



# Scotland's Marine Economic Statistics 2019



# Scotland's Marine Economic Statistics

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## 1. Introduction

This report presents statistics on the size (Gross Value Added<sup>1</sup> and turnover) and employment of Scotland's marine activities (hereafter collectively referred to as the marine economy). It is the fourth year of this report, which remains classed as experimental statistics until the content and methodology are fully established.

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)<sup>2</sup>. 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 2010 to 2019. Due to the coronavirus (COVID-19) pandemic the 2019 SABS results are based on a lower number of responses than usual. This means that the 2019 estimates are subject to more uncertainty than usual. However, the estimates for 2019 were strengthened by incorporating VAT turnover data. For more information on this see Annex B section 18.2.

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
- Shipbuilding
- Construction and water transport services
- Passenger water transport
- Freight water transport
- Renting & leasing
- Marine tourism

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<sup>1</sup> 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.

<sup>2</sup> Scottish Annual Business Statistics (SABS) provides information on businesses' employment, turnover, and approximate gross value added. [Scottish Annual Business Statistics 2019](#)

Economic data for aquaculture is sourced from [Marine Scotland aquaculture statistics](#) and business level data collected under clause 1 of the UK Fisheries Act 2020. This replaces the previous European Commission's Data Collection Framework requirements (DCF)<sup>3</sup>, which no longer apply as we have left the EU. However, the data collected under the legislation is the same as under the previous DCF requirements. Economic data for sea fisheries is sourced from the [Economics of the UK Fishing Fleet 2019](#) published by Seafish and from Marine Scotland [Scottish Sea Fisheries Statistics](#).

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

For the first time this report contains information on the employment and turnover of the offshore wind sector. Work is still ongoing to develop a methodology to calculate gross value added for this sector. Information of the offshore wind sector is shown separately in Section 12 and is not included within the overall marine information.

Other marine sectors that also contribute to the Scottish economy that are not covered by these statistics are discussed in Section 13 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

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<sup>3</sup> 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).

sectors which have high levels of part time employment (e.g. Marine Tourism).

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 2019 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 2019. Time series are presented for ten years, 2010 to 2019. SIC codes changed in 2007, so data before 2008 is not comparable with this series. SABS figures for 2019 were released in November 2021.

To enable meaningful comparison of monetary values over time, all values have been adjusted to 2019 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 2019, the Scottish marine economy **generated £5 billion in GVA**: accounting for 3.4% of the overall Scottish economy. The Scottish marine economy provided **employment for 75,490 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 38.6% of the marine economy GVA and 20.8% of the employment while marine tourism provides 11.9% of the GVA and 43.8% of the employment (see Table 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 2019 (around £572,000), and marine tourism producing the lowest at around £18,000.

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. See Annex B section 18.7 for more information.

**Table 1: Marine economic sectors – GVA, turnover, employment and GVA per head, 2019**

Description	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
Fishing	329	596	4.9	67,257
Aquaculture	560	1,111	2.4	232,842
Support for oil & gas	1,945	4,527	15.7	123,885
Processing	390	1,707	6.8	57,368
Shipbuilding	408	1,094	6.3	64,825
Construction & water transport services	436	725	4.3	101,302
Passenger water transport	133	284	1.4	95,071
Freight water transport	229	385	0.4	572,250
Renting & leasing of water transport equipment	15	27	0.2	73,000
Marine tourism	598	1,111	33.1	18,076
<b>Total</b>	<b>5,043</b>	<b>11,567</b>	<b>75.5</b>	<b>66,800</b>

## 2.2 Marine economy trends

Between 2018 and 2019, the marine economy's GVA increased by 12% from £4.5 billion to £5 billion (2019 prices). Employment increased by 0.4%.

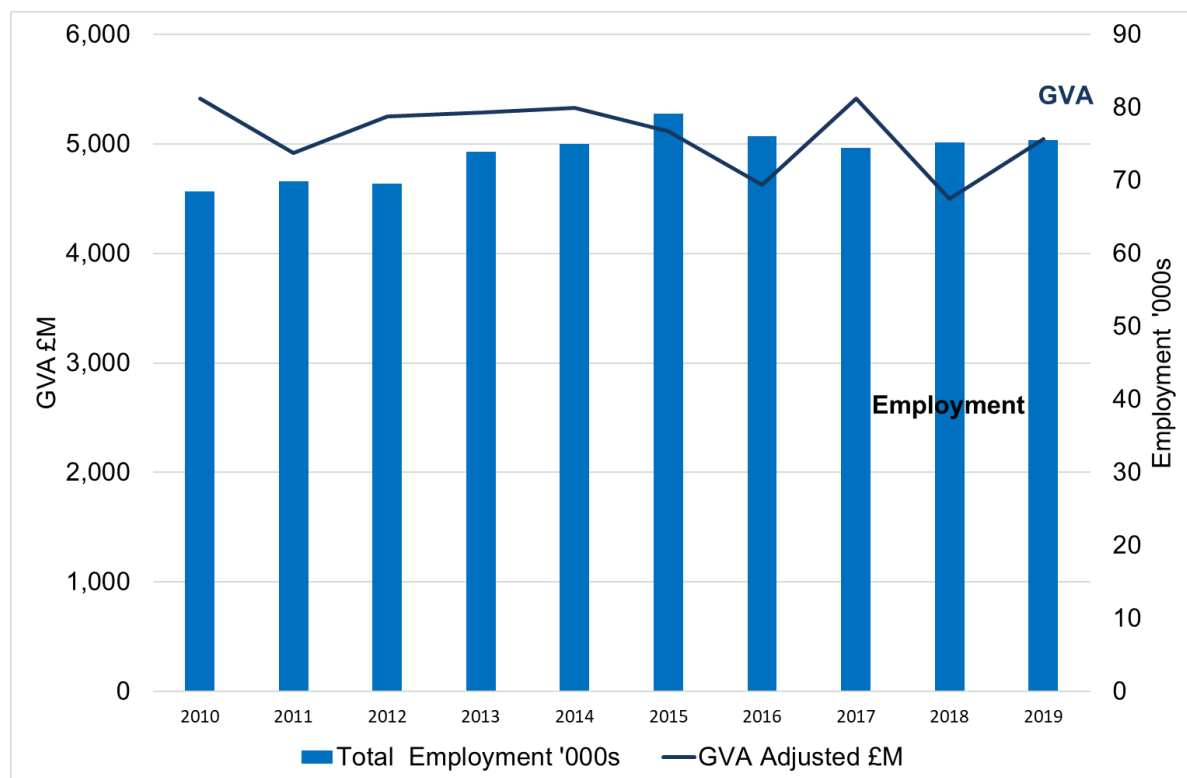
**Table 2: Marine sector - GVA, turnover and employment, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)
2010	5,414	13,207	68.5
2011	4,914	13,162	69.9
2012	5,250	13,584	69.5
2013	5,283	14,148	74.0
2014	5,328	14,889	75.0
2015	5,113	14,418	79.1
2016	4,624	11,278	76.0
2017	5,413	12,154	74.5
2018	4,500	11,282	75.2
2019	5,043	11,567	75.5

SABS categories for oil and gas services changed in 2011 see Annex B section 18.7.

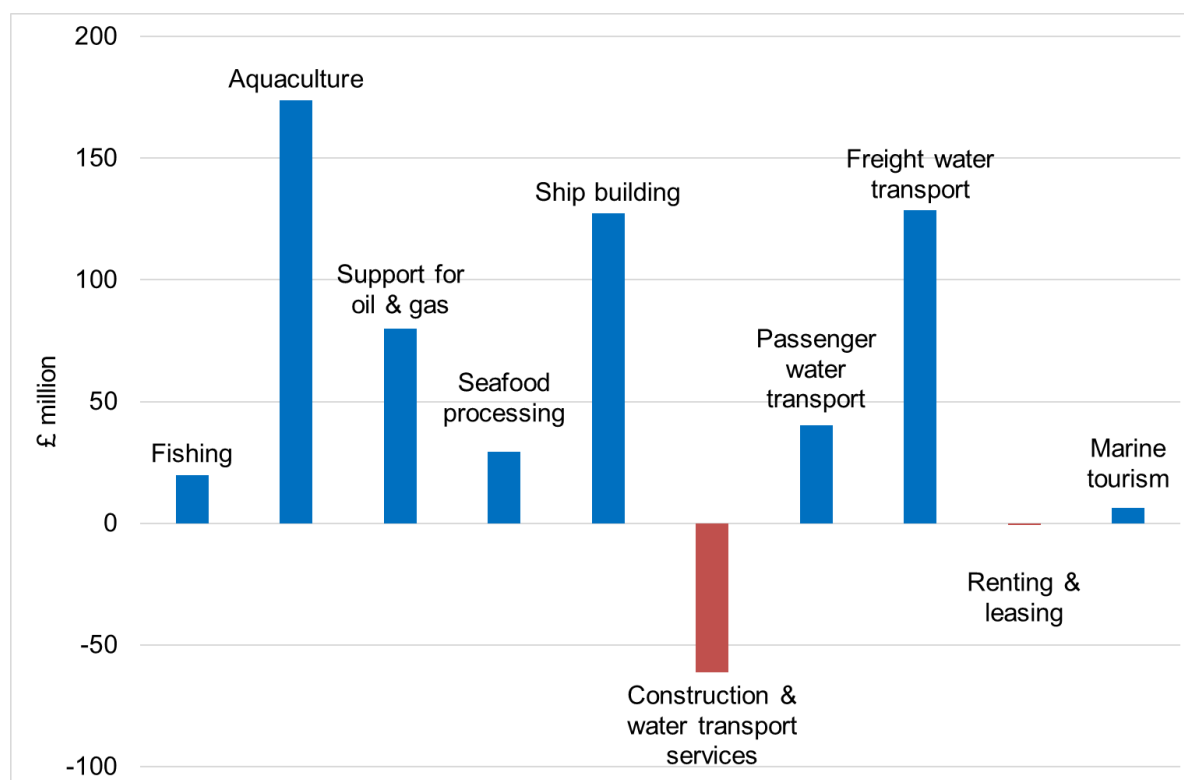
The longer term trend shows that between 2010 and 2019 the marine economy GVA (adjusted to 2019 prices) fell by 7% while employment increased by 10%.

**Figure 1: Marine sector - GVA and employment, 2010 to 2019 (2019 prices)**



The change in GVA from 2018 to 2019 is shown in Figure 2. The figures for the marine economy by industry are shown in Table 20 on page 50.

**Figure 2: Marine sector – Change in GVA by sector, 2018 to 2019 (2019 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 £1.9 billion (37%) of the marine economy’s GVA for 2019, with Aberdeenshire the next highest with £884 million (18%) (Table 3). Highland contributed 6% of the marine GVA and 13% of the employment.

The biggest change in GVA (value not percentage) from 2018 to 2019 was in the Aberdeen City local authority (Table 23). This is due to changes in oil prices causing an increase in turnover for the for oil and gas support services. The second biggest change was in Fife local authority and is likely due to shipbuilding. This is discussed in more detail in the shipbuilding chapter.

**Table 3: Marine sector – Gross value added (GVA), turnover and employment (headcount), by local authority, 2019**

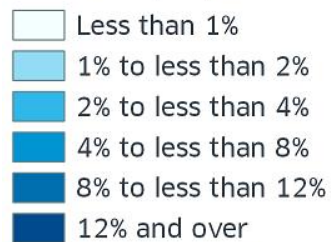
Local authority	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA (percentage of Scotland total)	Turnover (percentage of Scotland total)	Employment headcount (percentage of Scotland total)
Aberdeen City	1,888	4,159	15.2	37%	36%	20%
Aberdeenshire	884	2,104	8.9	18%	18%	12%
Angus	45	93	1.1	1%	1%	1%
Argyll & Bute	154	363	5.9	3%	3%	8%
City Of Edinburgh	50	135	1.5	1%	1%	2%
Clackmannanshire	1	3	c	0%	0%	c
Dumfries & Galloway	59	148	2.3	1%	1%	3%
Dundee City	21	33	0.6	0%	0%	1%
East Ayrshire	1	2	c	0%	0%	c
East Dunbartonshire	c	c	c	c	c	c
East Lothian	32	67	1.5	1%	1%	2%
East Renfrewshire	c	c	c	c	c	c
Falkirk	c	c	0.7	c	c	1%
Fife	146	367	5	3%	3%	7%
Glasgow City	198	c	4.1	4%	c	5%
Highland	291	672	10	6%	6%	13%
Inverclyde	87	150	1.6	2%	1%	2%
Midlothian	c	c	c	c	c	c
Moray	29	78	1.1	1%	1%	1%
Na H-Eileanan Siar	48	144	1.8	1%	1%	2%
North Ayrshire	47	101	1.6	1%	1%	2%
North Lanarkshire	7	21	0.2	0%	0%	0%
Orkney Islands	43	89	1.4	1%	1%	2%
Perth & Kinross	7	23	0.5	0%	0%	1%
Renfrewshire	39	69	1.5	1%	1%	2%
Scottish Borders	32	5	1.2	1%	0%	2%
Shetland Islands	139	294	2	3%	3%	3%
South Ayrshire	36	58	1.2	1%	1%	2%
South Lanarkshire	-1	c	c	0%	c	c
Stirling	15	26	0.7	0%	0%	1%
West Dunbartonshire	23	31	0.5	0%	0%	1%
West Lothian	4	10	0.1	0%	0%	0%
<i>Unallocated</i>	720	2,323	3.3	14%	20%	4%
<b>Scotland</b>	<b>5,043</b>	<b>11,567</b>	<b>75.5</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

The letter 'c' denotes disclosive data.

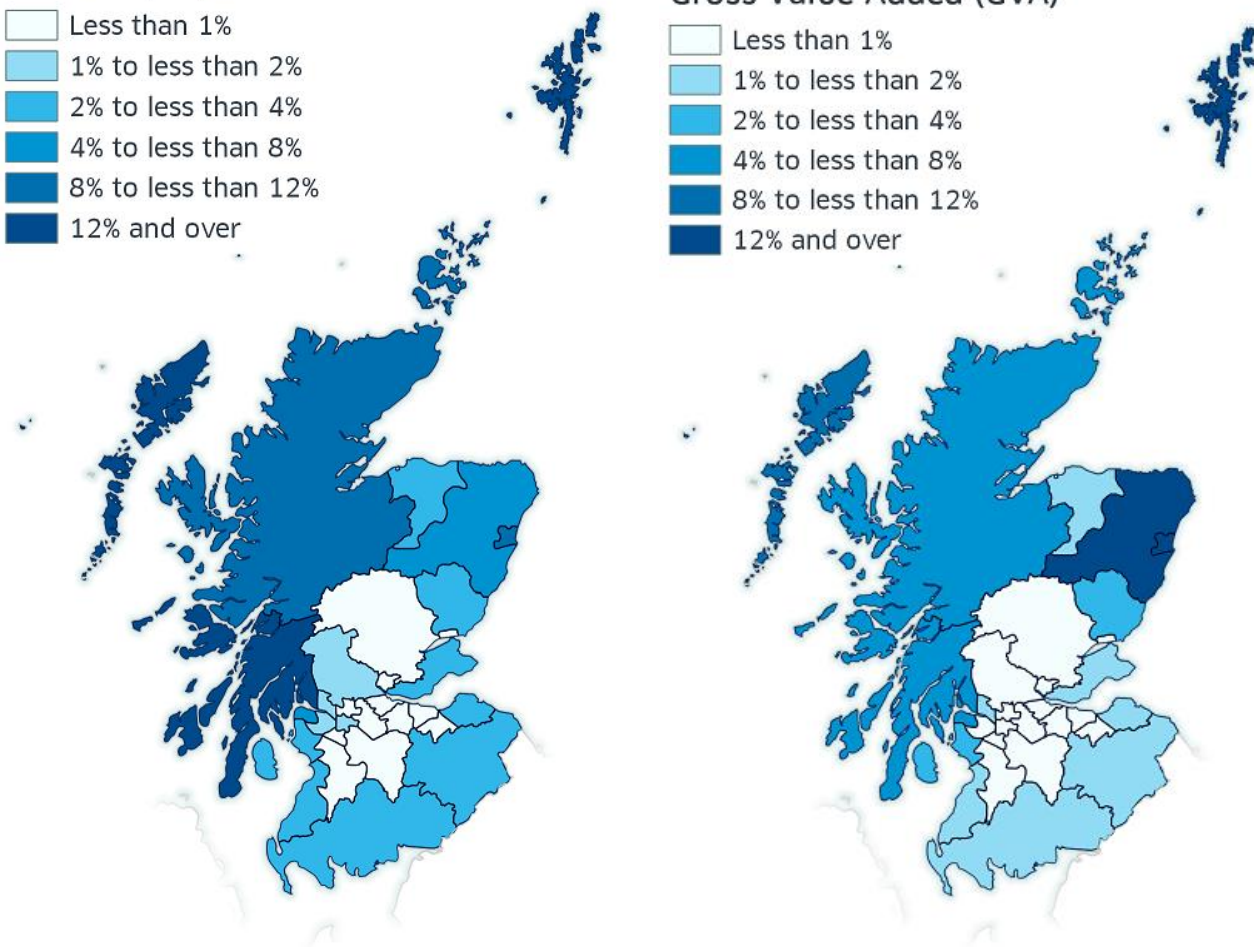
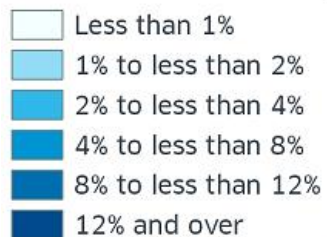
GVA and employment in the marine sector is particularly important to rural economies. Figure 3 shows the proportion that the marine sector contributes to each local authority's GVA and employment. The marine sector contributes most to the Shetland Islands, accounting for 19% of the total GVA in Shetland and 17% of employment in 2019.

