

Fisheries Research Services is an agency of the Scottish Executive

FRS MARINE LABORATORY PO BOX 101 375 VICTORIA ROAD ABERDEEN AB11 9DB UK

tel +44 (0)1224 876544 fax +44 (0)1224 295620/295511

fishhealth@marlab.ac.uk <http://www.frs-scotland.gov.uk>

© Crown copyright 2006



FISHERIES RESEARCH SERVICES

Scottish Shellfish Farm Production Survey 2005



INTRODUCTION TO THE YEAR 2005 SURVEY

This report is based on the returns of an annual survey questionnaire sent to all registered Scottish shellfish farming companies. The cooperation of the shellfish farming industry is gratefully acknowledged.

Movement and production forms were sent to 183 companies registered as active before the survey. All but one return was received. This business reported no production during 2004 or 2005. One 'wild' mussel fishery registered as a shellfish farm has been excluded from this report. During 2005, 11 new companies registered; ten de-registered and two went into receivership.

The survey showed that, of the 182 companies registered at the end of 2005, 80 recorded no sales during that year. These registered companies farmed 332 active sites, of which 154 (46%) placed shellfish on the market. Shellfish production by company and site is presented.

DJ Pendrey

DI Fraser

March 2006

PRODUCTION

The survey indicates that the shellfish species cultivated in Scottish waters in 2005 were:

Common mussel:	<i>Mytilus edulis</i>
Pacific oyster:	<i>Crassostrea gigas</i>
Native oyster:	<i>Ostrea edulis</i>
Scallop:	<i>Pecten maximus</i>
Queen:	<i>Chlamys opercularis</i>

Total production was dominated by mussels and Pacific oysters. Small numbers of queens native oysters and scallops were also produced. The 2005 production data for each species by region are given in Table 1.

TABLE 1 : Scottish shellfish production survey 2005. Regional production.

Region	Companies	Pacific oysters (000s)		Native oysters (000s)		Mussels (tonnes)		Queens (000s)		Scallops (000s)	
		Table	On-growing	Table	On-growing	Table	On-growing	Table	On-growing	Table	On-growing
Highland	48	583	703	0	0	364	0	139	0	76	382
Orkney	12	10	0	0	0	4	0	0	0	0	0
Shetland	42	1	0	0	0	2,150	0	0	0	0	0
Strathclyde	60	2,476	764	162	0	1,269	20	1,302	0	24	0
Western Isles	20	0	0	0	0	347	0	0	0	0	0
Scotland	182	3,070	1,467	162	0	4,135	20	1,441	0	100	382
Weight (tonnes)		246		13		4,135		58		12	

NB: This report only lists those regions from which questionnaires were received.

Conversion to weight used the following assumptions: individual oysters averaged 80g; individual scallops averaged 120g; individual queens averaged 40g.

Table = Sales directly for human consumption; On-growing = Sales to other companies for on-growing.

Table production by species is illustrated in Figure 1, while trends in production for the table market and on-growing in Scotland are presented in Table 2.

There was no significant change in mussel production from 2004 to 2005, whilst markets were maintained and demand remained high. The greatest contribution in regional production was from Shetland, accounting for 2,150 tonnes. Strathclyde produced 1,269 tonnes which, combined with that of Shetland, accounted for 83% of the total production in Scotland. Pacific oyster production decreased by 14%, whilst markets were maintained and demand remained high. Almost 81% of Pacific oysters were produced in the Strathclyde region. Queen production increased by 29%, annual variation in natural settlement possibly contributing to the increase. Native oyster production increased by 54%, which accounts for a small percentage of total oyster production, targeting a niche market. Production of farmed scallops increased by 18%, and as in previous years production was affected by environmental influences causing area closures which prevented sales for human consumption.

Ten Several Orders have been granted for scallop fisheries, nine for commercial companies and one for research and development (Figure 2, see page 5). Eight of which were in Highland region, one in Strathclyde and one in Shetland. The size of the Orders ranged from less than 10 hectares (ha) to as much as 150 ha. The total area covered was over 450 ha. Reports from industry indicated a strong market for scallops and queens throughout the year.

FIGURE 1 : Table production by species 1996-2005.

