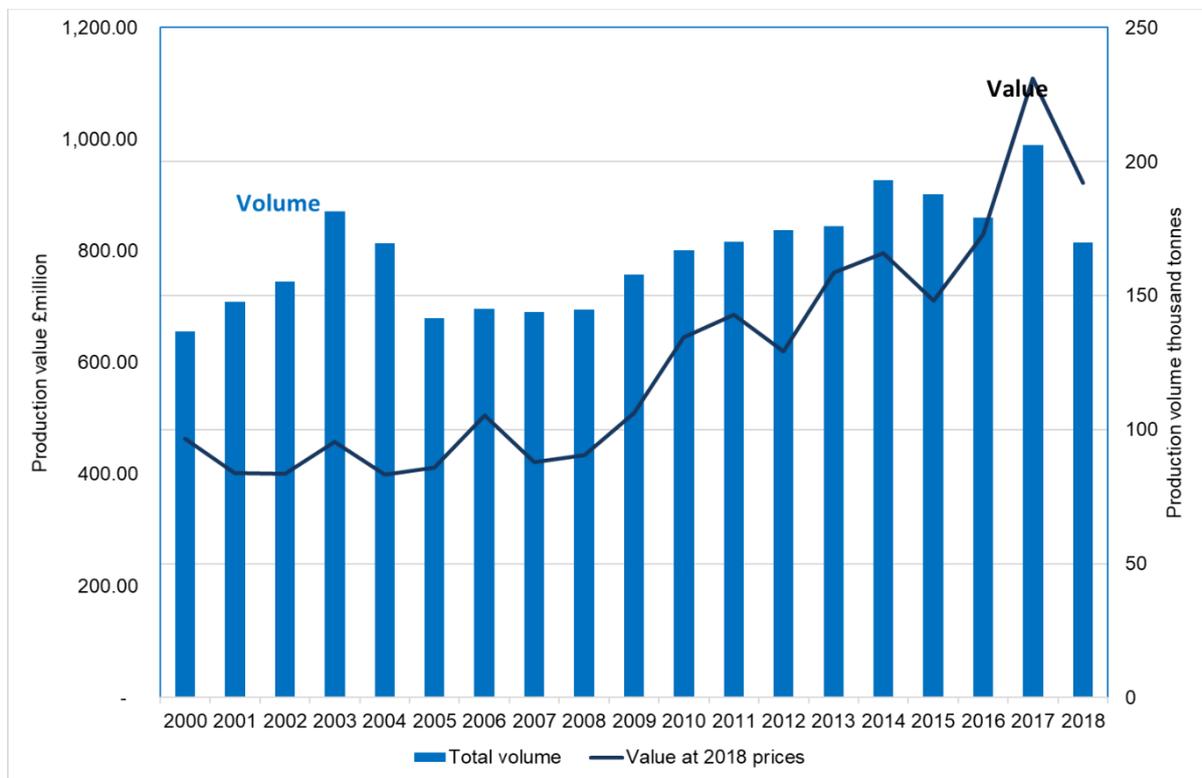


Figure 8: Aquaculture - volume and value of aquaculture production in Scotland, 2000 to 2018 (2018 prices)



Total aquaculture production in Scotland in 2018 decreased to 170 thousand tonnes (see Table 24). The decrease in volume of production in 2018 and a cost similar to production in 2017, led to a decrease in GVA. Table 24 presents more detailed aquaculture data, including aquaculture breakdown by fin fish or shellfish. The GVA values are estimated using the volume and value of aquaculture in Figure 8. The chart shows the longer term trend in the aquaculture production.

4.4 Aquaculture by geography

It is not possible to disaggregate aquaculture statistics to local authority levels as these become disclosive. In the Marine Scotland *Aquaculture Production Survey Statistics* Atlantic salmon and mussel production figures are presented by Scottish marine region⁶ (SMR) as far as possible. However, even at SMR level some regions in Table 7 have to be merged to avoid disclosure.

Atlantic salmon production value accounts for over 95% of all aquaculture, and so the salmon figures are reasonably representative of the economic distribution of aquaculture around Scotland. Table 7 shows the distribution of Atlantic salmon production around Scotland.

Table 7: Atlantic salmon production distribution around Scotland, 2018

Scottish Marine Region or combination	% of Scottish value 2018
Argyll and Clyde	24%
Orkney Islands	13%
Outer Hebrides	20%
Shetland Isles	23%
North Coast and West Highlands	20%

Mussel production mostly occurs in the Shetland Isles, accounting for three quarters of all Scottish production. Oyster production is largely split between the North Coast group and Argyll and Clyde.

Table 25 and Table 26 present a time series of salmon and mussel production by region.

⁶ Scottish Marine Regions were introduced by The Scottish Marine Regions Order 2015. The boundaries identify the areas for preparing and adopting regional marine plans. See References section.

5. Oil and gas services

5.1 Introduction

This section refers to the services that support the extraction of oil and gas, largely exploration and test drilling, but also looking ahead to oil and gas decommissioning, where there is substantial potential for economic growth. Oil and gas support activities are the largest contributors of turnover and GVA to the marine economy, although oil price changes tend to impact on the sector.

The SABS categories used to identify oil and gas services have changed in recent years. Since 2011, support services for oil and gas were extracted using the SIC code '09.1: Support activities for petroleum and natural gas extraction'. However, between 2008 and 2010 the code SIC '09 Mining support activities' was used to ensure statistics were non-disclosive. The difference between statistics using the different SIC codes is insignificant, but it is important to note the change in coverage of the industry.

5.2 Key economic points

In 2018, oil and gas support services generated **£1,798 million GVA**: accounting for 1.25% of the overall Scottish economy GVA and 42% of the marine economy GVA. Oil and gas support services provided **employment for 16,600 people** (headcount), 0.63% of the total Scottish employment and 22% of the marine economy employment.

5.3 Oil and gas services - trends

The oil and gas support services GVA has declined by 40% since 2009, and between 2017 and 2018 GVA decreased by 17% (adjusted to 2018 prices).

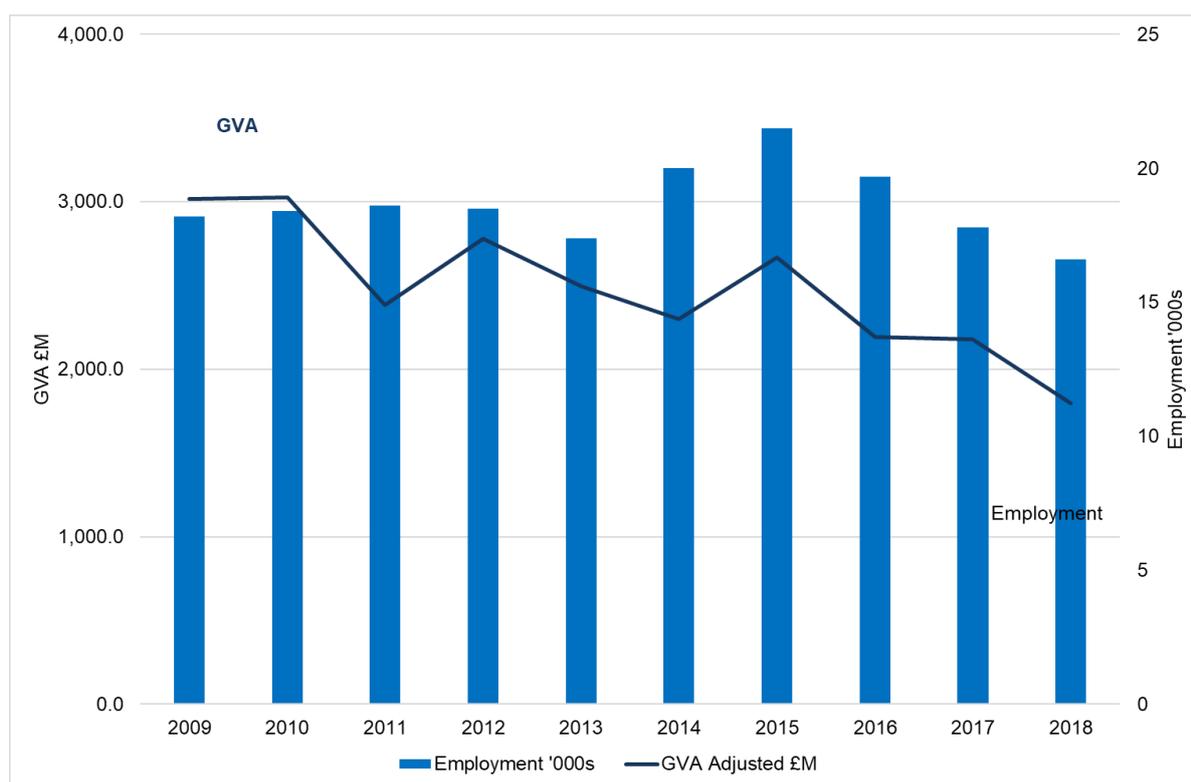
From 2009 to 2018, employment decreased by 9%, and it fell by 7% between 2017 and 2018.

Table 8: Oil and gas services - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009*	3,017	7,486	18.2	165,769
2010*	3,024	6,511	18.4	164,357
2011	2,385	6,242	18.6	128,230
2012	2,778	6,491	18.5	150,139
2013	2,494	6,656	17.4	143,355
2014	2,300	7,268	20	114,994
2015	2,666	7,152	21.5	123,993
2016	2,193	4,657	19.7	111,301
2017	2,178	4,628	17.8	122,374
2018	1,798	4,006	16.6	108,295

* SABS categories changed between 2010 and 2011. See introduction to this section and Annex B section 17.7.

Figure 9: Oil and gas services – GVA and employment, Scotland, 2009 to 2018 (2018 prices)



Geographic breakdown of oil and gas services is not readily available.

6. Seafood processing

6.1 Introduction

The seafood processing industry is defined in SABS as the “Processing and preserving of fish, crustaceans and molluscs”. In this publication, SABS information on seafood processing is used as the source data. *Seafish* publishes the processing data they collect in the [processing inquiry tool](#) which presents economic values for the processing of sea fish. Summary and background information is also available on the [Seafish website](#). However, methodological differences mean that the SABS data allows for better comparisons with other industry results (see the Methodology section).

While fish processing is predominantly a terrestrial activity, the bulk of processing in Scotland is highly dependent on fish landed from Scottish waters. Therefore fish processing has been included in the definition of the marine economy.

6.2 Key economic points

In 2018, Seafood processing **generated £338 million GVA**: accounting for 0.24% of the overall Scottish economy and 8% of the marine economy GVA. Seafood processing provided **employment for 7,600 people** (headcount), contributing 0.29% to total Scottish employment and 10% to marine economy employment.

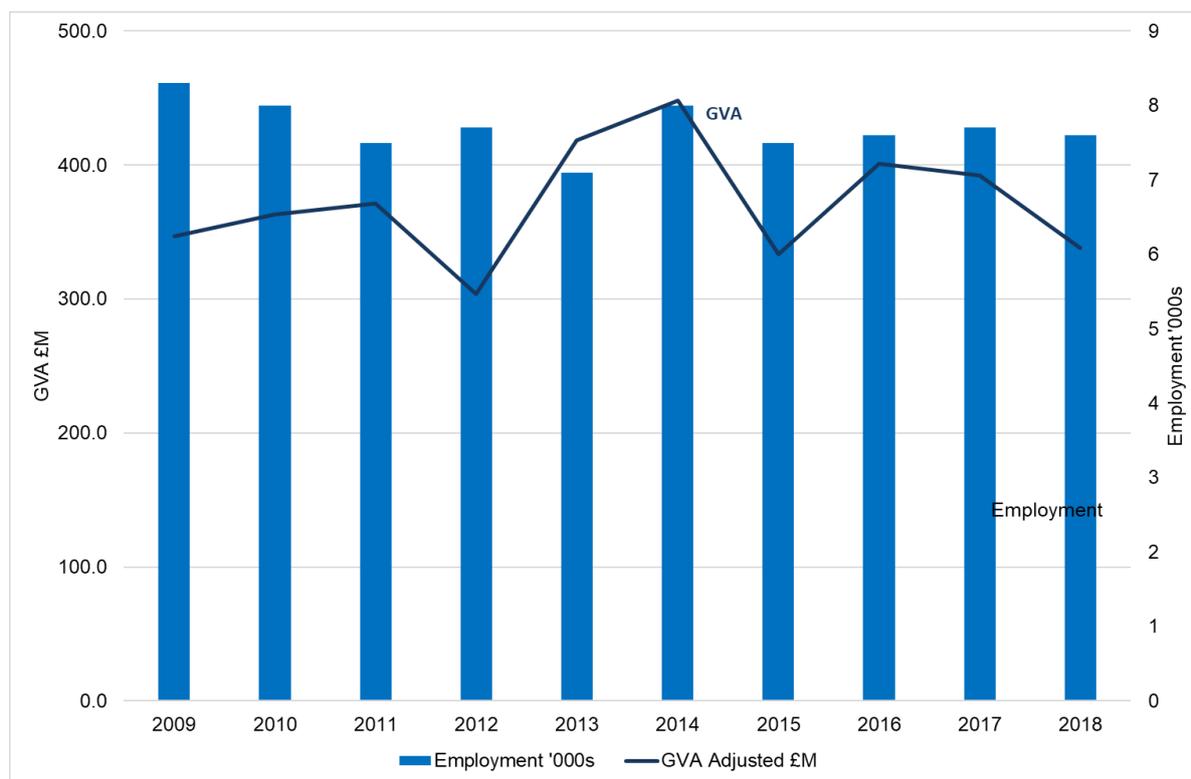
6.3 Seafood processing – trends

In 2018, the GVA from seafood processing (adjusted to 2018 prices) decreased by 14% from the previous year, while the longer term trend from 2009 to 2018 showed that seafood processing GVA decreased by 2%. Employment decreased by 8% between 2009 and 2018.

Table 9: Seafood processing - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	347	1,692	8.3	41,765
2010	363	1,666	8.0	45,424
2011	372	1,434	7.5	49,543
2012	304	1,463	7.7	39,445
2013	419	1,708	7.1	58,957
2014	448	1,812	8.0	56,035
2015	334	1,664	7.5	44,502
2016	401	1,670	7.6	52,733
2017	392	1,826	7.7	50,922
2018	338	1,728	7.6	44,487

Figure 10: Seafood processing – GVA and employment, Scotland, 2009 to 2018 (2018 prices)



6.4 Seafood processing by geography

The [Food Standards Agency](#)⁷ publish a full list of establishments approved to handle, prepare or produce products of animal origin, including fish processing plants. This information was used to provide the number of fish processing businesses in Scotland by local authority. It does not consider volume of throughput, or type of fish.

