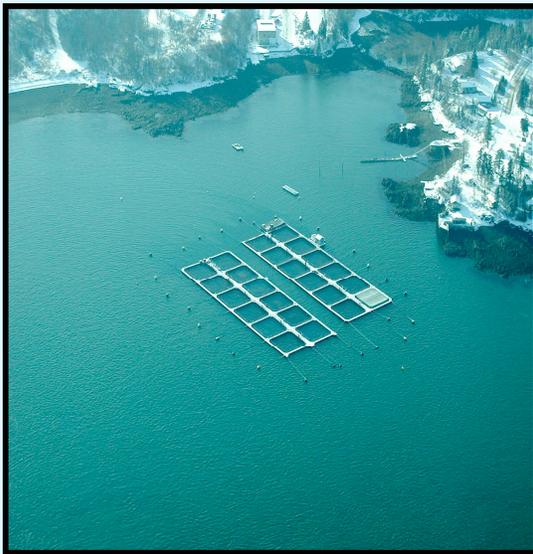


Scottish Farmed Salmon Exposed



*A Summary of Data Provided by Scottish
Government Agencies to the Pure Salmon
Campaign in Response to FOI Requests,
2006 and 2007*



Freedom of Information (Scotland) Act 2002

*Among the Most Powerful FOI Regulations
in the World*

- Every public authority **must respond** to all information requests received
- Have a duty to advise and assist on making requests
- Must provide info within **20 working days**
- Most requests are **free of charge**
- Cannot charge for the first 100 GBP it cost them, at that the fee is small

Data Obtained

Likely the most robust, publicly available data on regional impacts of salmon farming

Scottish Environment Protection Agency (SEPA) (2003 - June 2007):

- All salmon farming companies & farm sites (by company)
- Type of species farmed at each site
- Fish input dates and fallowing dates - site specific
- Consented & Actual Biomass - monthly, site specific
- Biomass Exceedance (%) - monthly, site specific
- Feed Use - monthly, site specific
- Calculated Waste Emissions - monthly, site specific (2005 onwards)
- Wastes Discharged Into Protected Areas - Area Specific
- Sea Lice Chemical Use - monthly, site specific
- Mortalities - monthly, site specific
- Antifoulant Use - annual, site specific (Through 2006)
- Antibiotic Use - annual, site specific (Through 2006)
- Anesthetic Use - annual, site specific (Through 2006)
- Disinfectant Use - annual, site specific (Through 2006)
- Prosecutions - name each company and type (Through 2006)
- Water pollution incidents -name each company (Through 2006)
- Sea-Bed Impacts (Through 2006)

Data Obtained

Likely the most robust, publicly available data on regional impacts of salmon farming

Scottish Executive:

- **Escapes (2002 - September 2007)**
 - Date of escape
 - Region of escape
 - Company & specific farm site responsible
 - Number of Escape Incident, date & company
 - Number of Farmed Fish Escapees, date & company
 - Number of Recaptures Escapees, date & company
 - Disease Status
 - Chemical Use/Treatment Prior to Escape
- **Disease on Farms (1980 - September 2007)**
 - Frequency of 72 different identified disease (1980 -1998)
 - List of diseases identified, by region (1998 -June 2007)
 - Frequency of 12 diseases on sites owned by Marine Harvest, Fjord, and Pan Fish (2006)

Using this Data

- To get a sense of overall impacts of open net cage salmon farming
- To assess regional impacts for Scotland
- To help assess a producer's overall environmental footprint
- To trace impacts back to a specific farm site from which you source
- To compare companies across Scotland
- To assess current "Best Practices" in Scotland
- To confirm salmon producers' claims
- To compare "organic" sites with conventional
- To compare "sustainable" producers with conventional
- To pressure authorities in other regions for better FOI regulations
- To begin to evaluate impacts of farming other species

“Best Practices” in Scotland in 2006

*What should open net cage standards be
requiring at the very least?*

- 77 % of companies reported no copper on nets in 2006
- 83 % reported no antibiotics in 2006
- 67 % reported no Cypermethrin in 2006
- 47 % reported no Emamectin benzoate in 2006
- 47 % reported no sea lice chemicals at all in 2006
- Around 73 % reported no escapes incidents in 2006

Breeches of Consented Biomass 2005 - June 2007

Company	Reported # of Monthly Exceedances of Consented Biomass		
	2005	2006	2007 Thru June
Aith		0	
Aqua Farm Ltd	0		0
Atlantic West	5		
Balta Island Seafare Ltd	0		0
Bound Skerries Ltd			0
Carloway Salmon	0		
Collafirth (Green Island Organics)	2		0
D&J Salmon	0		
Drumbeg Salmon Ltd	0	0	2
Dury Salmon Ltd	0	0	0
Finfish Ltd	0	0	0
Fjord Seafood Scotland	9	2	0
G Duncan (Salmon) Ltd	0	0	
Glendale Salmon	1		
Green Island Organics Ltd			0
Greenholm	0		
Hasviak, North Atlantic Seafarms (aka Northern Aquaculture, Shetland Halibut Company)	0	0	0
Hebredian Fishery (Salmon Co Ltd)	0		0
Hjaltland Seafarms Ltd	0	0	0
Hoganess Salmon Ltd	0	3	1
Johnson Seafarms (Marine Ltd)		0	0
Kames Fish Farming Ltd.	1	2	1
Lakeland (Marine & Unst) Ltd	4	2	0
Laski Farming Enterprises Ltd		0	
Lewis Salmon Ltd	0	0	0
Loch Duart Ltd	0	0	0
Mainstream Scotland Ltd	8	7	5
Marine Harvest (not inc. PanFish, Fjord)	22	61	55
Millburn	0		
MJM Salmon Ltd	3		0
NAFC	0	1	0
North Atlantic Salmon - Westside Salmon	5		0
North Isles Sea Farms Ltd		0	
North Uist Fisheries	0	0	0
Orkney Seafarms Ltd	2	0	0
Pan Fish Scotland Ltd	18	28	8
Rysa Salmon Ltd	0		0
Scottish Seafarms Ltd	1	0	0
Skelda Salmon	0	0	
Slett Salmon Ltd		0	
Stolt Sea Farms	9		
Sweening Salmon	0	0	
Thompson Brothers Salmon Ltd	0		0
Uyeasound Salmon	0	0	0
Weddell Fish Farms	0	0	0
West Minch (Sidnish)	0	0	0
Wester Ross Fisheries Ltd	0	0	0
Westray Salmon	0	1	0
Whalsay	0		
TOTAL	90	107	72

Marine Harvest - including Pan Fish and Fjord - reported 85% of all exceedances in 2006

Salmon farms have reported close to 700 breaches of pollution limits since 2003

72 exceedances were reported in the first half of 2007

Fish Farms Reporting Data 2005 - June 2007

Fish Farming Companies Reporting to SEPA in 2005 -2007			
Company	2005	2006	2007 Thru June
Aith	NBR	X	
Aqua Farm Ltd	X		NBR
Atlantic West	X		
Balta Island Seafare Ltd	X		X
Bound Skerries Ltd			X
Carloway Salmon	X		
Collafirth (Green Island Organics)	X		X
D&J Salmon	X		
Drumbeg Salmon Ltd	X	X	X
Dury Salmon Ltd	X	X	X
Finfish Ltd	X	X	X
Fjord Seafood Scotland	X	X	X
G Duncan (Salmon) Ltd	X	X	
Glendale Salmon	X		
Green Island Organics Ltd			X
Greenholm	X		
Hasviak, North Altantic Seafarms (aka Northern Aquaculture, Shetland Halibut Company)		X	X
Hebredian Fishery (Salmon Co Ltd)	X		X
Hjaltland Seafarms Ltd	X	X	X
Hoganess Salmon Ltd	X	X	X
Johnson Seafarms (Marine Ltd)	NBR	NBR	X
Kames Fish Farming Ltd.	X	X	X
Lakeland (Marine & Unst) Ltd	X	X	X
Laski Farming Enterprises Ltd	NBR	NBR	
Lewis Salmon Ltd	X	X	X
Loch Duart Ltd	X	X	X
Mainstream Scotland Ltd	X	X	X
Marine Harvest (not inc. PanFish, Fjord)	X	X	X
Millburn	X		
MJM Salmon Ltd	X		X
NAFC	X	X	X
North Atlantic Salmon - Westside Salmon	X		X
North Isles Sea Farms Ltd	NBR	NBR	
North Uist Fisheries	X	X	X
Orkney Seafarms Ltd	X	X	X
Pan Fish Scotland Ltd	X	X	X
Rysa Salmon Ltd			X
Scottish Seafarms Ltd	X	X	X
Skelda Salmon	X	X	
Slett Salmon Ltd	0		
Stolt Sea Farms	X		
Sweening Salmon	X	X	
Thompson Brothers Salmon Ltd	X		X
Uyeasound Salmon	X	X	X
Weddell Fish Farms	X	X	X
West Minch (Sidnish)	X		X
Wester Ross Fisheries Ltd	X	X	X
Westray Salmon	X	X	X
Whalsay	X		

X = Reported data to SEPA

NBR = Report submitted, but no biomass recorded

Empty = No report submitted to SEPA

Reported Feed Use 2005 - June 2007

Reported Feed Use (kg)			
Company	2005	2006	2007 Thru June
Aith	0	314	
Aqua Farm Ltd	1,265,110		0
Atlantic West	1,311,879		
Balta Island Seafare Ltd	242,663		126,318
Bound Skerries Ltd			158,000
Carloway Salmon	67,835		
Collafirth (Green Island Organics)	870,953		307,709
D&J Salmon	230,708		
Drumbeg Salmon Ltd	2,058,074	2,572,310	967,407
Dury Salmon Ltd	1,076,130	2,964,749	159,907
Finfish Ltd	54,829	199,926	90,951
Fjord Seafood Scotland	6,807,104	7,054,886	2,967,905
G Duncan (Salmon) Ltd	502,626	34,250	
Glendale Salmon	655,425		
Green Island Organics Ltd			232,343
Greenholm	208,296		
Hasviak, North Atlantic Seafarms (aka Northern Aquaculture, Shetland Halibut Company)	1,979,090	2,064,424	626,794
Hebredian Fishery (Salmon Co Ltd)	264,354		29,249
Hjaltland Seafarms Ltd	14,730,324	19,465,049	8,337,763
Hoganess Salmon Ltd	3,208,701	4,589,163	1,944,389
Johnson Seafarms (Marine Ltd)	0	0	960,710
Kames Fish Farming Ltd.	1,004,007	781,570	961,699
Lakeland (Marine & Unst) Ltd	10,696,024	9,229,011	5,647,314
Laski Farming Enterprises Ltd	0	0	
Lewis Salmon Ltd	155,150	304,825	11,960
Loch Duart Ltd	2,890,766	2,684,739	1,232,451
Mainstream Scotland Ltd	11,894,101	12,064,180	5,208,224
Marine Harvest (not inc. PanFish, Fjord)	41,576,220	51,011,217	22,394,471
Millburn	1,263,181		
MJM Salmon Ltd	914,094		1,447,186
NAFC	159,374	187,363	12,475
North Atlantic Salmon - Westside Salmon	2,335,323		574,124
North Isles Sea Farms Ltd	0	0	
North Uist Fisheries	80,075	45,775	24,980
Orkney Seafarms Ltd	3,884,244	557,150	711,675
Pan Fish Scotland Ltd	19,919,577	24,715,820	10,383,961
Rysa Salmon Ltd			175,523
Scottish Seafarms Ltd	26,455,650	31,950,752	14,130,131
Skelda Salmon	239,377	165,693	
Slett Salmon Ltd	0		
Stolt Sea Farms	8,994,564		
Sweening Salmon	119,253	38,187	
Thompson Brothers Salmon Ltd	1,006,824		436,330
Uyeasound Salmon	1,055,870	1,052,311	521,400
Weddell Fish Farms	7,942	4,401	1,780
West Minch (Sidnish)	930,050		447,475
Wester Ross Fisheries Ltd	1,282,637	841,521	580,495
Westray Salmon	355,150	378,150	81,000
Whalsay	2,139,122		
TOTAL	174,892,674	174,957,736	81,894,099

Empty = No reported submitted

Highlight = Reported only Q1

Marine Harvest, (including Fjord, and Pan Fish used 47% of all feed in 2006

Snapshot of Waste Emissions in 2005



Marine Harvest Loch Hourn Farm Site (2004), Salmon Farm Protest Group

***Note: Emissions data derived from a formula,
not from actual monitoring.***

Summary of Waste Emissions

In 2005, Scottish salmon farming companies reported discharging the following into the marine environment:

- **Nitrogen** - about 8.8 million kgs (8,800 tonnes)
- **Organic Carbon** - about 28.3 million kgs (28,300 tonnes)
- **Phosphorous** - about 1.2 million kgs (1,200 tonnes)
- **Copper (Feed & Nets)** - about 61,000 kg (61 tonnes)
- **Zinc** - about 9,000 kg (9 tonnes)

*But, what were the **ACTUAL** discharges?
And, what are the impacts of these discharges on the environment?*

Nitrogen Emissions in 2005

Scottish salmon farming companies reported discharging 8,800 tonnes of nitrogen into the marine environment in 2005

Rank	Company	Total Nitrogen (kg)	% of Total
1	Marine Harvest	2,099,363.27	24
2	Scottish Sea Farms	1,333,364.76	15
3	Pan Fish	1,003,946.68	11
4	Hjaltland	742,408.33	8
5	Mainstream	599,462.67	7
6	Lakeland	539,079.61	6
7	Stolt Sea Farms	453,326.01	5
8	Fjord Seafood	343,078.04	4
9	Orkney Seafarms	195,765.90	2
10	Hoganess	161,718.53	2
11	Loch Duart	145,694.61	2
12	North Atlantic - Westside	117,700.28	1
13	Whalsay	107,811.75	1
14	Drumbeg Salmon	103,726.92	1
15	Northern Aquaculture	99,746.14	1
16	Millburn	95,496.48	1
17	Atlantic West	66,118.70	1
18	Wester Ross	64,644.90	1
19	Aqua Farms	63,761.54	1
20	Dury Salmon	54,236.95	1
21	Kames	53,725.74	1
22	Uyeasound	53,215.85	1
23	Thompson Bros	50,743.90	1
24	West Minch Sidnish	46,874.52	1
25	MJM Salmon	46,070.34	1
26	Collafirth	43,896.03	0
27	Glendale Salmon	33,033.42	0
28	G Duncan	25,332.35	0
29	Westray	17,899.56	0
30	Hebredian Fishery	13,323.44	0
31	Balta Island	12,230.22	0
32	Skelda	12,064.60	0
33	D&J Salmon	11,627.68	0
34	Greenholm Salmon	10,498.12	0
35	NAFC	8,032.45	0
36	Lewis	7,819.56	0
37	Sweening	6,010.35	0
38	North Uist	4,035.78	0
39	Carloway Seafood	3,418.88	0
40	Finfish	3,212.12	0
41	Weddell	400.28	0
	2005 TOTAL	8,853,917.27	