**Figure 3: Percentage of overall employment and GVA accounted for by the marine sector by local authority, 2019**

**Total Employment**



**Gross Value Added (GVA)**



## 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<sup>4</sup> 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 2019, fishing **generated £329 million GVA**: accounting for 0.22% of the overall Scottish economy and 6.5% of the marine economy GVA. The commercial fishing industry provided **employment for a headcount of 4,886 people**, contributing 0.18% of the total Scottish employment and 6.5% of the marine economy employment.

### 3.3 Sea fishing trends

From 2018 to 2019, the GVA from fishing (adjusted to 2019 prices) increased by 6%. The longer term trend from 2010 to 2019, showed that fishing GVA increased by 56% and GVA per person increased 67% from £40 thousand per person to £67 thousand per person.

From 2010 to 2019, employment fell by 6%, though it has been stable in recent years.

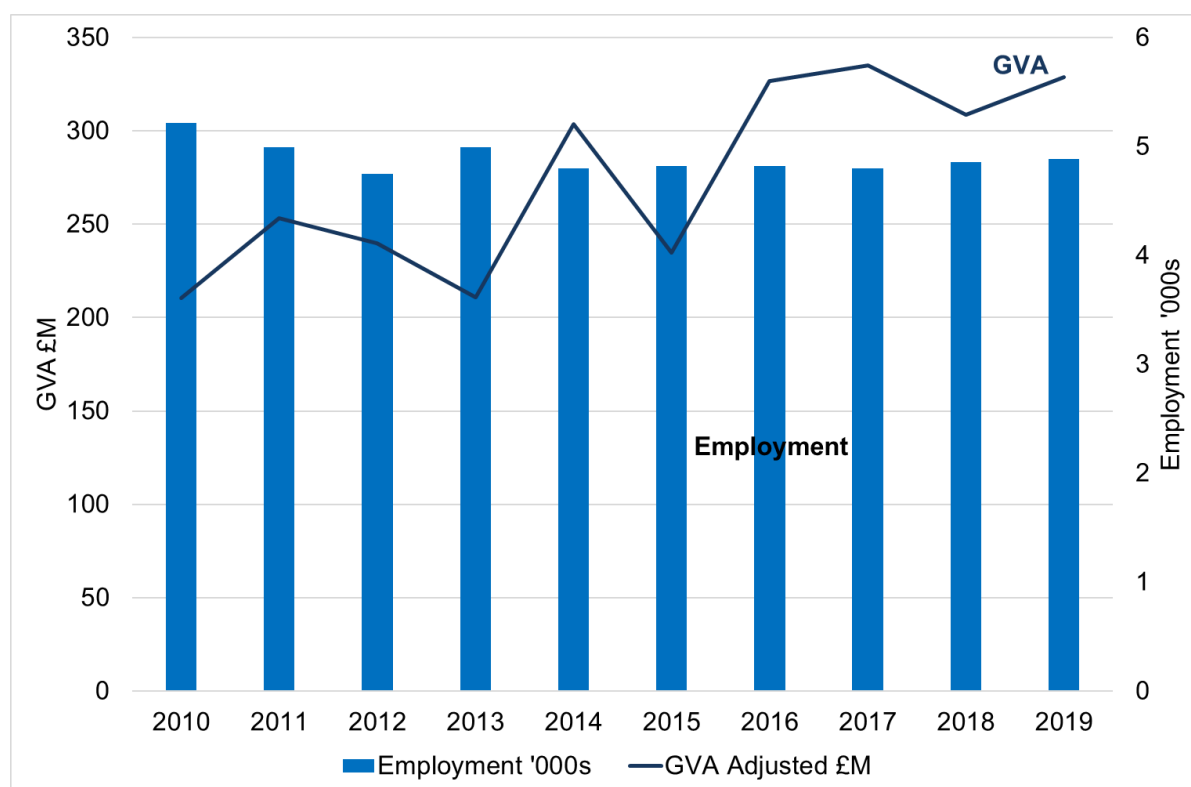
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<sup>4</sup> [Economics of the UK Fishing Fleet 2019](#)

**Table 4: Fishing - GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	210	520	5.22	40,329
2011	253	593	5.00	50,734
2012	240	551	4.75	50,557
2013	211	501	4.99	42,232
2014	303	586	4.80	63,271
2015	235	487	4.82	48,668
2016	327	609	4.82	67,746
2017	335	616	4.80	69,809
2018	309	603	4.86	63,536
2019	329	596	4.89	67,257

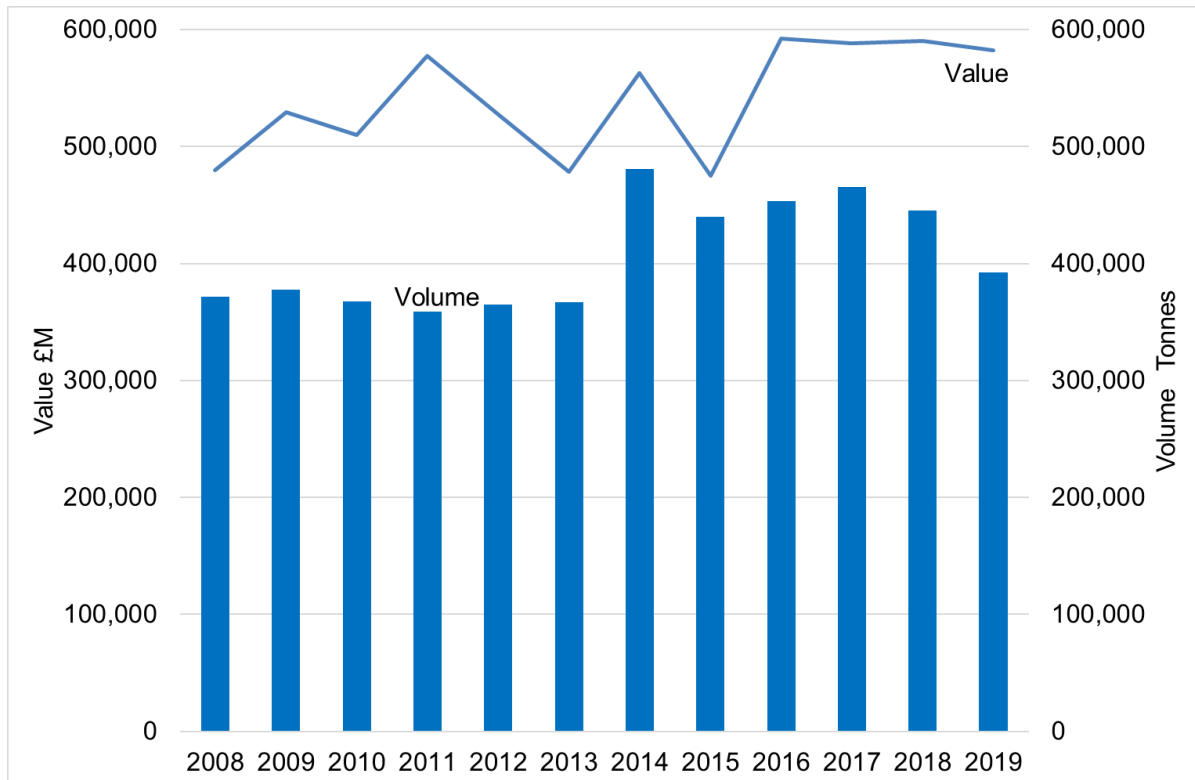
**Figure 4: Fishing - GVA and employment (headcount), Scotland, 2010 to 2019 (2019 prices)**



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 5). Between 2010 and 2019, the quantity of fish landed increased by 7% and value by 14%.

Figure 5 shows landings volume and value for Scottish registered vessels from 2010 to 2019.

**Figure 5: Fishing - volume and value of all landings by Scottish vessels, 2010-2019 (2019 prices)**



Source: [Scottish Sea Fisheries Statistics 2020](#)

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 24 shows the time series from 2016 to 2019 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 2019. The Highland region accounted for 18% of the employment.

**Table 5: Fishing – value of landings and employment by Local Authority of vessel registration, 2019**

<b>Local authority</b>	<b>Value of landings (millions of pounds)</b>	<b>Employment headcount</b>
Aberdeenshire	258.4	1,238
Shetland Islands	108.1	501
Highland	56	881
Argyll And Bute	28.8	513
Orkney Islands	22.6	288
Na h-Eileanan Siar	17.1	376
Moray	16.3	162
Dumfries And Galloway	15.2	235
South Ayrshire	11.6	215
Fife	6	153
Scottish Borders	5	106
Angus	3.3	60
East Lothian	2.8	94
North Ayrshire	1.8	35
Aberdeen City	0.5	12
City of Edinburgh	c	17
Unallocated	42.7	
<b>Scotland Total</b>	<b>596.3</b>	<b>4,886</b>

Ranked in order of value of landings.  
The letter 'c' 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 this section the economic contribution of aquaculture has been estimated using two main data sources: Marine Scotland [Aquaculture production survey statistics](#) for 2019 and separate economic survey data collected to meet clause 1 of the UK Fisheries Act 2020. This replaces the previous European Commission's Data Collection Framework requirements (DCF)<sup>5</sup>, which no longer applies as the UK has left the EU. However, the data collected under the legislation is the same as under the previous DCF requirements. This approach allows for more reliable estimates of economic activity than SABS figures, primarily because the aquaculture production survey collects data for every production site registered as active during the survey year.

The aquaculture production survey statistics provide production and employment data, while the aquaculture economic survey provides financial data from a sample of salmon, trout and mussel farms. These are combined to calculate GVA figures. The GVA calculation methodology was revised in this year's publication for all years to take account of the change in stock value. This makes the aquaculture GVA methodology more comparable to the SABS figures used for other industries. It should also help to minimise some of the year on year changes resulting from the multiyear aquaculture production process. For more information see Annex B, section 18.6. 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 2019, aquaculture **generated £560 million GVA**: accounting for 0.38% of the overall Scottish economy and 11% of the marine economy GVA. The aquaculture industry provided employment for **2,406 people** (headcount), contributing 0.09% of the total Scottish employment and 3% of the marine economy employment.

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<sup>5</sup> 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).

### 4.3 Aquaculture trends

From 2018 to 2019, the GVA from aquaculture (adjusted to 2019 prices) increased by 45% from £387 million to £560 million, while the longer term trend from 2010 to 2019 increased by 205% from £184 million. From 2010 to 2019, employment increased by 25%.

In 2019, Atlantic salmon accounted for around 98% of the aquaculture farm gate value, similar to previous years. 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. The production level, turnover and GVA for 2019 was similar to 2017.

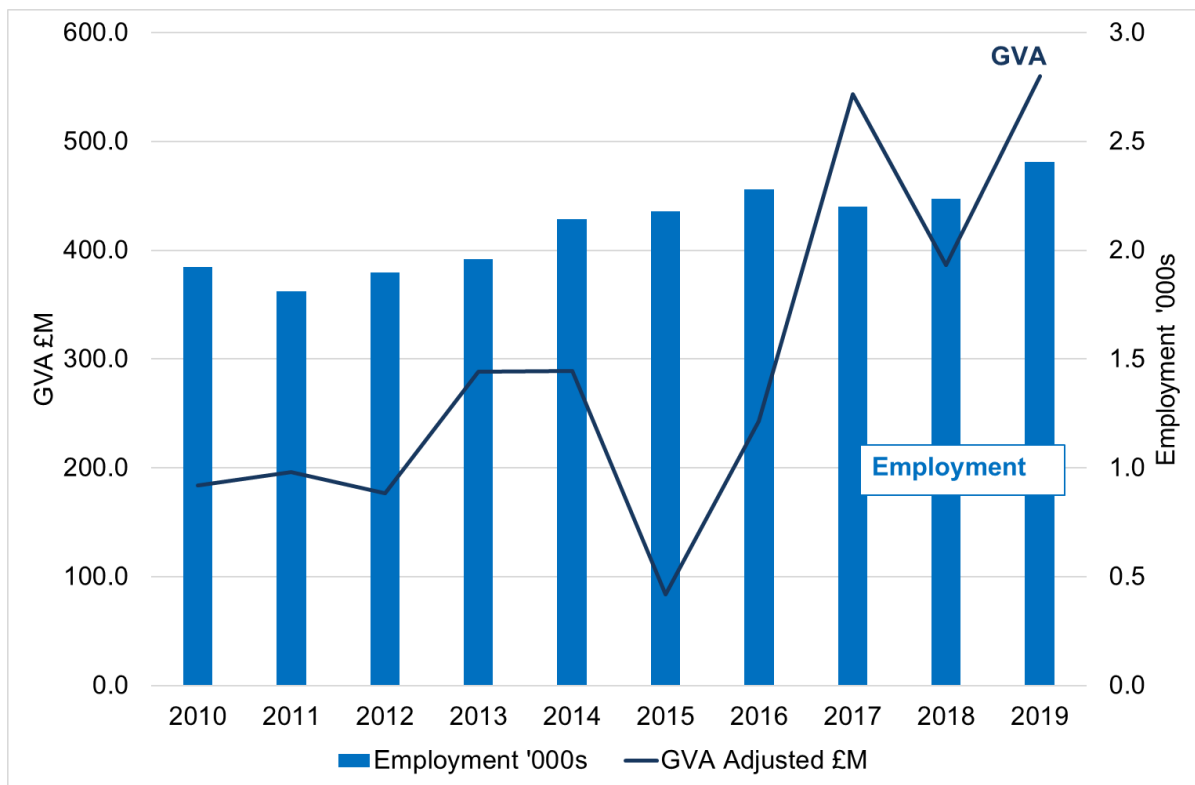
**Table 6: Aquaculture GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	184	659	1.92	95,554
2011	196	701	1.81	108,436
2012	177	633	1.90	93,088
2013	288	779	1.96	147,116
2014	289	814	2.14	134,989
2015	84	728	2.18	38,399
2016	243	849	2.28	106,690
2017	544	1,134	2.20	246,856
2018	387	941	2.24	172,705
2019	560	1,111	2.41	232,842