As of January 2019, there were 284 registered fish processing plants in Scotland. The three local authorities with the highest number of plants were Aberdeenshire (52), Highland (42) and Aberdeen City (37).

⁷ Food Standards Agency Approved Food Establishments, <https://data.gov.uk/dataset/2c80e0ce-ee1c-4f26-ba6f-1e1ae1bd8ee9/approved-food-establishments>

7. Shipbuilding

7.1 Introduction

Shipbuilding is represented in this report by the SABS SIC codes 30.1: *Building of ships and boats* and 33.15: *Repair and maintenance of ships and boats*. As part of the SABS annual publications, Scottish Government publishes a [Shipbuilding Profile](#) in the SABS excel tables, where the Scottish shipbuilding sector is analysed in relation to UK economic sectors.

Shipbuilding data can fluctuate considerably due to the spasmodic nature of the industry's business. It can take a number of years to build and sell a ship, so purchase figures may be higher in some years and turnover higher in other years. Company re-structuring within the industry has also contributed to year-on-year fluctuations in statistics for the industry. The ONS estimation methodology produces regional estimates for both Scottish and non-Scottish business sites from single business returns which cover all UK activity. The SIC codes covered in the SABS shipbuilding profile provide a slightly narrower definition than the codes used for these marine economic statistics.

7.2 Key economic points

In 2018, Shipbuilding **generated £289 million in GVA**: accounting for 0.2% of the overall Scottish economy and 7% of the marine economy GVA. Shipbuilding provided **employment for 7,100 people (headcount)**, contributing 0.27% of the total Scottish employment and 10% of the marine economy employment.

The SABS Shipbuilding Profile reports that Scottish shipbuilding accounted for around 26% of turnover and 14% of GVA of total UK output of the industry in 2018. This is a higher proportion than Scotland's contribution to the whole of manufacturing, where Scotland accounted for around 7% of turnover and 8% of GVA of total UK manufacturing in 2018.

7.3 Shipbuilding – trends

From 2017 to 2018, Shipbuilding GVA (adjusted to 2018 prices) decreased by 41%, while the longer term trend from 2009 to 2018 showed that Shipbuilding GVA decreased by 49%. Employment increased by 3% between 2009 and 2018.

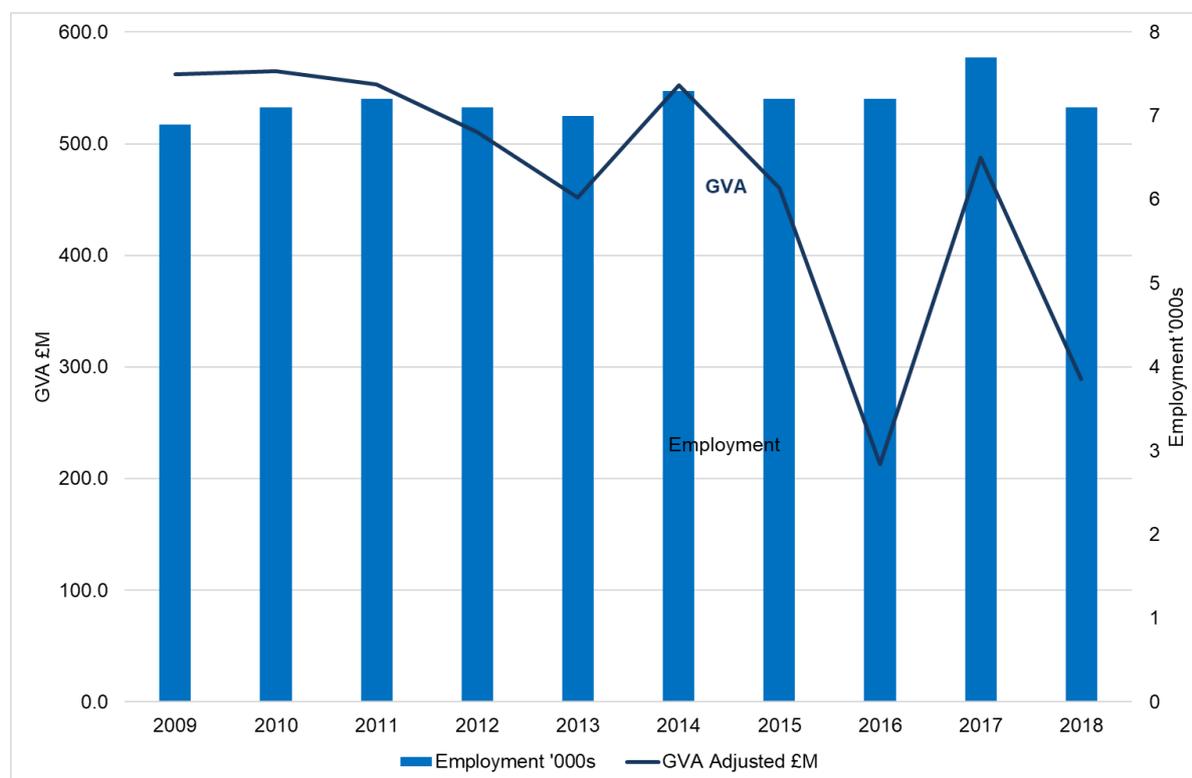
The SABS supporting notes on the Shipbuilding Profile indicate that changes in a small number of (large) companies can have a very marked effect on the statistics, particularly on sectoral and local authority figures, from one year to the next. They point out that at this level of analysis (4-digit SIC), particular caution should be exercised when looking at year-on-year changes for the sector. Instead, figures should be used to chart long-term trends.

Table 10: Ship building - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	562	1,514	6.9	81,513
2010	565	1,632	7.1	79,529
2011	553	1,602	7.2	76,856
2012	510	1,682	7.1	71,870
2013	452	1,332	7.0	64,574
2014	552	1,511	7.3	75,644
2015	460	1,738	7.2	63,909
2016	213	1,124	7.2	29,544
2017	488	1,562	7.7	63,351
2018	289	1,238	7.1	40,676

Figure 11 shows the long term trend, demonstrating considerable fluctuation over the period 2009 to 2018. Over the same period, employment increased slightly to around 7,100 workers.

Figure 11: Shipbuilding - GVA and employment, Scotland, 2009 to 2018 (2018 prices)



7.4 Shipbuilding – by geography

The SABS Shipbuilding profile reports that the top three local authority areas in the shipbuilding sector in 2018 were Glasgow City, Aberdeen City and Fife, which together accounted for 73% of employment, 83% of turnover and 74% of GVA in the sector. It is not possible to supply a full individual list of local authorities with shipbuilding activity without being disclosive.

8. Construction of water projects and water transport service activities

8.1 Introduction

For ease of description, in this report the joint industry sector will be referred to as 'Marine construction and water transport services'.

The two industry classes 42.91: 'Construction of water projects' and 52.22: 'Service activities incidental to water transportation' have been combined so that the data is non-disclosive. Marine construction and water transport services are key for connectivity and supporting growth for the marine economy.

The SABS category of *Construction of water projects* covers:

construction of:

- waterways, harbour and river works, pleasure ports (marinas), locks, etc.,
- dams and dykes,
- dredging of waterways.

It excludes project management activities related to civil engineering works.

The SABS category of Service activities incidental to water transportation includes:

- activities related to water transport of passengers, animals or freight,
- operation of terminal facilities such as harbours and piers and operation of waterway locks etc.,
- navigation, pilotage and berthing activities,
- lighterage (the transference of cargo by means of a lighter), salvage activities,
- lighthouse activities.

This class excludes cargo handling and operation of marinas.

8.2 Key economic points

In 2018, marine construction and water transport services **generated £557 million in GVA**: accounting for 0.39% of the overall Scottish economy, and 13% of the marine economy.

Marine construction and water transport services provided **employment for 4,000 workers**, contributing 0.15% to total Scottish employment, and 5% of the marine economy employment.

8.3 Construction and water transport services – trends

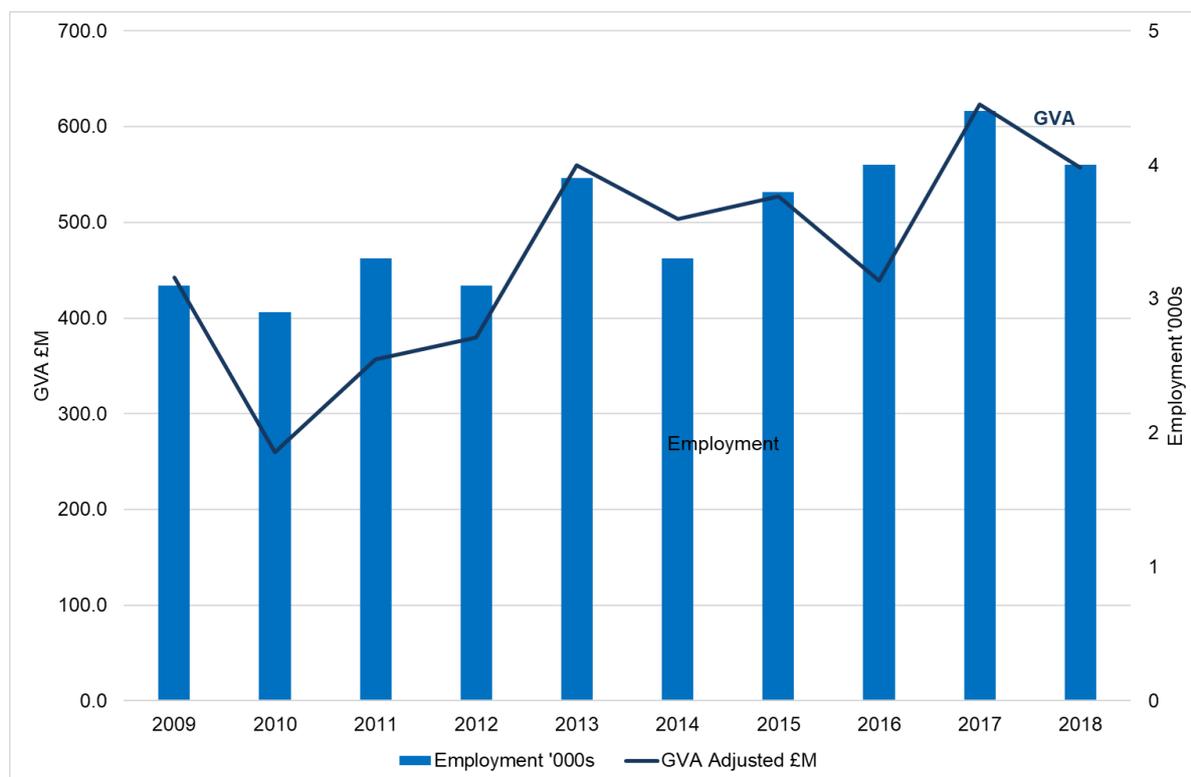
Marine construction and water transport services GVA decreased by 11%, while employment fell by 9% between 2017 and 2018.

The longer term trends have been variable, but generally increasing. Construction and water transport services GVA increased by 26% and employment increased by 29% between 2009 and 2018.

Table 11: Construction and water transport services - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	443	629	3.1	142,763
2010	260	470	2.9	89,716
2011	357	619	3.3	108,054
2012	380	890	3.1	122,524
2013	560	1,068	3.9	143,622
2014	504	873	3.3	152,689
2015	527	899	3.8	138,629
2016	439	697	4.0	109,741
2017	623	763	4.4	141,575
2018	557	625	4.0	139,275

Figure 12: Construction and water transport services – GVA and employment, 2009 to 2018 (2018 prices)



Geographic breakdown of construction and water transport services are not readily available.

9. Sea & coastal water transport

9.1 Introduction

This sector includes passenger and freight transport, though they are discussed separately. Inland water transport is not included. Sea and coastal water transport is an essential part of Scotland's transport network. It is key for connectivity and supports both island and mainland communities. One third of Scotland's total freight tonnage, including exports, was carried by water transport in 2018⁸.

Supplementary water transport information is taken from the [Transport Scotland Scottish Transport Statistics](#) publication, supported by data from the [Department of Transport statistics](#).

9.2 Passenger water transport – description

Sea and coastal passenger water transport includes the transport of passengers on vessels designed for operating on sea or coastal waters.

It includes:

- transport of passengers over seas and coastal waters, whether scheduled or not,
- operation of excursion, cruise or sightseeing boats,
- operation of ferries, water taxis etc.,
- renting of pleasure boats with crew for sea and coastal water transport (e.g. for fishing cruises).

This class excludes:

- restaurant and bar activities on board ships, when provided by separate units,
- renting of pleasure boats and yachts without crew,
- renting of commercial ships or boats without crew,
- operation of “floating casinos”.

The sea and coastal water transport categories are not included in the Marine tourism sector so the values are not double counted.

9.3 Passenger water transport – economic key points

In 2018, passenger water transport **generated £83 million in GVA**: accounting for 0.06% of the overall Scottish economy and 2% of the marine economy GVA. The passenger water transport industry provided employment for 1,500 **people** (headcount), contributing 0.06% of the total Scottish employment and 2% of the marine economy employment.