Marine Harvest, Stolt, Fjord, and Pan Fish together accounted for almost half (44%) of Nitrogen discharges

Phosphorous Emissions in 2005

Scottish salmon farming companies reported discharging 1,217 tonnes of phosphorous into the marine environment in 2005

Rank	Company	Total Phosphorous (kg)	% of Total
1	Marine Harvest	289,370.49	24
2	Scottish Sea Farms	184,131.32	15
3	Pan Fish	138,640.26	11
4	Hjaltland	102,523.06	8
5	Mainstream	82,782.94	7
6	Lakeland	74,444.33	6
7	Stolt Sea Farms	62,602.16	5
8	Fjord Seafood	47,377.44	4
9	Orkney Seafarms	27,034.34	2
10	Hoganess	22,332.56	2
11	Loch Duart	20,119.73	2
12	North Atlantic - Westside	16,253.85	1
13	Whalsay	14,888.29	1
14	Drumbeg Salmon	14,324.19	1
15	Northern Aquaculture	13,774.47	1
16	Atlantic West	9,130.68	1
17	Wester Ross	8,927.15	1
18	Aqua Farms	8,805.17	1
19	Millburn	8,791.74	1
20	Dury Salmon	7,489.86	1
21	Uyeasound	7,348.86	1
22	Thompson Bros	7,007.49	1
23	Kames	6,987.89	1
24	West Minch Sidnish	6,473.15	1
25	MJM Salmon	6,362.09	1
26	Collafirth	6,061.83	0
27	Glendale Salmon	4,561.76	0
28	G Duncan	3,498.28	0
29	Westray	2,471.84	0
30	Hebredian Fishery	1,839.90	0
31	Balta Island	1,688.93	0
32	Skelda	1,666.06	0
33	D&J Salmon	1,605.73	0
34	Greenholm Salmon	1,449.74	0
35	NAFC	1,109.24	0
36	Lewis	1,079.84	0
37	Sweening	830.00	0
38	North Uist	557.32	0
39	Carloway Seafood	472.13	0
40	Finfish	381.61	0
41	Weddell	55.28	0
	2005 TOTAL	1,217,253.01	

Marine Harvest, Stolt, Fjord, and Pan Fish together accounted for almost half (44%) of Phosphorous discharges

Organic Carbon Emissions in 2005

Scottish salmon farming companies reported discharging 28,280 tonnes of carbon into the marine environment in 2005

Rank	Company	Total Organic Carbon (kg)	% of Total
1	Marine Harvest	6,722,874.71	24
2	Scottish Sea Farms	4,277,878.61	15
3	Pan Fish	3,220,995.60	11
4	Hjalmland	2,381,893.39	8
5	Mainstream	1,923,276.05	7
6	Lakeland	1,729,547.08	6
7	Stolt Sea Farms	1,454,420.95	5
8	Fjord Seafood	1,100,708.72	4
9	Orkney Seafarms	628,082.25	2
10	Hoganess	518,846.95	2
11	Loch Duart	467,436.86	2
12	North Atlantic - Westside	377,621.73	1
13	Whalsay	345,896.03	1
14	Drumbeg Salmon	332,790.52	1
15	Northern Aquaculture	320,018.85	1
16	Atlantic West	212,130.83	1
17	Wester Ross	207,402.40	1
18	Aqua Farms	204,568.29	1
19	Millburn	204,256.37	1
20	Dury Salmon	174,010.22	1
21	Uyeasound	170,734.18	1
22	Thompson Bros	162,803.36	1
23	Kames	162,347.93	1
24	West Minch Sidnish	150,389.09	1
25	MJM Salmon	147,809.00	1
26	Collafirth	140,833.10	0
27	Glendale Salmon	105,982.22	0
28	G Duncan	81,274.62	0
29	Westray	57,427.76	0
30	Hebredian Fishery	42,746.04	0
31	Balta Island	39,238.61	0
32	Skelda	38,707.26	0
33	D&J Salmon	37,305.48	0
34	Greenholm Salmon	33,681.46	0
35	NAFC	25,770.78	0
36	Lewis	25,087.76	0
37	Sweening	19,283.21	0
38	North Uist	12,948.13	0
39	Carloway Seafood	10,968.92	0
40	Finfish	8,865.85	0
41	Weddell	1,284.22	0
	2005 TOTAL	28,280,145.40	

Marine Harvest, Stolt, Fjord, and Pan Fish together accounted for almost half (44%) Carbon discharges

Zinc Emissions in 2005

Scottish salmon farming companies reported discharging 8 tonnes of zinc into the marine environment in 2005

Rank	Company	Total Zinc (kg)	% of Total
1	Marine Harvest	2,087.50	24
2	Scottish Sea Farms	1,328.31	15
3	Pan Fish	1,000.14	11
4	Hjaltland	739.59	8
5	Mainstream	597.19	7
6	Lakeland	537.04	6
7	Stolt Sea Farms	451.61	5
8	Fjord Seafood	341.78	4
9	Orkney Seafarms	195.02	2
10	Hoganess	161.11	2
11	Loch Duart	145.14	2
12	North Atlantic - Westside	117.25	1
13	Whalsay	107.40	1
14	Drumbeg Salmon	103.33	1
15	Northern Aquaculture	99.37	1
16	Atlantic West	65.87	1
17	Wester Ross	64.40	1
18	Aqua Farms	63.52	1
19	Millburn	63.42	1
20	Dury Salmon	54.03	1
21	Uyeasound	53.01	1
22	Thompson Bros	50.55	1
23	Kames	50.41	1
24	West Minch Sidnish	46.70	1
25	MJM Salmon	45.90	1
26	Collafirth	43.73	0
27	Glendale Salmon	32.91	0
28	G Duncan	25.24	0
29	Westray	17.83	0
30	Hebredian Fishery	13.27	0
31	Balta Island	12.18	0
32	Skelda	12.02	0
33	D&J Salmon	11.58	0
34	Greenholm Salmon	10.46	0
35	NAFC	8.00	0
36	Lewis	7.79	0
37	Sweening	5.99	0
38	North Uist	4.02	0
39	Carloway Seafood	3.41	0
40	Finfish	2.75	0
41	Weddell	0.40	0
	2005 TOTAL	8,781.19	

Marine Harvest, Stolt, Fjord, and Pan Fish together accounted for almost half (44%) zinc discharges

Copper Emissions in 2005

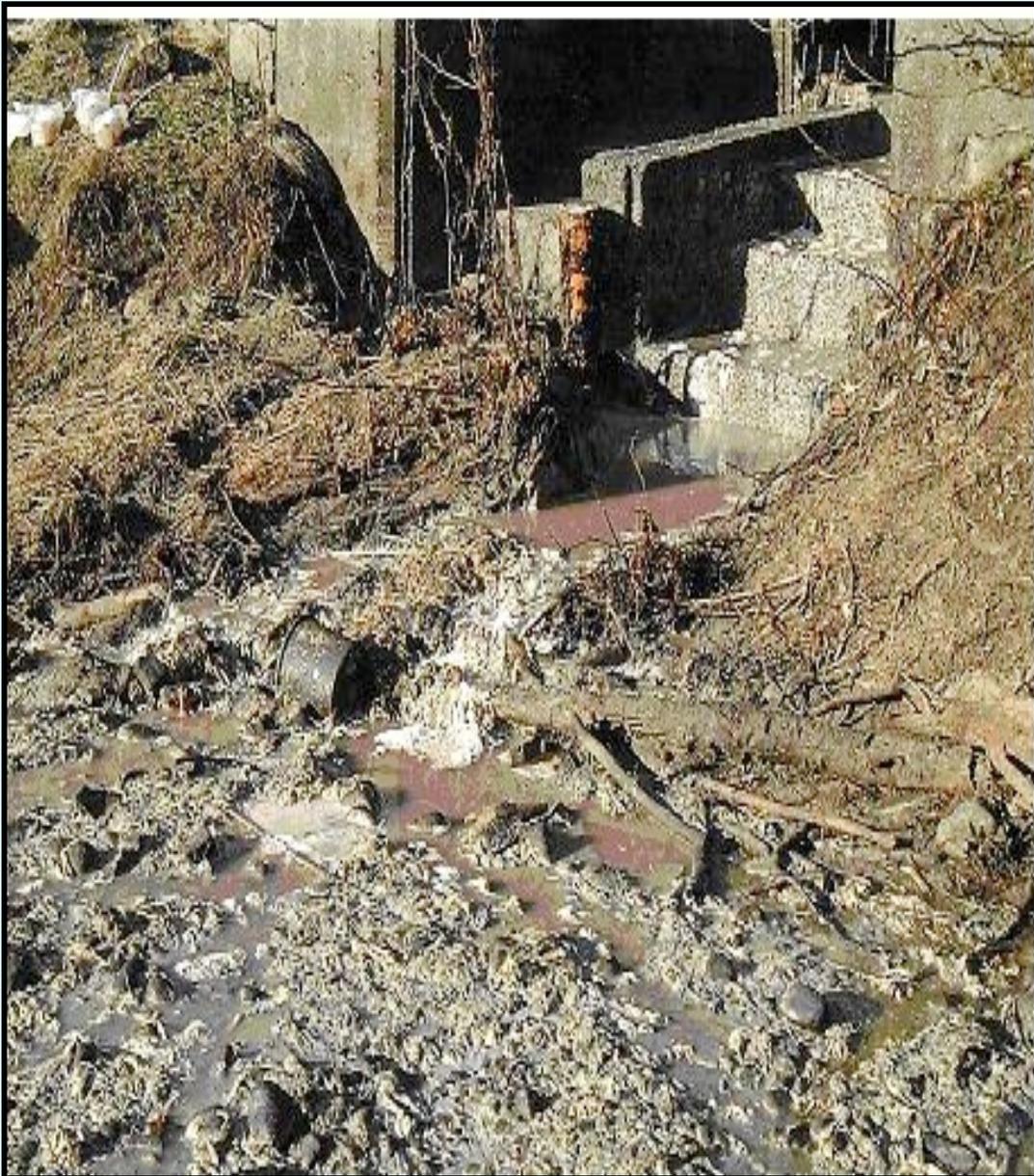
Scottish salmon farming companies reported discharging over 61 tonnes of copper (from feed & nets) into the marine environment in 2005

Rank	Company	Total Copper (kg)	% of Total
1	Pan Fish	34,816.63	57
2	Hjaltland	12,730.90	21
3	Marine Harvest	3,575.45	6
4	Scottish Sea Farms	3,183.09	5
5	Stolt Sea Farms	2,594.19	4
6	Fjord Seafood	2,096.45	3
7	Hoganess	807.70	1
8	Dury Salmon	610.55	1
9	Aqua Farms	361.40	1
10	Glendale Salmon	256.19	0
11	Kames	173.38	0
12	North Uist	96.19	0
13	MJM Salmon	86.80	0
14	Mainstream	28.18	0
15	Lakeland	25.34	0
16	Orkney Seafarms	9.20	0
17	Loch Duart	6.85	0
18	North Atlantic - Westside	5.53	0
19	Whalsay	5.07	0
20	Drumbeg Salmon	4.88	0
21	Northern Aquaculture	4.69	0
22	Atlantic West	3.11	0
23	Wester Ross	3.04	0
24	Millburn	2.99	0
25	Uyeasound	2.50	0
26	Thompson Bros	2.39	0
27	West Minch Sidnish	2.20	0
28	Collafirth	2.06	0
29	G Duncan	1.19	0
30	Westray	0.84	0
31	Hebredian Fishery	0.63	0
32	Balta Island	0.57	0
33	Skelda	0.57	0
34	D&J Salmon	0.55	0
35	Greenholm Salmon	0.49	0
36	NAFC	0.38	0
37	Lewis	0.37	0
38	Sweening	0.28	0
39	Carloway Seafood	0.16	0
40	Finfish	0.13	0
41	Weddell	0.02	0
	2005 TOTAL	61,503.11	

Pan Fish accounted for 57% of copper emissions due to heavy copper use on nets

Marine Harvest, Stolt, Fjord, and Pan Fish together accounted for 70% of copper discharges

Water Pollution Incidents in Scottish Fish Farming



Marine Harvest pollution in the River Lochy for which it was fined £ 4,000.