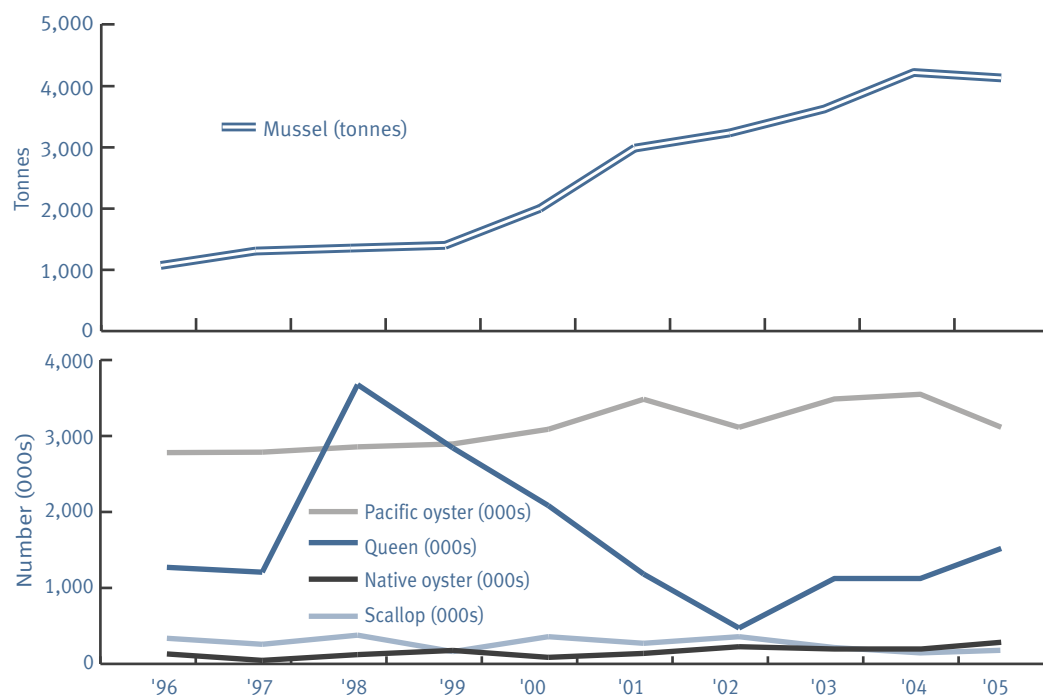


TABLE 2 : Trends in production data for the table and on-growing 1996-2005.

For the table	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	% increase 04-05
Pacific oyster (000s)	2,781	2,787	2,857	2,895	3,088	3,483	3,114	3,488	3,586	3,070	-14
Native oyster (000s)	96	11	87	142	51	103	191	161	105	162	54
Scallop (000s)	302	223	343	127	323	236	323	180	85	100	18
Queen (000s)	1,271	1,207	3,676	2,842	2,084	1,182	472	1,124	1,118	1,441	29
Mussel (tonnes)	1,072	1,307	1,355	1,400	2,003	2,988	3,236	3,632	4,223	4,135	-2

For on-growing	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Pacific oyster (000s)	3,580	1,264	750	502	1,315	881	1,578	2,640	2,510	1,467
Native oyster (000s)	23	55	154	1	3	0	0	0	0	0
Scallop (000s)	822	647	49	86	9	485	147	86	80	382
Queen (000s)	2,657	3,050	0	13	0	200	320	0	600	0
Mussel (tonnes)	30	0	3	0	33	4	38	18	61	20

Prices of farmed shellfish fluctuated throughout the year. The value at first sale of the species cultivated was estimated based on the following figures. The price of Pacific oysters varied between 15 and 25 pence per shell; native oysters, 35 pence per shell; scallops and queens 50-60 and five pence per shell respectively; and mussels between £800-£1,300 per tonne. The approximate value of the table trade based on these prices and the production figures given in Table 1 is:

Mussel:	£3.31 – 5.38 million	Pacific oyster:	£0.46 – 0.77 million
Native oyster:	£0.57 million	Scallop:	£0.05 – 0.06 million
Queen:	£0.07 million		

The total value at first sale for all species was estimated to be in the region of £6 million.

SITES AND COMPANIES

The number of registered and active companies and sites are presented in tables 3 and 4. The upward trend in the number of active companies reflects the development of new sites, particularly for mussel production. Many unproductive sites held stock not yet ready for market, others were fallow, and some were positioned in remote areas where cost-effective production and marketing of shellfish proved difficult.

Historically, production data have been collected by company. However, since 2002, data have been collected by both company and site, enabling the provision of more accurate site information. One hundred and fifty-four sites were shown to have produced shellfish for sale, an increase of less than 1% since 2004.

TABLE 3 : Registered and active companies 1996-2005.

		Number of Companies									
		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered		360	366	377	386	407	423	437	448	466	478
Active		187	170	171	151	176	173	183	178	175	183

TABLE 4 : Active and producing farm sites by region 2005.

