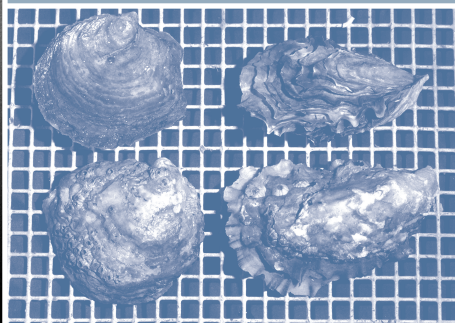
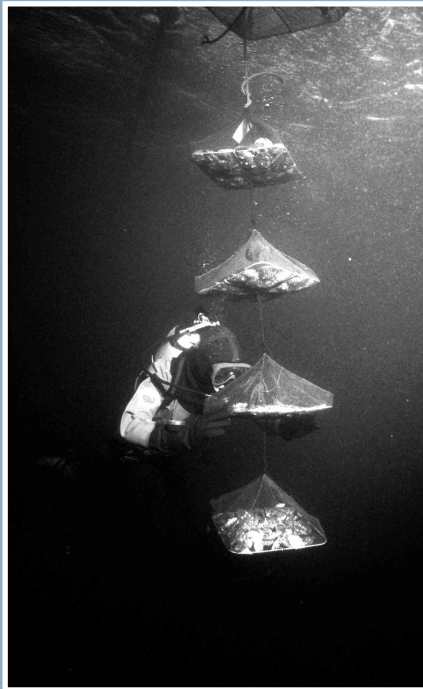




FISHERIES RESEARCH SERVICES

## Scottish Shellfish Farm Production Survey 2001



SCOTTISH EXECUTIVE  
Environment and Rural Affairs Department

## INTRODUCTION TO THE YEAR 2001 SURVEY

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

Movement and production forms were sent to 185 companies registered as active before the survey. One hundred and eighty four returns were received, the company that did not respond made no contribution to production in 2000. Shellfish production from two companies, unregistered prior to 2001, are included in the report. Production returns are recorded from 173 companies. During 2001 sixteen companies de-registered, and returns showed that a further eleven companies ceased trading during the year. One 'wild' mussel fishery registered as a shellfish farm, has been excluded from this report.

The survey shows that 97 companies (56%) produced shellfish for sale, both for the table and for on-growing. The remaining 76 continued in operation, but had no sales during 2001. The number of active companies continued to decrease from a peak of 229 in 1990, to 173 at the end of 2001. These companies farmed 261 active sites, of which 173 (66%), placed shellfish on the market.

Shellfish production by company is presented in the report.

DJ Pendrey  
DI Fraser  
March 2002

## PRODUCTION

The survey indicates that the shellfish species cultivated in Scottish waters in 2001 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 (2,988 tonnes) and 3.5 million Pacific oysters (279 tonnes). Small volumes of queens (47 tonnes), scallops (28 tonnes) and native oysters (8 tonnes) were also produced. The 2001 production data for each species by region are given in Table 1.

TABLE 1 : Scottish shellfish production survey 2001. 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	62	568	777	0	0	522	0	157	200	126	480
Orkney	10	22	0	0	0	0	0	0	0	0	0
Shetland	37	0	53	0	0	822	0	0	0	0	0
Strathclyde	58	2,885	51	103	0	1,361	1	1,025	500	110	5
Western Isles	19	8	0	0	0	283	3	0	0	0	0
Scotland	186	3,483	881	103	0	2,988	4	1,182	700	236	485
Weight (tonnes)		279		8		2,988		47		28	

NB: These reports only list 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 increased by 13% as markets were maintained and demand remained high. Over 80% of Pacific oysters were produced in the Strathclyde region. Native oyster production increased by 102%. This accounts for a small percentage of total oyster production, targeting a niche market. Mussel production increased significantly by 49%, as markets were developed, and prices remained high. The greatest increase in production for mussels by region was in Shetland by more than 100%. The mussel production for Shetland was 822 tonnes, 28% of the Scottish total production. Strathclyde region remained the largest producer of mussels, accounting for over 45% of Scottish production. Queen production decreased by 43% through a variation in natural settlement. Production of farmed scallops decreased as a result of environmental influences which caused area closures and prevented sales for human consumption. Nine Several Orders have been granted for scallop fisheries, seven for commercial companies and two for research and development of which one has recently been withdrawn (Figure 2). Reports from industry indicated a strong market for scallops and queens throughout the year.

FIGURE 1 : Table production by species 1992 – 2001.