Water Pollution Incidents in Scotland

- **Lakeland Marine Farm** (27th April 2006) - cause or knowingly permit a trade effluent namely effluent containing uneaten fish food and fish faeces to be discharged to controlled waters by way of the nets of said fish farm cages, having caused or knowingly permitted the total biomass contained in the south cage group to exceed the maximum biomass permitted for said cage group in terms of the consent issued by SEPA on 11 August 2004, namely 750 tonnes: CONTRARY to the Control of Pollution Act 1974, Section 30F(3). Fined £1,000.
- **Kames Fish Farming** (12th January 2006) - poisonous/noxious/polluting matter - fish faeces & uneaten fish feed, to Loch Lochy, by way of nets of fish farm cages. Alternative charges under s30F(1) & (3) CoPA. Fined £8,000.
- **Marine Harvest Scotland** (27th July 2005) - cause or knowingly permit poisonous, noxious or polluting matter or any solid waste matter namely fish viscera, blood and congealed fat deposits, scum & grease to the River Lochy contra s30F(1) CoPA 1974. Fined £4,000.
- **Hoganes Salmon** (6th July 2005) - s30F(1) CoPA - Emamectin Benzoate to the Gruting Voe by way of administering to salmon in fish cages. Fined £2,000.
- **Wester Sound Salmon** (6th July 2005) - 2 charges under s30F(1) - Emamectin Benzoate to the Vaila Sound, by administering to salmon in cages at Burrastow and Cloudin sites. Fined £2,000.
- **Pan Fish Scotland** (17th February 2005) - causing or knowingly permitting diesel oil to enter Loch Torridon by way of a leak from compressor with no boom, bund, drip tray or impermeable base in place & no procedure in place for dealing with diesel spills- contra s30F(1) CoPA. Fined £10,000.
- **Wester Ross Salmon Hatcheries** (26th August 2004) - effluent from fish farm cages discharged to Loch Tollaidh contra s30F(3) CoPA, alternatively s30F(1). Fined £12,000.
- **Scottish Sea Farms** (25th September 2003) - causing or knowingly permitting trade effluent, namely effluent arising from Ardtornish Fish hatchery, to be discharged into the River Rannoch at Ardtornish, Morvern, Argyll by way of a pipe leading from a discharge treatment drum - contra s30F(3) CoPA 19. Fined £1,000.
- **WISCO Processing** (16th June 2003) - contravention of s30F(1) CoPA 1974 - sodium hypochlorite solution to controlled waters - the Glen River, Stornoway. Fined £8,000.

Water Pollution Incidents in Scotland

- **Scottish Sea Farms** (19th December 2002) - Contravenes 30F(1) CoPA 1974 - diesel oil to Loch Kishorn. Fined £3,000.
- **Kames Fish Farming** (12th February 2002) - fish-processing wastes to the Eas 'a Chaorainn, also known as the Kames Burn, in contravention of section 30F(1) or (3) CoPA 1974. Fined £5,000.
- **Setter Ness Salmon** (23rd January 2002) - Two charges of contravening section 30F(1) CoPA 1974 - ivermectin from fish cages to controlled waters. Fined £3,000.
- **Corrie Mhor Salmon** (15th February 2001) - Trade effluent from fish tanks/grader to controlled waters in contravention of 30F(3) CoPA 1974. Fined £3,000.
- **Aquascot Group** (24th October 2000) - Contravention of Section 30F(1) CoPA 1974 - unconsented trade effluent from fish cages to controlled waters. Fined £500.
- **Marine Harvest Scotland** (23rd August 2000) - Section 30F(3) CoPA 1974 - trade effluent (fish processing effluent) to controlled waters. Admonition.
- **Marine Harvest Scotland** (27th June 2000) - Contravention of section 30F(3) CoPA 1974 - trade effluent from a fish farm in the form of fish fat and fish oils to controlled waters. Fined £500.
- **Shetland Intensive Smolts** (19th May 2000) - section 30F(3) COPA trade (fish hatchery) effluent to controlled waters. Fined £3,000.
- **Aquascot Group** (1st December 1999) - section 30F(1) or 30F(3) COPA 74 - discharge of fish feed/faeces to Inner Loch Clash in contravention of consent. Fined £2,500.
- **Wadbister Offshore** (15th April 1998) - section 30F(3) COPA. Illegal use of Cypermethrin. Fined £1,000.
- **EWOS** (25th February 1998) - Discharge of trade effluent (heavy fuel oil) from fish food factory to controlled waters contrary to Section 30F(3) COPA 1974 (as amended). Fined £2,000.
- **EWOS** (undated) - section 30F(3) COPA - trade effluent from fish food factory to controlled waters. Fined £500.

Chemical Use

*Reported by Scottish Fish Farming
Companies in 2005 through June 2007*



*Data presented as reported and also in
normalized form (using feed use as an
indicator of production levels)*

Summary of Reported Use of Antifoulants, Antiparasitics and Antibiotics 2005 - June 2007

Summary of Scottish Fish Farming, Company Reported Data 2005 - 2006				
	2005	2006	2007 Thru June	% Change 2005 -2006
Copper Use on Nets (Antifoulant) (kg)	61,088.79	60,553.60	no data	- 0.9
Antiparasitic Use				
Slice Use (kg)	18,168,645	11,622,439	12,579,135	- 36
Excis Use (l)	659.8	1,028.7	923.3	+55.9
Calcide Use (g)	0	0	53,670	0
Antibiotic Use (g)				
(Act. Ingr.: Oxytetracycline Hydrochloride)	1,268,053	4,983,370	no data	+ 292
Florocol (Act. Ingr.: Florfenicol)	3,715	64,000	no data	+ 1623
Florfenicol	8,000	0	no data	- 100
Panacur 4% Powder	10,000	0	no data	- 100
Vetremox	0	55,200	no data	+++
Virkon S	0	11,830	no data	+++
Kathon FP (1.5 kg)	0	6.675	no data	+++

Fjord Seafood reported using the sea lice chemical - Calicide (Teflubenzuron) in 2007. Scottish farmers had not reporting using this chemical in 2004, 2005, or 2006.

A Snapshot of Reported Chemical Use in 2005

Company	List of Chemicals Used by Top Farmed Salmon Companies
Marine Harvest	Antiparasitic: Excis (cypermethrin), Slice (emamectin benzoate) Antifoulants: Aqua-Net, Netguard Anesthetics: MS-222 Antimicrobials: Aquatet Disinfectants: Adsafe, Deep Clean De-greaser, G101, FAM 30, Formaldehyde,
Pan Fish	Antiparasitic: Excis (cypermethrin), Slice (emamectin benzoate), Hydrogen Antifoulants: Aqua-Net Anesthetics: Benzocaine, MS-222, Acetone Antimicrobials: Non reported Disinfectants: Biosolve, Virkon S
Scottish SeaFarms	Antiparasitic: Excis (cypermethrin), Slice (emamectin benzoate), Hydrogen Antifoulants: Aqua-Net, Netguard Anesthetics: Benzocaine, MS-222, Acetone Antimicrobials: Aquatet, Panacur 4% Powder Disinfectants: F-23 Foamer, G101, Iodet, Iodophor, Terminate Degreaser, Virkon
Stolt SeaFarms	Antiparasitic: Slice (emamectin benzoate) Antifoulants: Aqua-Net Anesthetics: 2-Phenoxyethanol, MS-222 Antimicrobials: non reported Disinfectants: Biosolve, FAM 30, SOMPLEX Fatsolve, Tegodyne, Tego
Mainstream	Antiparasitic: Slice (emamectin benzoate) Antifoulants: none reported Anesthetics: none reported Antimicrobials: none reported Disinfectants: none reported
Fjord Seafood	Antiparasitic: Excis (cypermethrin), Slice (emamectin benzoate) Antifoulants: Aqua-Net Anesthetics: MS-220, Tricaine Methyl Sulphonate Antimicrobials: Aquatet, Florfenicol Disinfectants: Iodophor, Virkon S
Loch Duart	Antiparasitic: Excis (cypermethrin), Slice (emamectin benzoate) Antifoulants: none reported Anesthetics: Benzocaine, Acetone Antimicrobials: none reported Disinfectants: none reported

***Loch Duart uses more chemicals by type and amount than
Mainstream (Cermaq)***

Summary of Top Reported Chemical Use in 2005

Summary of 2005 Chemicals Use by Scottish Salmon Farmers						
Chemical	Proprietary Name	Active Ingredient	# Companies that Used (of 41 total)	Total Quantity Used	Highest Use	% Used
<i>Antiparasitics</i>	Excis (l)	Cypermethrin	10	659.8	Marine Harvest	31
	Slice	Emamectin Benzoate	25	18,168,615.35	Marine Harvest	42
<i>Antifoulants</i>	AquaNet (l)	Copper Oxide	6	336,066	PanFish	65
	Netguard (l)	Copper Oxide	2	10,274	Marine Harvest	94
	Netrx AF (l)	Copper Oxide	6	120,781	Scottish Sea Farms	74
	Netwax (l)	Copper Oxide	4	8,338	Dury Salmon	46
<i>Anaesthetics</i>	Benzocaine (g)	Ethyl-aminobenzoate	10	11,966	Kames	33
	2-Phenoxyethanol (l)	2-Phenoxyethanol	3	7.15	Stolt Sea Farms	84
	MS-222 (g)	Tricaine Methyl Sulphonate	14	23,190.70	Marine Harvest	57
	Acetone (l)	2-Propanol	6	120.35	Loch Duart	38
<i>Antimicrobials</i>	Aquatet (g)	Oxytetracycline Hydrochloride	4	1,268,053	Marine Harvest	91
	Florocol (g)	Florfenicol	1	3,715	Kames	100
	N/A	Florfenicol (g)	1	8,000	Fjord Seafood	100
	Panacur 4% Powder (g)	Fenbendazole	1	10,000	Scottish Sea Farms	100

2006 - Reported Antibiotic Use

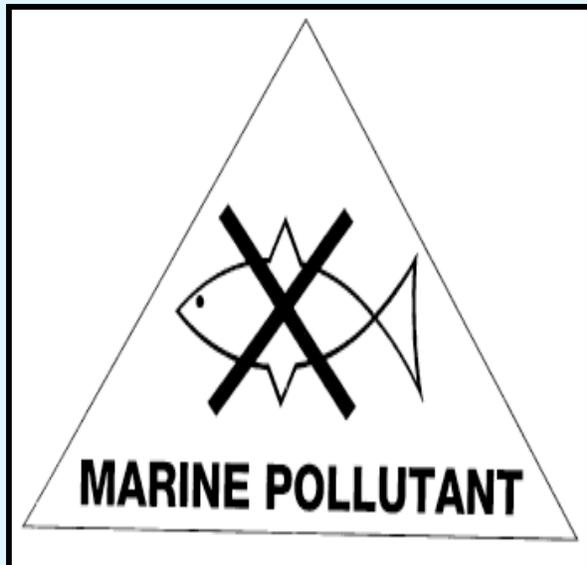
	2006 Reported Antimicrobial Use Scottish Salmon/Fish Farms					
Company	Vetremox (grams)	Aquatet (grams)	Florocol (grams)	Virkon S (g)	Kathon FP (1.5kg)	Unnamed
Finfish Ltd	0	15,000	0	0	0	0
Hjaltland Seafarms Ltd	0	180,400	0	0	0	0
Lakeland (Marine & Unst)	0	0	0	11,830	0	0
Marine Harvest	55,200	4,727,120	64,000	0	6.675	6.675
Pan Fish Scotland Ltd	0	60,850	0	0	0	0
TOTAL	55,200	4,983,370	64,000	11,830	6.675	6.675

2005 Reported Antibiotic Use

	2005 Reported Antimicrobial Use				
Company	Aquatet (grams)	Oxytetracycline Hydrochloride (grams)	Florocol (grams)	Florfenicol (grams)	Panacur 4% Powder (grams)
Kames	108,264	43,000	3,715	0	0
Marine Harvest	1,147,705	0	0	0	0
Fjord Seafood	12,000	12,000	0	0	0
Scottish Sea Farms	84	0	0	8,000	10,000
TOTAL	1,268,053	55,000	3,715	8,000	10,000

Sea Lice Chemicals

*Reported by Scottish Salmon Farming
Companies in 2005 - June 2007*



*Data presented as reported and also in
normalized form (using feed use as an
indicator of production levels)*

Reported Use of Slice (emamectin benzoate) 2005 - June 2007

Reported Slice Use (g)			
Company	2005	2006	2007 Thru June
Aith		0	
Aqua Farm Ltd	0		0
Atlantic West	0		
Balta Island Seafare Ltd	0		0
Bound Skerries Ltd			0
Carloway Salmon	0		
Collafirth (Green Island Organics)	0		0
D&J Salmon	0		
Drumbeg Salmon Ltd	401,789	757,306	251,010
Dury Salmon Ltd	242	300	0
Finfish Ltd	0	0	0
Fjord Seafood Scotland	1,744	1,475,853	1,293,360
G Duncan (Salmon) Ltd	223	0	
Glendale Salmon	0		
Green Island Organics Ltd			0
Greenholm	35,000		
Hasviak, North Atlantic Seafarms (aka	275,000	4,800	0
Hebredian Fishery (Salmon Co Ltd)			0
Hjaltland Seafarms Ltd	352,750	484,200	956,300
Hoganess Salmon Ltd	304,690	693,339	318,650
Johnson Seafarms (Marine Ltd)		0	700
Kames Fish Farming Ltd.	43,750	15,000	35,000
Lakeland (Marine & Unst) Ltd	293,680	454	275,700
Laski Farming Enterprises Ltd		0	
Lewis Salmon Ltd	40	24	0
Loch Duart Ltd	469,390	676,923	438,161
Mainstream Scotland Ltd	800,220	503,025	256,000
Marine Harvest (not inc. PanFish, Fjord)	7,712,907	671,844	5,668,555
Millburn	0		
MJM Salmon Ltd	14		279
NAFC	33,929	5,000	0
North Atlantic Salmon - Westside Salmon	321,400		0
North Isles Sea Farms Ltd		0	
North Uist Fisheries	0	0	0
Orkney Seafarms Ltd	0	0	0
Pan Fish Scotland Ltd	2,174,200	2,942,129	1,685,190
Rysa Salmon Ltd	0		0
Scottish Seafarms Ltd	3,258,021	3,168,934	1,332,119
Skelda Salmon	57	0	
Slett Salmon Ltd		0	
Stolt Sea Farms	1,338,013		
Sweening Salmon	0	0	
Thompson Brothers Salmon Ltd	0		0
Uyeasound Salmon	0	0	0
Weddell Fish Farms	0	0	0
West Minch (Sidnish)	0	0	50,400
Wester Ross Fisheries Ltd	297,587	223,307	17,711
Westray Salmon	0	0	0
Whalsay	54,000		
TOTAL	18,168,645	11,622,439	12,579,135

Empty = No reported submitted

Highlight = Reported only Q1

Marine Harvest - with Pan Fish and Fjord - used 44 % of Slice in 2006

Loch Duart - "The Sustainable Salmon Company" reported using more Slice than Marine Harvest in 2006

