



FISHERIES RESEARCH SERVICES

## Scottish Shellfish Farm Production Survey 2002



SCOTTISH EXECUTIVE  
Environment and Rural Affairs Department



## PRODUCTION

The survey indicates that the shellfish species cultivated in Scottish waters in 2002 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 (3,236 tonnes) and 3.1 million Pacific oysters (249 tonnes). Small volumes of queens (19 tonnes), scallops (39 tonnes) and native oysters (15 tonnes) were also produced. The 2002 production data for each species by region are given in Table 1.

TABLE 1 : Scottish shellfish production survey 2002. 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	55	418	1,566	0	0	432	0	122	320	105	142
Orkney	10	16	0	0	0	0	0	0	0	0	0
Shetland	38	0	0	0	0	1,246	38	50	0	20	0
Strathclyde	53	2,674	12	191	0	1,272	0	300	1,000	198	5
Western Isles	18	6	0	0	0	286	0	0	0	0	0
<b>Scotland</b>	<b>174</b>	<b>3,114</b>	<b>1,578</b>	<b>191</b>	<b>0</b>	<b>3,236</b>	<b>38</b>	<b>472</b>	<b>1,320</b>	<b>323</b>	<b>147</b>
<b>Weight (tonnes)</b>		<b>249</b>		<b>15</b>		<b>3,236</b>		<b>19</b>		<b>39</b>	

NB: This report only lists those regions from which annual survey returns were received.

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

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

Trends in production for the whole of Scotland are given in Table 2 for table and on-growing and for table production in Figure 1. Pacific oyster production decreased by 11%, although markets were maintained and demand remained high. Over 85% of Pacific oysters were produced in the Strathclyde region, where the scale of production amongst larger companies decreased. Native oyster production increased by 85%. This accounts for a small percentage of total oyster production, targeting a niche market. Mussel production increased by 8%, as markets were developed, and prices remained high. The greatest increase in regional production was in Shetland, by more than 50% to 1,246 tonnes. Strathclyde produced 1,272 tonnes and between both regions they produced 78% of Scottish production. Queen production decreased by 60% through continued variation in natural settlement. Production of farmed scallops increased, however production was again affected by environmental influences causing area closures, preventing sales for human consumption. Nine Several Orders have been granted for scallop fisheries, eight for commercial companies and one for research and development (Figure 2). One Several Order which had been used for research purposes was withdrawn during the year. Reports from industry indicated a strong market for scallops and queens throughout the year.

FIGURE 1 : Table production by species 1993 – 2002.

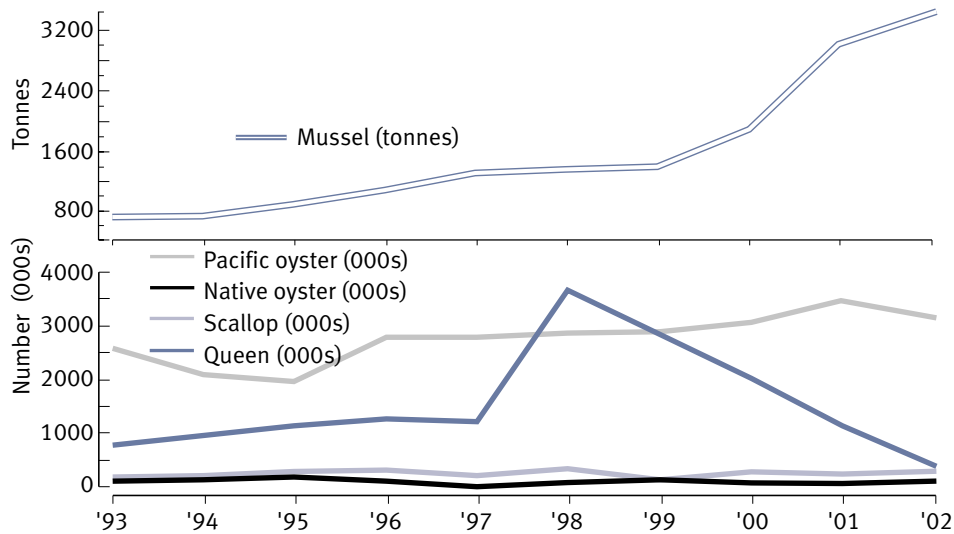


TABLE 2 : Trends in production data for the table and on-growing 1993-2002.