⁸ Scottish Transport Statistics, No 38, 2019 Edition,
<https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/>

9.4 Passenger water transport – trends

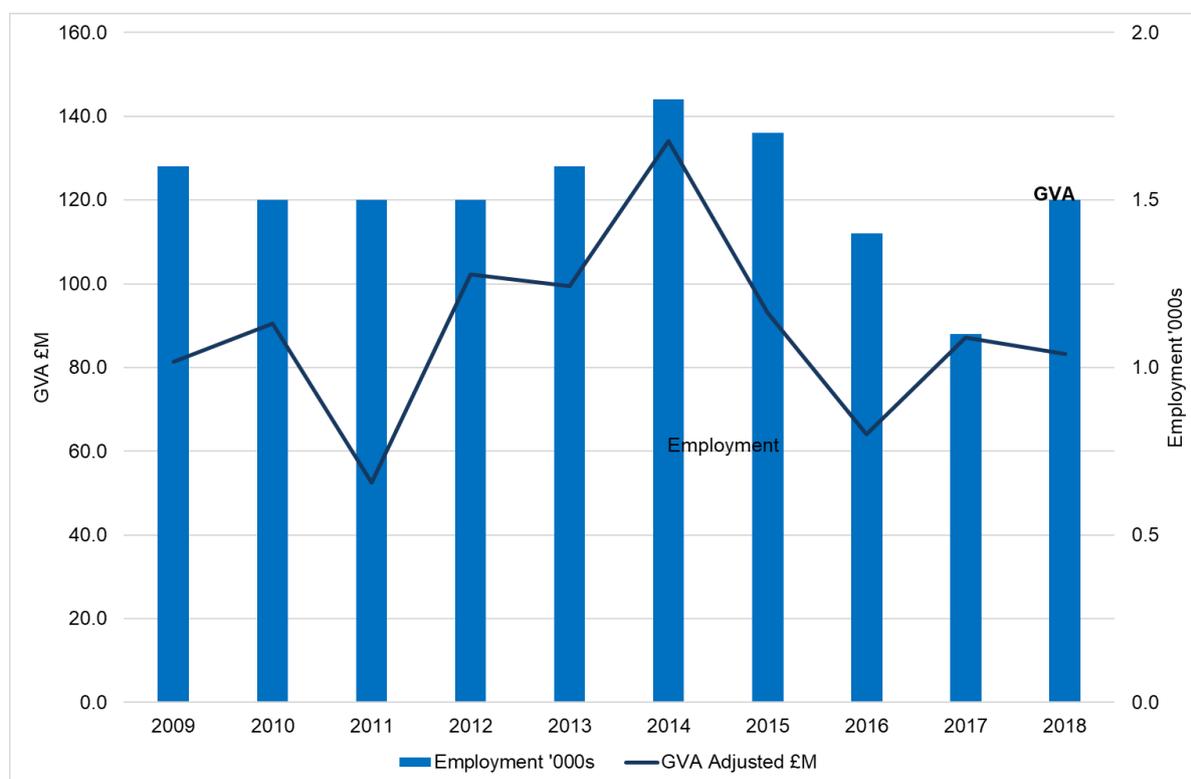
From 2017 to 2018, the GVA from passenger water transport (adjusted to 2018 prices) decreased by 5%, while the longer term trend from 2009 to 2018 showed that passenger water transport GVA fluctuates from year to year, but rose by 2%.

Employment in 2018 rose by 36% to 1,500, following the ten year low in 2017. From 2009 to 2018, employment fell by 6%.

Table 12: Passenger water transport - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

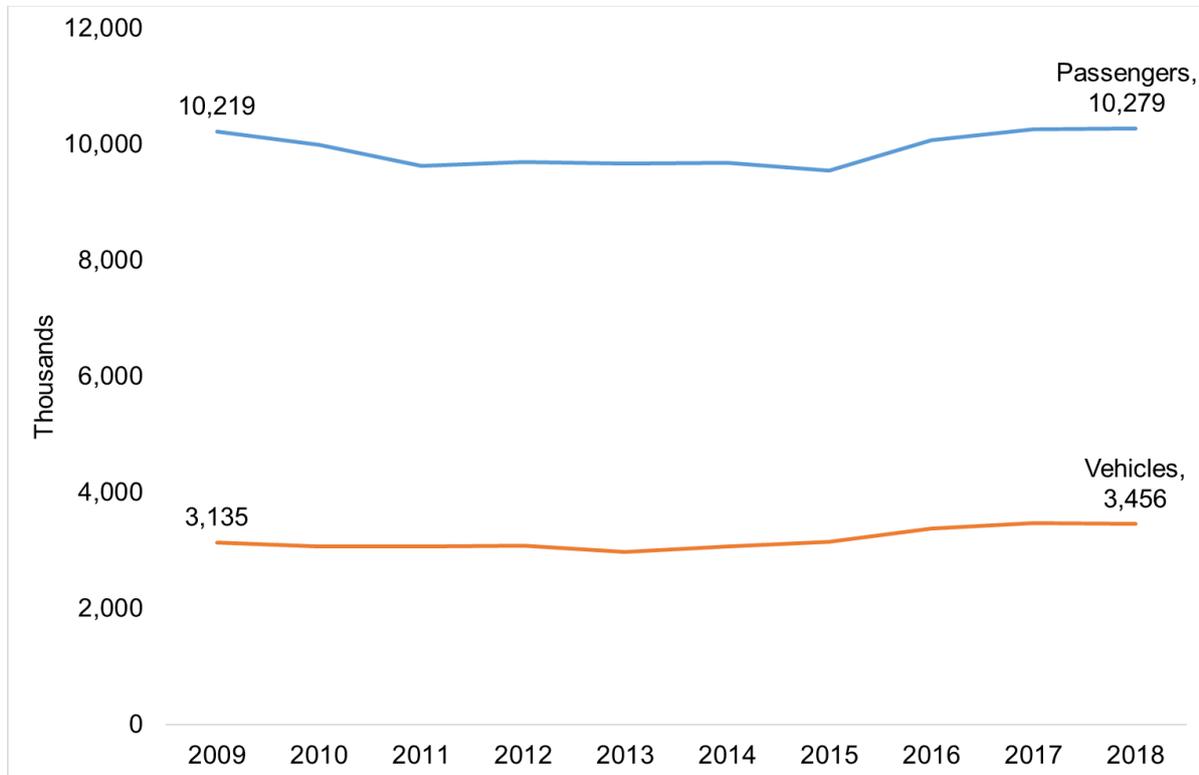
Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	81	391	1.6	50,823
2010	91	271	1.5	60,374
2011	52	399	1.5	34,959
2012	102	343	1.5	68,185
2013	99	382	1.6	62,123
2014	134	353	1.8	74,482
2015	93	232	1.7	54,772
2016	64	179	1.4	45,790
2017	87	203	1.1	79,295
2018	83	305	1.5	55,467

Figure 13: Passenger water transport – GVA and employment (headcount), 2009 to 2018 (2018 prices)



Transport Scotland statistics (Figure 14) show that the number of passengers in 2018 has increased by less than 1% from 2009, while the number of vehicles increased by 10%.

Figure 14: Passenger water transport - numbers of passengers and vehicles carried on ferry routes, 2009 to 2018



Source: [Transport Scotland from ferry operators \(not National Statistics\)](#)⁹

9.5 Passenger water transport – by geography

Transport Scotland report these services by operator rather than location, meaning that these statistics show a broad distribution of ferry business rather than a precise disaggregation. In 2018, around 51% of the passenger journeys were on the Caledonian MacBrayne services in the West of Scotland, between the mainland of Scotland and 22 of the major islands on Scotland's west coast. The next highest service was between Gourock and Dunoon, also on the West coast and carried 13% of passenger traffic, Shetland Island services carried 7% of passengers. The rest of the passengers carried in 2018 travelled on other services. The vehicle transport distribution is similar to passenger transport, with 44% on the Caledonian MacBrayne services in the West of Scotland, 19% between Gourock to Dunoon and 11% on Shetland Island services.

⁹ Scottish Transport Statistics No 38 2019 Edition, <https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/>

9.6 Freight water transport – description

This group includes the transport of freight on vessels designed for operating on sea or coastal waters. It includes:

- transport of freight over seas and coastal waters, whether scheduled or not,
- transport by towing or pushing of barges, oil rigs etc.,
- renting of vessels with crew for sea and coastal freight water transport.

It excludes:

- storage of freight,
- harbour operation and other auxiliary activities such as docking, pilotage, lighterage, vessel salvage,
- cargo handling,
- renting of commercial ships or boats without crew.

9.7 Freight water transport – economic key points

In 2018, freight water transport **generated £94 million GVA**: accounting for 0.07% of the overall Scottish economy and 2% of the marine economy GVA.

The freight water transport industry provided employment for **around 400 people** (headcount), contributing 0.02% of the total Scottish employment and 0.5% of the marine economy employment.

9.8 Freight water transport – trends

From 2017 to 2018, the GVA from freight water transport (adjusted to 2018 prices) increased by 117%, while the longer term trend from 2009 to 2018 showed that freight water transport GVA fell by 19%. GVA reached a peak of £197 million in 2011, and fell to a low of £43 million in 2017.

Table 13: Freight water transport - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	116	383	0.7	166,238
2010	174	343	0.5	348,895
2011	197	398	0.5	394,242
2012	158	279	0.6	264,013
2013	80	383	0.6	133,182
2014	89	288	0.9	98,477
2015	88	252	0.6	146,331
2016	70	190	0.5	140,285
2017	43	119	0.5	86,816
2018	94	300	0.4	235,000

From 2009 to 2018, employment fell by 43%, from a high of 900 people in 2014 to 400 in 2018.

Figure 15: Freight water transport - GVA and employment (headcount), 2009 to 2018 (2018 prices)

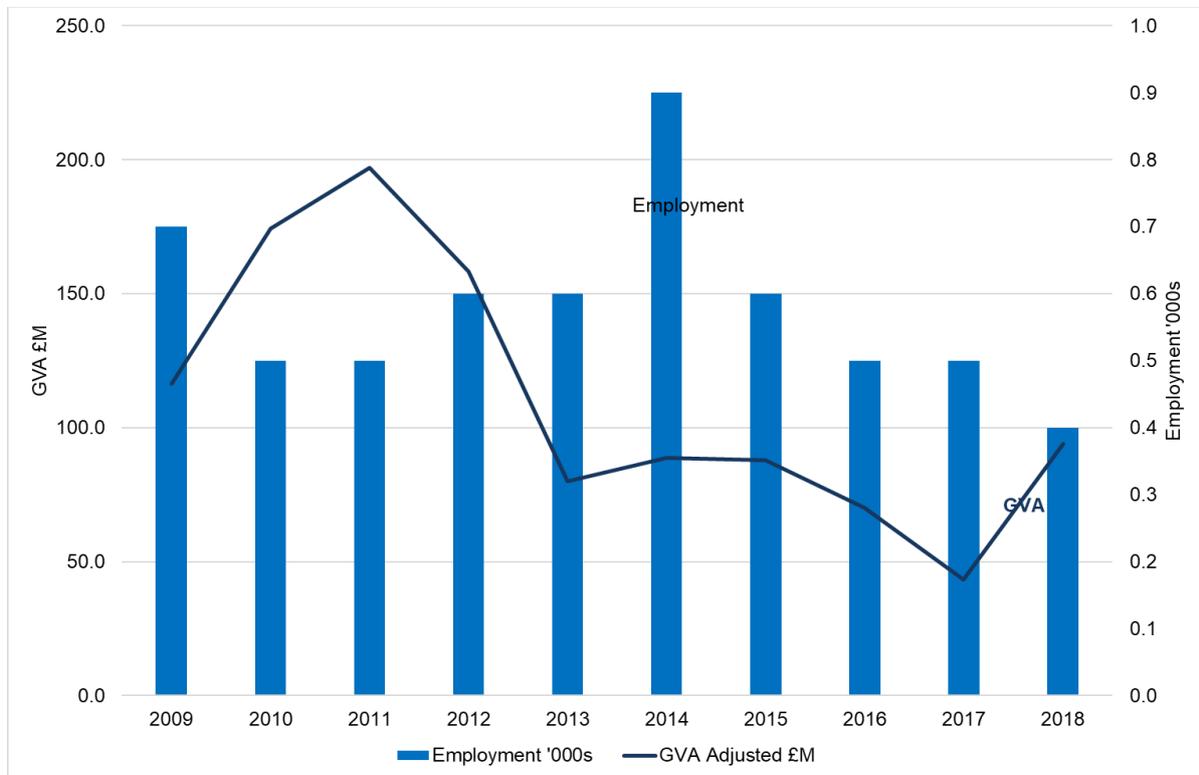
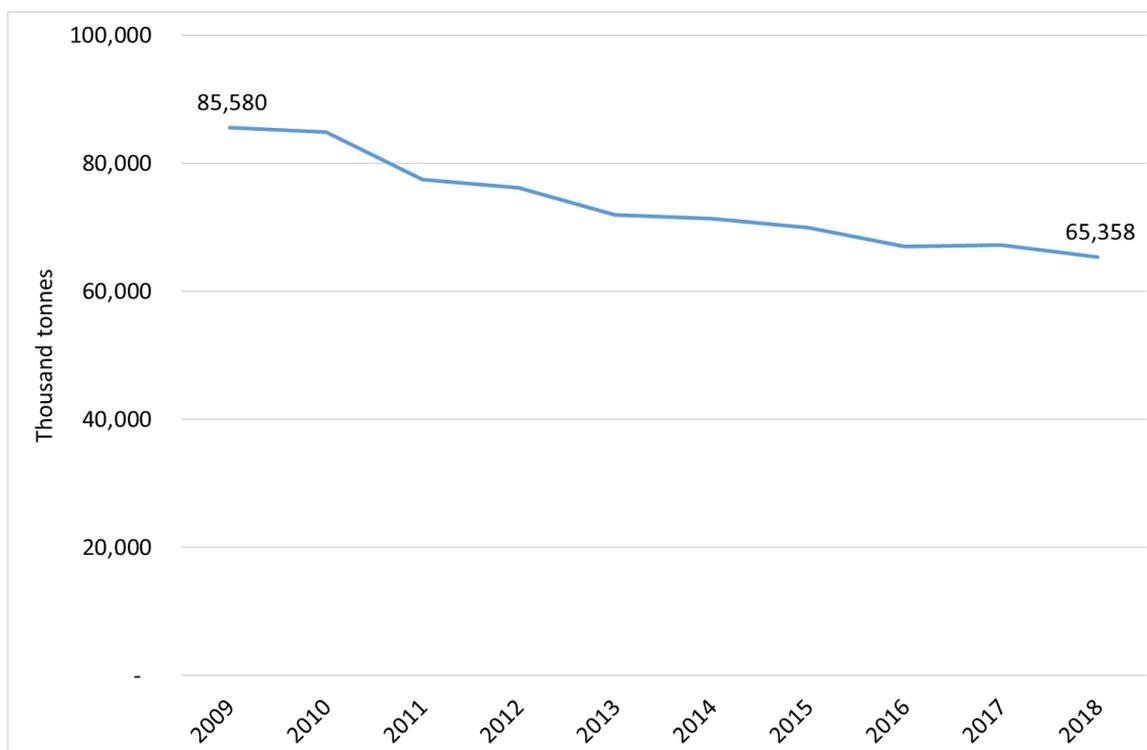


Figure 16 shows Transport Scotland’s statistics for the tonnage of freight traffic through Scottish ports. There were 65 million tonnes of freight handled by ports in Scotland in 2018, a 3% reduction on 2017. However, between 2009 and 2018 the total tonnage of freight traffic through Scottish ports reduced by 24%.