2006 Reported Use Slice (emamectin benzoate)

2006 Reported Slice Use Scottish Salmon/Fish Farms					
Rank (Absolute)	Company	Slice (grams) containing 0.2% emamectin benzoate	Slice Use - % of Scottish Total Use	Slice (g) Used/ kg Feed Used	Slice Normalized Rank (g slice/kg feed)
1	Scottish Sea Farms (Main,Shet)	3,168,934	27	0.099182	8
2	Pan Fish Scotland Ltd	2,942,129	25	0.119038	6
3	Fjord Seafood Scotland	1,475,853	13	0.209196	4
4	Drumbeg Salmon Ltd	757,306	7	0.294407	1
5	Hoganess	693,339	6	0.151082	5
6	Loch Duart Ltd	676,923	6	0.252137	3
7	Marine Harvest	671,844	6	0.013171	13
8	Mainstream (Ork, Shet, West)	503,025	4	0.041696	9
9	Hjaltland Seafarms Ltd	484,200	4	0.024875	11
10	Wester Ross Fisheries Ltd	223,307	2	0.265361	2
11	Kames Fish Farming Ltd	15,000	0	0.019192	12
12	NAFC	5,000	0	0.026686	10
13	Northern Aquaculture, Shetland Halibut Co, Hasvisk North Atlantic Seafarms	4,800	0	0.104861	7
14	Lakeland (Marine & Unst)	454	0	4.92E-05	16
15	Dury Salmon Ltd	300	0	0.000101	14
16	Lewis Salmon Ltd	24	0	7.84E-05	15
TOTAL		11,622,439			

2005 Reported Slice (Emamectin benozoate) Use

Raw Data, As Reported:

Rank	Company	Slice (grams)	% of Total
1	Marine Harvest	7,712,907	42
2	Scottish Sea Farms	3,258,021	18
3	Pan Fish	2,174,200	12
4	Stolt Sea Farms	1,338,013	7
5	Mainstream	800,220	4
6	Loch Duart	469,390	3
7	Drumbeg Salmon	401,789	2
8	Hjaltland	352,750	2
9	North Atlantic - Westside	321,400	2
10	Hoganess	304,690	2
11	Wester Ross	297,587	2
12	Lakeland	293,680	2
13	Northern Aquaculture	275,000	2
14	Whalsay	54,000	0
15	Kames	43,750	0
16	Greenholm Salmon	35,000	0
17	NAFC	33,929	0
18	Fjord Seafood	1,744	0
19	Dury Salmon	242	0
20	G Duncan	223	0
21	Skelda	57	0
22	Lewis	40	0
23	MJM Salmon	14	0
	2005 TOTAL	18,168,645	

Over 18 million grams of Slice use reported in 2005

2005 Reported Slice (Emamectin benozoate) Use

Normalized Data:

Rank	Company	Slice (grams) per tonne of feed in 2005
1	Wester Ross	232.01
2	NAFC	212.89
3	Drumbeg	195.23
4	Marine Harvest	185.51
5	Greenholm	168.03
6	Loch Duart	162.38
7	Stolt Sea Farms	148.76
8	Northern Aquaculture	138.95
9	North Atlantic-Westside	137.63
10	Scottish Sea Farms	123.15
11	Pan Fish	109.15
12	Hoganes Salmon	94.96
13	Mainstream	67.28
14	Kames	43.58
15	Lakeland	27.46
16	Whalsay	25.24
17	Hjaltland	23.95
18	G Duncan	0.44
19	Lewis Salmon	0.26
20	Fjord Seafood	0.26
21	Skelda Salmon	0.24
22	Dury Salmon	0.23
23	MJM Salmon	0.02
	Average Slice Use (g) Per Tonne Feed	51.16

In 2005, Scottish salmon fish farmers used an average of 51 grams of Slice/tonne of feed

Reported Use of Excis (cypermethrin) 2005 - June 2007

Reported Excis Use (l)			
Company	2005	2006	2007 Thru June
Aith		0	
Aqua Farm Ltd	0		0
Atlantic West	0		
Balta Island Seafare Ltd	0		0
Bound Skerries Ltd			0
Carloway Salmon	0		
Collafirth (Green Island Organics)	0		0
D&J Salmon	0		
Drumbeg Salmon Ltd	49.16	41.8	25.26
Dury Salmon Ltd	0	0	0
Finfish Ltd	0	0	0
Fjord Seafood Scotland	20.8	125.2	200.6
G Duncan (Salmon) Ltd	0	0	
Glendale Salmon	0		
Green Island Organics Ltd			0
Greenholm	0		
Hasviak, North Altantic Seafarms (aka Northern Aquaculture, Shetland Halibut Company)	0	0	0
Hebredian Fishery (Salmon Co Ltd)			0
Hjaltsland Seafarms Ltd	0	0	0
Hoganess Salmon Ltd	0	13.6	0
Johnson Seafarms (Marine Ltd)		0	0
Kames Fish Farming Ltd.	7.4	0	0
Lakeland (Marine & Unst) Ltd	24.3	2	14.9
Laski Farming Enterprises Ltd		0	
Lewis Salmon Ltd	0	0.6	0
Loch Duart Ltd	50.25	48.8	49.95
Mainstream Scotland Ltd	0	0	0
Marine Harvest (not inc. PanFish, Fjord)	205.6	559.6	335.1
Millburn	0		
MJM Salmon Ltd	0		0
NAFC	0	0	0
North Atlantic Salmon - Westside Salmon	0		0
North Isles Sea Farms Ltd		0	
North Uist Fisheries	0	0	0
Orkney Seafarms Ltd	0	0	0
Pan Fish Scotland Ltd	189.13	155.4	59.8
Rysa Salmon Ltd			0
Scottish Seafarms Ltd	108.66	81.7	224.17
Skelda Salmon	0	0	
Slett Salmon Ltd		0	0
Stolt Sea Farms	0		
Sweening Salmon	0	0	
Thompson Brothers Salmon Ltd	0		0
Uyeasound Salmon	0	0	0
Weddell Fish Farms	0	0	0
West Minch (Sidnish)	0	0	0
Wester Ross Fisheries Ltd	4.5	0	13.5
Westray Salmon	0	0	0
Whalsay	0		
TOTAL	659.8	1,028.7	923.3

Empty = No reported submitted

Highlight = Reported only Q1

Marine Harvest - with Pan Fish and Fjord - used 82 % of Excis in 2006

In the first half of 2007, fish farms have reported using more Excis than all of 2005 and almost has much as 2006.

2006 Reported Use of Excis (cypermethrin)

2006 Reported Excis Use Scottish Salmon/Fish Farms					
Rank (Absolute)	Company	Excis (litres) containing 1% cypermethrin	Excis Use - % of Scottish Total Use	Excis (l) Used/ kg Feed Used	Excis Normalized Rank (g slice/kg feed)
1	Marine Harvest	559.6	54	1.1E-05	4
2	Pan Fish Scotland Ltd	155.4	15	6.29E-06	5
3	Fjord Seafood Scotland	125.2	12	1.77E-05	2
4	Scottish Sea Farms (Main,Shet)	81.7	8	2.56E-06	7
5	Loch Duart Ltd	48.8	5	1.82E-05	1
6	Drumbeg Salmon Ltd	41.8	4	1.62E-05	3
7	Hoganess	13.6	1	2.96E-06	6
8	Lakeland (Marine & Unst)	2	0	2.17E-07	9
9	Lewis Salmon Ltd	0.6	0	1.97E-06	8
10	Mainstream (Ork, Shet, West)	0	0	0	
	TOTAL	1,029			

***The “Sustainable Salmon Company”, Loch Duart was
the highest user of Excis per tonne of feed in 2005***

2005 Reported Use of Excis (cypermethrin)

2005 Reported Excis Use Scottish Salmon/Fish Farms					
Rank (Absolute)	Company	Excis (litres) containing 1% cypermethrin	Excis Use - % of Scottish Total Use	Excis (l) Used/ tonne Feed Used	Excis Normalized Rank (g slice/kg feed)
1	Marine Harvest	205.6	31	0.005	5
2	Pan Fish Scotland Ltd	189.13	29	0.009	3
3	Scottish Sea Farms (Main,Shet)	108.66	16	0.004	6
4	Loch Duart Ltd	50.25	8	0.017	2
5	Drumbeg Salmon Ltd	49.16	7	0.024	1
6	Lakeland (Marine & Unst)	24.3	4	0.002	9
7	Fjord Seafood Scotland	20.8	3	0.003	8
8	Kames	7.4	1	0.007	4
9	Wester Ross	4.5	1	0.004	7
	TOTAL	660			

***78 % of companies reported NO Excis use in
2005***

***The “Sustainable Salmon Company”, Loch Duart
(and its subsidiary Drumbeg Salmon), was the
highest user of Excis per tonne of feed in 2005***

Sea Lice Chemical Use in Selected Lochs and Special Areas of Conservation in 2005

Annual total Cypermethrin (g) Receiving water	Year				
	2002	2003	2004	2005	2006
Firth of Lorn	20	212	70	68	-
Loch Alsh	178	-	180	-	-
Loch Duich	958	290	328	12	-
Loch Fyne	608	1,184	24	637	-
Loch Laxford	-	40	8	-	116
Loch Roag	618	264	166	412	471
Loch Sunart	1,131	606	1,704	72	1,080

***4,411 g of Cypermethrin was discharged into Special
Areas of Conservation between 2002 -2006***

Annual total Emamectin Benzoate (g) Receiving water	Year				
	2002	2003	2004	2005	2006
Firth of Lorn	297	910	205	490	55
Loch Alsh	662	341	2,504	-	78
Loch Duich	440	-	1,724	-	57
Loch Fyne	-	-	864	1,766	2,768
Loch Laxford	-	934	-	142	-
Loch Roag	1,418	349	310	1,382	23
Loch Sunart	1,753	155	8,030	1,600	134

***12,321 g of Emamectin Benzoate was discharged into Special
Areas of Conservation between 2002 -2006***

Reported Use of Copper (Antifoulant) 2005 - 2006

Copper from Nets (Active Ingredient, Copper-oxide, kg)		
Company	2005	2006
Aith		0
Aqua Farm Ltd	358.4	
Atlantic West	0	
Balta Island Seafare Ltd	0	
Carloway Salmon	0	
Collafirth (Green Island Organics)	0	
D&J Salmon	0	
Drumbeg Salmon Ltd	0	0
Dury Salmon Ltd	608	195
Finfish Ltd	0	0
Fjord Seafood Scotland	2,080.32	0
G Duncan (Salmon) Ltd	0	0
Glendale Salmon	254.64	
Greenholm Salmon	0	
Hebredian Fishery	0	
Hasviak, North Atlantic Seafarms (aka Northern Aquaculture, Shetland Halibut Company)	0	0
Hjaltland Seafarms Ltd	12,696	18,160
Hoganes Salmon Ltd	800.1	553.6
Johnson Seafarms (Marine Ltd)		
Kames Fish Farming Ltd.	171	0
Lakeland (Marine & Unst) Ltd	0	0
Laski Farming Enterprises Ltd		
Lewis Salmon Ltd	0	0
Loch Duart Ltd	0	0
Mainstream Scotland Ltd	0	0
Marine Harvest (not inc. PanFish, Fjord)	3,476.96	5,508.32
Millburn	0	
MJM Salmon Ltd	84.63	174
NAFC	0	0
North Atlantic Salmon - Westisde Salmon	0	
North Isles Sea Farms Ltd		0
North Uist Fisheries	96	0
Orkney Seafarms Ltd	0	0
Pan Fish Scotland Ltd	34,769.44	33,235.04
Scottish Sea Farms Ltd	3,120.42	2,727.64
Skelda Salmon	0	0
Slett Salmon Ltd		
Stolt Sea Farms	2,572.88	
Sweening Salmon	0	0
Thompson Brothers Salmon Ltd	0	
Uyeasound Salmon	0	0
Weddell Fish Farms	0	0
West Minch (Sidnish)	0	
Wester Ross Fisheries Ltd	0	0
Westray Salmon	0	0
Whalsay	0	
TOTAL	61,088.79	60,553.60

**Marine
Harvest -
with Pan Fish
and Fjord -
used 64 % of
Excis in 2006**

**In 2006, 77%
of Scottish
fish farming
companies
reported no
use of
copper on
nets**

2006 Reported Antifoulant Use

2006 Reported Antifoulant Use Scottish Salmon/Fish Farms							
Company	Aqua-Net (litres)	Netguard (litres)	Netrex AF (litres)	Flexabar (litres)	Aquaguard (litres)	Flexgard XI (litres)	NetWax (litres)
Dury Salmon Ltd	0	0	6,500	0	0	0	0
Hjaltland Seafarms Ltd	113,500	0	0	0	0	0	0
Hoganess	0	0	0	0	0	0	3460
Marine Harvest	21,302	13,125	0	3,900	0	0	0
Northern Aquaculture,					550		
Pan Fish Scotland Ltd	207,719	0	0	0	0	0	0
Scottish Sea Farms (Main,Shet)	9,254	0	23,700	0	0	67,719	12,112
TOTAL	351775	13125	30200	3900	550	67719	15572

2005 Antifoulant Use

Ranking by Normalized Data, Only

Company	Rank for Aqua-Net (liters) per tonne of feed	Rank for Netgard (liters) per tonne of feed	Rank for Netrex AF (liters) per tonne of feed	Rank for NetWax (liters) per tonne of feed
AquaFarm				3
Atlantic West Salmon				
Balta Island				
Carloway Seafoods				
Collafirth				
D&J Salmon				
Drumbeg				
Dury Salmon				1
FinFish				
Fjord Seafood	3			
G Duncan				
Glendale Salmon			4	2
Greenholm				
Hebredian Fishery				
Hjaltland	2			
Hoganess Salmon			1	
Kames			5	4
Lakeland				
Lewis Salmon				
Loch Duart				
Mainstream				
Marine Harvest	5	2		
Millburn Salmon				
MJM Salmon			3	
NAFC				
North Atlantic-Westside				
North Uist		1		
Northern Aquaculture				
Orkney Seafarms				
Pan Fish	1			
Scottish Sea Farms	6		2	
Skelda Salmon				
Stolt Sea Farms	4			
Sweening				
Thompson Bros				
Uyeasound				
Weddell				
West Minch Salmon				
Wester Ross				
Westray				
Whalsay				

Copper Discharges into Selected Lochs and Special Areas of Conservation, 2002 - 2005