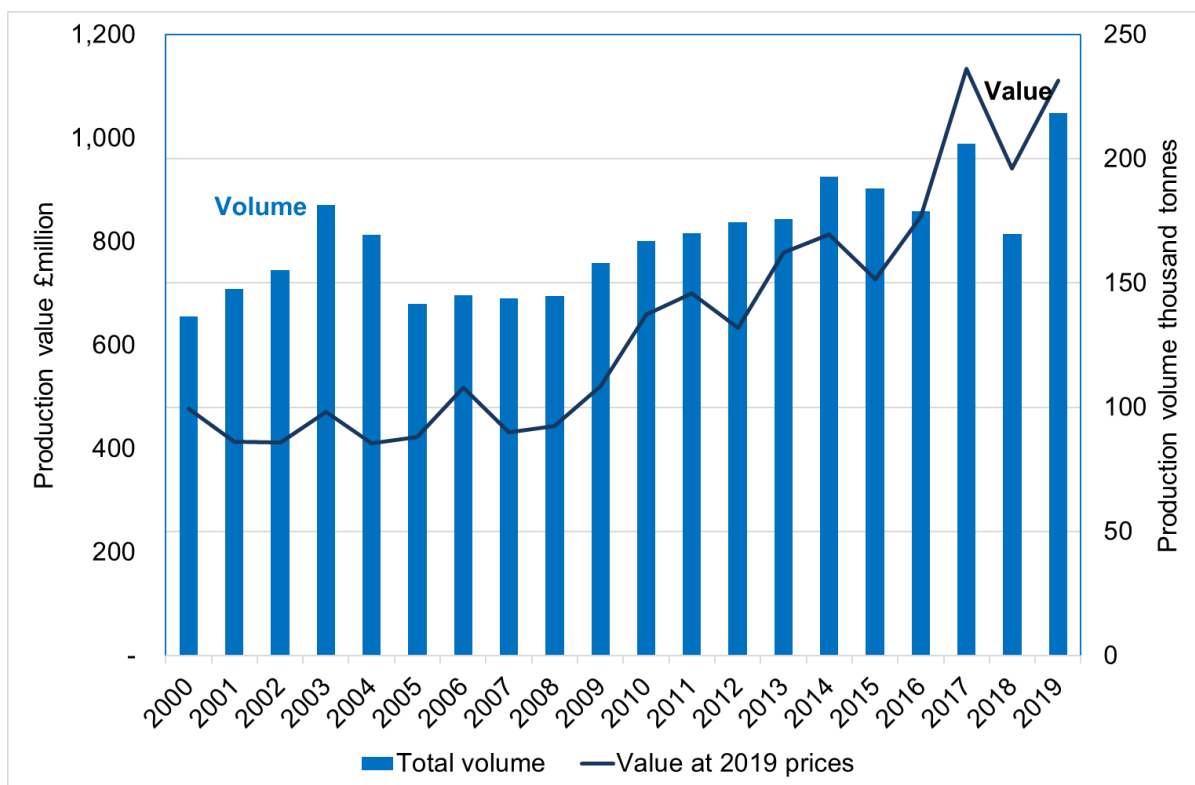
All years of Aquaculture GVA updated to include change in stock value see Annex B section 18.6.

In 2015, the aquaculture GVA dipped (see Figure 6) due to a combination of lower turnover and higher costs as a result of disease challenges. Aquaculture production is a multiyear process and is subject to varying costs due to uncontrollable factors like weather conditions and disease challenges. This results in large fluctuations in GVA between individual years. However the long term trend in GVA from aquaculture is a rapid increase to reach a peak of £560 million in 2019.

**Figure 6: Aquaculture GVA and employment, 2010 to 2019 (2019 prices)**



**Figure 7: Aquaculture - volume and value of aquaculture production in Scotland, 2000 to 2019 (2019 prices)**



Total aquaculture production in Scotland in 2019 increased to 218 thousand tonnes (see Table 25). This is the highest production tonnage recorded to date, and had similar but slightly lower production value to 2017. Table 25 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 7. 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 region<sup>6</sup> (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 value distribution around Scotland, 2019**

<b>Scottish Marine Region or combination</b>	<b>Percentage of Scottish value 2019</b>
Argyll and Clyde	22%
Orkney Islands	9%
Outer Hebrides	19%
Shetland Isles	18%
North Coast and West Highlands	33%

Mussel production mostly occurs in the Shetland Isles, accounting for three quarters of all Scottish production.

Table 26 and Table 27 present a time series of salmon and mussel production by region.

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<sup>6</sup> 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 2019, oil and gas support services generated **£1,945 million GVA**: accounting for 1.31% of the overall Scottish economy GVA and 39% of the marine economy GVA. Oil and gas support services provided **employment for 15,700 people** (headcount), 0.59% of the total Scottish employment and 21% of the marine economy employment.

### 5.3 Oil and gas services - trends

The oil and gas support services GVA has declined by 37% since 2010, however between 2018 and 2019 GVA increased by 4% (adjusted to 2019 prices).

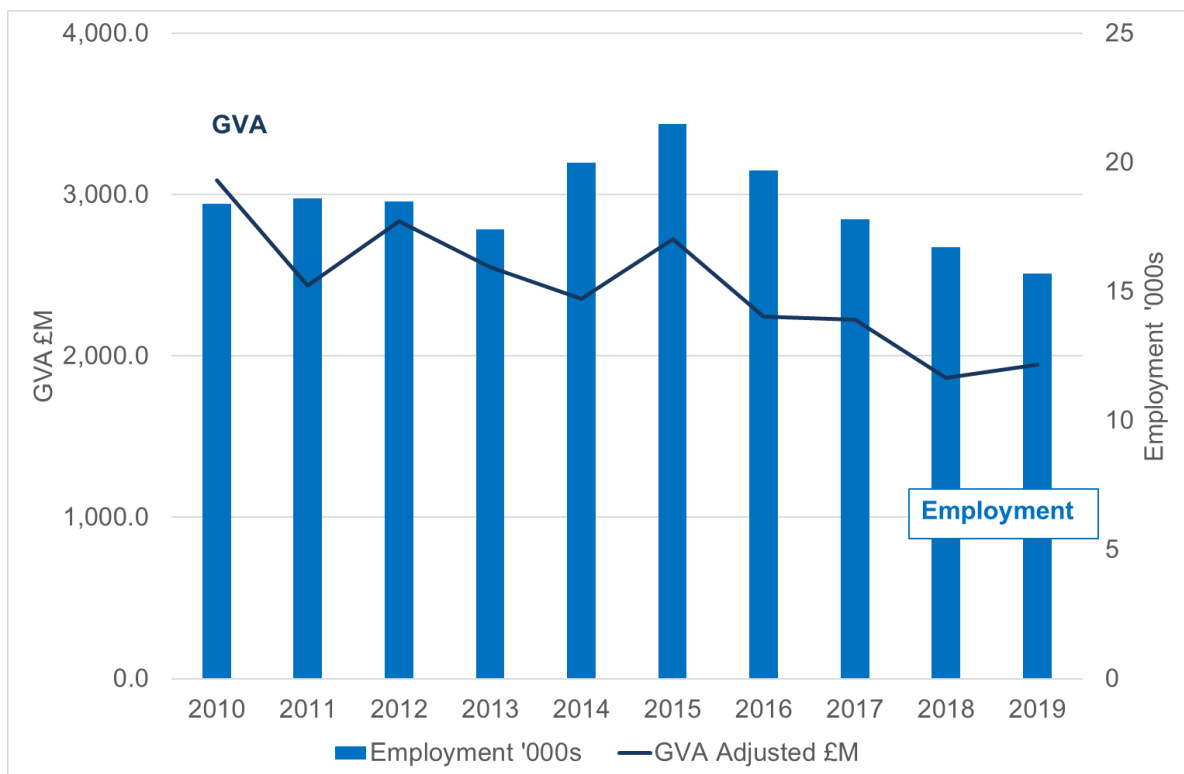
From 2010 to 2019, employment decreased by 15%, and it fell by 6% between 2018 and 2019.

**Table 8: Oil and gas services GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	3,090	6,653	18.4	167,940
2011	2,436	6,377	18.6	130,989
2012	2,837	6,631	18.5	153,378
2013	2,551	6,808	17.4	146,616
2014	2,354	7,440	20.0	117,718
2015	2,727	7,316	21.5	126,827
2016	2,243	4,763	19.7	113,834
2017	2,227	4,731	17.8	125,101
2018	1,865	4,277	16.7	111,672
2019	1,945	4,527	15.7	123,885

SABS categories changed between 2010 and 2011. See introduction to this section and Annex B section 18.7.

**Figure 8: Oil and gas services – GVA and employment, Scotland, 2010 to 2019 (2019 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 enquiry 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 2019, Seafood processing **generated £390 million GVA**: accounting for 0.26% of the overall Scottish economy and 8% of the marine economy GVA. Seafood processing provided **employment for 6,800 people** (headcount), contributing 0.26% to total Scottish employment and 9% to marine economy employment.

### 6.3 Seafood processing – trends

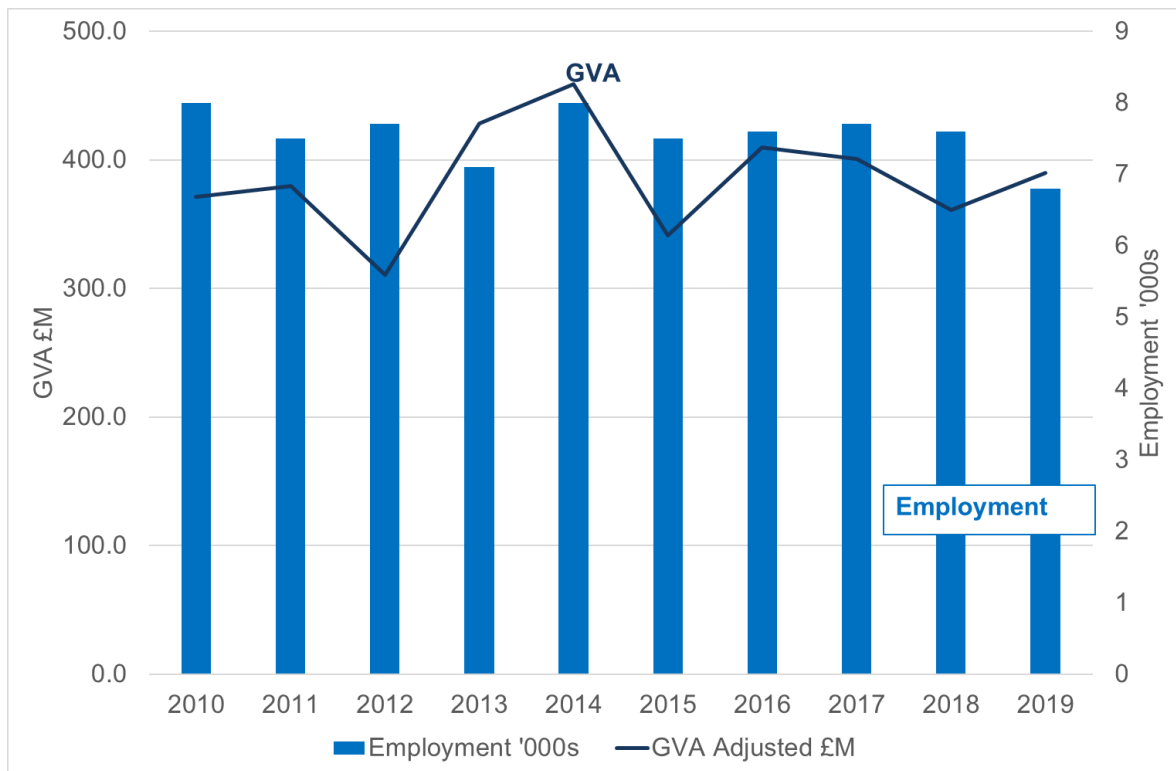
In 2019, the GVA from seafood processing (adjusted to 2019 prices) increased by 8% from the previous year, while the longer term trend from 2010 to 2019 showed that seafood processing GVA increased by 5%. Employment decreased by 15% between 2010 and 2019.

**Table 9: Seafood processing GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	371	1,702	8.0	46,414
2011	380	1,464	7.5	50,609
2012	310	1,494	7.7	40,296
2013	428	1,747	7.1	60,298
2014	459	1,855	8.0	57,362
2015	341	1,702	7.5	45,519
2016	410	1,708	7.6	53,933
2017	401	1,867	7.7	52,057
2018	361	1,779	7.6	47,484
2019	390	1,707	6.8	57,368



**Figure 9: Seafood processing – GVA and employment, Scotland, 2010 to 2019 (2019 prices)**



#### 6.4 Seafood processing by geography

The [Food Standards Agency](#)<sup>7</sup> 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 2020, there were 272 registered fish processing plants in Scotland. The three local authorities with the highest number of plants were Aberdeenshire (52), Highland (40) and Aberdeen City (30).

<sup>7</sup> [Food Standards Agency 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 2019, Shipbuilding **generated £408 million in GVA**: accounting for 0.28% of the overall Scottish economy and 8% of the marine economy GVA. Shipbuilding provided **employment for 6,300 people (headcount)**, contributing 0.24% of the total Scottish employment and 8% of the marine economy employment.

The SABS Shipbuilding Profile reports that Scottish shipbuilding accounted for around 23% of turnover and 19% of GVA of total UK output of the industry in 2019. This is a higher proportion than Scotland's contribution to the whole of manufacturing, where Scotland accounted for around 6.5% of turnover and 8% of GVA of total UK manufacturing in 2019.

### 7.3 Shipbuilding – trends

From 2018 to 2019, Shipbuilding GVA (adjusted to 2019 prices) increased by 45%, while the longer term trend from 2010 to 2019 showed that Shipbuilding GVA decreased by 29%. Employment decreased by 11% between 2010 and 2019.

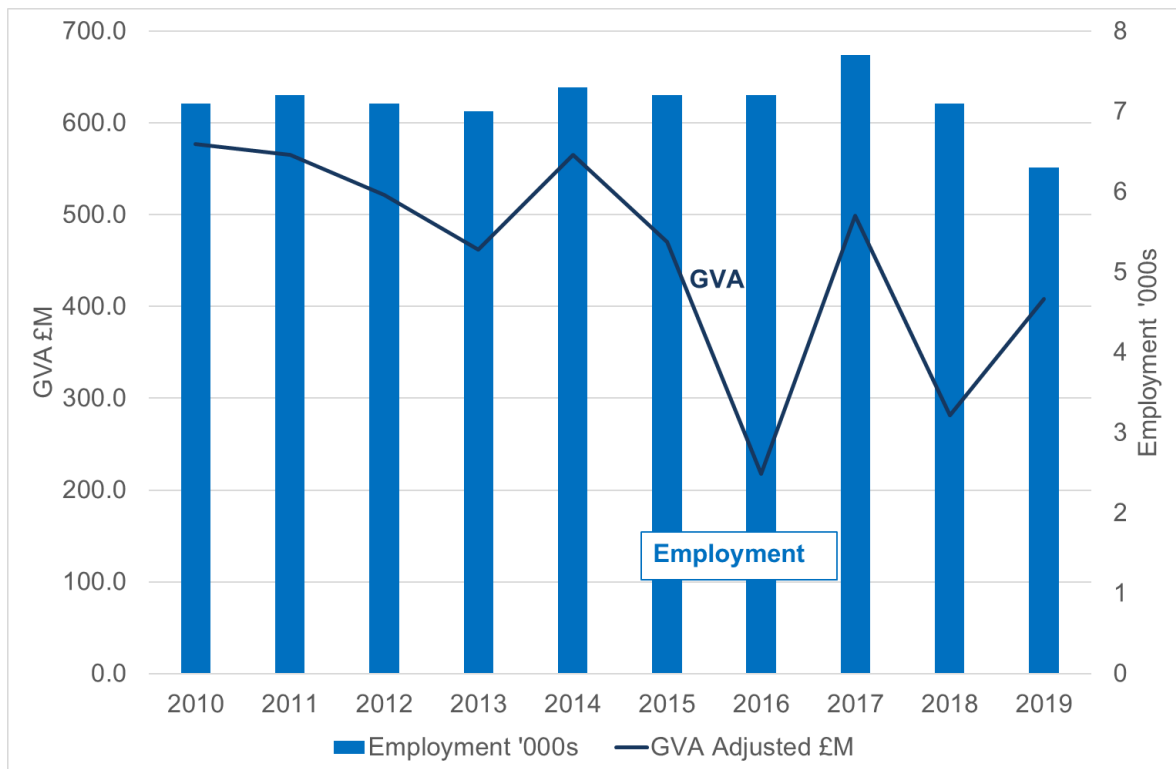
The SABS supporting notes on the Shipbuilding Profile indicate that changes in a small number of (large) companies can have a very marked effect on the statistics, particularly on sectoral and local authority figures, from one year to the next. They point out that at this level of analysis (4-digit SIC), 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: Shipbuilding GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	577	1,667	7.1	81,262
2011	565	1,636	7.2	78,509
2012	521	1,718	7.1	73,420
2013	462	1,363	7.0	66,043
2014	565	1,547	7.3	77,435
2015	471	1,778	7.2	65,370
2016	218	1,149	7.2	30,216
2017	499	1,597	7.7	64,763
2018	281	1,239	7.1	39,609
2019	408	1,094	6.3	64,825

Figure 10 shows the long term trend, demonstrating considerable fluctuation over the period 2010 to 2019. Over the same period, employment decreased slightly to around 6,300 workers.