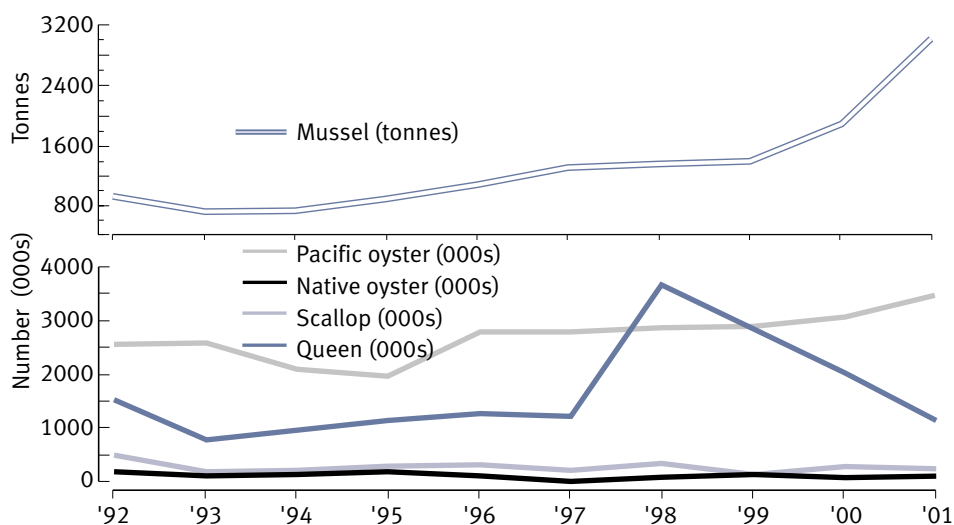


TABLE 2 : Trends in production data for table and on-growing 1992-2001.

For the table	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	% increase 00-01
Pacific oyster (000s)	2,560	2,594	2,104	1,973	2,781	2,787	2,857	2,895	3,088	3,483	13
Native oyster (000s)	194	119	142	182	96	11	87	142	51	103	102
Scallop (000s)	489	176	199	300	302	223	343	127	323	236	-27
Queen (000s)	1,538	788	956	1,147	1,271	1,207	3,676	2,842	2,084	1,182	-43
Mussel (tonnes)	923	708	716	882	1,072	1,307	1,355	1,400	2,003	2,988	49

For on-growing	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Pacific oyster (000s)	1,217	1,849	1,313	2,165	3,580	1,264	750	502	1,315	881
Native oyster (000s)	202	207	33	112	23	55	154	1	3	0
Scallop (000s)	1,046	636	198	896	822	647	49	86	9	485
Queen (000s)	1,128	2,620	746	3,415	2,657	3,050	0	13	0	700
Mussel (tonnes)	73	131	12	<1	30	0	3	0	33	4

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. Approximate value of the table trade based on these prices and the production figures (Table 1) would be:

Mussel:	£2.39 – 3.88 million	Pacific oyster:	£0.52 – 0.87 million
Native oyster:	£0.03 million	Scallop:	£0.12 – 0.14 million
Queen:	£0.06 million		

The total value at first sale for all species was in the region of £4 million.

## SITES AND COMPANIES

The number of companies registered as active decreased by 3 during 2001 (Table 3), and the number of active sites increased by 6% (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.

TABLE 3 : Registered and active companies 1992-2001.

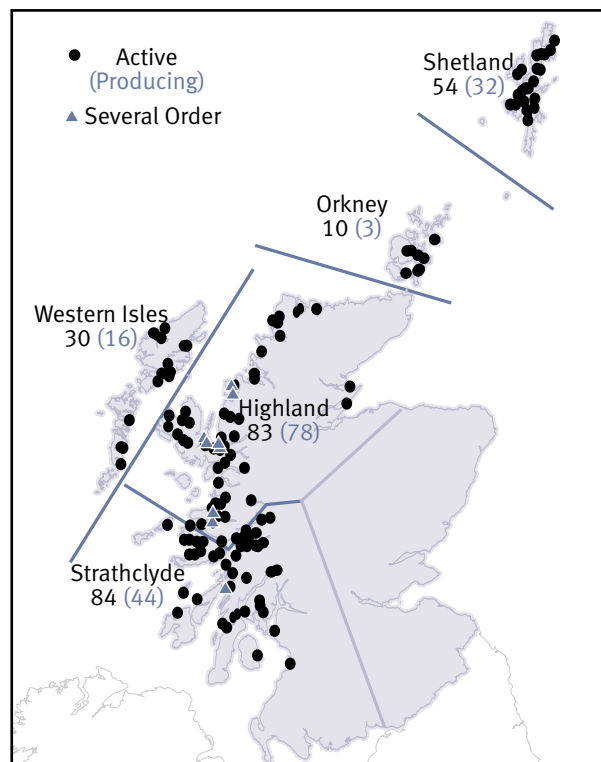
		Number of companies									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Registered		321	332	348	353	360	366	377	386	407	423
Active		214	205	196	190	187	170	171	151	176	173

TABLE 4 : Active and producing farm sites by region, 2001.