Annual total Copper Oxide (g) Receiving water	Year			
	2002	2003	2004	2005
Firth of Lorn	283,500	201,630	164,760	115,380
Loch Alsh	237,600	-	-	-
Loch Duich	-	-	-	-
Loch Fyne	1,743,680	530,670	2,520,000	9,347,200
Loch Laxford	-	-	-	-
Loch Roag	6,336,640	2,482,560	3,122,720	1,190,400
Loch Sunart	228,800	-	-	-

***Scottish salmon farming companies discharged
over 14 tonnes of copper into Special Areas of
Conservation, 2002 - 2005***

2005 Reported Anesthetic Use - Raw & Normalized Data

Company	Reported Benzocaine (g)	Rank for Benzocaine (g) per tonne of feed	Reported 2-Phenoxyethanol (l)	Rank for 2-Phenoxyethanol per tonne of feed	Reported MS-222 (g)	Rank for MS-222 (g) per tonne of feed	Reported Tricaine Methyl Sulphonate (g)	Rank for TMS (g) per tonne of feed	Reported Acetone (l)	Rank for Acetone (l) per tonne of feed	Reported 2-Propanol (l)
AquaFarm											
Atlantic West Salmon											
Balta Island											
Carloway Seafoods											
Collafirth											
D&J Salmon											
Drumbeg	1820	4						45		1	
Dury Salmon					30	10					
FinFish			0.15	1							
Fjord Seafood					2350	2	1085	1			
G Duncan											
Glendale Salmon					20	9					
Greenholm											
Hebredian Fishery											
Hjaltland											
Hoganess Salmon	106	9			2	13					
Kames	4000	2			1400	1					
Lakeland	800	8	1	3				7		5	
Lewis Salmon					5	8					
Loch Duart	1850	5						46.25		2	
Mainstream											
Marine Harvest					13260.7	3					
Millburn Salmon											
MJM Salmon					20	11					
NAFC											
North Atlantic-Westside					700	4					
North Uist	1000	1									
Northern Aquaculture											
Orkney Seafarms											
Pan Fish	2160	7			1250	7		21		4	
Scottish Sea Farms	50	10			3925	6		1		6	
Skelda Salmon											
Stolt Sea Farms			6	2	33	12					
Sweening											
Thompson Bros											
Uyeasound											
Weddell	10	3						0.1		3	
West Minch Salmon											
Wester Ross	170	6			195	5	195	2			5
Westray											
Whalsay											
TOTAL	11966		7.15		23190.7		1280		120.35		5

Yellow indicates those companies with the highest anesthetic use overall or anesthetic per tonne feed

2005 Reported Disinfectant Use

Disinfectants are used for sterilization of a site to prevent infectious diseases. Those reportedly used in 2005 were:

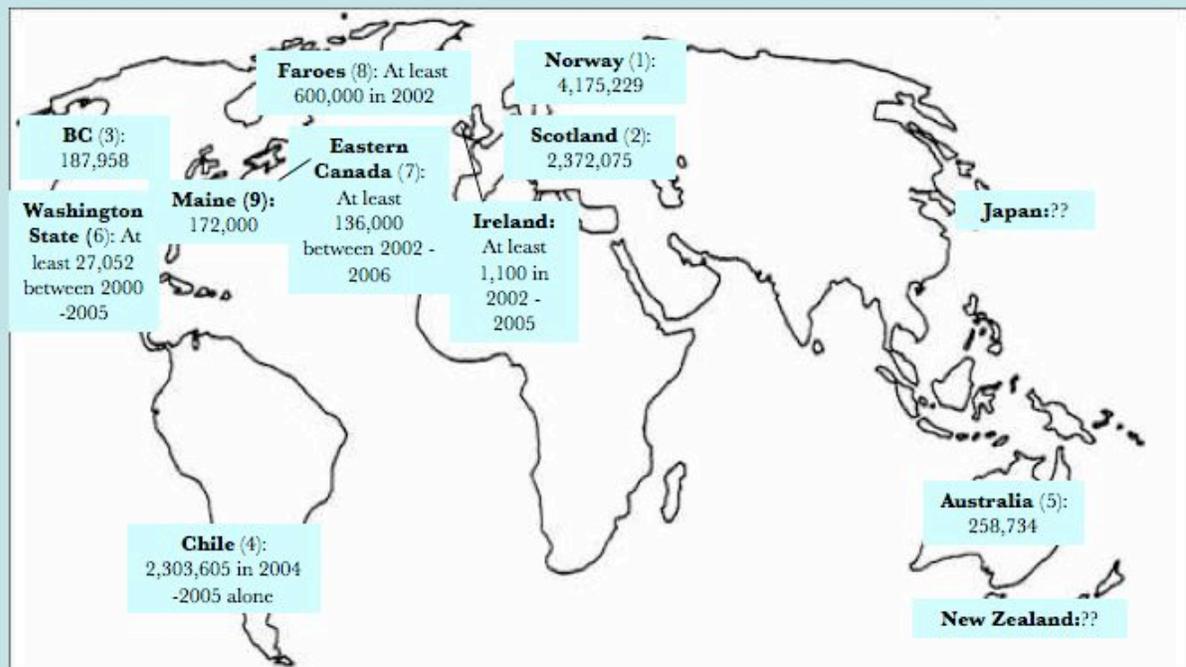
- Adsafe
- Biosolve
- Deep Clean Degreaser
- F-23 Foamer
- FAM 30
- Formaldehyde
- G101
- Iodet
- Iodophor
- Oxofoam
- Paragem
- Pear Drops
- Pine Disinfectant
- Spectrum-Food Safe
- SOMPLEX Fatsolve
- TEGO 2000
- Tegodyne
- Tego Hypochlorite
- Terminate Degreaser
- Virkon-S

Escapes from Salmonid Farms Globally



Reported Escapes of Farmed Salmonids Globally, 2000 - 2006

Between 2000 -2006,
we know of at least 10.2 million reported escapees of farmed salmonids, globally



?? = No government data available

International Inventory of Farmed Salmonid Escape Incidents 2001 -2006

Region	2001	2002	2003	2004	2005	2006	Regional Total 2001 -2006	Average # Incidents/Year
Norway						60	60	60.0
Chile				7	8		15	7.5
Scotland	12	9	14	14	24	25	98	16.3
Faroes Islands			1				1	1.0
Ireland		2		0	0		2	0.7
British Columbia, Canada				35	35		70	35.0
Eastern Canada					4	0	4	2.0
Australia	0	2	3	4	2	1	12	2.0
Annual Total	12	13	18	60	73	86	262	43.7

Since 2002, reported Scottish Salmonid escape incidents have risen from 9 incidents in 2002 to 25 incidents in 2006.

Up to September 2007, 15 escape incidents (involving 186,707 escapees) from fish farms in Scotland have already been reported.

Summary of Reported Escape from Salmonid Escape Incidents 2001 -2006

Region	2001	2002	2003	2004	2005	2006	Regional Total 2001 -2006	Average # Incidents/Year
Norway						60	60	60.0
Chile				7	8		15	7.5
Scotland	12	9	14	14	24	25	98	16.3
Faroes Islands			1				1	1.0
Ireland		2		0	0		2	0.7
British Columbia, Canada				35	35		70	35.0
Eastern Canada					4	0	4	2.0
Australia	0	2	3	4	2	1	12	2.0
Annual Total	12	13	18	60	73	86	262	43.7

Since 2002, reported Scottish Salmonid escape incidents have risen from 9 incidents in 2002 to 25 incidents in 2006.

Up to September 2007, 15 escape incidents (involving 186,707 escapees) from fish farms in Scotland have already been reported.

Summary of Scottish Fish Farm Escapes Data 2005 - Sept 2007 (As Reported to Scottish Executive)

Summary of Scottish Fish Farming, Company Reported Data 2005 - 2006				
	2005	2006	2007 Thru June	% Change 2005 -2006
Escapes	24	26	15	+ 7.7
# of Escapes	1,018,683	299,983	186,707	- 70.6
# of Escapes Recovered	88,108	1,300	2,112	- 98.5
# of Atlantic Salmon Escapes from IPN- infected site	339,511	no longer recorded	no data	???
# of Atlantic Salmon Escapes from a Site Treated with Slice/Emamectin Benzoate	51,953	24,318	no data	- 53.2
# of Atlantic Salmon Escapes from a Site Treated with Excis (Cypermethrin)	3,000	0	no data	-100
# of Atlantic Salmon Escapes from a Site Treated with Oxytetracycline	0	1,950	no data	+++

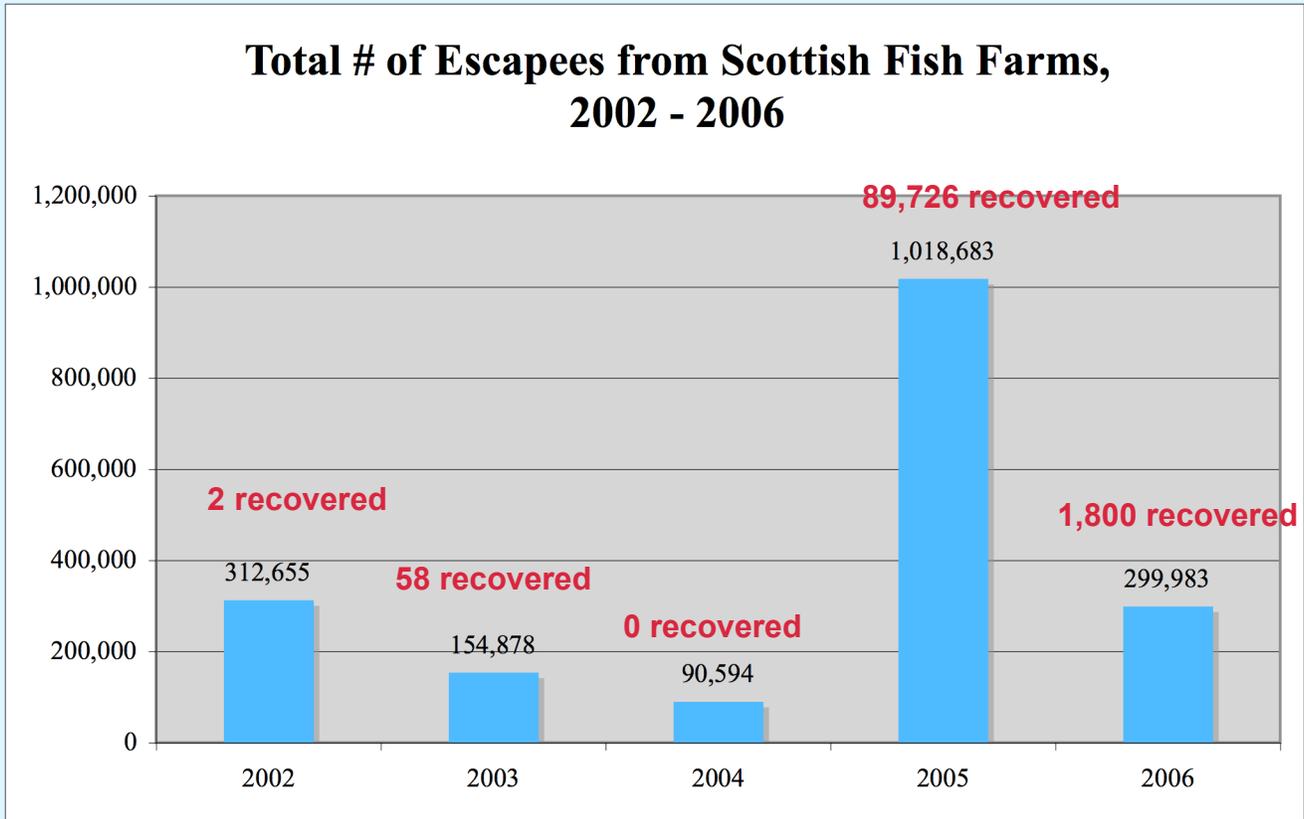
Reported Farmed Salmon Escapes and Escape Ratios in Major Producing Regions

Region	Year	Production (tonnes, wfe)	Reported Escapes	Escape Ratio	Average Escape Ratio
Norway (1)	2001	506,883	368,000	1:459	1:331
	2002	546,054	730,000	1:249	
	2003	578,475	550,000	1:350	
	2004	627,315	563,000	1:371	
	2005	645,387	722,000	1:298	
	2006	689,089	882,229	1:260	
Scotland (2)	2001	138,519	89,996	1:513	1:304
	2002	144,589	312,655	1:154	
	2003	169,736	151,853	1:373	
	2004	158,099	90,594	1:581	
	2005	129,588	1,002,883	1:43	
	2006	137,018	287,753	1:159	
Chile (3)	1995	98,287	315,133	1:104	1:626
	1996	144,315	111,706	1:431	
	2002	476,349	90,000	1:1,764	
	2004	569,500	2,023,365	1:94	
	2005	619,900	280,240	1:737	
British Columbia (4)	2001	68,000	55,167	1:411	1:195,158
	2002	84,200	20,455	1:1,372	
	2003	72,700	40	1:605,833	
	2004	61,800	43,985	1:468	
	2005	70,600	64	1:367,708	

Escape ratio is calculated by dividing estimated annual number of salmon in production by the reported number of escapees (e.g. 1 in 252 farmed salmon escaped in Norway in 2006). Number of fish in production is conservatively estimated by dividing annual production (tonnes) by 3 kilograms – this representing a mean size class of the O⁺, 1⁺ and 2⁺ sea winter fish in marine net-pens during a given year. The actual figure would vary as market-ready adults (~4 kg) are harvested and replaced by a greater number of smolts (~70 g). A 3 kg average is a conservative net-pen standing stock estimator, resulting in a conservative estimate of proportional escapes.

Norway and Scotland have escape ratios that average around one escape per every 300 fish in production.