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
<i>Sites</i>						
Active	74	13	103	100	42	332
Producing	36	3	49	52	14	154

Active = growing and placing on the market; Producing = placing on the market for the table and on-growing

FIGURE 2 : A map of Scotland showing the regional distribution of shellfish production sites 2005 and producing companies by area/species.

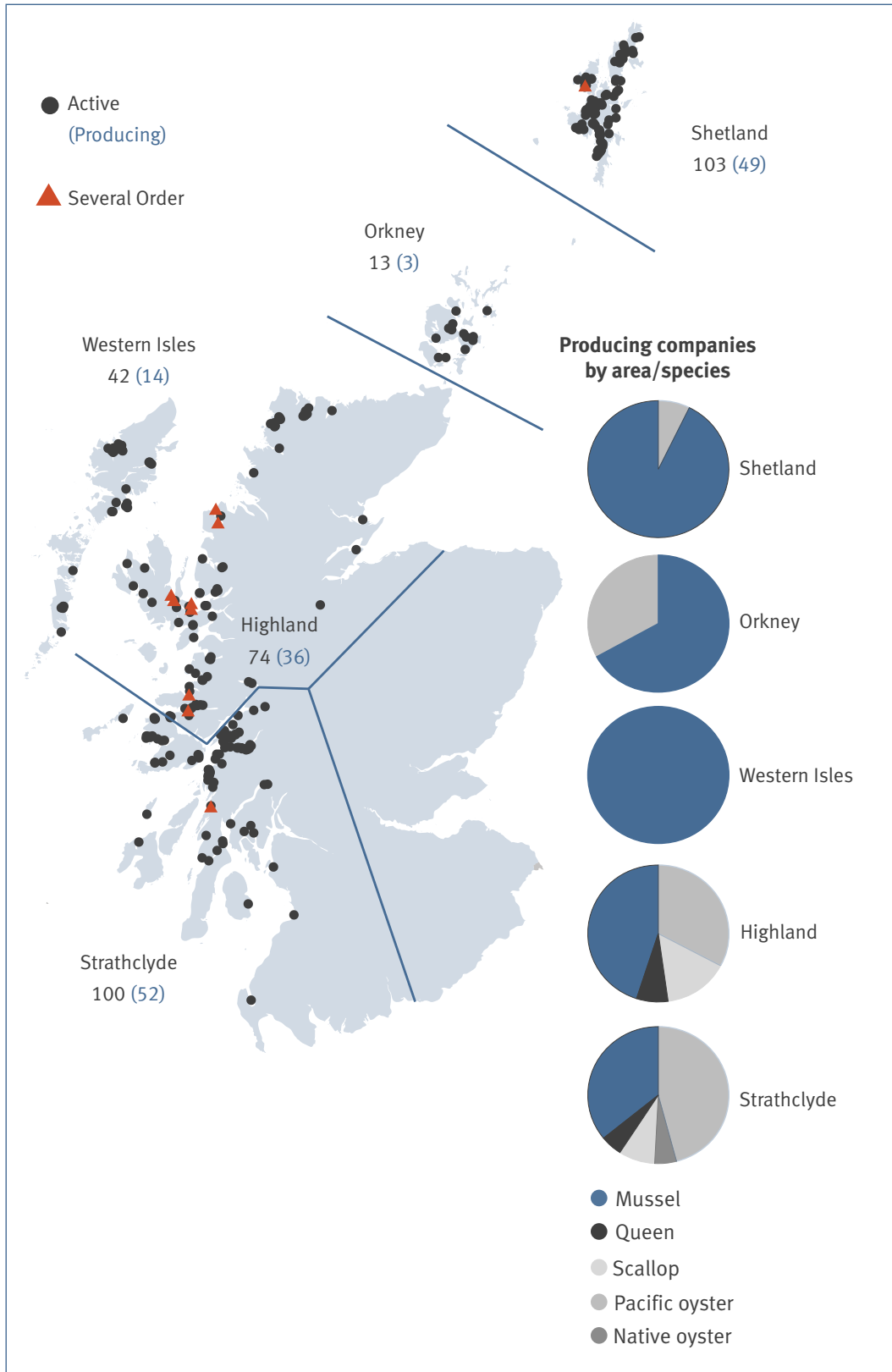


Table 5 shows the number of companies by region and by species: a) in production, b) in on-growing and c) showing no production. Many companies cultivate more than one species on site, a practice made possible by similar cultivation techniques. For example, scallops are grown together with queens, Pacific oysters with native oysters, and mussels with Pacific oysters.