**Figure 10: Shipbuilding GVA and employment, Scotland, 2010 to 2019 (2019 prices)**



#### **7.4 Shipbuilding – by geography**

The SABS Shipbuilding profile reports that the top three local authority areas in the shipbuilding sector in 2019 were Glasgow City, Aberdeen City and Fife, which together accounted for 74% of employment, 82% 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 the 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 2019, marine construction and water transport services **generated £436 million in GVA**: accounting for 0.29% of the overall Scottish economy, and 9% of the marine economy.

Marine construction and water transport services provided **employment for 4,300 workers**, contributing 0.16% to total Scottish employment, and 6% of the marine economy employment.

### 8.3 Construction and water transport services – trends

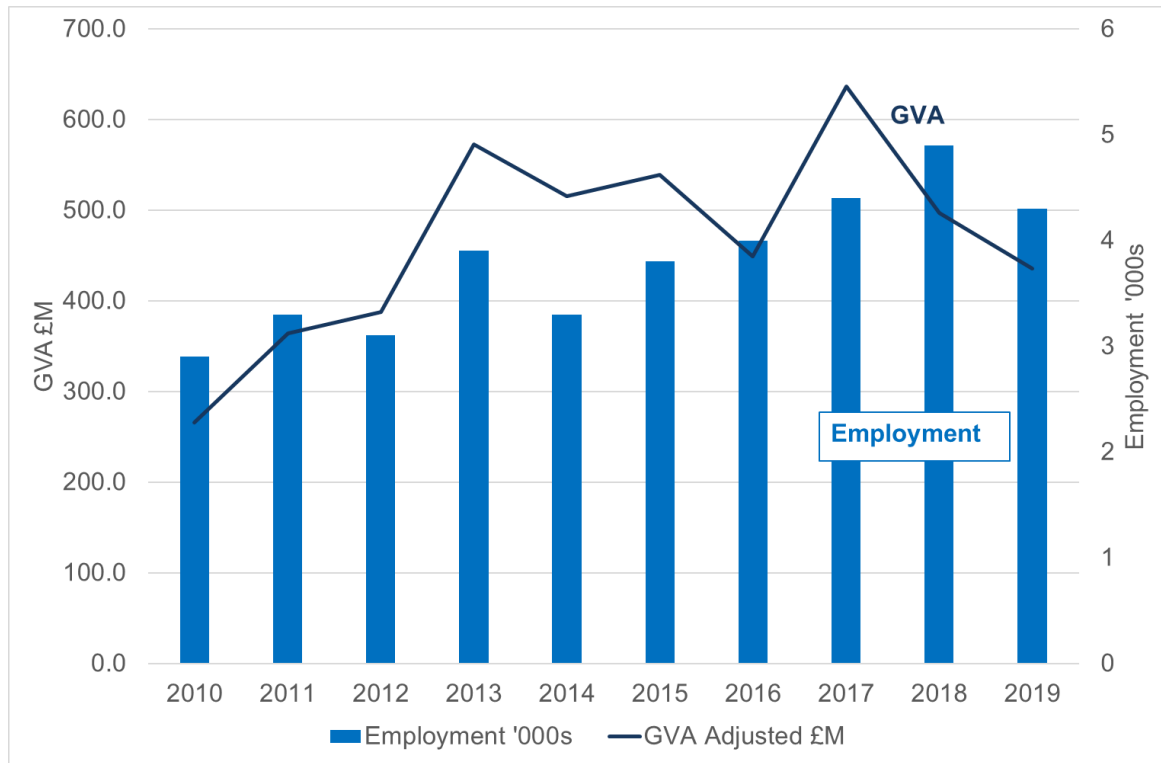
Marine construction and water transport services GVA and employment both fell by 12% between 2018 and 2019.

The longer term trends have been variable, but generally increasing. Construction and water transport services GVA increased by 64% and employment increased by 48% between 2010 and 2019.

**Table 11: Construction and water transport services GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

<b>Year</b>	<b>GVA (millions of pounds)</b>	<b>Turnover (millions of pounds)</b>	<b>Employment headcount (thousands)</b>	<b>GVA per head (pounds)</b>
2010	266	480	2.9	91,671
2011	364	632	3.3	110,379
2012	388	909	3.1	125,167
2013	573	1,092	3.9	146,888
2014	516	894	3.3	156,305
2015	539	919	3.8	141,798
2016	449	713	4.0	112,238
2017	637	780	4.4	144,729
2018	497	726	4.9	101,407
2019	436	725	4.3	101,302

**Figure 11: Construction and water transport services GVA and employment, 2010 to 2019 (2019 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 2019<sup>8</sup>.

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 2019, passenger water transport **generated £133 million in GVA**: accounting for 0.09% of the overall Scottish economy and 3% of the marine economy GVA. The passenger water transport industry provided employment for **1,400 people** (headcount), contributing 0.05% of the total Scottish employment and 2% of the marine economy employment.

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<sup>8</sup> [Scottish Transport Statistics, No 39, 2020 Edition](#).



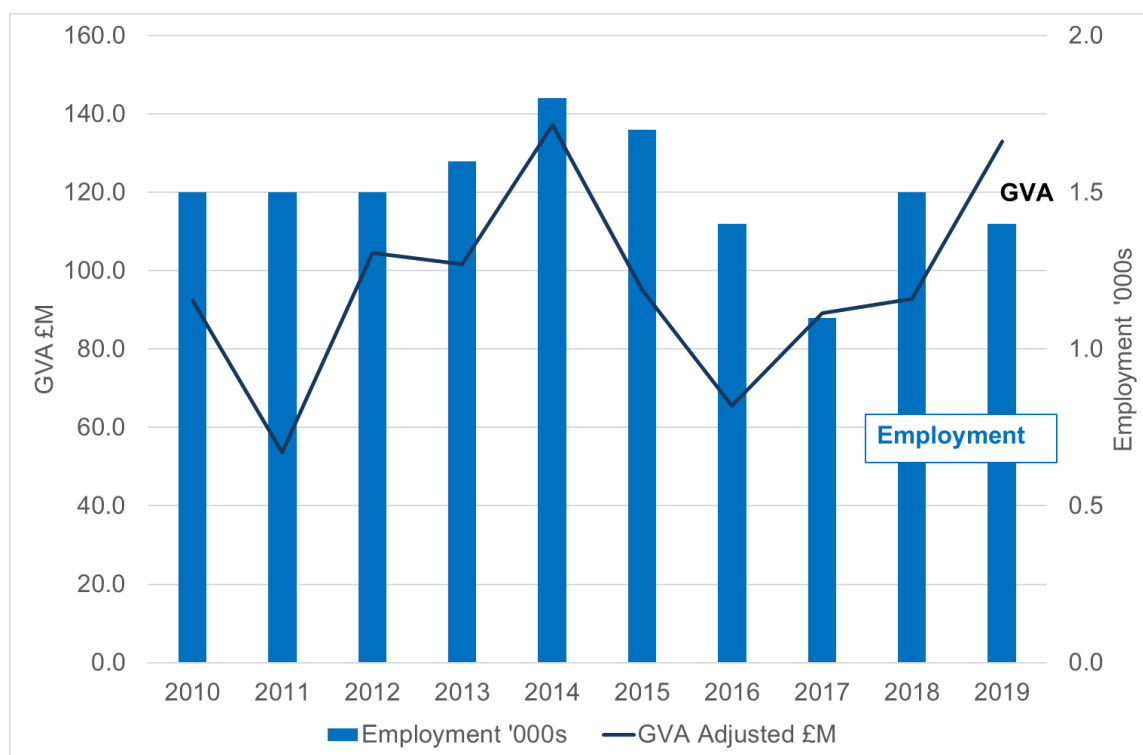
## 9.4 Passenger water transport – trends

From 2018 to 2019, the GVA from passenger water transport (adjusted to 2019 prices) increased by 43%, while the longer term trend from 2010 to 2019 showed that passenger water transport GVA fluctuated from year to year, but rose by 44%. Employment in 2019 fell by 7% to 1,400 compared to 2018. From 2010 to 2019, employment fell by 7%.

**Table 12: Passenger water transport GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

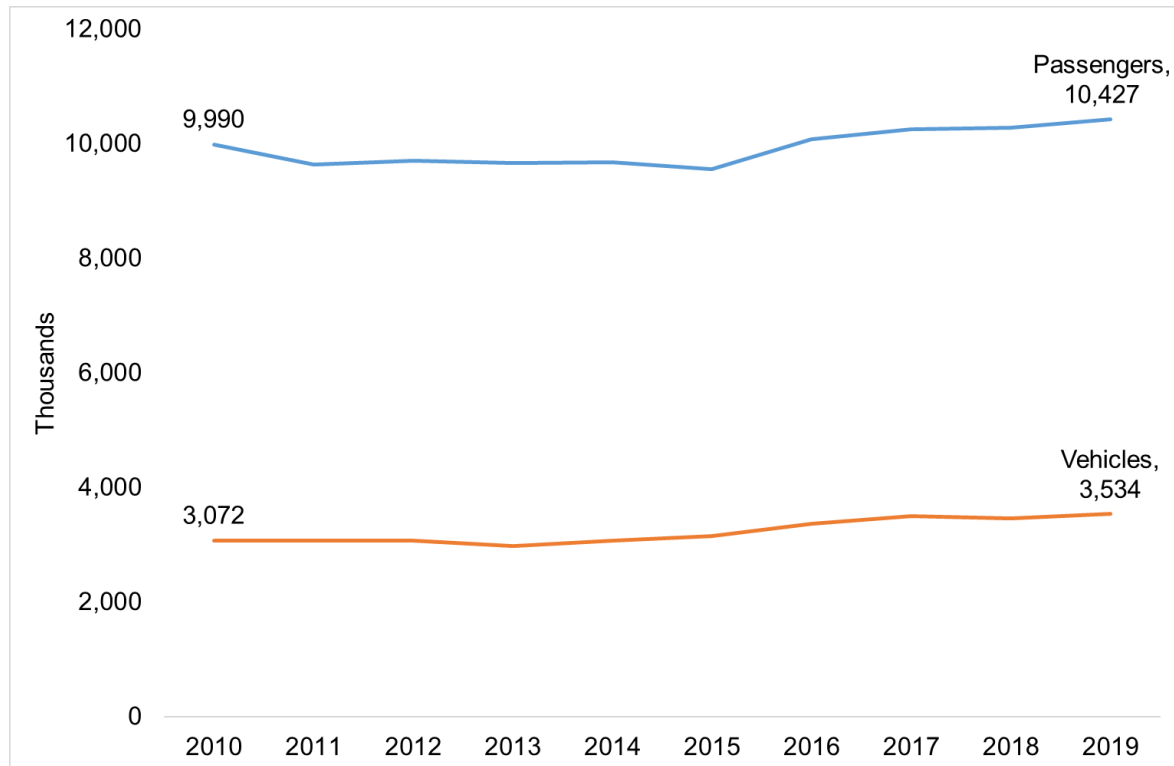
Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	93	277	1.5	61,690
2011	54	408	1.5	35,711
2012	104	350	1.5	69,656
2013	102	390	1.6	63,536
2014	137	361	1.8	76,246
2015	95	237	1.7	56,024
2016	66	183	1.4	46,832
2017	89	208	1.1	81,062
2018	93	316	1.5	61,950
2019	133	284	1.4	95,071

**Figure 12: Passenger water transport GVA and employment (headcount), 2010 to 2019 (2019 prices)**



Transport Scotland statistics (Figure 13) show that the number of passengers in 2019 has increased by 4% from 2010, while the number of vehicles increased by 15%.

**Figure 13: Passenger water transport - numbers of passengers and vehicles carried on ferry routes, 2010 to 2019**



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

## 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 2019, around 52% 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 2019 travelled on other services. The vehicle transport distribution is similar to passenger transport, with 45% on the Caledonian MacBrayne services in the West of Scotland, 19% between Gourock to Dunoon and 11% on Shetland Island services.

<sup>9</sup> [Scottish Transport Statistics No 39 2020 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 2019, freight water transport **generated £229 million GVA**: accounting for 0.15% of the overall Scottish economy and 4.5% 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 2018 to 2019, the GVA from freight water transport (adjusted to 2019 prices) increased by 128%, while the longer term trend from 2010 to 2019 showed that freight water transport GVA rose by 28%. This is a small sector so changes in a small number of businesses can have large effects on figures from one year to the next.

**Table 13: Freight water transport GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	178	350	0.5	356,500
2011	201	406	0.5	402,725
2012	162	285	0.6	269,708
2013	82	391	0.6	136,211
2014	91	295	0.9	100,810
2015	90	258	0.6	149,676
2016	72	194	0.5	143,477
2017	44	121	0.5	88,750
2018	100	307	0.4	250,948
2019	229	385	0.4	572,250

From 2010 to 2019, employment fell by 20%, from 500 people in 2010 to 400 in 2019.