Figure 16: Freight water transport – freight tonnage through Scottish ports, 2009 – 2018



Source: DfT [Maritime and shipping statistics](#) Table PORT0101.

9.9 Freight water transport – by geography

The highest freight traffic in 2018 was through Forth ports (43% of tonnage through the top 11 ports), Clyde ports (15%) and Glensanda (10%).

Table 14: Distribution of total freight tonnages through Scotland's 11 major ports, 2018

Port	Tonnage	% of total tonnage through Scotland's top 11 ports
Aberdeen	4,138	7%
Cairnryan	2,857	5%
Clyde	9,087	15%
Cromarty Firth	275	0%
Dundee	608	1%
Forth	26,587	43%
Glensanda	5,943	10%
Orkney	3,470	6%
Peterhead	1,131	2%
Stranraer / Loch Ryan	2,546	4%
Sullom Voe	5,329	9%
TOTAL	61,969	100%

Source: Transport Scotland, Scottish Transport Statistics No 38 2019 Edition.

10. Renting & leasing of water transport equipment

10.1 Introduction

This class includes renting and leasing of marine passenger and freight transport equipment e.g. commercial boats and ships, without an operator. It excludes renting of pleasure boats, water-transport equipment with operator and financial leasing.

10.2 Key economic points

In 2018, renting and leasing of water transport equipment **generated £16 million in GVA**: accounting for 0.01% of the overall Scottish economy and 0.4% of the marine economy GVA.

The renting and leasing industry provided employment for **around 200 people** (headcount), contributing 0.01% of the total Scottish employment and 0.3% of the marine economy employment.

10.3 Renting and leasing – trends

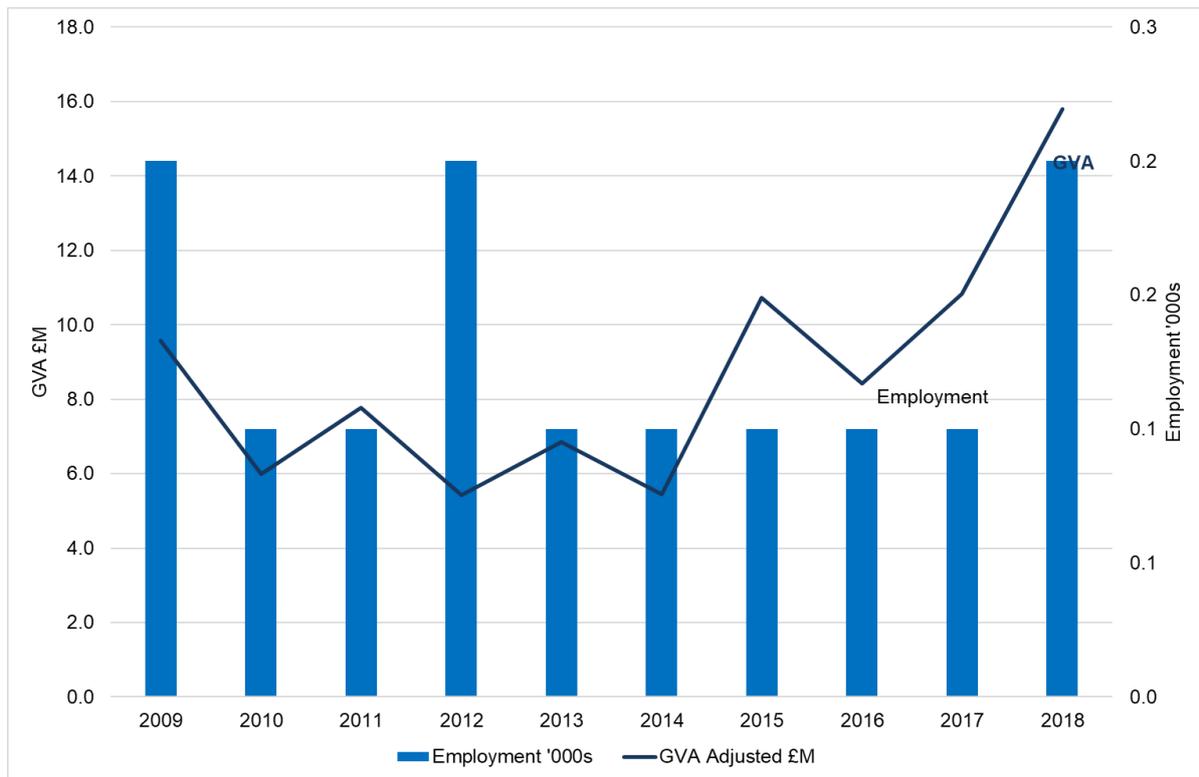
From 2017 to 2018, the GVA from the renting and leasing industry (adjusted to 2018 prices) increased by 46%, while the longer term trend from 2009 to 2018 showed that renting and leasing GVA increased by 65%.

From 2009 to 2018, employment was unchanged, though the low numbers employed in the industry mean relatively small changes can generate large percentage differences. For the duration of the time series, employment in the industry sector has been between 100 or 200 people (headcount), which is at the limit of the accuracy of the SABS survey figures.

Table 15: Renting and leasing of water transport equipment - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment '000s	GVA Per Head £
2009	10	21	0.2	47,902
2010	6	12	0.1	59,837
2011	8	14	0.1	77,811
2012	5	12	0.2	27,178
2013	7	12	0.1	68,587
2014	5	13	0.1	54,525
2015	11	19	0.1	107,356
2016	8	14	0.1	84,296
2017	11	18	0.1	108,264
2018	16	26	0.2	79,000

Figure 17: Renting and leasing of water transport equipment - GVA and employment (headcount), Scotland, 2009 to 2018 (2018 prices)



10.4 Renting and leasing – by geography

Renting and leasing is a relatively small economic sector and so geographic breakdowns of the data are not available.

11. Marine tourism and recreation

11.1 Introduction

In 2018, Marine Scotland developed the methodology for estimating marine tourism and recreation, separately from all tourism. This is based on SABS SIC codes used in the SABS reporting on [Sustainable Tourism growth sectors](#)¹⁰ and where businesses are located in postcodes within 100 metres of the coastline. While this may include some businesses that are not marine-related, and not include some that are marine-related, it provides a reasonable and replicable method of estimating the economic contributions of marine tourism and recreation businesses using existing data.

11.2 Key economic points

In 2018, marine tourism **generated £579 million GVA**: accounting for 0.4% of the overall Scottish economy and 13% of the marine economy GVA.

The marine tourism industry **provided employment for 29,700 people** (headcount), contributing 1.1% of the total Scottish employment. It is the biggest marine economy employer accounting for 40% of the marine economy employment. The figures in this report are headcounts so while marine tourism and recreation dominates marine economy employment figures, the full time equivalent employment will be significantly smaller because of the seasonal nature of tourism and recreation and the part time nature of the employment.

Scottish tourism as a whole was estimated to be worth £4.1 billion in GVA in 2018. Thus marine tourism is estimated to account for around 14% of all Scottish tourism, which is similar to the 2017 figure.

11.3 Marine tourism – trends

From 2017 to 2018, the GVA from marine tourism (adjusted to 2018 prices) decreased by 6%, while the longer term trend from 2009 to 2018 showed that marine tourism GVA increased by 55%.

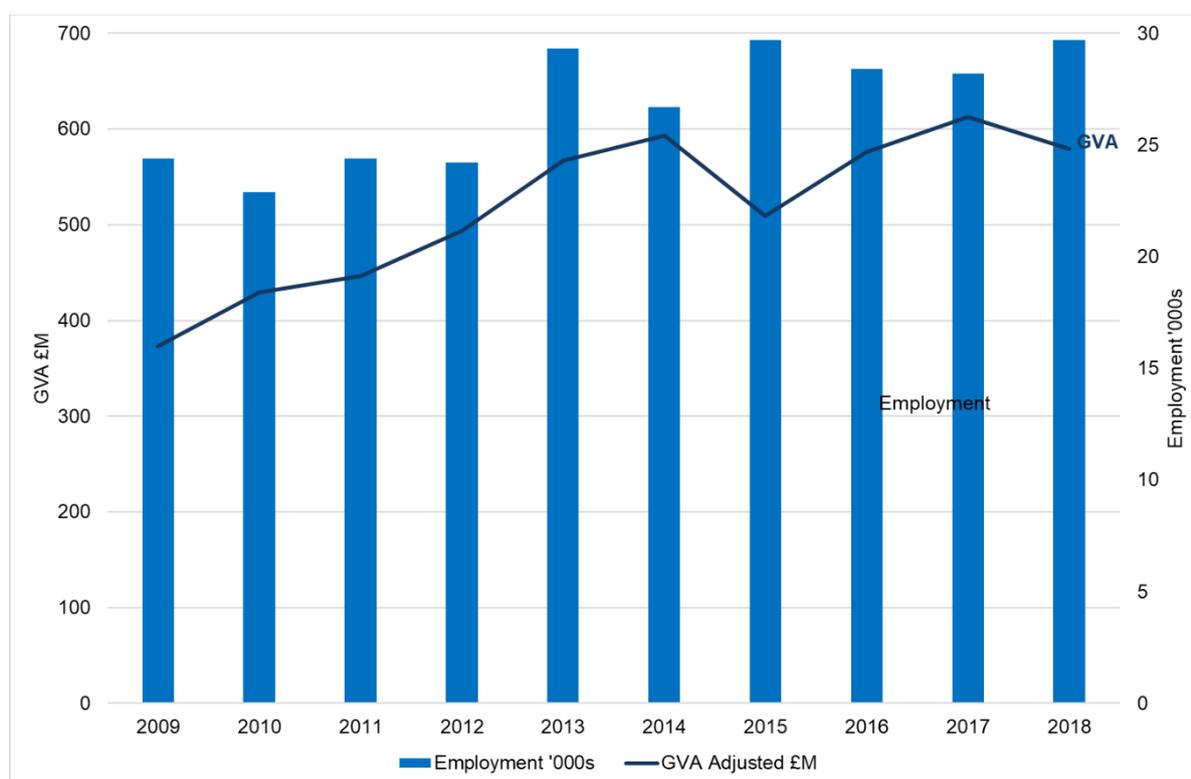
From 2009 to 2018, employment increased by 22%.

¹⁰ Growth Sector Statistics <https://www.gov.scot/publications/growth-sector-statistics/>

Table 16: Marine tourism - GVA, turnover, employment and GVA per head, 2009 to 2018 (2018 prices)

Year	GVA £M	Turnover £M	Employment Headcount 000's	GVA Per Head £
2009	373	780	24.4	15,279
2010	429	868	22.9	18,743
2011	446	910	24.4	18,288
2012	494	978	24.2	20,398
2013	567	1,040	29.3	19,344
2014	593	1,057	26.7	22,219
2015	510	951	29.7	17,157
2016	576	1,071	28.4	20,290
2017	613	1,058	28.2	21,738
2018	579	1,038	29.7	19,498

Figure 18: Marine tourism - GVA and employment (headcount), 2009 to 2018 (2018 prices)



11.4 Marine tourism by geography

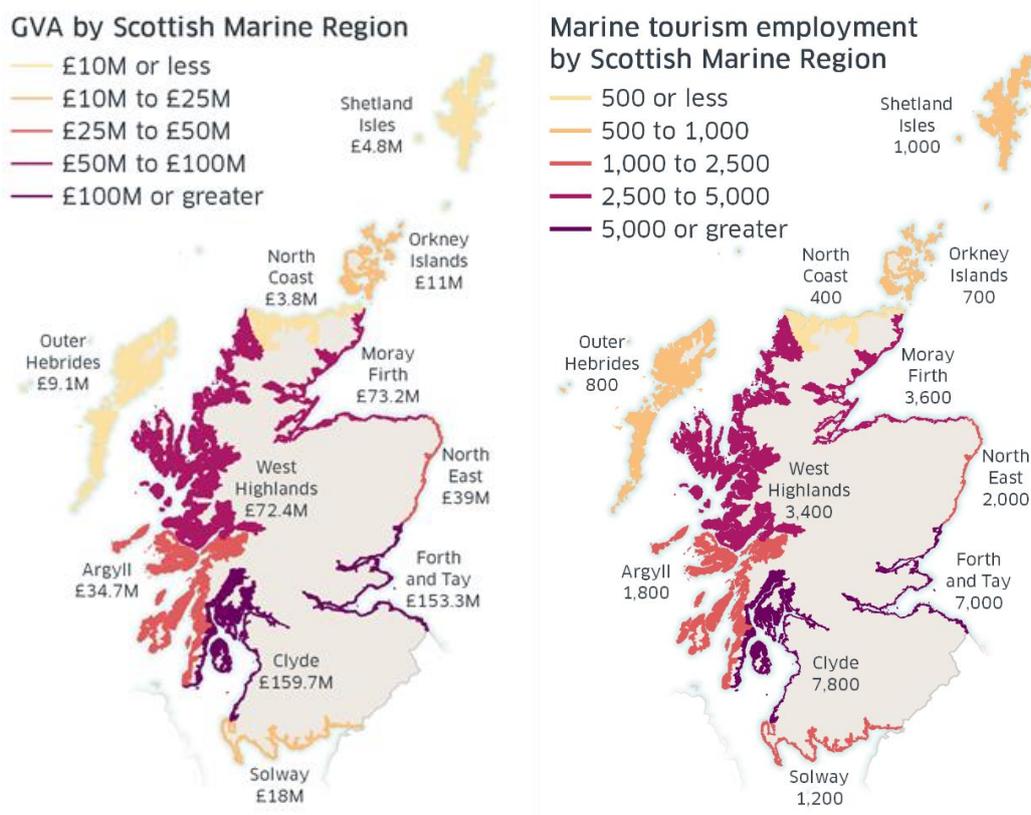
The marine tourism economic values were disaggregated to Scottish Marine Regions (attribution by local authority is partially disclosive due to the small quantity of data). While SMRs are geographies that relate to the sea, marine tourism is earned on land and so Figure 19 shows outputs around the coast.