Sites	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Active	83	10	54	84	30	261
Producing	78	3	32	44	16	173

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.



The number of active companies and the regional distribution of active and producing farm sites is 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, 2001.

a) Production for the table

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	7	1	0	23	1	32
Native oyster	0	0	0	2	0	2
Scallop	7	0	0	2	0	9
Queen	1	0	0	2	0	3
Mussel	14	0	17	15	5	51
<b>Total</b>	<b>29</b>	<b>1</b>	<b>17</b>	<b>44</b>	<b>6</b>	<b>97</b>

b) Production for on-growing to other producers

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	1	0	1	4	0	6
Native oyster	0	0	0	0	0	0
Scallop	2	0	0	2	0	4
Queen	1	0	0	1	0	2
Mussel	0	0	0	2	1	3
<b>Total</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>1</b>	<b>15</b>

c) No production but actively on-growing

	Region					Total
	Highland	Orkney	Shetland	Strathclyde	Western Isles	
Pacific oyster	6	3	2	3	0	14
Native oyster	1	2	1	1	0	5
Scallop	8	3	3	1	2	17
Queen	7	1	2	1	1	12
Mussel	13	2	9	1	6	31
<b>Total</b>	<b>35</b>	<b>11</b>	<b>17</b>	<b>7</b>	<b>9</b>	<b>79</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 increased from 7 to 12 since 2000. Those 12 companies produced 67% of the total mussel production in Scotland. The number of companies producing Pacific oysters did not alter significantly in 2001, nor did the scale of production among companies. The seven companies producing over 100,000 Pacific oysters, produced 82% of the total Pacific oyster production in Scotland.

TABLE 6: Company production by species, 2001.

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	1	3	1	1	1	1	1	1	1	7	32
Native oyster (000s)	1	0	0	0	0	0	0	0	0	0	1	2
Scallop (000s)	2	3	1	1	1	0	0	0	1	0	0	9
Queen (000s)	0	0	0	1	0	0	0	0	0	0	2	3
Mussel (tonnes)	13	11	2	4	3	2	2	1	0	1	12	51
												97

## EMPLOYMENT

The industry employed 137 full-time and 235 part-time workers during 2001, an overall increase of 2% over the previous year. The regional breakdown of employment is given in Table 7.

TABLE 7: Regional employment.

Region	Companies	Staff		
		Full-time	Part-time	Casual
Highland	62	33	44	22
Orkney	10	5	3	11
Shetland	37	21	37	27
Strathclyde	58	70	51	22
Western Isles	19	8	11	7
All Scotland	186	137	146	89

## HEALTH INFLUENCES ON THE INDUSTRY

Approved Zone status for the notifiable diseases *Bonamia* and *Marteilia* was maintained in 2001 (under EC Directive 91/67) after testing confirmed the absence of these diseases in Scottish waters. Samples were taken from 10 sites holding native oysters, a species known to be susceptible to these shellfish diseases. Approved Zone status continued to offer benefits to 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 Fish Health Inspectorate under the Directive. On these visits, facilities, stock health, movement records and registration details are checked. It is the responsibility of farmers to inform the Department of any abnormal, unexplained mortalities on their sites.

## **SUMMARY**

### **THE 2001 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 sites;
- The number of active sites producing shellfish for table sales rose from 53% to 66%;
- Production of mussels and Pacific oysters increased substantially;
- That manpower increased by 2%;
- A substantial increase in the production of native oysters, although scale of production remains low;
- A decrease in production of scallops and queens;
- Environmental influences affected scallop sales during the year;
- That Approved Zone status for the diseases *Bonamia* and *Marteilia* was maintained during the year;
- That the industry continues to be dominated by small producers, although there is a trend towards large companies contributing significantly to the annual production of all species.

The market for all species appeared to be buoyant, and prices remained stable throughout the year. It is predicted that production will continue to increase steadily over the next few years, although environmental influences may continue to impact on production of scallops.



## **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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