**Figure 14: Freight water transport GVA and employment (headcount), 2010 to 2019 (2019 prices)**

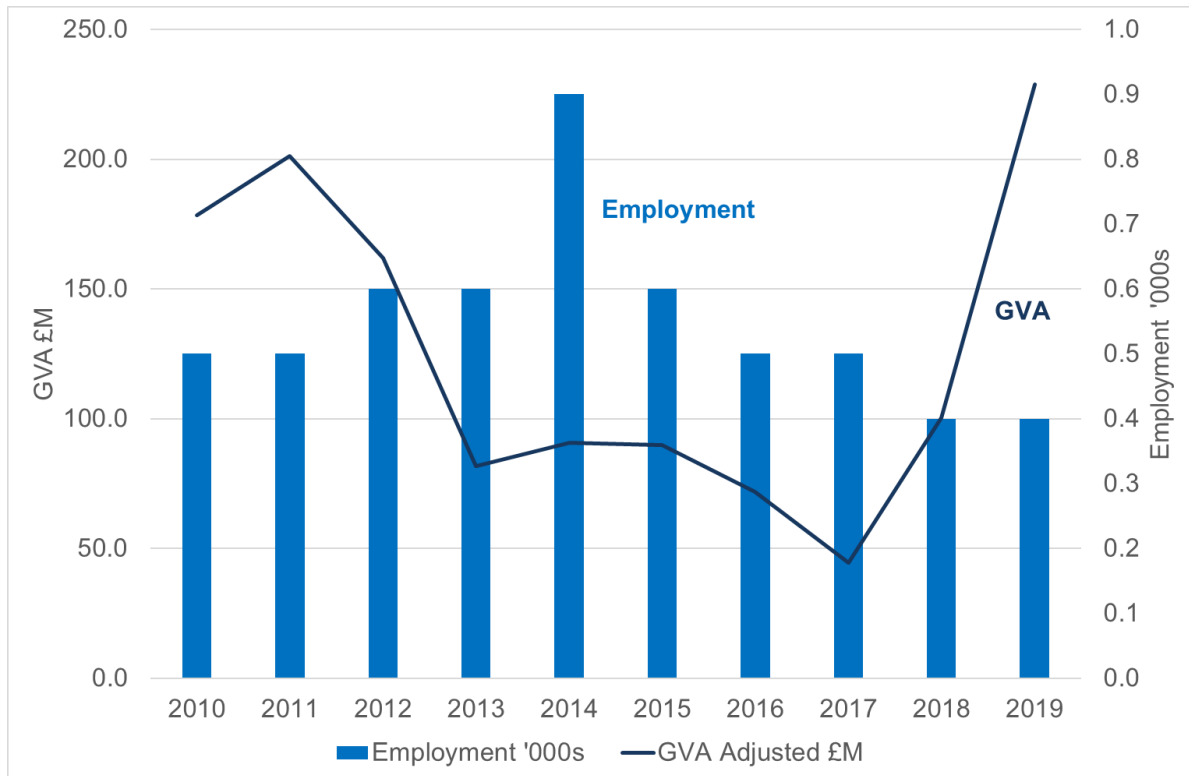
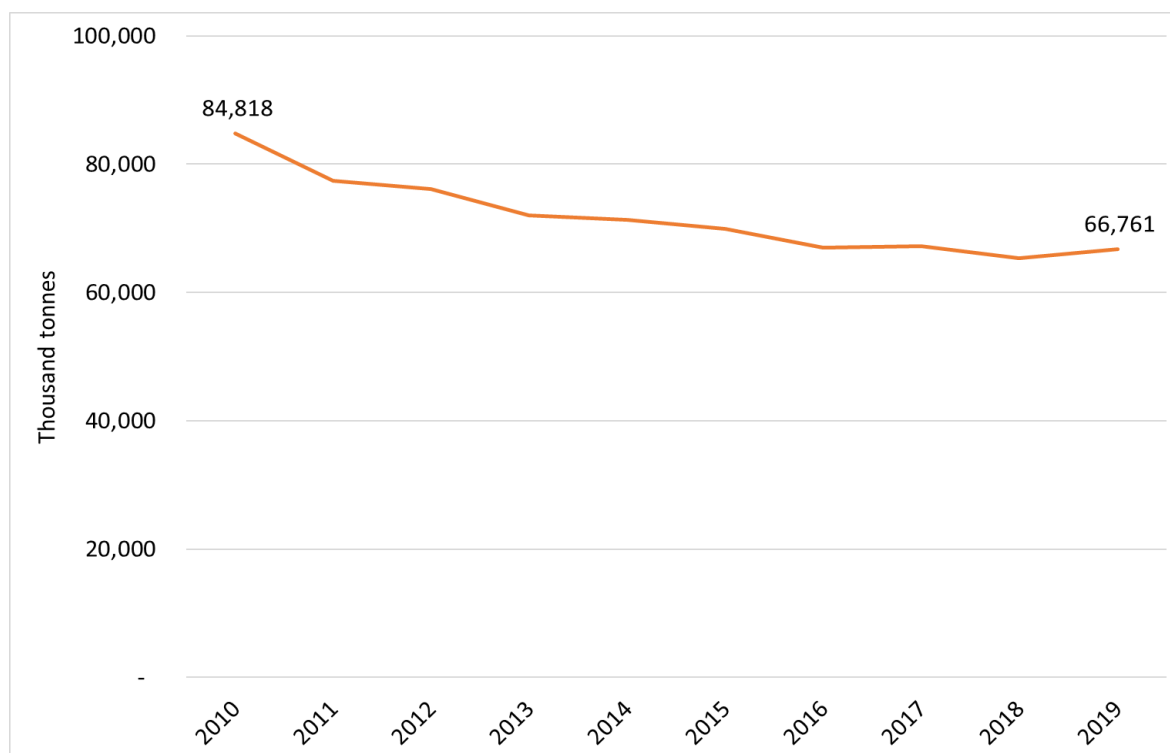


Figure 15 shows Transport Scotland’s statistics for the tonnage of freight traffic through Scottish ports. There were 67 million tonnes of freight handled by ports in Scotland in 2019, a 2% increase on 2018. However, between 2010 and 2019 the total tonnage of freight traffic through Scottish ports reduced by 21%.

**Figure 15: Freight water transport – freight tonnage through Scottish ports, 2010 – 2019**



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

### 9.9 Freight water transport – by geography

The highest freight traffic in 2019 was through Forth ports (40% of tonnage through the top 11 ports), Clyde ports (14%) and Sullom Voe (12%).

**Table 14: Distribution of total freight tonnages through Scotland's 11 major ports, 2019**

Port	Tonnage	% of total tonnage through Scotland's top 11 ports
Aberdeen	4,195	7%
Cairnryan	2,705	4%
Clyde	8,801	14%
Cromarty Firth	929	1%
Dundee	503	1%
Forth	25,221	40%
Glensanda	6,646	11%
Orkney	3,050	5%
Peterhead	1,090	2%
Stranraer / Loch Ryan	2,650	4%
Sullom Voe	7,371	12%
<b>TOTAL</b>	<b>63,160</b>	<b>100%</b>

Source: Transport Scotland, [Scottish Transport Statistics No 39 2020 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 2019, renting and leasing of water transport equipment **generated £15 million in GVA**: accounting for 0.01% of the overall Scottish economy and 0.3% 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

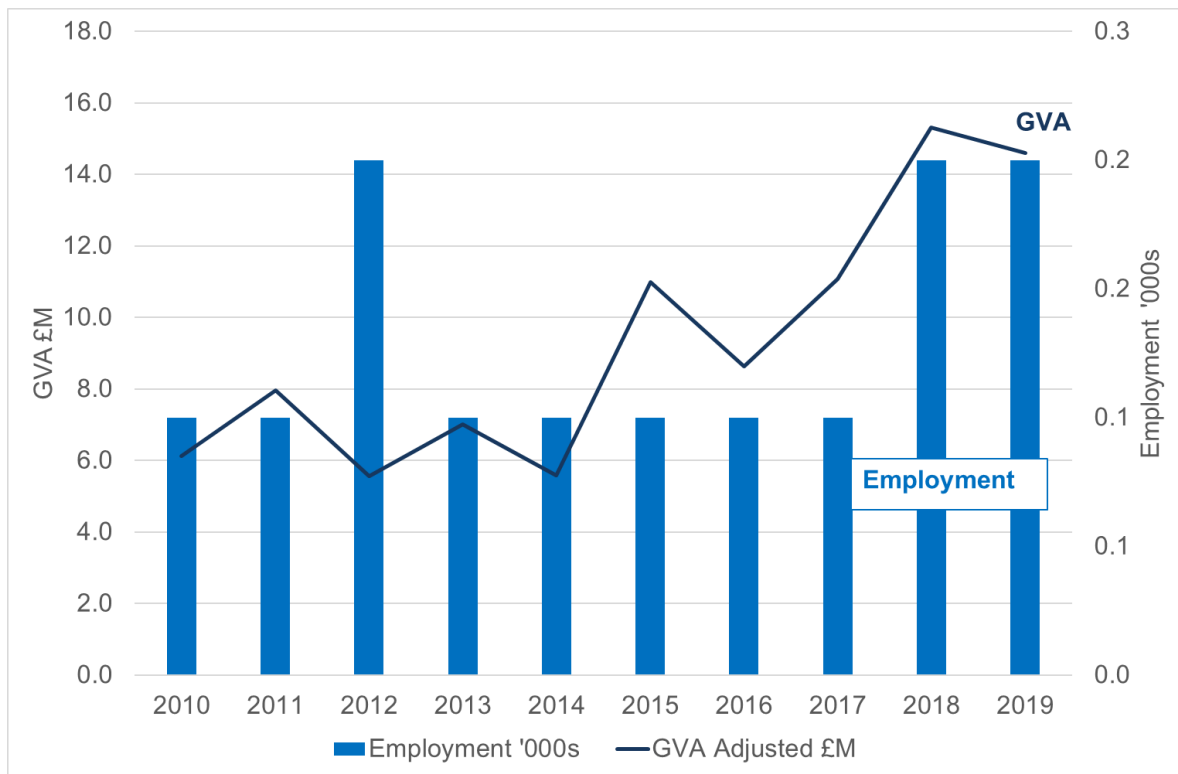
From 2018 to 2019, the GVA from the renting and leasing industry (adjusted to 2019 prices) decreased by 5%, while the longer term trend from 2010 to 2019 showed that renting and leasing GVA increased by 139%.

From 2010 to 2019, employment increased by 100%, 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, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	6	12	0.1	61,141
2011	8	14	0.1	79,485
2012	6	13	0.2	27,764
2013	7	12	0.1	70,147
2014	6	13	0.1	55,816
2015	11	19	0.1	109,810
2016	9	15	0.1	86,214
2017	11	18	0.1	110,677
2018	15	27	0.2	76,586
2019	15	27	0.2	73,000

**Figure 16: Renting and leasing of water transport equipment GVA and employment (headcount), Scotland, 2010 to 2019 (2019 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](#)<sup>10</sup> 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 exclude some that are marine-related, it is a reasonable and replicable method of estimating the marine tourism economy using existing data. This methodology was updated slightly in 2022, to use updated postcode and boundary data but this does not affect comparability. See Annex B section 18.10 for more information.

### 11.2 Key economic points

In 2019, marine tourism **generated £598 million GVA**: accounting for 0.4% of the overall Scottish economy and 12% of the marine economy GVA.

The marine tourism industry **provided employment for 33,100 people** (headcount), contributing 1.2% of the total Scottish employment. It is the biggest marine economy employer accounting for 44% of the marine economy employment. However, due to the seasonal and part time nature of tourism employment, the full time equivalent will be significantly smaller.

Scottish tourism as a whole was estimated to be worth £4.5 billion in GVA in 2019. Thus marine tourism is estimated to account for around 13% of all Scottish tourism in 2019, which is a slightly lower percentage than in 2018 (14%).

### 11.3 Marine tourism – trends

From 2018 to 2019, the GVA from marine tourism (adjusted to 2019 prices) increased by 1%, while the longer term trend from 2010 to 2019 showed that marine tourism GVA increased by 36%.

From 2010 to 2019, employment increased by 45%.

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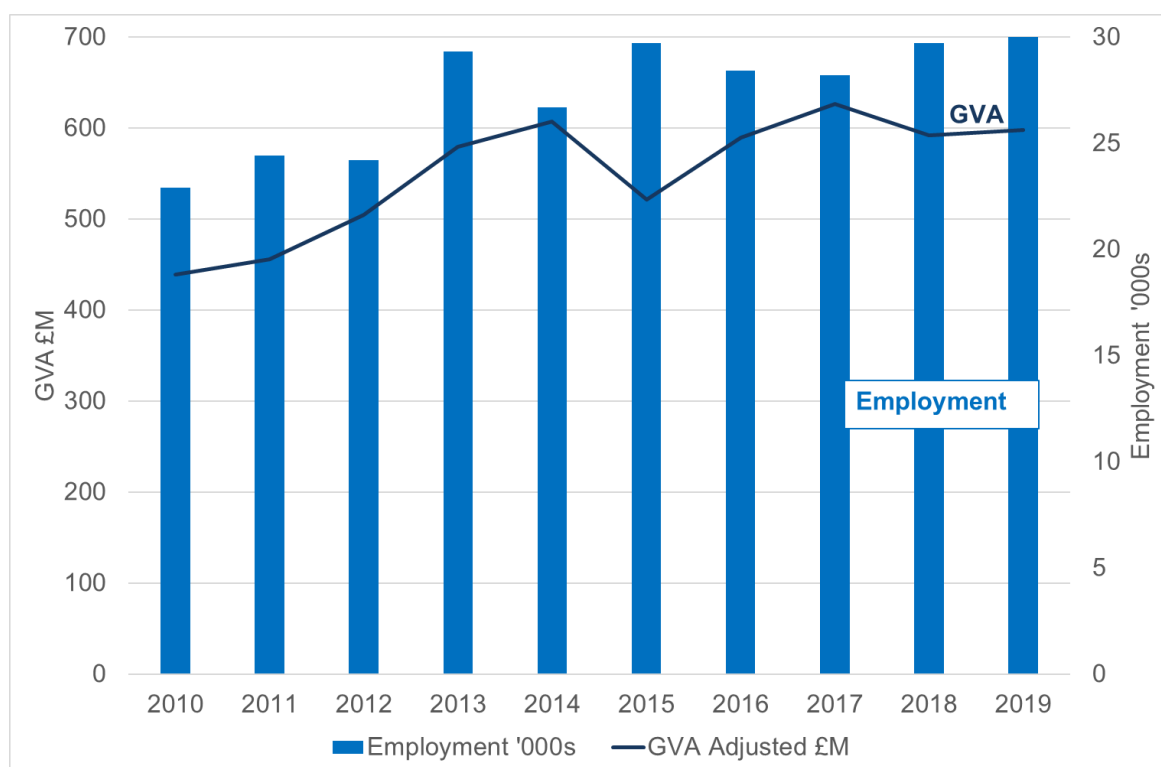
<sup>10</sup> [Growth Sector Statistics](#)



**Table 16: Marine tourism GVA, turnover, employment and GVA per head, 2010 to 2019 (2019 prices)**

Year	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)	GVA per head (pounds)
2010	439	886	22.9	19,152
2011	456	930	24.4	18,682
2012	504	999	24.2	20,838
2013	580	1,064	29.3	19,784
2014	607	1,082	26.7	22,745
2015	521	973	29.7	17,549
2016	589	1,095	28.4	20,752
2017	627	1,082	28.2	22,223
2018	592	1,068	29.7	19,938
2019	598	1,111	33.1	18,076

**Figure 17: Marine tourism GVA and employment (headcount), 2010 to 2019 (2019 prices)**



#### 11.4 Marine tourism by geography

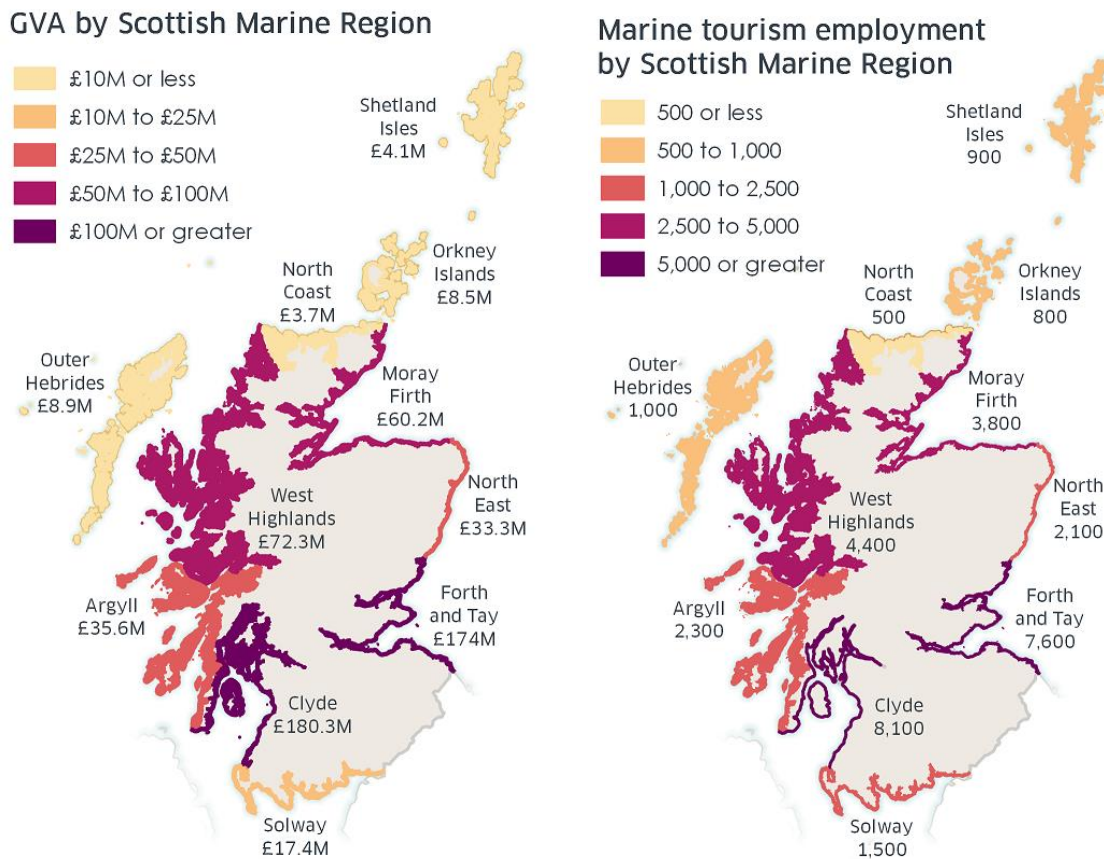
The marine tourism economic values were disaggregated to Scottish Marine Regions (local authority breakdown is unavailable due to the small quantity of data). While SMRs are geographies that relate to the sea, marine tourism value is earned on land and so Figure 18 shows outputs around the coast. The Clyde region was the largest contributor to marine tourism GVA in 2019 at £180 million (30% of the GVA),

and to employment in 2019, (24% of the employment). The Forth and Tay region was the next highest accounting for 29% of the GVA and 23% of the employment.