The Clyde region was the largest contributor to marine tourism GVA in 2018 at £160 million (28% of the GVA), and to employment in 2018, (26% of the employment). The Forth and Tay region was the next highest accounting for 26% of the GVA and 24% of the employment.

Table 17: Marine tourism - GVA, turnover and employment, by SMR, 2018

SMR	GVA £M	Turnover £M	Headcount '000s
Clyde	159.7	299.2	7.8
Forth and Tay	153.3	267.9	7
Moray Firth	73.2	130	3.6
West Highlands	72.4	123.2	3.4
North East	39	69.1	2
Argyll	34.7	63.8	1.8
Solway	18	31.4	1.2
Orkney Islands	11	20.9	0.7
Outer Hebrides	9.1	17.1	0.8
Shetland Isles	4.8	9.6	1
North Coast	3.8	6.2	0.4
Grand Total	579.1	1,038	29.7

Figure 19: Marine tourism GVA and employment by SMR, 2018



Scottish Government (Marine Scotland) 2020. Contains National Statistics data © Crown copyright and database right

12. Other marine economic sectors

The information provided in this report is based on available, validated economic data sources. There are other sectors that contribute to the marine economy, such as offshore renewable energy and research and development (R&D). However, because relevant data is not readily available it has not been possible to include them in this report. The estimates within this report are therefore likely to provide a lower bound of the economic value of Scotland's marine economy.

The fishing section reports on commercial sea fisheries activity. This does not include the coastal netting for wild salmon and trout, which are not currently included within these Marine Economic Statistics as economic data is not available.

Renewable energy has continued to grow in Scotland and marine renewable energy (wind, wave and tidal) has increased by 214% in capacity and a 142% in generation between 2014 and 2018¹¹. A number of offshore wind developments are under construction and some are now fully operational, including the world's first floating offshore windfarm, with further developments planned. However, while the capacity and generation are well documented, the financial information needed to estimate GVA specifically for the offshore elements of renewable energy is not yet available. In the coming year research is planned to explore the availability of specific marine, renewable energy related economic data in Scotland.

Seaweed harvesting is also a potential addition to the future marine economy statistics report when data and appropriate methods have been developed.

¹¹ BEIS Energy Trends, September 2019 Table 6.1.
<https://www.gov.uk/government/collections/energy-trends#2019-data>

13. Related reports and statistics

13.1 National Marine Assessment

The 2017 Marine Economic Statistics were used in the National Marine Assessment to be published in 2020. The assessment provides the evidence base for the National Marine Plan. The plan is due to be reviewed in 2021 and will consider the economic value of the marine environment alongside environmental considerations.

13.2 SABS Growth Sector Statistics

SABS Growth Sector Statistics present sustainable tourism information in support of national strategies on increasing the economic contribution from sectors where Scotland has a distinct comparative advantage. This information has been used in the relevant sections of this statistical bulletin.

13.3 The economic contribution of the Maritime sector in Scotland:

Maritime UK is an organisation that brings together the UK's shipping, ports, services, engineering and leisure marine industries to promote and benefit the sector. In 2019, they commissioned and published the report: [*The economic contribution of the Maritime sector in Scotland*](#)¹². This report presents Scotland's maritime economy and focuses on industries specific to the interest of Maritime UK members. The Maritime sector was defined as consisting of the Shipping, Ports, Marine and Maritime Business Services industries. Marine Oil and Gas activities are also included. Maritime UK's report estimated that in 2017 the Maritime sector directly supported just under £9.9 billion in turnover, £3.7 billion in GVA and 41,000 jobs in Scotland. The Maritime UK's report and these marine economic statistics are therefore related, but not the same.

The Maritime UK analysis was initially a one-off project producing a suite of reports in 2017, however, updated versions have been produced since. The marine economic statistics are produced as an annual series, which requires regular consistent data sources to produce time series data. For this reason, the contents of the latest Maritime UK report will be analysed to establish whether additional industry sectors could usefully be included in the Marine Economic Statistics, bearing in mind the need for suitable, reliably-available source data.

13.4 Other source reports

The methodology annex describes the statistical publications that were used in the estimations presented in this bulletin.

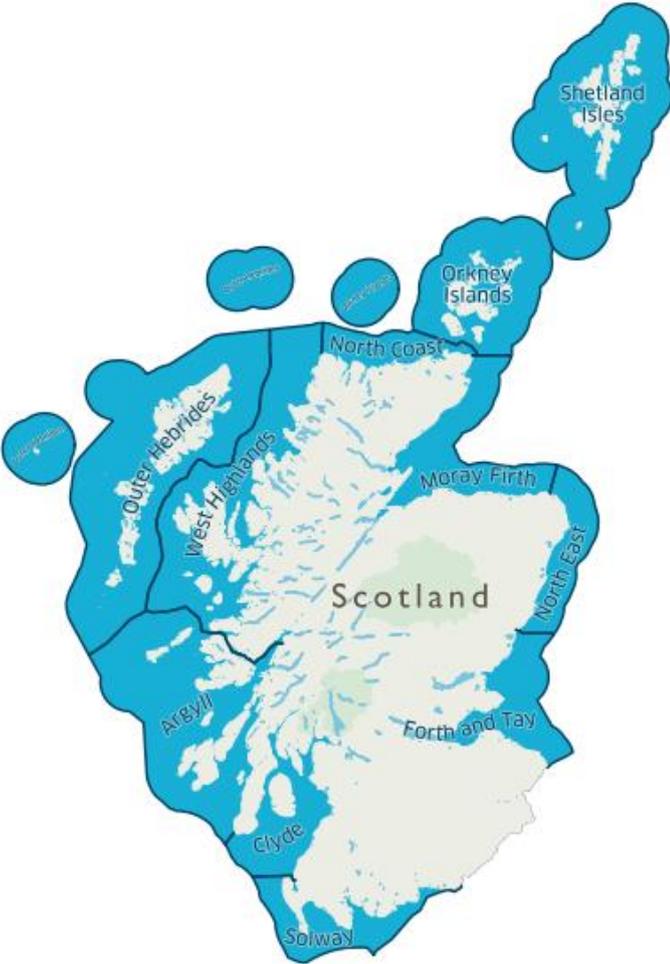
¹² The Economic Contribution of the Maritime Sector in Scotland: A report for Maritime UK https://www.britishports.org.uk/system/files/documents/cebr_maritime_uk_scotland_report_051119.pdf

14. References and Glossary

Aquaculture	Aquaculture or fish farming is the breeding and harvesting of plants and animals in water. It can take place in natural water bodies such as ponds, lakes, marshland or brackish water and the ocean. It can also be conducted in tanks, commonly found in fish hatcheries.
Aquaculture statistics Marine Scotland	The Marine Scotland aquaculture statistics are based on two annual aquaculture surveys; one on finfish and one on shellfish. These are the source for production and employment data. https://www.gov.scot/collections/scottish-fish-farm-production-surveys/ https://www.gov.scot/publications/scottish-shellfish-farm-production-survey-2018/
Annual Population Survey (APS)	The Annual Population Survey was used as the source for employment statistics. https://www.gov.scot/publications/scotlands-labour-market-people-places-and-regions-background-tables/
CEFAS	Centre for Environment, Fisheries and Aquaculture Science www.cefasc.co.uk/ . CEFAS annually coordinates the UK collection of economic data on aquaculture for the DCF.
Data Collection Framework DCF data	The European Commission's Data Collection Framework (DCF) establishes a European Community framework for the collection, management and use of data in the fisheries industry. The Data Collection Framework (DCF) regulation is EU Regulation 2017/1004 which replaced EC Reg 199/2008. https://www.gov.uk/guidance/data-collection-framework Under the regulations, member states are required to compile a wide range of biological and economic data as specified in the Commission Implementing Decision (EU) 2016/1251 of 12 July 2016 which sets out the requirements for 2017-19. The requirements include: <ul style="list-style-type: none"> • biological data on stocks caught by Union commercial fisheries and by recreational fisheries; • data to assess the impact of Union fisheries on the marine ecosystem; • detailed data on the capacity and activity of Union fishing; • social and economic data on fisheries; • social, economic and environmental data on aquaculture;

	The DCF social and economic data provided the source for producing the economic statistics for aquaculture and fishing.
Fleet Economic Survey Seafish publication	The Seafish Fleet Economic Performance Dataset contains financial, economic and operation performance indicators for the sea fisheries fleet for the period 2009-2019.
Food Standards Agency (FSA)	The FSA publish data on Approved Food Establishments. The data was used to provide the geographic distribution of fish processing plants. https://data.gov.uk/dataset/2c80e0ce-ee1c-4f26-ba6f-1e1ae1bd8ee9/approved-food-establishments
Full Time Equivalent (FTE)	This allows part-time workers' working hours to be standardised against those working full-time. The standardised figure is 1.0, which refers to a full-time worker. The SABS data is presented as head counts , i.e. not taking working hours (or seasonal employment) into account. All employment counts in this publication are presented as head counts to remain consistent with SABS presentation.
Gross Value Added (GVA)	Approximate Gross Value Added is the value generated by any unit engaged in the production of goods and services less any intermediate inputs into the production process. While Turnover measures the value of the goods and services produced, GVA measures the net of inputs used (i.e. turnover less the value of intermediate inputs). GVA is a measure of the contribution the economy made by to the production of goods and services, and as such is a more useful indication of contribution to the economy.
Growth Sector Statistics Database	Scotland's Economic Strategy identifies sectors where Scotland has a distinct comparative advantage, including Food & Drink (including agriculture & fisheries). Figures from the Growth Sector Statistics Database are not directly comparable with these Marine Economic Statistics due to methodological differences. https://www.gov.scot/publications/growth-sector-statistics/
Headcount	SABS reports employment by headcount i.e. the number of individuals working in a sector, not taking account of their working hours (or seasonal employment). All employment statistics in this publication are presented as head counts to remain consistent with SABS presentation. See FTE.
Marine Sector	Marine Scotland has defined the SABS industrial categories that make up the marine economy. These can be seen in Annex A. They are supplemented by other data in some industry sectors.
Marine Management Organisation (MMO)	The MMO licences, regulates and plans marine activities in the seas around England so that they're carried out in a

	sustainable way. It is also manages fisheries data collection for the UK.
National Accounts Scotland	Scottish GVA, taken from the National Accounts Scotland. https://www.gov.scot/publications/gdp-quarterly-national-accounts-for-scotland-2018-q4/
Processing sector statistics Seafish publication	Annual financial surveys of UK fish processors and a census of all UK fish processing businesses every two years. This survey is referred to but is not used in this report as the SABS data was more consistent. https://www.seafish.org/insight-and-research/seafood-processing-data-and-insight/
Quarterly National Accounts of Scotland	The Quarterly National Accounts of Scotland provided national-level GVA estimates. The 2016 statistics for Scotland's onshore economy were used. https://www.gov.scot/publications/gdp-quarterly-national-accounts-for-scotland-2018-q4/
Scottish Annual Business Statistics (SABS)	SABS provides the core data for this publication. SABS contains data mainly on the Production (including Manufacturing), Construction and Service Sectors in Scotland. The SABS data is published in tables that include information on businesses' employment, turnover, purchases, estimates of approximate gross value added and labour costs. Businesses in the survey are classified according to industry group, geographical area and ownership. https://www.gov.scot/collections/business-and-innovation-statistics/
Scottish Marine Regions	Scottish Marine Regions were introduced by The Scottish Marine Regions Order 2015 . The boundaries identify the areas for preparing and adopting regional marine plans. A map of these regions is shown below:

	
<p>Scottish Sea Fisheries Statistics Marine Scotland publication</p>	<p>This is an annual statistical bulletin that provides detailed statistics on the Scottish fishing fleet, fishers employment, and the quantity and value of fish landings for the year previous to publication year. https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2018/</p>
<p>Seafish</p>	<p>Seafish is an industry funded body that supports the seafood industry to work for a sustainable, profitable future. It offers regulatory guidance and services to the seafood industry, including catching and aquaculture, processors, importers, exporters and distributors of seafood. It also collects and publishes economic and social data on seafood sectors www.seafish.org</p>
<p>Shipbuilding profile SABS analysis</p>	<p>SABS specialist analysis of Scottish shipbuilding figures in the SABS excel tables. https://www.gov.scot/publications/scottish-annual-business-statistics-2018/</p>

<p>Standard Industrial Classification - SIC Codes</p>	<p>A Standard Industrial Classification (SIC) is used for classifying business establishments and other statistical units by the type of economic activity in which they are engaged. The classification provides a framework for the collection, tabulation, presentation and analysis of data, and its use promotes uniformity in defining and identifying industries. In addition, it can be used for administrative purposes and by non-government bodies as a convenient way of classifying industrial activities into a common structure. The current codes were introduced in 2007 and are the reason that the reporting in this publication runs from 2008 onwards.</p> <p>SIC 2007: structure and explanatory notes</p>
<p>Sustainable Tourism by Local Authority Area SABS Analysis</p>	<p>SABS specialist analysis of Scottish tourism by local authority in the SABS excel tables.</p> <p>https://www.gov.scot/publications/scottish-annual-business-statistics-2018/</p>
<p>Transport Scotland</p>	<p>Transport Scotland produce transport activity statistics. The passenger and freight activity data was extracted from Scottish Transport Statistics – No 38 – Datasets. Chapter 9 Water Transport. The data was supplied by ferry operators and is not classified as National Statistics.</p> <p>https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/</p>

15. Tables

15.1 Economic Overview

Table 18: Economic Overview - Scotland's marine economic statistics by sector, 2018

Industry sector	GVA			Turnover		Employment ⁵		
	GVA £M	% of Scotland Marine Economy	% of Scotland total economy ⁴	Turnover at 2017 prices £M	% of Scotland Marine Economy	Sector Employment '000s ⁵	% of Scotland Marine Economy	% of Scotland total economy
Fishing ¹	301	7%	0.21%	593	5%	4.9	7%	0.18%
Aquaculture ²	238	6%	0.17%	921	9%	2.2	3%	0.08%
Support for oil & gas	1,798	42%	1.25%	4,006	37%	16.6	22%	0.63%
Processing	338	8%	0.24%	1,728	16%	7.6	10%	0.29%
Ship building	289	7%	0.20%	1,238	11%	7.1	10%	0.27%
Construction and water transport services	557	13%	0.39%	625	6%	4.0	5%	0.15%
Passenger water transport	83	2%	0.06%	305	3%	1.5	2%	0.06%
Freight water transport	94	2%	0.07%	300	3%	0.4	1%	0.02%
Renting and leasing of water transport equipment	16	0%	0.01%	26	0%	0.2	0%	0.01%
Marine Tourism ³	579	13%	0.40%	1,038	10%	29.7	40%	1.13%
Marine Total	4,294	100%	3.00%	10,780	100%	74.2	100%	2.81%
Scotland total ⁴	143,328					2,638.4		

Source: Marine Scotland, Scottish Annual Business Statistics, Office for National Statistics.