For the table	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	% increase 01-02
Pacific oyster (000s)	2,594	2,104	1,973	2,781	2,787	2,857	2,895	3,088	3,483	3,114	-11
Native oyster (000s)	119	142	182	96	11	87	142	51	103	191	85
Scallop (000s)	176	199	300	302	223	343	127	323	236	323	37
Queen (000s)	788	956	1,147	1,271	1,207	3,676	2,842	2,084	1,182	472	-60
Mussel (tonnes)	708	716	882	1,072	1,307	1,355	1,400	2,003	2,988	3,236	8

For on-growing	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Pacific oyster (000s)	1,849	1,313	2,165	3,580	1,264	750	502	1,315	881	1,578
Native oyster (000s)	207	33	112	23	55	154	1	3	0	0
Scallop (000s)	636	198	896	822	647	49	86	9	485	147
Queen (000s)	2,620	746	3,415	2,657	3,050	0	13	0	700	1,320
Mussel (tonnes)	131	12	<1	30	0	3	0	33	4	38

Prices of farmed shellfish fluctuated throughout the year, however, the value at first sale of the species cultivated was estimated. The price of Pacific oysters varied between 15 and 25 pence per shell; native oysters 50 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 (Table 1) is:

Mussel:	£2.59 – 4.21 million	Pacific oyster:	£0.47 – 0.79 million
Native oyster:	£0.10 million	Scallop:	£0.16 – 0.19 million
Queen:	£0.02 million		

The total value at first sale for all species was in the region of £5 million.

## SITES AND COMPANIES

The number of companies registered as active increased by 6% since 2001 (Table 3), and the number of active sites increased by 11% (Table 4). This trend 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 the cost-effective production and marketing of shellfish proved difficult.

Historically, production data has been collected by company, however this year data was collected by both company and site, which enables us to provide more accurate site information. One hundred and thirty-six sites were shown to have produced shellfish for sale, an apparent decrease of 21% since 2001.

TABLE 3 : Registered and active companies 1993-2002.

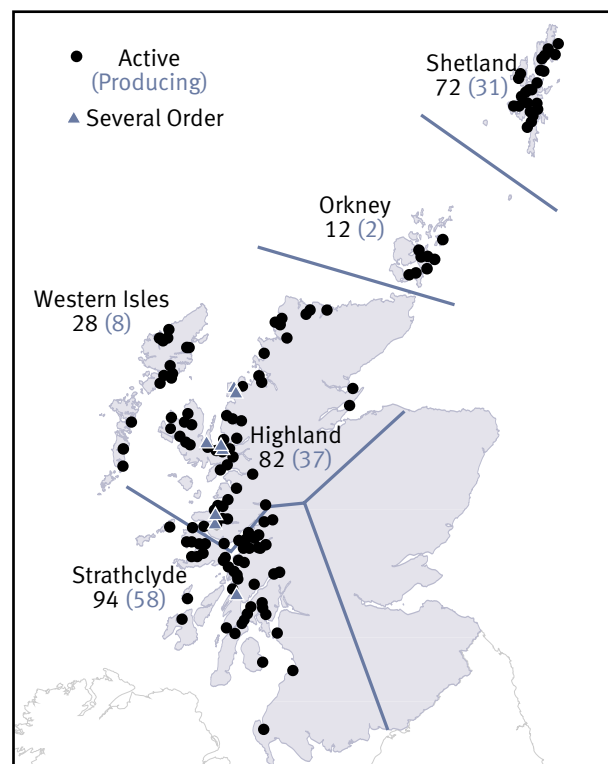
	Number of companies									
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Registered	332	348	353	360	366	377	386	407	423	437
Active	205	196	190	187	170	171	151	176	173	183

TABLE 4 : Active and producing farm sites by region, 2002.

Sites	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Active	82	12	72	94	28	288
Producing	37	2	31	58	8	136

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, 2002.