Reported Scottish Fish Farm Escapees Versus Number Recovered, 2002 - 2006



Between 2002 -2006, Scottish salmon farming companies reported 1,876,793 farmed salmon escapees (less than 5% recovered)

Reported Scottish Fish Farm Escape Incidents By Company, 2002 -2006

Company	2002	2003	2004	2005	2006	Total Escape Incidents 2002 - 2006	% of Total, 2002 - 2006
Marine Harvest	1	5	5	6	7	24	27
Fjord Seafood	0	0	0	5	3	8	9
Stolt Sea Farm	1	1	1	2	0	5	6
Pan Fish	0	0	0	2	3	5	6
Scottish Sea Farms	0	2	2	1	0	5	6
Mainstream	0	0	0	1	3	4	4
Murray Seafoods	0	0	0	1	3	4	4
Balta Island Seafare	2	0	2	0	0	4	4
Loch Duart	1	1	1	1	0	4	4
North Uist	0	1	0	2	0	3	3
Landcatch Ltd.	0	0	0	1	2	3	3
Lakeland	0	0	1	0	1	2	2
Lewis Salmon	0	0	2	0	0	2	2
Hebridean Smolts	0	0	0	0	2	2	2
Cro Lax	1	0	0	0	0	1	1
South Side Salmon	0	0	0	1	0	1	1
Orkney Sea Farms	0	1	0	0	0	1	1
Hascosy Salmon	1	0	0	0	0	1	1
Papil Salmon Farm	0	0	0	1	0	1	1
Kames Marine	0	0	0	0	1	1	1
Killean Salmon Hatchery	0	1	0	0	0	1	1
Bressay Salmon	0	1	0	0	0	1	1
Hunter Salmon	0	1	0	0	0	1	1
WISCO	1	0	0	0	0	1	1
Ardvar Salmon	0	1	0	0	0	1	1
Finfish	1	0	0	0	0	1	1
Wester Ross	0	0	0	0	1	1	1
Westray	0	0	0	1	0	1	1
Annual Total	9	15	14	25	26	89	

Reported Scottish Fish Farm Escapes By Company 2002 -2006

Company	2002	2003	2004	2005	2006	Total # Escapes, 2002 - 2006	% Total # Escapes, 2002 - 2006
Stolt Sea Farm	2,659	500	15,946	321,000		340,105	18
Cro Lax	238,420					238,420	13
North Uist		47,176		169,435		216,611	12
Marine Harvest	58	27,527	3,320	151,876	29,746	212,527	11
Pan Fish				120,000	22,368	142,368	8
Lakeland			1		130,000	130,001	7
Fjord Seafood				101,013	6,500	107,513	6
Scottish Sea Farms		51	45,200	43,453		88,704	5
South Side Salmon				65,000		65,000	3
Mainstream				1,998	61,627	63,625	3
Orkney Sea Farms		50,983				50,983	3
Murray Seafoods				22,500	27,819	50,319	3
Balta Island Seafare	27,500		11,700			39,200	2
Hascosy Salmon	35,335					35,335	2
Loch Duart	8,147	18,416	200	3,000		29,763	2
Papil Salmon Farm				15,800		15,800	1
Lewis Salmon			14,227			14,227	1
Kames Marine					12,230	12,230	1
Landcatch Ltd.				3,608	4,683	8,291	0
Hebridean Smolts					5,000	5,000	0
Killean Salmon Hatchery		5,000				5,000	0
Bressay Salmon		3,025				3,025	0
Hunter Salmon		2,000				2,000	0
WISCO	500					500	0
Ardvar Salmon		200				200	0
Finfish	36					36	0
Wester Ross					10	10	0
Westray				0		0	0
Annual Total	312,655	154,878	90,594	1,018,683	299,983	1,876,793	

Total Escapees Per Tonne of Feed in 2005

Based on Figures Reported by the Scottish Executive

Company	Escapes (number of fish) per tonne of feed	Rank for escapes (number of fish) per tonne of feed
North Uist	2116.0	1
Stolt Sea Farms	35.7	2
Fjord Seafood	14.8	3
Pan Fish	6.0	4
Marine Harvest	3.7	5
Scottish Sea Farms	1.6	6
Loch Duart	1.0	7
Mainstream	0.2	8
Westray	0.0	9
Industry average /tonne feed	53.1	

Note: Four companies - South Side Salmon, Murray Seafoods, Papil Salmon Farm, and Landcatch reported escapes in 2005 to the Scottish Executive but did not submit SEPA data (on feed use). These companies reported 107,908 escapees in 2005.

In 2005, Scottish salmon farming companies reported an average of more than 53 escapees per tonne of feed

of Escapees By Region, 2000 -2006

As Reported by the Scottish Executive

	Shetland	Orkney	Highland	Western Isles	Strathclyde	Total
2000	30,000	320,020	67,521	0	3,000	420,541
2001	35,496	14,500	4,000	27,000	9,000	89,996
2002	313,255	20,000	8,241	6,159	19,750	367,405
2003	2,000	50,983	45,776	47,676	5,002	151,437
2004	56,300	0	200	25,946	201	82,647
2005	0	1,998	177,061	676,324	22,500	877,883
2006	0	58,987	12,280	7,916	26,183	105,366
Total	437,051	466,488	315,079	791,021	85,636	2,095,275
% Total Escapes	20.9	22.3	15.0	37.8	4.1	

Scottish salmon farming companies in the Western Isles reported close to 40% of all escapees between 2000 - 2006

Chemically Contaminated Escapees from Scottish Atlantic Salmon Farms

Year	# Escaped	# Recovered	Slice or		
			Emamectin*	Excis*	OTC*
2002	312,655	2	8,647	0	0
2003	151,853	58	16,001	500	0
2004	90,594	0	15,946	0	0
2005	1,018,683	88,108	51,953	3,000	0
2006	287,753	1,300	24,318	0	1,950
Total	1,861,538	89,468	116,865	3,500	1,950

* = From site treated with this chemical

Chemically Contaminated Escapees from Scottish Atlantic Salmon Farms

Pan Fish's Glenan Bay site (24th - 27th December 2006) - farmed salmon treated with **Slice (Emamectin benzoate)**: 16,868 escaped (Zero escapees recovered)

Marine Harvest's Ardintoul site (15th July 2006) - farmed salmon treated with **Oxytetracycline and Slice (Emamectin benzoate)**: 1,950 escaped (Zero escapees recovered)

Pan Fish's Ardmaddy site (5th April 2006) - farmed salmon treated with **Slice (Emamectin benzoate)**: 5,500 escaped (Zero escapees recovered)

Fjord Seafood's Tolsta site (2nd December 2005) - farmed salmon treated with **Slice (Emamectin benzoate)**: 8,500 escaped (Zero escapees recovered)

Loch Duart's Badcall Bay site (14th to 17th October 2005) - farmed salmon treated with **Excis (Cypermethrin)**: 3,000 escaped (Zero escapees recovered)

Scottish Sea Farm's Kishorn B (North) site (11th to 13th January 2005) - **Emamectin** used on site: 43,453 escaped (600 escapees recovered)

Stolt Sea Farm's Eilean Dubh site (22nd September 2004) - farmed salmon treated with **Excis (Cypermethrin)**: 15,946 escaped (Zero escapees recovered)

Marine Harvest's Loch Ewe site (27th April 2003) - farmed salmon treated with **Slice (Emamectin benzoate)**: 16,000 escaped (Zero escapees recovered)

Stolt Sea Farm's Ferramus site (27th August 2003) - farmed salmon treated with **Excis (Cypermethrin)**: 500 escaped (Zero escapees recovered)

Marine Harvest's Lamlash Bay site (30th September 2003) - farmed salmon treated with **Slice (Emamectin benzoate)**: 1 escaped (Zero escapees recovered)

Loch Duart's Badcall Bay site (End May to June 2002) - farmed salmon treated with **Slice (Emamectin benzoate)**: 8,147 escaped (Zero escapees recovered)

WISCO's Vuia West site (17th October 2002) - farmed salmon treated with **Slice (Emamectin benzoate)**: 500 escaped (Zero escapees recovered)

Reported Escapes from IPN-Infected Sites in Scotland 2000 - 2005

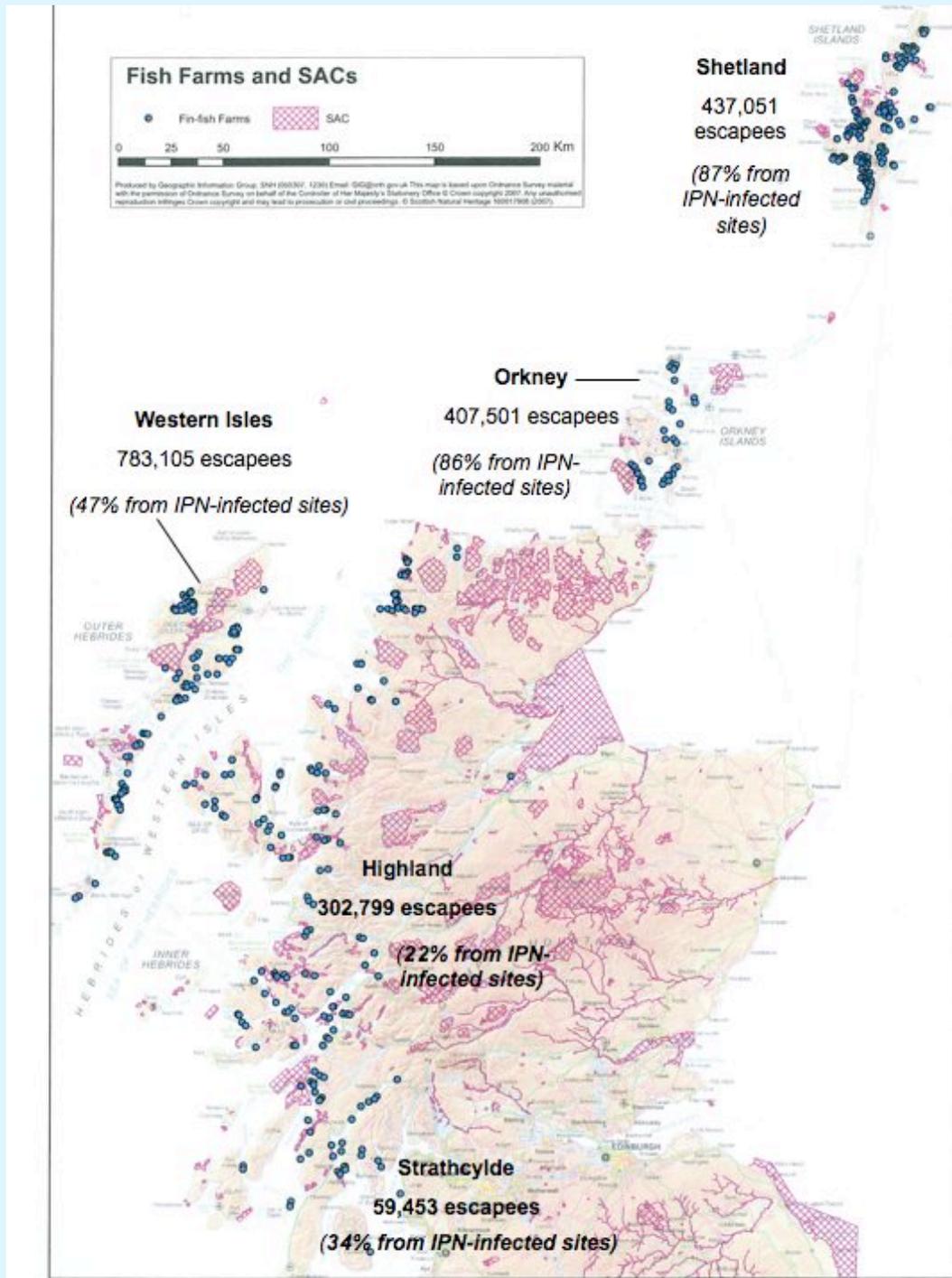
	# escapees	# escapees from IPN-infected sites	% escapees from IPN-infected sites
2000	420,541	370,357	88
2001	89,996	26,000	29
2002	367,405	336,746	92
2003	151,437	30,227	20
2004	82,647	82,647	100
2005	877,883	339,511	39
Total	1,989,909	1,185,488	60

60 percent of Scottish farmed salmon escapees between 2000 -2005 originated from IPN-infected farm sites.

In this time period, close to 1.2 million salmon escaped from IPN-infected sites.

In 2004, all reported farmed salmon escapes in Scotland were from IPN-infected sites.

Escapes In or Near Scottish Special Areas of Conservation, 2000 - 2005



Scottish Executive Site Specific Reported Farmed Salmon Escapes as Compared to Soil Association Organic-Certified Salmon Farms 2002-2006

Scottish Executive Company, Site (1)	Soil Association Company, Site (2)	Date	# escapees	# recovered
Balta Island Seafare, Huney	Same	11/3/02	13,500	0
Balta Island Seafare, Huney	Same	12/24/02	14,000	0
Killean Salmon Hatchery, Sound of Ginga/Killean (salt-water)	Killean Salmon Hatchery	4/18/03	5,000	0
Balta Island Seafare, Balta Island	Balta Island Seafare, Balta (North & South)	4/29/04	11,300	0
Lewis Salmon, Arbhair	Lewis Salmon	5/10/04	4,227	0
Balta Island Seafare, Balta Island	Balta Island Seafare, Balta (North & South)	8/11/04	400	0
Lewis Salmon, Arbhair	Lewis Salmon	8/11/04	11,000	0
Mainstream, Bay of Vady	Same	11/1/05	1,998	0
Westray, Bay of Cleat North	Same	11/14/05	0	0
Mainstream, Bay of Vady	Same	2/17/06	25,018	1,300
Mainstream, Bay of Vady	Same	3/15/06	2,019	0
Mainstream, Kirk Noust	Mainsream, Kirknoust	5/29/06	34,500	0
Total			122,962	1,300

Organic salmon farms certified by the Soil Association have reported over 122,962 escapees of farmed salmon in 12 separate escape incidents, between 2002 -2006.

Only 1,300 of these escaped fish were reported as recaptured.