Footnotes: Turnover and GVA adjusted for inflation based on 2018 price estimates.

1 – Fishing values taken from Marine Scotland Sea Fisheries Statistics, GVA estimated using Marine Scotland and Seafish Statistics.

2 – Aquaculture values taken from Marine Scotland Aquaculture Surveys, GVA estimated using Marine Scotland and DCF statistics.

3 – Marine tourism values include specific tourism SIC groups (See Annex A) within 100m of the coast.

4 - Scotland total GVA is from Quarterly National Accounts Scotland. Scotland employment is from the Annual Population Survey.

5 - Employment figures are head counts.

Table 19: Economic Overview - GVA time series by industry, 2009 to 2018, £ million (2018 prices)

Industry sector	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fishing ¹	237	210	247	236	210	292	228	319	327	301
Aquaculture ²	134	171	182	164	229	265	115	225	431	238
Support for oil & gas	3,017	3,024	2,385	2,778	2,494	2,300	2,666	2,193	2,178	1,798
Processing	347	363	372	304	419	448	334	401	392	338
Ship building	562	565	553	510	452	552	460	213	488	289
Construction and water transport services	443	260	357	380	560	504	527	439	623	557
Passenger water transport	81	91	52	102	99	134	93	64	87	83
Freight water transport	116	174	197	158	80	89	88	70	43	94
Renting & leasing of water transport equipment	10	6	8	5	7	5	11	8	11	16
Marine Tourism ³	373	429	446	494	567	593	510	576	613	579
Grand Total	5,319	5,293	4,800	5,131	5,118	5,183	5,031	4,508	5,194	4,294

Source: Marine Scotland, Scottish Annual Business Statistics, Office for National Statistics.

Footnotes

GVA adjusted for inflation based on 2018 price estimates.

1 – Fishing GVA estimated using Marine Scotland and Seafish Statistics.

2 – Aquaculture GVA estimated using Marine Scotland and DCF statistics. 2017 aquaculture GVA updated following receipt of additional DCF survey returns see Annex B section 17.6.

3 – Marine tourism GVA includes specific tourism SIC groups within 100m of the coast.

SABS categories for oil and gas services changed between 2010 and 2011. See section 17.7.

Table 20: Economic Overview - Turnover time series by industry, 2009 to 2018, £ million (2018 prices)

Industry sector	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fishing ¹	537	518	578	541	500	565	472	593	602	593
Aquaculture ²	510	645	686	620	762	795	712	830	1,109	921
Support for oil & gas	7,486	6,511	6,242	6,491	6,656	7,268	7,152	4,657	4,628	4,006
Processing	1,692	1,666	1,434	1,463	1,708	1,812	1,664	1,670	1,826	1,728
Ship building	1,514	1,632	1,602	1,682	1,332	1,511	1,738	1,124	1,562	1,238
Construction and water transport services	629	470	619	890	1,068	873	899	697	763	625
Passenger water transport	391	271	399	343	382	353	232	179	203	305
Freight water transport	383	343	398	279	383	288	252	190	119	300
Renting & leasing of water transport equipment	21	12	14	12	12	13	19	14	18	26
Marine Tourism ³	780	868	910	978	1,040	1,057	951	1,071	1,058	1,038
Grand Total	13,943	12,935	12,882	13,299	13,844	14,536	14,091	11,026	11,889	10,780

Source: Marine Scotland, Scottish Annual Business Statistics, Office for National Statistics.

Footnotes

Turnover adjusted for inflation based on 2018 price estimates.

1 – Fishing values taken from Marine Scotland Sea Fisheries Statistics, GVA estimated using Marine Scotland and Seafish Statistics.

2 – Aquaculture values taken from Marine Scotland Aquaculture Surveys, GVA estimated using Marine Scotland and DCF statistics.

3 – Marine tourism values include specific tourism SIC groups (See Annex A) within 100m of the coast.

SABS categories for oil and gas services changed between 2010 and 2011. See section 17.7.

Table 21: Economic Overview - Employment time series by industry, 2009 to 2018, '000s

	Headcount '000s									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fishing ¹	5.4	5.2	5.0	4.7	5.0	4.8	4.8	4.8	4.8	4.9
Aquaculture ²	1.8	1.9	1.8	1.9	1.9	2.1	2.2	2.3	2.2	2.2
Support for oil & gas	18.2	18.4	18.6	18.5	17.4	20.0	21.5	19.7	17.8	16.6
Processing	8.3	8.0	7.5	7.7	7.1	8.0	7.5	7.6	7.7	7.6
Ship building	6.9	7.1	7.2	7.1	7.0	7.3	7.2	7.2	7.7	7.1
Construction and water transport services	3.1	2.9	3.3	3.1	3.9	3.3	3.8	4.0	4.4	4.0
Passenger water transport	1.6	1.5	1.5	1.5	1.6	1.8	1.7	1.4	1.1	1.5
Freight water transport	0.7	0.5	0.5	0.6	0.6	0.9	0.6	0.5	0.5	0.4
Renting & leasing of water transport equipment	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2
Marine Tourism ³	24.4	22.9	24.4	24.2	29.3	26.7	29.7	28.4	28.2	29.7
Grand Total	70.6	68.5	69.9	69.5	73.9	75.0	79.1	76.0	74.5	74.2

Source: Marine Scotland, Scottish Annual Business Statistics, Office for National Statistics.

Footnotes

1 – Fishing values taken from Marine Scotland Sea Fisheries Statistics, GVA estimated using Marine Scotland and Seafish Statistics.

2 – Aquaculture values taken from Marine Scotland Aquaculture Surveys, GVA estimated using Marine Scotland and DCF statistics.

3 – Marine tourism values include specific tourism SIC groups (See Annex A) within 100m of the coast.

SABS categories for oil and gas services changed between 2010 and 2011. See section 17.7.

Employment figures are head counts (not adjusted to Full Time Equivalents).

Table 22: Economic Overview - by local authority, 2017 to 2018 (2018 prices)

Local authority	GVA £M		Turnover £M		Employment '000s	
	2017	2018	2017	2018	2017	2018
Aberdeen City	1,955	1,669	3,957	3,457	16.9	15.5
Aberdeenshire	963	949	2,203	2,238	9.8	10.1
Angus	76	59	89	83	1.1	1.2
Argyll & Bute	138	131	347	349	5.2	5.2
City Of Edinburgh	36	35	105	119	1.4	1.5
Clackmannanshire	1	*	2	*	*	*
Dumfries & Galloway	107	84	269	258	2.8	2.7
Dundee City	16	8	23	14	0.4	1
East Ayrshire	*	*	*	1	*	*
East Dunbartonshire	*	*	*	*	*	*
East Lothian	34	27	67	60	1.3	1.4
East Renfrewshire	*	*	*	*	*	*
Falkirk	*	*	*	*	0.7	0.7
Fife	146	8	543	250	4.7	4.4
Glasgow City	279	236	*	*	4.4	4.1
Highland	259	218	640	614	8.9	9.2
Inverclyde	125	42	169	139	1.2	1.7
Midlothian	*	*	*	*	*	*
Moray	26	26	51	66	0.9	0.9
Na H-Eileanan Siar	43	49	127	123	1.4	1.4
North Ayrshire	62	66	108	101	1.5	1.6
North Lanarkshire	*	8	*	22	0.2	0.2
Orkney Islands	35	33	70	97	1.3	1.4
Perth & Kinross	4	2	22	24	0.3	0.4
Renfrewshire	33	37	58	71	1.6	1.6
Scottish Borders	28	27	5	5	1.2	1.2
Shetland Islands	169	141	320	308	2.1	2.1
South Ayrshire	43	34	75	62	1.2	1.3
South Lanarkshire	12	9	*	*	*	0.3
Stirling	15	14	24	24	0.7	0.7
West Dunbartonshire	18	22	31	35	0.3	0.5
West Lothian	3	3	7	9	0.1	0.2
<i>Unallocated</i>	<i>570</i>	<i>358</i>	<i>2,578</i>	<i>2,250</i>	<i>3.1</i>	<i>2.2</i>
Scotland total	5,194	4,294	11,889	10,780	74.5	74.2

Source: Scottish Annual Business Statistics and MS statistics. Marine totals are compiled from combined SABS SIC codes – see Annex A.

Notes: Turnover and GVA are adjusted for inflation based on 2018 price estimates.

Employment figures are head counts only (not adjusted to FTEs).

The methodology used to combine the SABS and other statistics is shown in **Annex B: Methodology and source data, Notes about tables.**

Totals may not sum due to rounding.

* = Denotes disclosive data.

15.2 Sea Fisheries

Table 23: Fishing - GVA and fishing income by Scottish vessels, by local authority, 2015 to 2018 (2018 prices)

Local authority	GVA (2018 prices) £M				Value of landings (2018 prices) £M			
	2015	2016	2017	2018	2015	2016	2017	2018
Aberdeen City	0.1	0.1	0.2	0.3	0.2	0.2	0.4	0.4
Aberdeenshire	100.3	136.7	149.0	137.0	205.7	248.5	265.2	267.1
Angus	0.8	1.3	1.5	1.8	1.8	2.3	2.9	3.1
Argyll & Bute	11.4	14.4	14.8	13.5	24.1	28.4	29.0	28.6
Edinburgh, City Of	0.1	0.2	0.1	0.0	0.3	0.4	0.3	0.0
Dumfries & Galloway	8.2	8.2	9.5	5.6	16.8	18.4	18.2	16.2
East Lothian	0.9	1.5	1.6	1.5	2.2	2.9	3.0	3.0
Fife	1.5	2.4	2.9	2.5	4.0	4.9	5.8	5.7
Highland	26.8	30.9	26.6	27.5	56.9	62.0	55.6	56.3
Moray	4.7	7.6	8.0	6.4	12.8	16.7	16.7	16.4
Na h-Eileanan Siar	6.1	7.9	7.3	6.9	12.3	14.6	14.3	13.9
North Ayrshire	0.7	0.8	0.9	1.2	1.5	1.5	1.6	2.2
Orkney Islands	7.6	9.8	10.9	11.2	16.8	19.7	19.9	23.3
Scottish Borders	1.7	2.4	3.1	2.9	3.6	4.5	5.4	5.3
Shetland Islands	51.0	75.2	70.4	71.9	89.2	120.4	108.3	116.9
South Ayrshire	4.7	5.4	5.6	5.0	9.5	11.1	10.9	11.9
<i>Unallocated</i>	<i>1.2</i>	<i>14.0</i>	<i>14.9</i>	<i>6.2</i>	<i>14.1</i>	<i>36.9</i>	<i>44.5</i>	<i>22.4</i>
Scotland Total	228.0	319.0	327.5	301.3	471.8	593.5	602.1	592.7

Source: Marine Scotland Sea Fisheries Statistics, Seafish Fleet Economic Survey.

Notes: Values adjusted for inflation based on 2018 price estimates. Seafish produced estimated GVA based on the vessel's registered port. Where values became disclosive they were not reported to a local authority and are shown here as 'Unallocated'

15.3 Aquaculture

Table 24: Aquaculture time series: GVA, production volume, value and employment, 2009 to 2018 (2018 prices) ¹

	Year	GVA £ Million			Volume (Thousand Tonnes)			Value £ Million			Employment Headcount		
		Fin	Shell	Total	Fin	Shell	Total	Fin	Shell	Total	Fin	Shell	Total
GVA Values calculated using mean GVA ratio between 2013 and 2016	2009	129	4.8	134	151	6.6	158	501	8.9	510	1,416	345	1,761
	2010	165	5.1	171	159	7.5	167	636	9.6	645	1,525	399	1,924
	2011	176	5.9	182	163	7.3	170	675	11.0	686	1,467	343	1,810
	2012	159	5.2	164	168	6.5	175	610	9.7	620	1,540	358	1,898
	2013	224	5.1	229	169	6.9	176	752	9.7	762	1,531	333	1,864
GVA values calculated using actual CEFAS annual DCF data	2014	259	5.9	265	185	8.0	193	784	11.3	795	1,796	345	2,141
	2015	109	6.5	115	180	7.5	188	701	10.7	712	1,833	344	2,177
	2016	218	6.6	225	171	8.0	179	818	12.1	830	1,964	315	2,279
	2017	422	9.0	431	197	8.7	206	1,096	12.6	1,109	1,916	328	2,244
	2018	233	5.6	238	162	7.2	170	912	9.5	921	1,940	298	2,238

Source: Marine Scotland Aquaculture survey statistics, DCF data.

Notes: GVA and Value adjusted for inflation based on 2018 price estimates.

Values are rounded and so totals may not match exactly.

¹ – 2017 GVA totals updated following receipt of additional DCF survey returns for 2017 alongside the 2018 returns, for more information see Annex B section 17.6.

Table 25: Aquaculture time series: Atlantic salmon production value by SMR group, 2013 to 2018 (2018 prices)

Scottish Marine Region group	Production value (£million)					
	2013	2014	2015	2016	2017	2018
Argyll & Clyde	157	149	140	152	252	211
Orkney Islands	52	56	43	72	95	118
Outer Hebrides	166	144	106	160	191	173
Shetland Isles	165	198	167	184	220	202
North Coast & West Highlands	195	217	214	230	315	174
All Scotland	735	765	670	798	1,072	878

Source: Marine Scotland Aquaculture production surveys.

Figures for West Highlands and the North Coast have been merged due to commercial confidentiality.

Prices have been adjusted for inflation based on 2018 price estimates.