The number of active companies and the regional distribution of active and producing farm sites are shown in Tables 3 and 4, and in Figure 2. 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, 2002.

a) Production for the table

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	9	1	0	22	1	33
Native oyster	0	0	0	2	0	2
Scallop	5	0	1	4	0	10
Queen	2	0	1	1	0	4
Mussel	13	0	19	15	6	53
<b>Total</b>	<b>29</b>	<b>1</b>	<b>21</b>	<b>44</b>	<b>7</b>	<b>102</b>

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	1	0	4
Queen	1	0	0	1	0	2
Mussel	0	0	3	0	0	3
<b>Total</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>13</b>

c) No production but actively on-growing

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	6	3	8	8	1	26
Native oyster	3	3	1	2	0	9
Scallop	11	5	2	4	2	24
Queen	11	1	1	2	1	16
Mussel	21	4	12	5	9	51
<b>Total</b>	<b>52</b>	<b>16</b>	<b>24</b>	<b>21</b>	<b>13</b>	<b>126</b>

Note: 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 decreased from 12 to 9 since 2001. Those nine companies produced 55% of the total mussel production in Scotland. The number of companies producing Pacific oysters did not alter significantly in 2002, although their scale of production has decreased by 11% since 2001. The ten companies producing over 100,000 Pacific oysters produced 85% of the Scottish total.

TABLE 6: Company production by species, 2002.

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	4	1	0	0	1	0	1	0	2	10	33
Native oyster (000s)	1	0	0	0	0	0	0	0	0	0	1	2
Scallop (000s)	4	2	1	0	1	0	0	0	0	2	0	10
Queen (000s)	0	0	0	1	1	0	0	0	1	0	1	4
Mussel (tonnes)	12	8	6	1	5	3	2	5	1	1	9	53
												102

## EMPLOYMENT

The industry employed 128 full-time and 219 part-time workers during 2002, an overall decrease of 7% on the previous year. This reflects the on-going trend in more efficient husbandry and marketing practices. The regional breakdown of employment is given in Table 7.

TABLE 7: Regional employment, 2002.

Region	Companies	Staff		
		Full-time	Part-time	Casual
Highland	55	24	36	17
Orkney	10	4	2	2
Shetland	38	24	46	26
Strathclyde	53	68	41	32
Western Isles	18	8	9	8
All Scotland	174	128	134	85

## HEALTH INFLUENCES ON THE INDUSTRY

Approved Zone status for the notifiable diseases *Bonamia* and *Marteilia* was maintained in 2002 (in accordance with EC Directive 91/67) after testing confirmed the absence of these diseases in Scottish waters. Samples were taken from eight 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.

EC Council Directive 95/70 maintains that minimum Community measures for the control of certain diseases affecting bivalve molluscs are in place. A third of all shellfish sites are visited annually by the 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 the FRS of any abnormal or unexplained shellfish mortality on their sites.

Mortalities were reported to be the result of predation by eider ducks, crabs, starfish and oyster catchers. Losses were also reported due to storm damage, mechanical grading and illegal fishing. Tubeworm infestation caused marketing difficulties for two companies.

## **SUMMARY**

### **THE 2002 SURVEY HAS SHOWN:**

- Mussels and Pacific oysters are the main species produced in terms of value and tonnage;
- An increase in the number of producing companies;
- The number of companies producing shellfish for table sales rose from 56% to 59%;
- Production of mussels increased;
- Production of Pacific oysters decreased;
- That employment decreased by 7%;
- A substantial increase in the production of native oysters, although scale of production remains low;
- A continued decrease in the production of queens;
- An increase in the production of scallops;
- Environmental influences affected scallop sales during the year;
- That Approved Zone status for the diseases *Bonamia* and *Marteilia* was maintained during the year;
- For shellfish health purposes, a third of all shellfish sites were inspected by FRS Fish Health Inspectorate during 2002;
- That the industry continues to be dominated by small producers, although there is a continued trend toward large companies contributing significantly to the annual production of all species.

The market for all species was buoyant and prices remained stable throughout the year. It is predicted that annual production of all species will continue to increase steadily.



## **GLOSSARY**

Active	Farms in a production growing cycle which may contain stock or be fallow
Inactive	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

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