TABLE 5 : Number of companies by region and by species 2005.

a) Production for the table

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	9	1	2	17	0	29
Native oyster	0	0	0	2	0	2
Scallop	4	0	0	3	0	7
Queen	2	0	0	2	0	4
Mussel	12	2	25	13	8	60
Total	27	3	27	37	8	102

b) Production for on-growing to other producers

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	1	0	0	3	0	4
Native oyster	0	0	0	0	0	0
Scallop	3	0	0	0	0	3
Queen	1	0	0	0	0	1
Mussel	0	0	0	1	0	1
Total	5	0	0	4	0	9

c) No production but actively on-growing

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	7	2	7	13	2	31
Native oyster	5	2	1	2	0	10
Scallop	5	5	3	6	2	21
Queen	1	2	1	2	1	7
Mussel	15	4	7	10	6	42
Total	33	15	19	33	11	111

NB: A company may produce more than one species

Company production levels by species are shown in Table 6. The number of companies producing more than 100 tonnes of mussels has increased from 11 to 14 since 2004. Those fourteen companies produced 65% of the total mussel production in Scotland. However, the number of companies producing mussels has decreased by one since 2004. The number of companies producing more than 100,000 Pacific oysters has decreased from 13 to 10 since 2004. Those 10 companies' production accounted for over 88% of the Scottish total.

TABLE 6: Company production levels by species 2005.

Species	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	>100	Total
Pacific oyster (000s)	14	0	0	0	1	1	1	2	0	0	10	29
Native oyster (000s)	1	0	0	0	0	0	0	0	0	0	1	2
Scallop (000s)	3	3	0	1	0	0	0	0	0	0	0	7
Queen (000s)	2	0	0	0	0	0	0	0	0	0	2	4
Mussel (tonnes)	15	6	4	3	6	5	2	2	1	2	14	60
Total	35	9	4	4	7	6	3	4	1	2	27	102

EMPLOYMENT

The industry employed 162 full-time and 239 part-time and casual workers during 2005. This represented virtually no change from the previous year. The regional breakdown of employment is given in Table 7.

TABLE 7: Regional employment 2005.

Region	Companies	Staff		
		Full-time	Part-time	Casual
Highland	48	23	40	21
Orkney	12	8	8	2
Shetland	42	50	50	21
Strathclyde	60	72	44	32
Western Isles	20	9	13	8
All Scotland	182	162	155	84

HEALTH INFLUENCES ON THE INDUSTRY

In accordance with EC Directive 91/67 Approved Zone status for the notifiable diseases Bonamiasis (causative agent, protozoan parasite *Bonamia ostreae*) and Martelliasis (causative agent, protozoan parasite *Marteilia refringens*) was maintained in 2005 following testing to confirm the absence of these diseases in Scottish waters. Samples were taken from six sites holding native oysters, a species known to be susceptible to these shellfish diseases. Approved Zone status continued to protect the health of both wild and farmed native oyster stocks in Scottish waters.

In accordance with EC Council Directive 95/70 minimum Community measures for the control of certain diseases affecting bivalve molluscs were maintained. A third of all shellfish sites are visited annually by Fisheries Research Services (FRS) Fish Health Inspectorate in accordance with the requirements of the Directive. On these visits, facilities, stock health, movement records and registration details are checked. It is the responsibility of farmers to inform FRS of any abnormal or unexplained shellfish mortality on their sites.

Reported mortalities were attributed to predation by eider ducks, crabs, starfish and oyster catchers. Losses were also reported due to storm damage, warm weather and mechanical grading.

SUMMARY

- Mussels and Pacific oysters are the main species produced in terms of value and tonnage. There was little change in the production of mussels, and the production of Pacific oysters decreased;
- There has been an increase in the production of native oysters, queens and scallops, however, scale of production remained low;
- Environmental influences affected scallop sales during the year;
- Employment levels showed no significant change from the previous year;
- Approved Zone status for the shellfish diseases Bonamiasis and Marteiliasis was maintained during the year and, for shellfish health purposes, one third of all shellfish sites were inspected by FRS Fish Health Inspectorate during 2005;
- The industry continued to be dominated by small producers, although there was a continued trend toward large companies contributing significantly to the annual production of all species;
- The market for all species was buoyant throughout the year.

GLOSSARY

Active sites	Farms in a production growing cycle which may contain stock or be fallow
Inactive sites	Farms not in a production cycle, without stock and not to be used by the company again
Several Order	An area of the seabed severed from the public right to fish, in order to conserve or enhance named shellfish stocks