Table 26: Aquaculture time series: Mussel production value by SMR group, 2013 to 2018 (2018 prices)

Scottish Marine Region group	Production value (£million)					
	2013	2014	2015	2016	2017	2018
Argyll & Clyde	1.00	0.96	0.63	0.83	0.79	0.50
Outer Hebrides	0.69	0.53	0.92	0.99	0.50	0.63
Shetland Isles	5.65	7.56	7.12	7.71	8.32	5.87
West Highlands, Moray Firth & North Coast	1.46	0.76	0.63	0.95	0.70	0.82
All Scotland	8.80	9.82	9.31	10.48	10.30	7.82

Source: Marine Scotland Aquaculture production surveys and DCF data.

Figures for West Highlands, Moray Firth and the North Coast have been merged due to commercial confidentiality.

Prices have been adjusted for inflation based on 2018 price estimates.

15.4 Marine Transport

Table 27: Passenger water transport - Total passengers and vehicles carried, 2009 to 2018

	Thousands									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Passengers	10,219	9,990	9,631	9,698	9,662	9,679	9,554	10,073	10,255	10,279
Vehicles	3,135	3,072	3,071	3,076	2,972	3,074	3,146	3,372	3,467	3,456

Source: [Scottish Transport Statistics](#)¹³

¹³ Scottish Transport Statistics Datasets. Chapter 9 Water Transport, <https://www.transport.gov.scot/publication/scottish-transport-statistics-no-38-2019-edition/> .

Table 28: Freight water transport - All freight traffic through Scottish ports by Local Authority, 2009 to 2018

Thousand tonnes

Local authority	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Aberdeen City	4,570	4,164	4,165	4,493	4,263	4,231	4,376	3,770	4,058	4,138
Aberdeenshire	889	1,187	1,137	1,105	1,061	1,453	1,530	1,214	1,349	1,181
Angus	423	512	488	518	588	601	493	504	444	534
Argyll And Bute	63	111	124	59	100	109	107	57	45	12
Clyde*	12,552	12,283	13,431	15,421	14,783	16,201	12,484	8,742	8,865	9,087
Dumfries And Galloway	3,749	3,652	3,918	4,425	4,501	4,407	4,712	5,097	5,235	5,403
Dundee City	810	962	929	842	815	517	515	534	566	608
Fife	36,788	34,506	28,034	25,504	26,492	24,775	27,268	27,651	27,722	26,763
Highland	9,408	10,560	11,052	9,107	10,126	9,026	6,857	7,195	7,668	7,639
Moray	105	108	113	90	110	74	83	91	79	84
Na H-Eileanan Siar	236	258	298	284	213	242	232	217	201	189
Orkney Islands	3,241	3,244	2,344	1,729	1,054	1,151	3,945	4,615	4,852	3,470
Perth And Kinross	125	103	74	62	60	61	63	33	31	12
Shetland Islands	11,808	11,862	10,760	12,082	7,250	8,055	6,915	6,837	5,809	5,867
South Ayrshire	812	1,307	546	418	575	478	388	416	351	374
Grand Total	85,580	84,818	77,413	76,138	71,992	71,381	69,968	66,972	67,275	65,358

Source: DfT [Maritime and shipping statistics](#) Table PORT0101.

Note: Transport Scotland report freight tonnage through major and minor ports. These ports were assigned to local authorities. However, several ports in the Clyde region are only reported for statistical purposes as 'Clyde' and so the tonnage can't be allocated to the correct local authority. They are shown here under the Clyde heading, although this is not a valid local authority. Equally, Forth ports carry the highest tonnage of freight traffic, and the recording rules mean that the ports are assigned to Fife. Hence, no freight is recorded as carried through Edinburgh City local authority.

Table 29: Freight water transport - All freight traffic through Scottish ports by Scottish Marine Region, 2009 to 2018

	<i>Thousand tonnes</i>									
Scottish Marine Region	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Argyll	5,654	5,957	6,184	5,600	5,846	6,456	5,704	5,543	6,183	5,954
Clyde	13,364	13,591	13,977	15,839	15,358	16,679	12,872	9,158	9,216	9,460
Forth & Tay	38,146	36,083	29,525	26,926	27,956	25,955	28,340	28,722	28,763	27,916
Moray Firth	3,642	4,458	4,768	3,274	4,082	2,214	943	1,175	892	1,048
North Coast	252	262	277	240	264	285	252	247	280	257
North East	5,367	5,271	5,218	5,517	5,235	5,608	5,844	4,918	5,347	5,269
Orkney Islands	3,241	3,244	2,344	1,729	1,054	1,151	3,945	4,615	4,852	3,470
Outer Hebrides	236	258	298	284	213	242	232	217	201	189
Shetland Isles	11,808	11,862	10,760	12,082	7,250	8,055	6,915	6,837	5,809	5,867
Solway	3,749	3,652	3,918	4,425	4,501	4,407	4,712	5,097	5,235	5,403
West Highlands	121	182	143	222	234	330	209	443	497	525
Grand Total	85,580	84,818	77,413	76,138	71,992	71,381	69,968	66,972	67,275	65,358

Source: DfT [Maritime and shipping statistics](#) Table PORT0101.

Note: Transport Scotland report freight tonnage through major and minor ports. These ports were assigned to SMRs.

15.5 Marine Tourism

Table 30: Marine tourism - GVA, turnover, employment, by SMR, 2015 to 2018 (2018 prices)

Scottish Marine Region	GVA £M				Turnover £M				Employment Headcount '000s			
	2015	2016	2017	2018	2015	2016	2017	2018	2015	2016	2017	2018
Argyll	26.7	27.5	27.2	34.7	49.9	48.2	46.8	63.8	2	1.7	1.7	1.8
Clyde	132.9	131.9	142.1	159.7	244.8	258.3	260.8	299.2	7.5	7.5	7.2	7.8
Forth and Tay	124.6	139.0	156.8	153.3	214.1	231.3	258.8	267.9	6.4	6.4	6.5	7
Moray Firth	50.6	62.9	77.2	73.2	97.5	123.9	129.8	130.0	3.5	3.4	3.4	3.6
North Coast	4.6	6.9	6.7	3.8	9.4	10.8	10.9	6.2	0.4	0.4	0.4	0.4
North East	51.9	40.4	47.6	39.0	98.3	75.8	85.4	69.1	2.2	2	2	2
Orkney Islands	5.4	16.9	14.0	11.0	10.7	28.3	22.6	20.9	0.7	0.6	0.7	0.7
Outer Hebrides	23.1	14.0	13.1	9.1	43.7	28.9	25.2	17.1	0.8	0.8	0.7	0.8
Shetland Isles	11.5	35.5	38.1	4.8	31.1	74.9	68.3	9.6	1.1	1	0.9	1
Solway	32.8	44.1	29.4	18.0	67.2	96.8	51.6	31.4	1.5	1.4	1.4	1.2
West Highlands	45.6	57.2	60.9	72.4	84.9	93.5	98.1	123.2	3.4	3.2	3.3	3.4
Grand Total	509.6	576.2	613.0	579.1	951.3	1070.8	1058.3	1038.4	29.7	28.4	28.2	29.7

Source: SABS extract - SABS SIC codes were identified as being related to tourism and recreation. Then, all tourism businesses located in postcodes within 100 metres of the coastline were included as 'marine tourism'.

Notes:

Employment figures are head counts (not adjusted to Full Time Equivalents).

GVA and turnover values are adjusted to 2018 prices.

Totals may not sum due to rounding and disclosure control.

16. Annex A – SABS SIC Codes

The main source for the economic statistics is [Scottish Annual Business Statistics](#)¹⁴.

Throughout this document SABS class definitions are quoted from the [UK Standard Industrial Classification of Economic Activities 2007 \(SIC 2007\)](#)¹⁵

Standard Industrial Classification of Economic Activities, or SIC, is a Classification to help classify businesses according to the type of their economic activity. One or more SIC codes can be attributed to a business.

Marine totals are compiled from combined outputs for:

The 'Marine related' SIC codes were agreed with Marine Scotland for the Economic Topic Sheets, published since 2011. The codes *exclude* SIC 06 Extraction of crude petroleum and natural gas. Although oil and gas extraction is a key component of the Scottish economy, estimates are not presented here to remain consistent with UK extra regio (offshore) activity in National Accounts Statistics.

In addition to the marine related SIC codes, a marine tourism category has been derived, defined in terms of SIC codes set out in Scottish Government's Growth Sectors, for postcodes identified as being up to 100m from coast-line.

Table 31 shows the SIC codes used to extract economic values for the marine economy. For the purposes of labelling charts and discussing findings, abbreviated names have been used as shorthand for the full SABS SIC codes, these are included in the table.

¹⁴ <https://www.gov.scot/publications/scottish-annual-business-statistics-2018/>

¹⁵ <https://www.ons.gov.uk/methodology/classificationsandstandards/ukstandardindustrialclassificationofeconomicactivities/uksic2007>

Table 31: SIC codes and abbreviations used in this report

For the purposes of labelling charts and discussing findings, the following abbreviated names have been used as shorthand for the full SABS SIC codes.

Specific Marine SIC codes	Abbreviation used in this report
03.1: Fishing <i>(not extracted these statistics)</i> 03.2: Aquaculture <i>(not extracted these statistics)</i> 09.1: Support activities for petroleum and natural gas extraction 10.2: Processing and preserving of fish, crustaceans and molluscs 30.1: Building of ships and boats & 33.15: Repair and maintenance of ships and boats 42.91: Construction of water projects & 52.22: Service activities incidental to water transportation 50.1: Sea and coastal passenger water transport 50.2: Sea and coastal freight water transport 77.34: Renting and leasing of water transport equipment	Fishing Aquaculture Oil and gas services Seafood processing Ship building Construction and water transport services Passenger water transport Freight water transport Renting & leasing
Marine Tourism and Recreation SIC codes	
55.1: Hotels and similar accommodation 55.2: Holiday and other short-stay accommodation 55.3: Camping grounds, recreational vehicle parks and trailer parks 56.1: Restaurants and mobile food service activities 56.3: Beverage serving activities 79.12: Tour operator activities 79.9: Other reservation service and related activities 91.02: Museum activities 91.03: Operation of historical sites and buildings and similar visitor attractions 91.04: Botanical and zoological gardens and nature reserve activities 93.11: Operation of sports facilities 93.199: Other sports activities (not including activities of racehorse owners) 93.21 Activities of amusement parks and theme parks 93.29: Other amusement and recreation activities	Marine tourism

The SABS [Methodology page](#) provides details on all aspects of the data collection and limitations. Key points are covered in Annex B: Methodology and source data.

17. Annex B: Methodology and source data

17.1 Notes about tables

To prevent repetition of notes beneath each table, generic notes are presented in this section. Specific points about individual tables are noted as they arise in the report.

Source data : Scottish Annual Business Statistics(SABS), Office for National Statistics, Marine Scotland. Fishing and Aquaculture figures are taken from analysis of Marine Scotland statistics rather than the SABS figures. Table 32 summarises the main data sources for individual topics in this publication.

Table 32: Source data for marine economic sectors

Economic sector and SABS SIC Code	Data sources – economic measures
03.1: Fishing <i>SABS data not used</i>	Seafish Fleet Economic Survey, Marine Scotland Sea Fisheries statistics
03.2: Aquaculture <i>SABS data not used</i>	Marine Scotland Aquaculture Survey statistics: Shellfish Production Survey, and Fish Farm Production Survey Data Collection Framework (DCF) economic data ¹⁶
09.1: Support activities for petroleum and natural gas extraction (extraction is not included in this publication)	SABS
10.2: Processing and preserving of fish, crustaceans and molluscs	SABS Seafish Processing Industry statistics – available but not used Number of Plants – Food Standards Agency
30.1: Building of ships and boats & 33.15: Repair and maintenance of ships and boats	SABS
42.91: Construction of water projects & 52.22: Service activities incidental to water transportation Marine tourism	SABS
50.1: Sea and coastal passenger water transport 50.2: Sea and coastal freight water transport	SABS Transport Scotland statistics
77.34: Renting and leasing of water transport equipment	SABS

¹⁶ CEFAS annually collects **economic data** on aquaculture under the Data Collection Framework (DCF) regulation (EU Regulation 2017/1004)

Marine tourism	SABS various SIC codes (see Annex A) supplemented by geographic filters to select businesses within 100m of the coast line
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Notes:

- Employment figures are head counts (not adjusted to Full Time Equivalents).
- GVA and turnover values are adjusted to 2018 prices
- Since 2011, support activities for oil and gas were extracted using the SIC code SIC 09.1: Support activities for petroleum and natural gas extraction. However, between 2008 and 2010 these figures were disclosive and so the wider code SIC 09 Mining support activities used to provide data. While there is little difference between the code values, it is important to note the change in coverage of the industry that is the largest contributor to the marine economy. The difference is minimal - see the Oil and Gas Methodology section.
- Totals may not sum due to rounding and disclosure control.

17.2 Scottish Annual Business Statistics

The majority of economic figures in this publication have been taken from the [Scottish Annual Business Statistics](#) (SABS) publication. This provides data on a number of economic variables across a range of sectors, based on data from the Annual Business Survey (ABS) conducted by the Office for National Statistics (ONS). The SABS statistics were produced under partnership procedures between ONS and the Scottish Government. These have resulted in an improvement in the quality of the underlying data and consistency in the figures used by ONS and SG.

SABS data is attributed according to business site address e.g. a shop or factory, so data for a large company can be split over more than a single site. Rigorous checks are made to ensure that information relating to individual businesses are not disclosed, either directly or by deduction, in the figures released. In some cases this means that data cannot be presented at smaller geographies such as local authority areas.

To set the individual industry results in context, throughout this publication they have been considered in the context of the Scottish economy as a whole. The national GVA estimate was taken from the [Quarterly National Accounts of Scotland](#). The total employment in Scotland was taken from the [Annual population Survey](#).

SABS data is used to monitor growth sectors in the [Growth Sector Statistics Database](#). Figures from these Marine Economic Statistics are not directly comparable with the food and drink growth sector those in due to methodological differences.

17.2.1 Sampling methodology

The ABS uses a register of businesses (the Inter Departmental Business Register (IDBR)) to produce an estimate of all businesses etc. that make up the population. The ABS sample is designed as a stratified random sample of UK businesses from the IDBR. The inquiry results are grossed up to the register population, so that they relate to all active UK businesses on the IDBR for the sectors covered.