**Table 17: Marine tourism - GVA, turnover and employment, by SMR, 2019**

SMR	GVA (millions of pounds)	Turnover (millions of pounds)	Employment headcount (thousands)
Clyde	180.3	306.1	8.1
Forth and Tay	174	303.1	7.6
West Highlands	72.3	130.8	4.4
Moray Firth	60.2	125.6	3.8
Argyll	35.6	67.1	2.3
North East	33.3	88.5	2.1
Solway	17.4	34	1.5
Outer Hebrides	8.9	18.6	1
Orkney Islands	8.5	20	0.8
Shetland Isles	4.1	9	0.9
North Coast	3.7	8	0.5
<b>Total</b>	<b>598.3</b>	<b>1110.9</b>	<b>33.1</b>

**Figure 18: Marine tourism GVA and employment by SMR, 2019**



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## 12. Offshore wind

### 12.1 Introduction

Marine Scotland has been investigating ways to measure the economic activity of offshore wind farms. This is still under development, so it is not included within the overall marine economic figures. Estimates on the employment and turnover for offshore wind are sourced from the Office for National Statistics's [Low Carbon and Renewable Energy Economy Survey](#). This annual survey collects economic information on the 17 Low Carbon and Renewable Energy sectors, one of which is offshore wind. The accuracy of these survey-based estimates for smaller sectors and country level dis-aggregations, can be variable, which limits the use of some of the data. More information on this including confidence intervals can be found in the [Low carbon and renewable energy economy, UK: 2020 bulletin](#).

Unfortunately, we have been unable to calculate GVA estimates but are continuing to look into this. The employment estimates are also given as full time equivalents rather than headcounts so are not directly comparable to the rest of the publication.

### 12.2 Key economic points

Scottish offshore wind directly **employed an estimated 1,600 full time equivalent (FTE) staff in 2019**. It generated **3,161 GWh of electricity, 10% of all renewable energy generation in Scotland** and had an estimated **turnover of £603 million** in 2019, accounting for 0.25% of overall Scottish turnover.

### 12.3 Offshore wind farms – trends

From 2018 to 2019, the turnover from the Scottish offshore wind farm industry (adjusted to 2019 prices) increased by 125%, while the longer term trend from 2014 to 2019 showed that turnover (adjusted to 2019 prices) increased by 480%.

The employee FTE increased by 129% between 2014 and 2019. This increase is not statistically significant and could be due to sampling variability rather than a real change. See Annex B section 18.11 for more details.

**Table 18: Offshore wind electricity generation, turnover and full time equivalent employment, 2014 to 2019**

Year	Electricity generation (GWh)	Turnover (millions of pounds)	Full time equivalent employees (thousands)
2014	569	104	0.7
2015	539	c	0.3
2016	502	c	1.2
2017	614	c	1.9
2018	1,209	268	1.6
2019	3,161	603	1.6

Data shown as 'c' are confidential as they are based on a small number of businesses.

### 13. 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 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 only. Economic activity from recreational sea angling is not included separately in this publication. However some elements of the economic activity from recreational sea angling may be covered within other sectors, such as marine tourism or renting and leasing of water equipment.

Renewable energy has continued to grow in Scotland and marine renewable energy (wind, wave and tidal) has increased by 456% in generation between 2014 and 2019<sup>11</sup>. For the first time this year we have included information of offshore wind turnover and employment in this report. We are still working on calculating GVA for offshore wind and sourcing economic information for the other offshore renewable energy sectors.

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

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<sup>11</sup> [BEIS Energy Trends, December 2021, Renewable electricity capacity and generation \(ET 6.1 - quarterly\) excel spreadsheet.](#)

## 14. Related reports and statistics

### 14.1 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.

### 14.2 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](#)<sup>12</sup>. 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, which were updated in 2019. 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 Maritime UK report is not a suitable source as it has not been updated for several years. However, this report does identify additional industry sectors which we will consider for future inclusion in the Marine Economic Statistics.

### 14.3 Other source reports

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

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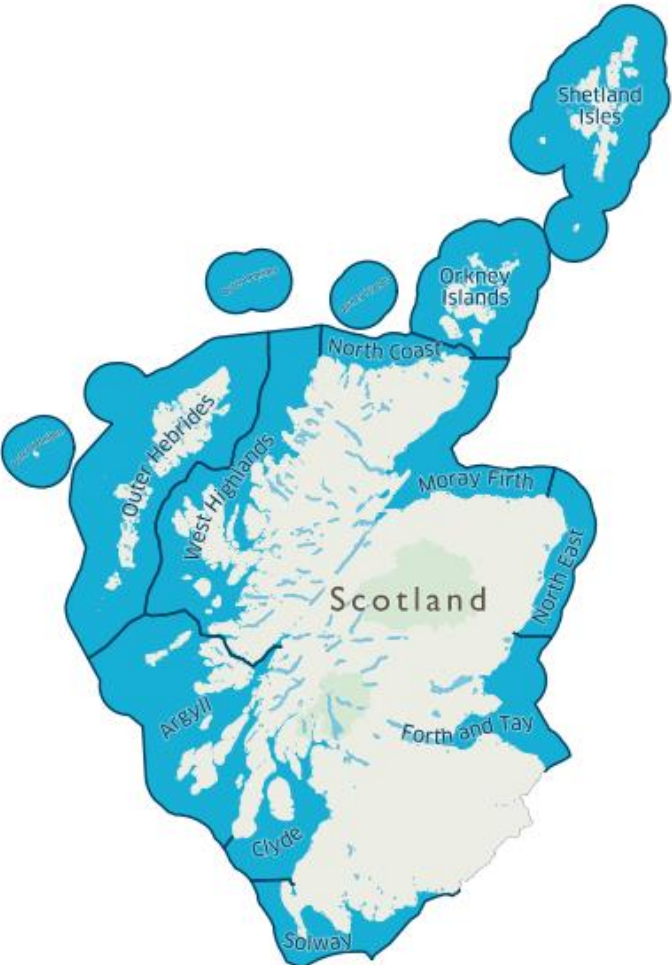
<sup>12</sup> The Economic Contribution of the Maritime Sector in Scotland: A report for Maritime UK [Cebr economic impact studies \(2019\) | Maritime UK](#)

## 15. 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. <a href="http://www.gov.scot">Scottish fish farm production surveys - gov.scot (www.gov.scot)</a> <a href="http://www.gov.scot">Scottish shellfish farm production surveys - gov.scot (www.gov.scot)</a>
Annual Population Survey (APS)	The Annual Population Survey was used as the source for employment statistics. <a href="#">Background tables related to Scotland's Labour Market - People, Places and Regions</a>
<a href="#">CEFAS</a>	Centre for Environment, Fisheries and Aquaculture Science. CEFAS annually coordinates the supply of UK economic data on aquaculture to the EU.
Data Collection Framework <a href="#">DCF data</a>	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. Under the regulations, member states are required to compile a wide range of biological and economic data.  As the UK has now left the EU, these requirements no longer apply and have been replaced by the UK Fisheries Act 2020.
<a href="#">Fleet Economic Survey</a> (Seafish publication)	The <a href="#">Seafish Fleet Economic Performance Dataset</a> contains financial, economic and operation performance indicators for the sea fisheries fleet for the period 2010-2020.
<a href="#">Food Standards Agency</a> (FSA)	The FSA publish data on Approved Food Establishments. The data was used to provide the geographic distribution of fish processing plants. <a href="#">Food Standards Agency Approved Food Establishments</a>

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 <b>head counts</b> , i.e. not taking working hours (or seasonal employment) into account. All employment counts in this publication apart from the offshore wind estimates 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 to the production of goods and services, and as such is a more useful indicator.
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. <a href="#">Growth Sector Statistics</a>
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.
<a href="#">Marine Management Organisation</a> (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.
<a href="#">Processing sector statistics</a> (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.
<a href="#">Quarterly National Accounts of Scotland</a>	The Quarterly National Accounts of Scotland provide national-level GVA estimates. The 2019 statistics for Scotland's economy were used.



<p><a href="#">Scottish Annual Business Statistics</a> (SABS)</p>	<p>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.</p>
<p>Scottish Marine Regions</p>	<p>Scottish Marine Regions were introduced by The <a href="#">Scottish Marine Regions Order 2015</a>. The boundaries identify the areas for preparing and adopting regional marine plans. A map of these regions is shown below:</p>  <p>The map displays the geographical outline of Scotland and its surrounding islands, divided into ten distinct marine regions. The regions are labeled as follows: Shetland Isles (northernmost), Orkney Islands (northwest), North Coast (northern mainland), Outer Hebrides (far west), West Highlands (west coast), Moray Firth (northern inland), North East (east coast), Argyll (west coast), Forth and Tay (east coast), Clyde (southwest coast), and Solway (southern coast).</p>
<p><a href="#">Scottish Sea Fisheries Statistics</a> (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.</p>
<p><a href="#">Seafish</a></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,</p>



	exporters and distributors of seafood. It also collects and publishes economic and social data on seafood sectors.
<a href="#">Shipbuilding profile</a> SABS analysis	SABS specialist analysis of Scottish shipbuilding figures in the SABS 2019 – industry profiles tables.
<a href="#">Standard Industrial Classification - SIC Codes</a>	<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.</p> <p>The current codes were introduced in 2007 and are the reason that the reporting in this publication runs from 2008 onwards.</p> <p><a href="#">SIC 2007: structure and explanatory notes</a></p>
<a href="#">Sustainable Tourism by Local Authority Area</a> SABS Analysis	SABS specialist analysis of Scottish tourism by local authority in the SABS 2019 excel tables.
<a href="#">Transport Scotland</a>	Transport Scotland produce transport activity statistics. The passenger and freight activity data was extracted from Scottish Transport Statistics – No 39 – Datasets. Chapter 9 Water Transport. The data was supplied by ferry operators and is not classified as National Statistics. <a href="#">Scottish Transport Statistics No 39 2020 Edition</a>
<a href="#">UK Fisheries Act 2020</a>	Clause 1 of the UK Fisheries Act 2020 enables the collection of data on the management of fish and aquaculture activities based on the best available scientific advice. For continuity, the data collected replicate those previously collected under EU Reg 2017/1004 for the DCF survey.

## 16. Tables

### 16.1 Economic Overview

**Table 19: Economic Overview - Scotland's GVA, turnover and employment <sup>1</sup> by sector, 2019**

Industry sector	GVA (millions of pounds)	GVA as a percentage of the Marine total	GVA as a percentage of the Scotland total	Turnover (millions of pounds)	Turnover as a percentage of the Marine total	Employment headcount (thousands)	Employment headcount as a percentage of the Marine total	Employment headcount as a percentage of the Scotland total
Fishing	329	7%	0.22%	596	5%	4.9	6%	0.18%
Aquaculture <sup>2</sup>	560	11%	0.38%	1,111	10%	2.4	3%	0.09%
Support for oil & gas	1,945	39%	1.31%	4,527	39%	15.7	21%	0.59%
Processing	390	8%	0.26%	1,707	15%	6.8	9%	0.26%
Shipbuilding	408	8%	0.28%	1,094	9%	6.3	8%	0.24%
Construction and water transport services	436	9%	0.29%	725	6%	4.3	6%	0.16%
Passenger water transport	133	3%	0.09%	284	2%	1.4	2%	0.05%
Freight water transport	229	5%	0.15%	385	3%	0.4	1%	0.02%
Renting and leasing of water transport equipment	15	0%	0.01%	27	0%	0.2	0%	0.01%
Marine Tourism <sup>3</sup>	598	12%	0.40%	1,111	10%	33.1	44%	1.24%
<b>Marine Total</b>	<b>5,043</b>	<b>100%</b>	<b>3.40%</b>	<b>11,567</b>	<b>100%</b>	<b>75.5</b>	<b>100%</b>	<b>2.83%</b>
<b>Scotland total <sup>4</sup></b>	<b>148,269</b>					<b>2,663.9</b>		

**Footnotes:** Turnover and GVA adjusted for inflation based on 2019 price estimates.  
 1 – Employment figures are head counts (not adjusted to Full Time Equivalents).  
 2 – All years of Aquaculture GVA updated to include change in stock value see Annex B section 18.6.

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.

**Table 20: Economic Overview, Scotland's GVA (millions of pounds) time series by sector, 2010 to 2019 <sup>1</sup> (2019 prices)**

<b>Marine sector</b>	<b>GVA 2010</b>	<b>GVA 2011</b>	<b>GVA 2012</b>	<b>GVA 2013</b>	<b>GVA 2014</b>	<b>GVA 2015</b>	<b>GVA 2016</b>	<b>GVA 2017</b>	<b>GVA 2018</b>	<b>GVA 2019</b>
Fishing	210	253	240	211	303	235	327	335	309	329
Aquaculture <sup>2</sup>	184	196	177	288	289	84	243	544	387	560
Support for oil & gas <sup>3</sup>	3,090	2,436	2,837	2,551	2,354	2,727	2,243	2,227	1,865	1,945
Processing	371	380	310	428	459	341	410	401	361	390
Shipbuilding	577	565	521	462	565	471	218	499	281	408
Construction and water transport services	266	364	388	573	516	539	449	637	497	436
Passenger water transport	93	54	104	102	137	95	66	89	93	133
Freight water transport	178	201	162	82	91	90	72	44	100	229
Renting & leasing of water transport equipment	6	8	6	7	6	11	9	11	15	15
Marine Tourism <sup>4</sup>	439	456	504	580	607	521	589	627	592	598
<b>Grand Total <sup>5</sup></b>	<b>5,414</b>	<b>4,914</b>	<b>5,250</b>	<b>5,283</b>	<b>5,328</b>	<b>5,113</b>	<b>4,624</b>	<b>5,413</b>	<b>4,500</b>	<b>5,043</b>

Footnotes

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – All years of Aquaculture GVA updated to include change in stock value see Annex B section 18.6.

3 – SABS categories for oil and gas services changed in 2011 see Annex B section 18.7.

4 – Marine tourism values include specific tourism SIC groups within 100m of the coast.

5 – Totals may not sum due to rounding and/or disclosure control.