Diseases

*Figures Provided By the Scottish Executive,
1998 - 2006*



Photo of Infectious Pancreatic
Necrosis

Source:
www.syndel.com/images/bsh-6.jpg

Types of Disease Identified on Scottish Salmon Farms 1980 - 2006

Over 70 different diseases and disease agents were reported on Scottish salmon farms

The top 5 (by # of occurrence) since 1980 are:

- *Vibrio* spp (occurred in 21 years)
- *Pseudomonas* spp (19 years)
- *Aeromonas salmonicida* (17 years)
- Infectious Pancreatic Necrosis (17 years)
- *Yersinia ruckeri* (12 years)

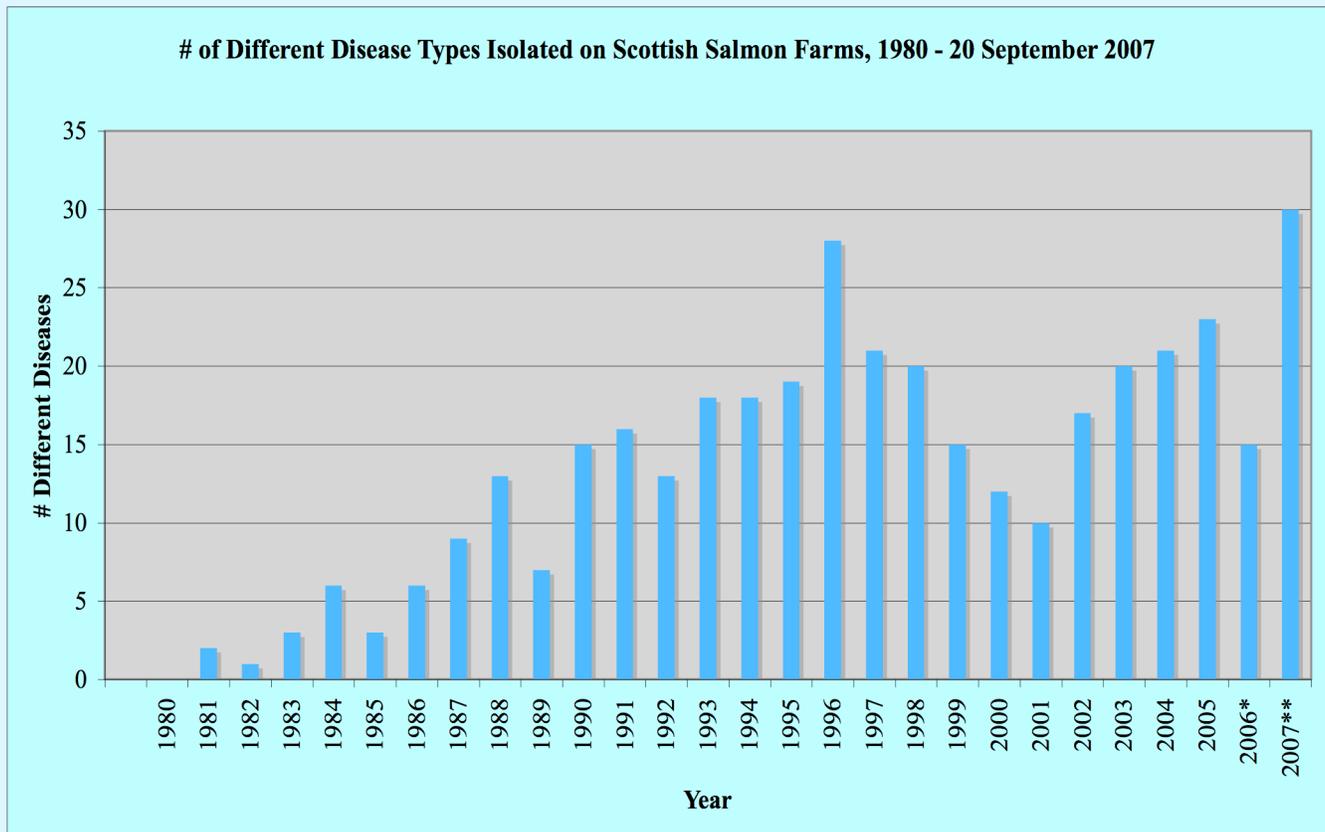
Frequency of Diseases By Region, 1998 -2005



	Dumfries & Galloway	Highland	Orkney	Shetland	Strathclyde	Western Isles
1998	0	9	2	9	8	6
1999	1	12	2	6	5	6
2000	0	5	7	5	7	4
2001	1	5	6	7	4	3
2002	1	6	4	11	4	4
2003	0	9	3	9	9	7
2004	0	14	5	6	6	9
2005	5	7	4	7	9	6
TOTAL	8	67	33	60	52	45

Scotland's Highland region had the highest frequency of disease from 1998 -2005, followed by Shetland.

of Diseases Present on Scottish Salmon Farms, 1980 -2005



Number of different disease types identified on Scottish salmon farms has generally increased since 2001 (2006 is partial data only).

In 2007 thus far, Scottish salmon farms have identified a record number of different diseases (though it is difficult to determine if reporting has changed)

Mortalities

*Reported by Scottish Salmon Farming
Companies in 2005*



*Data presented as reported and also in
normalized form (using feed use as an
indicator of production levels)*

Mortalities by Weight 2005

Raw Data, As Reported:

Rank	Company	Mortalities (kgs)
1	Marine Harvest	2,043,156.2
2	Scottish Sea Farms	849,781.0
3	Stolt Sea Farms	741,308.0
4	Mainstream	720,349.0
5	Lakeland	522,015.0
6	Fjord Seafood	302,814.0
7	Pan Fish	279,767.5
8	Hoganess	248,775.0
9	Aqua Farms	111,776.0
10	Kames	109,190.0
11	Greenholm Salmon	78,199.2
12	West Minch Sidnish	70,048.0
13	Drumbeg Salmon	62,727.0
14	Dury Salmon	46,566.0
15	Loch Duart	43,775.2
16	North Atlantic - Westside	27,774.0
17	North Uist	26,098.0
18	Hebredian Fishery	25,991.1
19	Atlantic West	25,258.0
20	Northern Aquaculture	22,690.0
21	Glendale Salmon	20,262.0
22	Finfish	17,054.3
23	MJM Salmon	13,731.0
24	G Duncan	10,339.2
25	Thompson Bros	7,649.7
26	Wester Ross	5,868.9
27	Skelda	5,572.1
28	NAFC	5,426.0
29	Uyeasound	1,876.2
30	Weddell	1,553.5
31	Carloway Seafood	1,461.2
32	Lewis Salmon	1,110.5
33	Balta Island	945.5
34	Westray	906.5
	Collafirth	
	D&J Salmon	
	Hjaltland	
	Millburn	
	Orkney Seafarms	
	Sweening	
	Whalsay	
	2005 TOTAL	6,451,814.8

Normalized Data:

Rank for morts (kg) per tonne of feed	Company	Morts (kg) per tonne of feed
1	Kames	375
2	Uyeasound	326
3	Weddell	311
4	G Duncan	196
5	Mainstream	109
6	Stolt Sea Farms	98
7	Greenholm	88
8	Glendale Salmon	82
9	Fjord Seafood	78
10	Sweening	75
11	West Minch Salmon	61
12	Orkney Seafarms	49
13	Marine Harvest	49
14	D&J Salmon	44
15	Carloway Seafoods	43
16	Scottish Sea Farms	34
17	Collafirth	32
18	NAFC	31
19	Millburn Salmon	30
20	Atlantic West Salmon	23
21	North Uist	22
22	Hjaltland	21
23	FinFish	19
24	Drumbeg	15
25	AquaFarm	15
26	Pan Fish	14
27	Westray	12
28	Northern Aquaculture	11
29	North Atlantic-Westside	8
30	Lewis Salmon	7
31	Wester Ross	5
32	Hebredian Fishery	4
33	Whalsay	3
34	MJM Salmon	2
	Dury Salmon	No Data
	Skelda Salmon	No Data
	Hoganess Salmon	No Data
	Loch Duart	No Data
	Lakeland	No Data
	Thompson Bros	No Data
	Balta Island	No Data
	Average morts (kg) per tonne feed	67

Mortalities by Number 2005

Raw Data, As Reported:

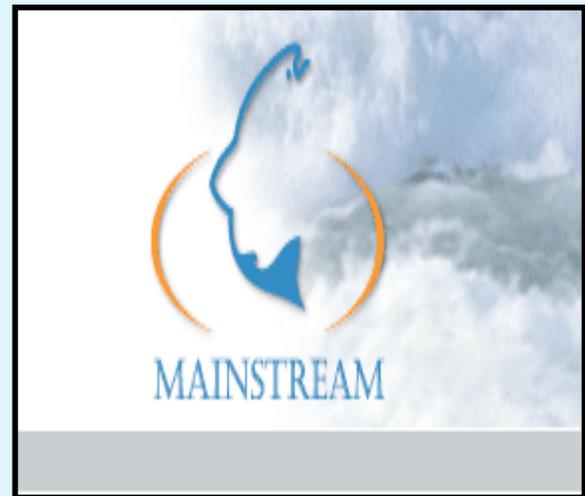
1	Marine Harvest	2,043,156.2
2	Scottish Sea Farms	849,781.0
3	Stolt Sea Farms	741,308.0
4	Mainstream	720,349.0
5	Lakeland	522,015.0
6	Fjord Seafood	302,814.0
7	Pan Fish	279,767.5
8	Hoganess	248,775.0
9	Aqua Farms	111,776.0
10	Kames	109,190.0
11	Greenholm Salmon	78,199.2
12	West Minch Sidnish	70,048.0
13	Drumbeg Salmon	62,727.0
14	Dury Salmon	46,566.0
15	Loch Duart	43,775.2
16	North Atlantic - Westside	27,774.0
17	North Uist	26,098.0
18	Hebredian Fishery	25,991.1
19	Atlantic West	25,258.0
20	Northern Aquaculture	22,690.0
21	Glendale Salmon	20,262.0
22	Finfish	17,054.3
23	MJM Salmon	13,731.0
24	G Duncan	10,339.2
25	Thompson Bros	7,649.7
26	Wester Ross	5,868.9
27	Skelda	5,572.1
28	NAFC	5,426.0
29	Uyeasound	1,876.2
30	Weddell	1,553.5
31	Carloway Seafood	1,461.2
32	Lewis Salmon	1,110.5
33	Balta Island	945.5
34	Westray	906.5
	Collafirth	
	D&J Salmon	
	Hjaltland	
	Millburn	
	Orkney Seafarms	
	Sweening	
	Whalsay	
	2005 TOTAL	6,451,814.8

Normalized Data:

Rank	Company	Morts (#) per tonne of feed
1	Greenholm	1309.4
2	FinFish	643.1
3	Hebredian Fishery	459.4
4	North Uist	288.3
5	Dury Salmon	187.0
6	Skelda Salmon	165.8
7	Millburn Salmon	144.8
8	Carloway Seafoods	120.5
9	Weddell	113.1
10	D&J Salmon	98.8
11	Hjaltland	97.0
12	NAFC	94.6
13	Kames	80.9
14	Stolt Sea Farms	55.4
15	Hoganess Salmon	54.8
16	Fjord Seafood	52.2
17	Mainstream	49.7
18	Marine Harvest	46.8
19	Lewis Salmon	45.4
20	Drumbeg	41.6
21	West Minch Salmon	39.3
22	Orkney Seafarms	37.8
23	Loch Duart	36.5
24	AquaFarm	34.8
25	Scottish Sea Farms	34.4
26	Westray	33.5
27	Uyeasound	29.5
28	Northern Aquaculture	27.3
29	Lakeland	26.1
30	Pan Fish	16.7
31	Collafirth	16.3
32	Atlantic West Salmon	16.2
33	Glendale Salmon	14.4
34	Thompson Bros	11.4
35	North Atlantic-Westside	11.2
36	MJM Salmon	8.2
37	G Duncan	7.6
38	Sweening	6.1
39	Wester Ross	3.2
40	Whalsay	1.6
	Balta Island	No Data
	Average morts (kg) per tonne feed	114.0

Company Focus

Environmental Footprint of Salmon Farming Companies



Marine Harvest

The Worst Pollution Manager in Scotland in 2005

SCOTLAND'S WORST POLLUTION MANAGERS		
COMPANY	PROBLEMS	SEPA SCORE (lower = worse)
Marine Harvest fish processing plant Fort William	Eight breaches of pollution permit	12
Norbord chipboard plant Cowie, Stirling	Increased pollution after equipment failure	14
Dales dry dock Aberdeen	Unauthorised discharges	14
Scottish Power sewage sludge plant Daldowie, Glasgow	Legal action to curb emissions	16
Ibstock brick works Uddingston	Breaching pollution limits	16
Pig finishing unit Lower Inchdrewer Farm, Banff	Legal action to curb smell	16
Norboard board plant Nairn	Discharges after equipment failure	17
Total Waste Management Alliance Peterhead	Inadequate maintenance	18
Alcan aluminium smelter Fort William	Breaches of pollution permits	18
Tullis Russell paper mill Glenrothes	Legal action to curb emissions	18
Grieve Groundwork landfill Mains of Taymouth, Aberfeldy	Failure to submit waste returns	18
Barr Garlaff landfill Skares, Cumnock	Fires burning inside waste	21
SGL carbon fibre plant Muir of Ord, Ross-shire	Breaches of pollution permit	24

source: www.sepa.org.uk/opa

Source: 28 May 2006. Environment protection agency reveals Scotland 'dirty dozen'. *Sunday Herald*. Available at:
http://www.robedwards.com/2006/05/environment_pro.html

Marine Harvest in 2005

Does not include Pan Fish, Stolt, Fjord

	2005 Figures	% of Total for Scottish Salmon Farming Industry	Absolute Rank	Normalized Rank (per tonne of feed used)
Environmental Impacts				
Feed Use (kg)	41,576,220	24	1	n/a
Waste Discharges (kg)				
Nitrogen	2,099,363	24	1	n/a
Phosphorous	289,370	24	1	n/a
Total Carbon	6,722,875	24	1	n/a
Zinc	2,087	24	1	n/a
Total Copper	3,575	6	3	n/a
Biomass Exceedance	22	24	1	n/a
Escapes				
# Incidents	6	29	1	n/a
# of Fish	151,876	17	3	5
Mortalities				
# of morts	1,945,631	24	1	18
Weight of morts (kg)	2,043,156.2	32	1	12
Sea Lice Chemicals				
Excis (litres)	205.6	31	1	5
Slice (grams)	7,712,907	42	1	4
Antifoulants				
Copper from nets (kgs)	3,476.96	6	3	13
Aqua-Net (litres)	12,057	4	3	5
Netguard (litres)	9,674	94	1	2
Anesthetics				
MS-222 (g)	13260.7	57	1	3
Antibiotics				
Aquatet (g)	1,147,705	91	1	2