Scottish Government also funds an enhanced ABS sample in Scotland, to improve the quality of Scottish figures. In 2018, around 2,600 extra firms in Scotland were sampled as a result of this boost, giving a total sample size in Scotland of **around 8,300 firms**.

Scottish Annual Business Statistics are published as soon as possible after the release of ONS's regional results, which are due out each summer. In 2020 the SABS figures for 2018 were released in 24th June, 18 months after the end of the relevant calendar year.

SABS publish information about sample sizes and error margins for the survey. <https://www.gov.scot/publications/scottish-annual-business-statistics-2018/>

17.2.2 Marine economic sectors

Marine economic sectors have been defined as those depending on the marine environment for their output, and where official statistics are available. The SABS data is used along with Marine Scotland's own statistical publications to gauge each industry's contribution to the Scottish economy. Where SABS is the sole source of data, the estimates are used directly. Where other sources are used the methodology is introduced in the relevant section of the report and explained more fully in this Methodology section.

Economic values have been adjusted to take inflation into account and are presented at 2018 prices. This means that they are directly comparable in the time series tables.

17.3 Geographic Distribution

The distribution of the whole marine economy, excluding fishing and aquaculture (SIC code 3), by local authority was provided from SABS data. Values for fishing and aquaculture are not derived from SABS and were combined with the SABS extract to produce estimates of all marine economy at local authority level. The fishing values were distributed to local authorities as far as possible, with the residue, which could not be allocated, assigned to an 'unallocated' category. Aquaculture values were not available by local authority and therefore these values have been assigned as "Unallocated".

The methodology used for this combining is the same as the previous bulletin but different from 2018 (2016 data). In the statistics for 2016 the SABS extract included aquaculture and sea fisheries statistics. However, in this report the economic statistics for fishing and aquaculture are not derived from SABS and so reconciliation was necessary for the economic values at local authority level.

17.4 Price presentation

All values have been adjusted to 2018 prices using the GDP deflators <https://www.gov.uk/government/collections/gdp-deflators-at-market-prices-and-money-gdp> making it simpler to compare values across a time series.

17.5 Sea Fisheries Methodology

The GVA and turnover estimates for the fishing sector were provided by *Seafish* as extracts from their [Seafish Industry Authority Fleet Economic Survey](#)¹⁷. Employment data was from [Marine Scotland Sea Fisheries Statistics](#)¹⁸.

These sources provide a more reliable estimate of economic activity than the SABS figures, initially because *Seafish* use landings data as the source data for 'turnover' and carry out their own financial survey to produce estimates of GVA. The landings data is administrative data that covers the entire population rather than just a sample (as is the case with SABS), while the *Seafish* financial survey is stratified to produce a representative sample.

Sample sizes

Marine Scotland publishes Scottish Sea Fisheries Statistics as an annual National Statistics publication. The statistics provide a detailed overview of the quantity and value of landings of sea fish and shellfish by Scottish vessels, and landings into Scotland. The Marine Scotland data is a census of all landings by Scottish registered vessels. Information on the Scottish fishing fleet and the number of fishers on Scottish vessels is also presented. Scottish Sea Fisheries Statistics are obtained by data extractions from Scottish and UK databases from data supplied by skippers.

The *Seafish* Industry Authority carries out economic surveys of the UK fishing fleet, published as annual Economics of the UK fishing fleet publications. The data is also available in the [Seafish Fleet Economic Performance Dataset](#). This contains financial, economic and operation performance indicators for the period 2009-2019. The figures presented in this publication are an extract of economic performance data for all active vessels registered in Scotland.

¹⁷ <https://www.seafish.org/document/?id=0748BE36-187C-4245-BCC9-753324BD1A19>

¹⁸ <https://www.gov.scot/publications/scottish-sea-fisheries-statistics-2018/pages/1/>

The Seafish Fleet Economic Survey combines costs and earnings information from vessel accounts provided by vessel owners to the annual Seafish UK Fleet Survey, with official effort, landings and capacity data for Scottish registered vessels from Marine Scotland's Sea Fisheries Statistics. In 2018, the Seafish survey collected 370 sets of financial accounts for the UK fleet (8% of the active UK fleet).

17.5.1 Regional data

Seafish provided figures at local authority level so that a regional distribution of the turnover and GVA can be presented. Data was allocated to the geography based on the location of the registration port of the vessel. Reporting at this level introduces the possibility of disclosing commercially sensitive information. To prevent this happening, all other segmentation categories were aggregated (species type, fishing gear etc.) and outputs where five or fewer vessels were registered were restricted.

17.5.2 Seafish economic analysis methodology

Outputs from the Seafish Fleet Economic Survey provided fishing GVA estimation. Full details of the Seafish methodology are available in the Seafish Fleet Economic Survey, a summary is given here.

The UK fleet is stratified into fleet segments using MMO data¹⁹ on capacity, effort and landings for each vessel. For the data in this publication, only Scottish registered vessels were included and other segment criteria were suppressed.

Financial accounts were collected for each fleet segment.

Costs and earnings data from vessel accounts were allocated to fleet segments.

Fuel costs and crew costs are calculated differently from the other costs. For crew share, assign a minimum £100 per day, or the actual observed amount, whichever is the higher. For fuel costs, estimate fuel consumption in litres and combine with the average annual red diesel price (excluding duty).

Following calculation of fuel cost and crew share, apply the proportions from the other costs to the official declared fishing income for each vessel to calculate Gross Value Added, operating profit and net profit for each vessel.

UK fleet totals and fleet segment totals and averages are then calculated from the estimates produced for each vessel.

Where there are low sample sizes for a particular segment in a particular year previous years' estimates are taken into consideration.

¹⁹ MMO collate the UK data returns on fishing. Scottish data is provided to MMO and the Scottish Sea Fisheries Statistics are extracted from the MMO database.

17.6 Aquaculture methodology

17.6.1 Source data

The quantity and value of fin and shell fish produced on Scottish aquaculture sites is sourced from the [Marine Scotland Aquaculture Surveys](#). The aquaculture surveys are census surveys, receiving a response from every active fish farm in Scotland.

The financial data is drawn from EU Data Collection Framework (DCF) data. The DCF sets out broad requirements for collecting social, economic and environmental data on aquaculture for the UK. The MMO acts as national correspondent for the data, and CEFAS collects the financial data for the UK. It is the DCF survey data that provided the source financial data for estimating the aquaculture GVA for Scotland.

For the reporting in this bulletin there was no EU call for data and so the responses were entirely voluntary. This explains the sample numbers, which are not large. The table below shows sample sizes for Scotland over four years of DCF surveys as collected by CEFAS.

Species	Count of samples					
	2013	2014	2015	2016	2017 ¹	2018
Mussels	12	9	5	5	4	3
Salmon	14	16	8	8	11	10
Trout	3	4	6	5	1	1
Total samples	29	29	19	18	16	14

¹ Additional returns for 2017 (1 mussel, 1 trout and 3 salmon) were supplied at the same time as the 2018 return, so 2017 figures were updated.

17.6.2 Calculating GVA using DCF sample data and Marine Scotland survey data

1. The DCF sample data contains financial returns for UK aquaculture businesses, by year and by species type. For this analysis, DCF data for Scottish production of salmon is used to represent finfish and mussels is used to represent shellfish.

2. Because the Marine Scotland aquaculture surveys are a census survey, the total production value can be assumed to estimate the value for Scotland. The DCF sample is scaled to Scotland level using the ratio of the DCF sample income to the Marine Scotland Aquaculture sample. i.e.

$$\text{Sample weighting} = \frac{\text{MS Survey income}}{\text{CEFAS sample income}}$$

3. Estimate GVA by calculating, at the Scotland level, total outputs and total inputs.

$$\text{GVA} = \text{Total output} - \text{Total input}$$

4. Calculate the GVA to income ratio by

$$\text{GVA to income ratio} = \frac{\text{GVA}}{\text{Total output}}$$

This GVA to income ratio can be used to estimate annual GVA where the value of the production is known, e.g. for regional estimates. DCF data is available for 2013 to 2017 and a ratio is calculated for each of these years. Table 33 provides the unadjusted GVA and the GVA to income ratio from 2015 onwards. To produce a longer time series, incorporating figures for before 2013, a mean GVA to income ratio was calculated and used to estimate the GVA from the known aquaculture turnover. This is noted in the tables.

Table 33: GVA Ratios for aquaculture production

	GVA	GVA to income ratio
Mussels		
2015	6,083,167	0.59
2016	6,376,713	0.54
2017 ¹	8,810,641	0.68
2018	5,630,327	0.55
Salmon		
2015	98,314,541	0.15
2016	207,665,156	0.27
2017 ^{1,2}	413,385,470	0.38
2018 ²	232,830,289	0.25
Trout		
2015	3,842,184	0.15
2016	2,081,832	0.10

¹ 2017 figures updated following receipt of addition returns alongside the 2018 ones.

² From 2017 Salmon covers all fin fish due to the small number of trout returns.

17.6.3 Comparisons with other data

SABS produces estimates for aquaculture GVA, turnover and employment. These have not been used because the aquaculture survey statistics are more complete than the ABS surveys. However, estimates for 2015 showed a considerable variance between SABS and estimates based on aquaculture data. This has been explored and the estimates in this publication seem to more accurately reflect the situation. In 2015, production was lower and costs higher due to biological problems such as sea lice and disease. This does not appear to have affected SABS survey estimates.

As with fishing estimates, aquaculture economic data has previously been reported in the Marine Scotland Economic Topic Sheet. The aquaculture method previously used a **mean** GVA to turnover estimate based on five years of SABS ratios. With the

more specific data used for the estimates in this publication, individual years estimates for 2014 to 2018 are provided.

17.6.4 Update to the 2017 aquaculture GVA

The DCF survey return data covers two years, the current year and the previous year. In 2020, the returns we received for 2018 that included some 2017 returns that had not been supplied the year earlier. One of these returns was from a large aquaculture company which had relatively low costs and a high income. These values were double checked with the company and it was confirmed that they were correct and that 2017 was a good production year. Therefore, the 2017 aquaculture data was updated to include these. This resulted in the GVA for 2017 increasing from the previously published figure.

17.7 Oil & Gas support sector methodology

In this publication estimates for **support activities** related to oil and gas extraction are presented rather than the extraction itself. This retains consistency with National Accounts Statistics and ABS data where Oil & Gas *extraction* is normally allocated to a separate 'Extra Regio' category rather than allocated to a region within the UK.

ABS data relating to Oil & Gas extraction (SIC 6) is allocated to UK regions (including Scotland) according to the address at which the business is registered - onshore and offshore Oil & Gas extraction and activities are allocated in this way. GVA associated with off-shore activity, under UK regional accounts procedures, is normally allocated to a separate 'Extra Regio' category rather than allocated to a region within the UK.

The codes used to produce figures related to oil and gas production have changed from 2009 to 2018.

From 2009 to 2010, data was provided for *SIC 09 Mining support service activities*. This included both *SIC 09.1: Support activities for petroleum and natural gas extraction* and *SIC 09.9: Support activities for other mining and quarrying*. While 'other mining and quarrying' activities are not necessarily marine, they were included because publishing only SIC 09.1 at the Scotland level would have been disclosive.

Since 2011, only SIC 9.1 Support activities for petroleum and natural gas extraction have been included.

Previous analysis has shown that SIC 09.9 'other mining and quarrying' is a small component of SIC 09. It is less than 0.02% of the employment, GVA or turnover of SIC 09.1 'Oil and gas services' and so the series has been considered comparable and no break in the series is required. Footnotes to tables explain this and in the Oil and gas methodology section the differences are explored.

17.8 Fish Processing Methodology

Seafish carries out annual financial surveys of a sample of majority sea fish processors and a biennial census of all UK fish processing businesses. Their [Seafood Processing Industry Report](#) presents an overview and analysis of the UK seafood processing industry.

While the Seafish report has the advantage of providing sector specific economic data and does provide information on sea fish processing only (SABS provides all fish processing), it has not been used in this publication because:

The sample size for the financial data is small and not available at local authority level.

Employment is collected biennially and is provided as FTE for Scotland, so it is inconsistent with the headcount figures used in the rest of this publication.

17.9 Water Transport Geographic Distribution Methodology

SABS provides an estimate of the GVA for Scotland for both freight and passenger water transport. These estimates were used as the sole source for economic reporting in this publication.

For the freight transport, DfT statistics provide a tables of tonnages of all freight traffic through UK major and minor ports. Using GIS, the Scottish ports were allocated to both Scottish Marine Regions (SMR) and Local Authorities which allowed an analysis of the geographical distribution of tonnage of freight. Passenger transport was not presented by specific ports and so no geographical breakdown was made.

17.10 Marine Tourism Methodology

Marine tourism and recreation has been defined as including “activities which involve travel away from one’s “habitual” place of residence, which have as their host or focus the marine environment and/or the coastal zone”. This is the definition used in the 2015 [Scottish Marine Recreation and Tourism Survey](#).

In this Marine Economic Statistics report, the estimates extract tourism that was identified as ‘marine related’ from all tourism figures as presented in the Scottish Annual Business Statistics data. The approach taken treats all tourism businesses located in postcodes within 100 metres of the coastline as engaging in marine tourism and recreation, or dependent on the marine environment.

The list of SABS codes for relevant tourism and recreation business activities is provided in Annex A. This list aligns with SABS definitions of Sustainable Tourism in their Growth Sector Statistics. The methodology assumes that *marine* tourism and recreation businesses are located close to the coast. This assumption may exclude

relevant activities of tourism and recreation businesses that are located within postcodes that are more than 100 metres from the coastline. The 100 metre threshold was selected to minimise chances of including in the estimates activities of non-marine tourism and recreation businesses that are located along the coast, especially in urban coastal areas such as Aberdeen and Edinburgh.

A similar approach to estimating the economic contribution of marine tourism and recreation has been used by other EU member states such as Portugal and the Netherlands. The estimates in this report are therefore comparable with those produced by other countries. In addition, this methodology has been discussed with economists at the Oslo-Paris (OSPAR) Commission Socio-economic Working Group, and there is general agreement across member states on the principles of the approach.

In generating a geographic breakdown of the marine tourism sector, presenting the outputs by local authority was partially disclosive and Scottish Marine Regions (SMR) were selected as the lowest non-disclosive geography that could be used. While SMRs are developed strictly for information related to areas of sea within 12 nm of the coast, they were used in conjunction with the methodology described above to present both marine and land based tourism related to the sea.



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