**Table 21: Economic Overview, Scotland's turnover (millions of pounds) time series by marine sector, 2010 to 2019 <sup>1</sup> (2019 prices)**

Marine sector	Turnover 2010	Turnover 2011	Turnover 2012	Turnover 2013	Turnover 2014	Turnover 2015	Turnover 2016	Turnover 2017	Turnover 2018	Turnover 2019
Fishing	520	593	551	501	586	487	609	616	603	596
Aquaculture	659	701	633	779	814	728	849	1,134	941	1,111
Support for oil & gas <sup>2</sup>	6,653	6,377	6,631	6,808	7,440	7,316	4,763	4,731	4,277	4,527
Processing	1,702	1,464	1,494	1,747	1,855	1,702	1,708	1,867	1,779	1,707
Shipbuilding	1,667	1,636	1,718	1,363	1,547	1,778	1,149	1,597	1,239	1,094
Construction and water transport services	480	632	909	1,092	894	919	713	780	726	725
Passenger water transport	277	408	350	390	361	237	183	208	316	284
Freight water transport	350	406	285	391	295	258	194	121	307	385
Renting & leasing of water transport equipment	12	14	13	12	13	19	15	18	27	27
Marine Tourism <sup>3</sup>	886	930	999	1,064	1,082	973	1,095	1,082	1,068	1,111
<b>Grand Total <sup>4</sup></b>	<b>13,207</b>	<b>13,162</b>	<b>13,584</b>	<b>14,148</b>	<b>14,889</b>	<b>14,418</b>	<b>11,278</b>	<b>12,154</b>	<b>11,282</b>	<b>11,567</b>

Footnotes

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – SABS categories for oil and gas services changed in 2011 see Annex B section 18.7.

3 – Marine tourism values include specific tourism SIC groups within 100m of the coast.

4 – Totals may not sum due to rounding and/or disclosure control.

**Table 22: Economic Overview, Scotland's employment <sup>1</sup> (thousands) time series by marine sector, 2010 to 2019**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fishing	5.2	5	4.7	5	4.8	4.8	4.8	4.8	4.9	4.9
Aquaculture	1.9	1.8	1.9	2	2.1	2.2	2.3	2.2	2.2	2.4
Support for oil & gas <sup>2</sup>	18.4	18.6	18.5	17.4	20	21.5	19.7	17.8	16.7	15.7
Processing	8	7.5	7.7	7.1	8	7.5	7.6	7.7	7.6	6.8
Shipbuilding	7.1	7.2	7.1	7	7.3	7.2	7.2	7.7	7.1	6.3
Construction and water transport services	2.9	3.3	3.1	3.9	3.3	3.8	4	4.4	4.9	4.3
Passenger water transport	1.5	1.5	1.5	1.6	1.8	1.7	1.4	1.1	1.5	1.4
Freight water transport	0.5	0.5	0.6	0.6	0.9	0.6	0.5	0.5	0.4	0.4
Renting & leasing of water transport equipment	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Marine Tourism <sup>3</sup>	22.9	24.4	24.2	29.3	26.7	29.7	28.4	28.2	29.7	33.1
<b>Grand Total <sup>4</sup></b>	<b>68.5</b>	<b>69.9</b>	<b>69.5</b>	<b>74</b>	<b>75</b>	<b>79.1</b>	<b>76</b>	<b>74.5</b>	<b>75.2</b>	<b>75.5</b>

Footnotes

1 – Employment figures are head counts (not adjusted to Full Time Equivalentents).

2 – SABS categories for oil and gas services changed in 2011 see Annex B section 18.7.

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

4 – Totals may not sum due to rounding and/or disclosure control.

**Table 23: Economic Overview, by local authority, 2018 to 2019 <sup>1 2 3</sup> (2019 prices)**

<b>Local authority</b>	<b>GVA 2018 (millions of pounds)</b>	<b>GVA 2019 (millions of pounds)</b>	<b>Turnover 2018 (millions of pounds)</b>	<b>Turnover 2019 (millions of pounds)</b>	<b>Employment 2018 (thousands)</b>	<b>Employment 2019 (thousands)</b>
Aberdeen City	1,700	1,888	3,725	4,159	15.6	15.2
Aberdeenshire	966	884	2,283	2,104	10.1	8.9
Angus	38	45	83	93	1.1	1.1
Argyll & Bute	134	154	356	363	5.2	5.9
City Of Edinburgh	37	50	123	135	1.5	1.5
Clackmannanshire	c	1	c	3	c	c
Dumfries & Galloway	81	59	257	148	2.7	2.3
Dundee City	9	21	18	33	0.5	0.6
East Ayrshire	0	1	1	2	c	c
East Dunbartonshire	c	c	c	c	c	c
East Lothian	29	32	65	67	1.5	1.5
East Renfrewshire	c	c	c	c	c	c
Falkirk	c	c	c	c	0.7	0.7
Fife	55	146	332	367	5.3	5.0
Glasgow City	240	198	c	c	4.0	4.1
Highland	221	291	621	672	9.0	10.0
Inverclyde	44	87	141	150	1.6	1.6
Midlothian	c	c	c	c	c	c
Moray	26	29	65	78	0.9	1.1
Na H-Eileanan Siar	46	48	124	144	1.4	1.8
North Ayrshire	43	47	104	101	1.6	1.6
North Lanarkshire	8	7	24	21	0.2	0.2
Orkney Islands	34	43	99	89	1.4	1.4
Perth & Kinross	3	7	26	23	0.4	0.5
Renfrewshire	40	39	76	69	1.6	1.5
Scottish Borders	29	32	5	5	1.2	1.2
Shetland Islands	137	139	308	294	2.1	2.0
South Ayrshire	34	36	61	58	1.3	1.2
South Lanarkshire	-2	-1	c	c	0.3	c
Stirling	14	15	24	26	0.7	0.7
West Dunbartonshire	23	23	35	31	0.5	0.5
West Lothian	3	4	9	10	0.2	0.1
<i>Unallocated</i> <sup>4</sup>	508	720	2,317	2,323	2.6	3.3
<b>Scotland total</b>	<b>4,500</b>	<b>5,043</b>	<b>11,282</b>	<b>11,567</b>	<b>75.2</b>	<b>75.5</b>

Footnotes

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – All years of Aquaculture GVA updated to include change in stock value see Annex B section 18.6.

3 – The use of a 'c' in a cell denotes that the data is confidential so cannot be supplied.

4 – Some values could not be assigned to local authorities and have been reported as 'Unallocated'.

## 16.2 Sea Fisheries

**Table 24: Fishing - GVA and fishing income by Scottish vessels (millions of pounds), by local authority, 2016 to 2019 <sup>1 2 3</sup> (2019 prices)**

Local authority	GVA 2016	GVA 2017	GVA 2018	GVA 2019	Value of landings 2016	Value of landings 2017	Value of landings 2018	Value of landings 2019
Aberdeen City	0.1	0.2	0.2	0.3	0.2	0.4	0.4	0.5
Aberdeenshire	139.7	152.3	140.9	148.7	254.2	271.1	272.8	258.4
Angus	1.4	1.6	1.8	1.7	2.3	3	3.1	3.3
Argyll & Bute	14.8	15.1	13.7	13.9	29.1	29.7	29.2	28.8
Edinburgh, City Of	0.2	0.1	c	c	0.4	0.3	0	0
Dumfries & Galloway	8.3	9.8	5.8	7.3	18.8	18.6	16.7	15.2
East Lothian	1.5	1.6	1.5	1.3	3	3.1	3	2.8
Fife	2.4	3	2.6	2.5	5	5.9	5.8	6
Highland	31.6	27.2	27.7	27.5	63.4	56.9	57.5	56
Moray	7.8	8.2	6.6	7.2	17.1	17.1	16.8	16.3
Na h-Eileanan Siar	8.1	7.4	7	8.6	14.9	14.6	14.2	17.1
North Ayrshire	0.8	1	1.3	1	1.5	1.6	2.2	1.8
Orkney Islands	10	11.2	11.9	12	20.2	20.4	23.8	22.6
Scottish Borders	2.4	3.2	2.9	2.6	4.6	5.6	5.4	5
Shetland Islands	76.9	71.9	73.7	72.3	123.1	110.7	119.3	108.1
South Ayrshire	5.5	5.8	5.2	5.5	11.3	11.1	12.1	11.6
<i>Unallocated</i> <sup>4</sup>	15.1	15.4	6.1	16.1	39.3	45.6	21	42.7
<b>Scotland Total</b>	<b>326.7</b>	<b>335</b>	<b>308.8</b>	<b>328.6</b>	<b>608.6</b>	<b>615.7</b>	<b>603.5</b>	<b>596.3</b>

### Footnotes

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – Seafish produced estimated GVA based on the vessel's registered port.

3 – The use of a 'c' in a cell denotes that the data is confidential so cannot be supplied.

4 – Some values could not be assigned to local authorities and have been reported as 'Unallocated'

## 16.3 Aquaculture

**Table 25: Aquaculture time series: GVA, production volume, value and employment, 2010 to 2019 (2019 prices) <sup>1 2 3 4</sup>**

<b>Value</b>	<b>Year 2010</b>	<b>Year 2011</b>	<b>Year 2012</b>	<b>Year 2013</b>	<b>Year 2014</b>	<b>Year 2015</b>	<b>Year 2016</b>	<b>Year 2017</b>	<b>Year 2018</b>	<b>Year 2019</b>
Finfish GVA (millions of pounds)	179	190	171	282	283	77	236	535	381	553
Shellfish GVA (millions of pounds)	5	6	5	6	6	6	7	9	5	7
<b>Total GVA (millions of pounds)</b>	<b>184</b>	<b>196</b>	<b>177</b>	<b>288</b>	<b>289</b>	<b>84</b>	<b>243</b>	<b>544</b>	<b>387</b>	<b>560</b>
Finfish production volume (thousands of tonnes)	159	163	168	169	185	180	171	197	162	211
Shellfish production volume (thousands of tonnes)	7	7	7	7	8	8	8	9	7	7
<b>Total production volume (thousands of tonnes)</b>	<b>167</b>	<b>170</b>	<b>175</b>	<b>176</b>	<b>193</b>	<b>188</b>	<b>179</b>	<b>206</b>	<b>170</b>	<b>218</b>
Finfish value (millions of pounds)	649	690	624	769	803	717	836	1,121	931	1,103
Shellfish value (millions of pounds)	10	11	10	10	12	11	12	13	10	8
<b>Total value (millions of pounds)</b>	<b>659</b>	<b>701</b>	<b>633</b>	<b>779</b>	<b>814</b>	<b>728</b>	<b>849</b>	<b>1,134</b>	<b>941</b>	<b>1,111</b>
Finfish employment headcount	1,525	1,467	1,540	1,625	1,796	1,833	1,964	1,874	1,940	2,129
Shellfish employment headcount	399	343	358	333	345	344	315	328	298	277
<b>Total employment headcount</b>	<b>1,924</b>	<b>1,810</b>	<b>1,898</b>	<b>1,958</b>	<b>2,141</b>	<b>2,177</b>	<b>2,279</b>	<b>2,202</b>	<b>2,238</b>	<b>2,406</b>
Finfish GVA per worker (pounds)	117,087	129,639	111,268	173,823	157,483	42,219	120,390	285,405	196,423	259,963
Shellfish GVA per worker (pounds)	13,255	17,752	14,884	16,788	17,890	18,044	21,271	26,611	18,294	24,389
<b>Total GVA per worker (pounds)</b>	<b>95,554</b>	<b>108,436</b>	<b>93,088</b>	<b>147,116</b>	<b>134,989</b>	<b>38,399</b>	<b>106,690</b>	<b>246,856</b>	<b>172,705</b>	<b>232,842</b>

### Footnotes

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – All years of Aquaculture GVA updated to include change in stock value see Annex B section 18.6.

3 – Totals may not sum due to rounding and/or disclosure control.

4 – GVA Values calculated using mean GVA ratio between 2013 and 2016. GVA values calculated using actual annual economic survey data from 2017 onwards. Known as the DCF survey prior to 2019.



**Table 26: Aquaculture time series - Atlantic salmon production value (millions of pounds) by Scottish marine region group, 2014 to 2019 (2019 prices) <sup>1 2 3</sup>**

Scottish marine region group	Production value 2014	Production value 2015	Production value 2016	Production value 2017	Production value 2018	Production value 2019
Argyll & Clyde	153	143	155	257	216	237
Orkney Islands	57	44	74	96	120	94
Outer Hebrides	147	108	163	194	176	203
Shetland Isles	202	170	187	224	207	190
North Coast and West Highlands	222	218	235	321	178	351
<b>All Scotland</b>	<b>781</b>	<b>683</b>	<b>814</b>	<b>1,092</b>	<b>897</b>	<b>1,074</b>

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – Figures for some Scottish marine regions have been merged due to commercial confidentiality.

3 – Totals may not sum due to rounding and/or disclosure control.

**Table 27: Aquaculture time series - Mussel production value by Scottish marine region group, 2014 to 2019 (2019 prices) <sup>1 2 3</sup>**

Scottish marine region group	Production value 2014	Production value 2015	Production value 2016	Production value 2017	Production value 2018	Production value 2019
Argyll & Clyde	0.99	0.64	0.85	0.8	0.51	0.33
Outer Hebrides	0.54	0.94	1.01	0.5	0.64	0.5
Shetland Isles	7.72	7.27	7.86	8.47	6	4.9
West Highlands, Moray Firth and North Coast	0.78	0.65	0.97	0.71	0.83	0.43
<b>All Scotland</b>	<b>10.03</b>	<b>9.49</b>	<b>10.69</b>	<b>10.49</b>	<b>7.99</b>	<b>6.16</b>

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – Figures for some Scottish marine regions have been merged due to commercial confidentiality.

3 – Totals may not sum due to rounding and/or disclosure control.

## 16.4 Marine Transport

Table 28: Passenger water transport - total passengers and vehicles carried (thousands), 2010 to 2019 <sup>1</sup>

Type	Year 2010	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019
<b>Passengers</b>	9,990	9,631	9,698	9,662	9,679	9,554	10,073	10,255	10,279	10,427
<b>Vehicles</b>	3,072	3,072	3,076	2,973	3,075	3,148	3,371	3,506	3,457	3,535

<sup>1</sup> – Data is provided by ferry operators, not National Statistics.

**Table 29: Freight water transport - All freight traffic (thousands of tonnes) through Scottish ports by Local Authority, 2010 to 2019**<sup>1 2</sup>

Local authority	Tonnage 2010	Tonnage 2011	Tonnage 2012	Tonnage 2013	Tonnage 2014	Tonnage 2015	Tonnage 2016	Tonnage 2017	Tonnage 2018	Tonnage 2019
Aberdeen City	4,164	4,165	4,493	4,263	4,231	4,376	3,770	4,058	4,138	4,195
Aberdeenshire	1,187	1,137	1,105	1,061	1,453	1,530	1,214	1,349	1,181	1,160
Angus	512	488	518	588	601	493	504	444	534	534
Argyll And Bute	111	124	59	100	109	107	57	45	12	62
Clyde*	12,283	13,431	15,421	14,783	16,201	12,484	8,742	8,865	9,087	8,801
Dumfries And Galloway	3,652	3,918	4,425	4,501	4,407	4,712	5,097	5,235	5,403	5,355
Dundee City	962	929	842	815	517	515	534	566	608	503
Fife	34,506	28,034	25,504	26,492	24,775	27,268	27,651	27,722	26,763	25,379
Highland	10,560	11,052	9,107	10,126	9,026	6,857	7,195	7,668	7,639	8,981
Moray	108	113	90	110	74	83	91	79	84	76
Na H-Eileanan Siar	258	298	284	213	242	232	217	201	189	218
Orkney Islands	3,244	2,344	1,729	1,054	1,151	3,945	4,615	4,852	3,470	3,050
Perth And Kinross	103	74	62	60	61	63	33	31	12	29
Shetland Islands	11,862	10,760	12,082	7,250	8,055	6,915	6,837	5,809	5,867	7,945
South Ayrshire	1,307	546	418	575	478	388	416	351	374	475
<b>Grand Total</b>	<b>84,818</b>	<b>77,413</b>	<b>76,138</b>	<b>71,992</b>	<b>71,381</b>	<b>69,968</b>	<b>66,972</b>	<b>67,275</b>	<b>65,358</b>	<b>66,761</b>

1 – 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.

2 – Totals may not sum due to rounding and/or disclosure control.

**Table 30: Freight water transport - All freight traffic (thousands of tonnes) through Scottish ports by Scottish marine region, 2010 to 2019 <sup>1 2</sup>**

<b>Scottish Marine Region</b>	<b>Tonnage 2010</b>	<b>Tonnage 2011</b>	<b>Tonnage 2012</b>	<b>Tonnage 2013</b>	<b>Tonnage 2014</b>	<b>Tonnage 2015</b>	<b>Tonnage 2016</b>	<b>Tonnage 2017</b>	<b>Tonnage 2018</b>	<b>Tonnage 2019</b>
Argyll	5,957	6,184	5,600	5,846	6,456	5,704	5,543	6,183	5,954	6,708
Clyde	13,591	13,977	15,839	15,358	16,679	12,872	9,158	9,216	9,460	9,275
Forth & Tay	36,083	29,525	26,926	27,956	25,955	28,340	28,722	28,763	27,916	26,446
Moray Firth	4,458	4,768	3,274	4,082	2,214	943	1,175	892	1,048	1,679
North Coast	262	277	240	264	285	252	247	280	257	270
North East	5,271	5,218	5,517	5,235	5,608	5,844	4,918	5,347	5,269	5,284
Orkney Islands	3,244	2,344	1,729	1,054	1,151	3,945	4,615	4,852	3,470	3,050
Outer Hebrides	258	298	284	213	242	232	217	201	189	218
Shetland Isles	11,862	10,760	12,082	7,250	8,055	6,915	6,837	5,809	5,867	7,945
Solway	3,652	3,918	4,425	4,501	4,407	4,712	5,097	5,235	5,403	5,355
West Highlands	182	143	222	234	330	209	443	497	525	531
<b>Grand Total</b>	<b>84,818</b>	<b>77,413</b>	<b>76,138</b>	<b>71,992</b>	<b>71,381</b>	<b>69,968</b>	<b>66,972</b>	<b>67,275</b>	<b>65,358</b>	<b>66,761</b>

1– Transport Scotland report freight tonnage through major and minor ports. These ports were assigned to Scottish marine regions.

2 – Totals may not sum due to rounding and/or disclosure control.

## 16.5 Marine Tourism

**Table 31: Marine tourism - GVA, turnover, employment, by SMR, 2016 to 2019 (2019 prices)**

Value	Argyll	Clyde	Forth and Tay	Moray Firth	North Coast	North East	Orkney Islands	Outer Hebrides	Shetland Isles	Solway	West Highlands	Total
<b>GVA 2016</b> (millions of pounds)	28.1	134.9	142.2	64.3	7.0	41.3	17.2	14.4	36.3	45.1	58.5	<b>589.3</b>
<b>GVA 2017</b> (millions of pounds)	27.8	145.2	160.3	78.9	6.9	48.7	14.3	13.4	38.9	30.1	62.2	<b>626.7</b>
<b>GVA 2018</b> (millions of pounds)	36.3	160.8	160.7	73.0	3.9	41.8	10.9	9.2	4.8	18.1	72.7	<b>592.2</b>
<b>GVA 2019</b> (millions of pounds)	35.6	180.3	174.0	60.2	3.7	33.3	8.5	8.9	4.1	17.4	72.3	<b>598.3</b>
<b>Turnover 2016</b> (millions of pounds)	49.3	264.2	236.6	126.8	11.1	77.5	29.0	29.6	76.6	99.0	95.6	<b>1,095.1</b>
<b>Turnover 2017</b> (millions of pounds)	47.8	266.6	264.6	132.7	11.2	87.3	23.1	25.8	69.9	52.7	100.2	<b>1,081.9</b>
<b>Turnover 2018</b> (millions of pounds)	66.5	307.6	279.3	129.9	6.3	73.0	21.0	17.5	9.8	31.9	124.9	<b>1,067.6</b>
<b>Turnover 2019</b> (millions of pounds)	67.1	306.1	303.1	125.6	8.0	88.5	20.0	18.6	9.0	34.0	130.8	<b>1,110.9</b>
<b>Employment 2016</b> (thousands)	1.7	7.5	6.4	3.4	0.4	2.0	0.6	0.8	1.0	1.4	3.2	<b>28.4</b>
<b>Employment 2017</b> (thousands)	1.7	7.2	6.5	3.4	0.4	2.0	0.7	0.7	0.9	1.4	3.3	<b>28.2</b>
<b>Employment 2018</b> (thousands)	1.8	7.7	7.1	3.5	0.4	2.1	0.7	0.8	1.0	1.2	3.3	<b>29.7</b>
<b>Employment 2019</b> (thousands)	2.3	8.1	7.6	3.8	0.5	2.1	0.8	1.0	0.9	1.5	4.4	<b>33.1</b>

1 – Values have been adjusted for inflation based on 2019 price estimates.

2 – Marine tourism values include specific tourism SIC groups within 100m of the coast.

3 – Totals may not sum due to rounding and/or disclosure control.

## 17. Annex A – SABS SIC Codes

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

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

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 that 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 32 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.

**Table 32: 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.

<b>Specific Marine SIC codes</b>	<b>Abbreviation used in this report</b>
03.1: Fishing (not extracted these statistics) 03.2: Aquaculture (not extracted these statistics) 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 Shipbuilding Construction and water transport services Passenger water transport Freight water transport Renting & leasing
<b>Marine Tourism and Recreation SIC codes</b>	
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.

## 18. Annex B: Methodology and source data

### 18.1 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 and Marine Scotland. Fishing and Aquaculture figures are taken from analysis of Marine Scotland statistics rather than the SABS figures Table 33 summarises the main data sources for individual topics in this publication.

**Table 33: Source data for marine economic sectors**

Economic sector and SABS SIC Code	Data sources – economic measures
03.1: Fishing SABS data not used	Seafish Fleet Economic Survey, Marine Scotland Sea Fisheries statistics
03.2: Aquaculture SABS data not used	Marine Scotland Aquaculture Survey statistics: Shellfish Production Survey, and Fish Farm Production Survey. Aquaculture economic and social survey, previously known as Data Collection Framework (DCF) survey.
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
Marine tourism	SABS various SIC codes (see Annex A) supplemented by geographic filters to select businesses within 100m of the coast line

**Notes:**

- Employment figures are head counts (not adjusted to Full Time Equivalents).
- GVA and turnover values are adjusted to 2019 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, in 2010 these figures were disclosive and so the wider code SIC 09 Mining support activities was used to provide data. The difference is minimal - see the Oil and Gas Methodology section.
- Totals may not sum due to rounding and disclosure control.

## 18.2 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 compared to 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 due to methodological differences.

### 18.2.1 Sampling methodology

The ABS uses a register of businesses (the Inter Departmental Business Register (IDBR)) to produce an estimate of all businesses 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.

In 2019, 53% of sampled businesses were included in the final Annual Business Survey (ABS) results UK wide. The average response rate in previous years was approximately 75%. The 2019 rate was lower than usual because the coronavirus (COVID-19) pandemic made it more difficult to contact respondents in order to process survey returns.

For Scotland, this means that the SABS results are based on a lower number of ABS responses than usual. The SABS results for 2019 are based on approximately 6,000 ABS responses from businesses with a presence in Scotland, this is down on the 2018 survey response of around 8,000 responses. This means that the 2019 estimates in this release are subject to more uncertainty than usual. However, we have taken steps to strengthen the estimates for 2019 by incorporating VAT turnover data. More information on this new estimation process is available in the methodology notes. The full set of tables and methodology notes are available under Scottish Annual Business Statistics 2019 heading at: [Scottish Annual Business Statistics](#)

### **18.2.2 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 2019 prices. This means that they are directly comparable in the time series tables.

### **18.3 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".

### **18.4 Price presentation**

All values have been adjusted to 2019 prices using the GDP deflators [GDP deflators at market prices](#) making it simpler to compare values across a time series.

### **18.5 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](#). Employment data was from [Marine Scotland Sea Fisheries Statistics](#).

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 2010-2020. The figures presented in this publication are an extract of economic performance data for all active vessels registered in Scotland.

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 late 2020 and early 2021 Seafish collected 354 sets of 2019 financial accounts for the UK fleet (8% of the active UK fleet).

#### **18.5.1 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.

#### **18.5.2 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 data<sup>13</sup> 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.

## **18.6 Aquaculture methodology**

### **18.6.1 Source data**

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

The financial data for 2018 and earlier 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 collected the financial data for the UK. In 2021, Marine Scotland took over the collection of the financial data for 2019 and onwards. This coincided with the UK's exit from the EU meaning that this collection is no longer covered by the DCF framework. New UK legislation, the UK Fisheries Act 2020 was introduced to replace this, with the aquaculture financial data covered under clause 1. Although the legislation behind this survey has changed, the actual data collected remains unchanged and is comparable to previous years. This survey is now referred to as the Aquaculture economic survey and provides the source financial data for estimating the aquaculture GVA for Scotland.

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<sup>13</sup> MMO collate the UK data returns on fishing. Scottish data is provided to MMO and published in the Scottish Sea Fisheries Statistics.

Although we are legally required to collect the aquaculture economic survey data, aquaculture businesses are not required to respond. The voluntary nature of this survey explains the variation in the number of businesses responding in each year. The table below shows the number of businesses responding in Scotland over the past 8 years.

Species	Count of samples						
	2013	2014	2015	2016	2017	2018	2019
Mussels	12	9	5	5	4	3	2
Salmon	14	16	8	8	11	10	7
Trout	3	4	6	5	1	1	2
Total samples	29	29	19	18	16	14	11

Note that although the number of responses are small, the sector is dominated by a small number of very large businesses. Therefore the responses we received covered 74% of the finfish production value and 9% of the shellfish production value.

### 18.6.2 Calculating GVA using DCF sample data and Marine Scotland survey data

1. The aquaculture economic survey data contains financial returns for Scottish aquaculture businesses, by year and by species type. For this analysis, economic survey data for Scottish production of salmon and trout is used to represent finfish and mussels is used to represent shellfish.
2. Because the Marine Scotland aquaculture production surveys are a census survey, the total production value can be assumed to estimate the value for Scotland. The economic survey sample is scaled to Scotland level using the ratio of the economic survey sample income to the Marine Scotland Aquaculture sample. i.e.

$$\text{Sample weighting} = \frac{\text{MS production Survey income}}{\text{economic survey sample income}}$$

3. Estimate GVA by calculating, at the Scotland level, total outputs, total inputs and change in stock value. Note this is different from previous years where change in stock value was not included. However, change in stock value is included in the GVA calculation for the SABS. So, this was included to make them more comparable and to help avoid large year on year changes due to multiyear nature of salmon production.

$$\text{GVA} = \text{Total output} - \text{Total input} + \text{change in stock value}$$

4. Change in stock value was estimated using the change in stock value from SABS and scaling it up to Scotland level using the ratio of the SABS turnover to the MS production survey income. The SABS change in stock value needed to be scaled up because the turnover was considerably lower than the production survey income so

it was underestimating value. It is therefore likely that the change in stock value would also be an underestimate without scaling. i.e.

**Estimated change in stock value** = change in stock value from SABS × (MS production survey income/SABS turnover)

5. 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. Economic survey data is available for 2013 to 2019 and a ratio is calculated for each of these years. Table 34 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 34: GVA Ratios for aquaculture production**

	<b>GVA</b>	<b>GVA to income ratio</b>
<b>Mussels</b>		
2015	5,709,046	0.57
2016	6,295,031	0.54
2017	8,359,512	0.67
2018	5,338,716	0.56
2019	6,755,701	0.84
<b>Salmon</b>		
2015	68,060,046	0.11
2016	219,884,441	0.29
2017 <sup>1</sup>	512,248,168	0.38
2018 <sup>1</sup>	373,168,145	0.25
2019 <sup>1</sup>	553,461,441	0.49
<b>Trout</b>		
2015	3,118,759	0.13
2016	2,262,104	0.10

<sup>1</sup> From 2017 Salmon covers all fin fish due to the small number of trout returns.

### **18.6.3 Comparisons with other data**

SABS produces estimates for aquaculture GVA, turnover and employment. These have not been used because the aquaculture production survey statistics are more complete than the SABS surveys. However, estimates for 2015 showed a considerable variance between SABS and estimates based on aquaculture data.

This is still that case and may reflect the small number of large aquaculture businesses that dominate the industry and different methodologies used.

#### **18.6.4 Change in calculation of aquaculture GVA**

As mentioned in section 18.6.2, the methodology used to calculate aquaculture GVA was revised slightly to make it more comparable with the SABS methodology. This change involved estimating the change in stock value (detailed in section 18.6.2) and including this in the GVA estimate so:  $GVA = \text{Total output} - \text{Total input} + \text{change in stock value}$ . This change has been applied to all years of data in this publication.

#### **18.7 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 2010 to 2011. In 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 and so the series has been considered comparable and no break in the series is required.

#### **18.8 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.

## **18.9 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, Department for 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.

## **18.10 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.



The March 2021 postcode file was used for the 2018 and 2019 marine tourism data to ensure that the most recent postcode information is used as postcodes and their boundaries can change over time. The April 2018 postcode file continues to be used for the 2017 and earlier years data. The results derived for 2018 using both postcode files were compared to ensure comparability and only very minor and insignificant differences were identified. Therefore all years of data are fully comparable and there is no break in series.

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.

### **18.11 Offshore wind methodology**

The Low Carbon and Renewable Energy Economy (LCREE) Survey was designed to provide greater detail on the low carbon and renewable energy economy in the UK. The survey was despatched for the sixth time in 2020, for the reporting year 2019, to a sample of around 24,000 businesses. Information for previous years are subject to revision due to methodology developments, incorporation of additional data or revisions of previous submissions. Typically these revisions only effect the most recent years. The survey collects information on turnover, imports, exports, employment, and acquisitions and disposals of capital assets, for 17 low carbon sectors. These are:

- offshore wind
- onshore wind
- solar photovoltaic
- hydropower
- other renewable electricity
- bioenergy
- alternative fuels
- renewable heat
- renewable combined heat and power
- energy efficient lighting

- other energy efficient products
- energy monitoring, saving or control systems
- low carbon financial and advisory services
- low emission vehicles and infrastructure
- carbon capture and storage
- nuclear
- fuel cells and energy storage

The LCREE figures are survey-based estimates and gather information from a sample rather than the whole population. This means that they are subject to measurable sampling uncertainty, which has an effect on how changes in the estimates should be interpreted. Estimates of the level of uncertainty associated with all figures (coefficients of variation and confidence intervals) reported are presented in the [ONS Low carbon and renewable energy economy, UK: 2020 bulletin](#) and datasets to aid interpretation. These uncertainty measures take into account both the variability in the estimate of the proportion of businesses active in the LCREE economy and the variability of the estimate of those active businesses.

In general, changes in the estimates reported are not usually greater than the level that is explainable by sampling variability. This means movements in the estimates should be treated as indicative only. Summary information on the confidence intervals for the 2014 and 2019 offshore wind turnover and FTE estimates are given below:

**Table 35: Estimates and confidence intervals for offshore wind turnover and full time equivalent employees, 2014 and 2019**

	2014 estimate	2014 lower confidence interval	2014 higher confidence interval	2019 estimate	2019 lower confidence interval	2019 higher confidence interval
<b>Turnover (millions of pounds)</b>	95	12.5	177	602.5	480.5	724.5
<b>Full time equivalent employees (thousands)</b>	0.7	~	1.4	1.6	0.9	2.3

In the case of the estimates above, we can be confident that the turnover in 2019 was significantly higher than in 2014. However, we cannot be confident that the FTE employee estimate was higher in 2019 than in 2014 as the confident intervals overlap. The same applies to the 2018 FTE estimates where we cannot be confident that the real figures in 2019 were any different to the 2018 figures as the confidence intervals overlap.



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Any enquiries regarding this publication should be sent to us at  
The Scottish Government  
St Andrew's House  
Edinburgh  
EH1 3DG

ISBN: 978-1-80435-194-9 (web only)

Published by The Scottish Government, March 2022

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA  
PPDAS1028158 (03/22)