The “New” Marine Harvest

Marine Harvest, Pan Fish, Fjord, and Stolt merged in 2005 - 2006



<i>The New Marine Harvest in Scotland Pan Fish, Marine Harvest, Fjord, and Stolt</i>	%
PRODUCTION FIGURES	
% Harvest Quantity in Scotland (of Atlantic salmon, coho, Chinook, and big trout) in 2005	45
% Scottish Fish Farm Sites Owned by Scottish Salmon Farms in 2005	40
IMPACT FIGURES	
% Consented Biomass Exceedances in 2005	64
% Fish Feed Used in 2005	44
% Nitrogen Discharged in 2005	44
% Total Organic Carbon Discharged in 2005	44
% Phosphorous Discharged in 2005	44
% Copper (from Feed and Nets) Discharged in 2005	70
% Zinc Discharged in 2005	44
% Excis Used in 2005	63
% Slice Used in 2005	61
% Oxytetracycline Used in 2005	91
% Florfenicol Used in 2005	100
% Aqua-Net (Copper Oxide) Used in 2005	75
% Netguard (Copper Oxide) Used in 2005	94
% 2-Phenoxyethanol (anesthetic) Used in 2005	84
% MS-222 Used in 2005	73
% Benzocaine Used in 2005	18
% Acetone Used in 2005	17
% # of Mortalities in 2005	38
% Weight of Mortalities in 2005	52
% of Farmed Salmon Escape Incidents in 2006	67
% of Total Escapes in 2006	23

Mainstream (Cermaq) in 2005



		% of Total for Scottish Salmon Farming Industry	Absolute Rank	Normalized Rank (per tonne of feed used)
Environmental Impacts	2005 Figures			
Feed Use (kg)	11,894,101	7	5	n/a
Waste Discharges (kg)				
Nitrogen	599,462.67	7	5	n/a
Phosphorous	82,783	7	5	n/a
Total Carbon	1,923,276	7	5	n/a
Zinc	597	7	5	n/a
Total Copper	28	negligible	14	n/a
Biomass Exceedance	8	9	4	n/a
Escapes				
# Incidents	1	5	6 (tie)	n/a
# of Fish	1,998	negligible	8	8
Mortalities				
# of morts	591,176	7	4	17
Weight of morts (kg)	720,349.0	11	4	11
Sea Lice Chemicals				
Excis (litres)	None	n/a	n/a	n/a
Slice (grams)	800,220	4	5	13
Antifoulants				
None	None	n/a	n/a	n/a
Anesthetics				
None	None	n/a	n/a	n/a
Antibiotics				
None	None	n/a	n/a	n/a

Loch Duart

“The Sustainable Salmon Company”



- Loch Duart is comprised of Loch Duart Ltd. and its subsidiary Drumbeg Salmon
- Together, they had the capacity to produce over 9,000 tonnes in 2005 (produced about 3,600 tonnes in 2005)
- According to SEPA data, Loch Duart (including Drumbeg Salmon) owns 18 salmon farm sites on the North-West coast of Scotland in 2005
- **Three of Loch Duart's salmon farm sites are located within the boundaries of Loch Laxford Special Area of Conservation.**

Is Loch Duart a Small Company?

Loch Duart paints a picture of a “small independent Scottish salmon farm”, but here is what we know about Loch Duart and Drumbeg:

- 14 active farm sites in 2005– **7th highest** # of active farm sites in 2005 of all Scottish salmon farming companies
- 9,410 tonnes consented biomass – **9th highest** consented biomass in 2005 of all Scottish salmon farming companies
 - Loch Duart ranked just below Fjord Seafood
- 4,948,840 kgs of feed consumed – **9th largest** feed consumer in 2005 of all Scottish salmon farming companies

Is it one of the More Eco-Friendly Salmon Farming Operations in Scotland?

Loch Duart is no better than most Scottish salmon farming companies regarding its chemical use policies:

- Loch Duart reports it does not use antifoulants
 - But, 66% of Scottish salmon farms also reported no use of antifoulants in 2005
- Loch Duart reports it does not use antibiotics
 - But, 88% of Scottish salmon farms also reported no use of antibiotics in 2005

Is it one of the More Eco-Friendly Salmon Farming Operations in Scotland?

Loch Duart's use of the toxic, sea lice chemical Emamectin Benzoate was above most conventional farms in 2005 and 2006:

- In normalized terms, it was the **4th highest user of Slice** per tonne of feed in 2005 (176 grams Slice per tonne feed)
- In absolute terms, **5th highest user of Slice** in 2005 (absolute terms)
 - Yet, 44% of Scottish salmon farming companies reported no use of this chemical in 2005
 - Fjord Seafood used 800 times less Slice than Loch Duart in 2005
- In 2006 (thru Sept), Loch Duart was the **3rd highest user of Slice** (absolute)
 - Used 1 million grams of Slice in 2006, already 200,000 more than 2005
 - Drumbeg's Oldany site used more Slice than any other salmon farm site in Scotland n 2006

Is it one of the More Eco-Friendly Salmon Farming Operations in Scotland?

Loch Duart's use of the toxic, sea lice chemical Cypermethrin (Excis) was unparalleled in 2005:

- In normalized terms, it was the **# 1 user of Excis** per tonne of feed in 2005
- In absolute terms, **4th highest user of Excis** in 2005 (absolute terms)
 - Yet, 78% of Scottish salmon farming companies reported no use of this chemical in 2005
- In 2006 (thru Sept), Loch Duart was the **4th highest user of Excis** (absolute)
 - All of Loch Duart's sites in the Loch Laxford Special Area of Conservation used Excis in 2006

Is it one of the More Eco-Friendly Salmon Farming Operations in Scotland?

Since it became law to report escape incidents in 2002, Loch Duart reported an escape every year between 2002 - 2005.

- In 2005, Loch Duart reported 3,000 escapees in one incident
 - The escaped fish had been treated with Excis
- In 2004, Loch Duart reported 200 escapees in one incident
 - It was one of only 7 companies that reported an escape that year
- In 2003, Loch Duart reported 18,416 escapees in one incident (4th highest reported escapes by any salmon farming company that year)
 - The escaped fish came from a site affected with “Clinical IPN”
- In 2002, Loch Duart reported 8,147 escapees in one incident
 - The escaped fish had been treated with Slice

Summary of Loch Duart Impacts in 2005

	Loch Duart	Drumbeg	Combined Total	Combined Absolute Rank	Combined Normalized Rank	# Companies in Scotland That Used/Discharged/ Reported	% of Companies That Did NOT Use or Discharge
Size Data							
Production (from website)	?	?	3600	?		n/a	0
Number of Active Farm Sites	9	5	14	7	n/a	n/a	0
Amount of Feed Used (kg)	2,890,766	2,058,074	4,948,840	9	n/a	n/a	0
Consented Biomass (tonnes)	5810	3600	9410	9	n/a	n/a	0
Chemicals Used							
Excis (Cypermethrin) (litres)	50.25	49.16	99.41	4	1	9	78
Slice (Emamectin Benzoate) (g)	469,390	401,789	871,179	5	4	23	44
Benzocaine (Anesthetic) (g)	1,850	1,820	3,670	2	4	10	56
Acetone (Anesthetic) (litres)	47	45	91	1	1	6	85
Antifoulants (all)	0	0	0	n/a	n/a	14	66
Copper (from nets) (kg)	0	0	0	n/a	n/a	13	68
Antibiotics (all)	0	0	0	n/a	n/a	5	90
Disinfectants (all)	0	0	0	n/a	n/a	19	54
Impact Data							
Nitrogen (kg)	145,694.61	103,726.92	249,421.53	9	n/a	41	0
Phosphorous (kg)	20,119.73	14,324.19	34,443.92	9	n/a	41	0
Organic Carbon (kg)	467,436.86	332,790.52	800,227.38	9	n/a	41	0
Zinc (from feed) (kg)	145.14	103.33	248.47	9	n/a	41	0
Total Copper (only feed) (kg)	6.85	4.88	11.73	16	n/a	41	0
Number of mortalities	105,389	85,589	190,978	11	22	41	0
Weight of mortalities (kg)	43,775.20	62,727.00	106,502.20	11	21	41	0
# Exceedances	0	0	0	n/a	n/a	14	66
Escapes (# of fish)	0	3000	3000	11	n/a	13	68

What About “Organic” Farmed Salmon?



“Organic” Salmon Farm Sites in Scotland & Ireland

- **Breached Pollution Limits in Scotland (2005)**
 - 2 organic farm sites exceeded consented biomass 6 times in 2005
 - These sites accounted for 7 % of exceedances in 2005
- **Used Toxic Sea Lice Chemicals in Scotland (2005 & 2006)**
 - 2 organic farm sites used Slice in 2005 and 2006
 - They used 26,540 grams of Slice in 2005
 - Lewis Salmon (organic farm site) also used Excis in 2006
- **Had the Highest Sea Lice Load in Ireland (November 2006)**
- **Had Farmed Salmon Escapes in Scotland (2002 - 2006)**
 - Had at least 6 escape incidents (2002 -2006)
 - Had at least 83,700 fish escapees (2002 -2006)
 - Accounted for at least 4% of total escapees in Scotland (2002 -2006)

Escapes from “Organic” Salmon Farm Sites in Scotland

Scottish Executive Company, Site (1)	Soil Association Company, Site (2)	Date	# escapees	# recovered
Balta Island Seafare, Huney	Same	11/3/02	13,500	0
Balta Island Seafare, Huney	Same	12/24/02	14,000	0
Killean Salmon Hatchery, Sound of Ginga/Killean (salt-water)	Killean Salmon Hatchery	4/18/03	5,000	0
Balta Island Seafare, Balta Island	Balta Island Seafare, Balta (North & South)	4/29/04	11,300	0
Lewis Salmon, Arbhair	Lewis Salmon	5/10/04	4,227	0
Balta Island Seafare, Balta Island	Balta Island Seafare, Balta (North & South)	8/11/04	400	0
Lewis Salmon, Arbhair	Lewis Salmon	8/11/04	11,000	0
Mainstream, Bay of Vady	Same	11/1/05	1,998	0
Westray, Bay of Cleat North	Same	11/14/05	0	0
Mainstream, Bay of Vady	Same	2/17/06	25,018	1,300
Mainstream, Bay of Vady	Same	3/15/06	2,019	0
Mainstream, Kirk Noust	Mainsream, Kirknoust	5/29/06	34,500	0
Total			122,962	1,300

“Organic” Scottish Farmed Salmon

Waste Discharges & Morts for those Sites Certified by the Soil Association as Organic

Company	# Exceedances	Feed (kg)	Nitrogen (kg)	Phosphorous (kg)	Organic Carbon (kg)	Mortalities (kg)
Balta Island SeaFare	0	242,663	12,230.22	1,688.93	39,238.60	946
Baltasound Harbour, Unst, Shetland Islands*	0	66,944	3,373.98	465.93	10,824.84	885
Huney, Shetland Islands (trout)	0	0	0.00	0.00	0.00	0
Swarta Skerry, Unst, Shetland Islands	0	159,232	8,025.29	1,108.25	25,747.81	9
Balta (North & South), Shetland Islands (trout)	0	16,487	830.95	114.75	2,665.95	52
Lewis Salmon	0	155,150	7,819.56	1,079.84	25,087.76	1,110.50
Arbhair	0	155,150	7,819.56	1,079.84	25,087.76	1,110.50
Mainstream Scotland, Orkney	1	885,798	44,644.20	6,165.15	143,233.46	253,533
Bay of Ham Site, Rousay	0	0	0.00	0.00	0.00	0
Bay of Vady Site, Egilsay	0	454,492	22,906.40	3,163.26	73,491.28	171,129
Kirk Noust Site, Rousay	1	431,306	21,737.80	3,001.89	69,742.18	82,404
Mainstream Scotland, Shetland	0	601,838	30,332.60	4,199.79	97,317.20	33,674
Bunya Sand Site, Mid Yell Voe	0	601,838	30,332.60	4,199.79	97,317.20	33,674
West Minch/Atlantic West	5	2131099	107407.42	14832.45	344598.704	80081
Upper Loch Laxadale, Harris	**	**	**	**	**	**
Loch Marulaig, South Uist	**	**	**	**	**	**
Loch Kearinish, South Uist	**	**	**	**	**	**
Loch Duin Na Cille, South Uist	**	**	**	**	**	**
Petersport, Benbecula	**	**	**	**	**	**
Uiskevagh, Benbecula	0	508,800	25,643.52	3,541.25	82,272.96	6,999
Meanarvagh, Benbecula ***	0	310,420	15,645.20	2,160.52	50,194.91	47,824
Mult, North Uist	0	0	0	0	0	0
Treany, North Uist	0	0	0	0	0	0
Loch Grosebay, Harris	5	198,079	56,135.52	7,752.05	180,101.46	19,189
Loch Stockinish, Harris	0	1,113,800	9,983.18	1,378.63	32,029.37	6,069
Westray Salmon	0	355,150	17,939.04	2,471.84	57,427.76	907
Scaffall Point, Pierowall	0	31,800	1,602.72	221.33	5,142.06	8
Bay of Cleat (South)	0	76,350	3,848.04	531.40	12,345.80	868
Bay of Cleat (North)	0	247,000	12,488.28	1,719.12	39,939.90	31
TOTAL	6	4,371,698	220,373	30,438	706,903	370,252

Organic Food Federation refused to give data on sites

“Organic” Scottish Farmed Salmon

Chemical Use for those Sites Certified by the Soil Association as Organic

Company	Slice (g)	Copper (kg)	Zinc (kg)	Additional Chemical Use Reported
Balta Island SeaFare	0	0.535	12.184	Iodophor, Para Bleach, Sodium Hypochlorite, Tegodyne
Baltasound Harbour, Unst, Shetland Islands*	0	0.159	3.361	Iodophor, Para Bleach, Sodium Hypochlorite
Huney, Shetland Islands (trout)	0	0	0	n/a
Swarta Skerry, Unst, Shetland Islands	0	0.338	7.995	Iodophor, Para Bleach, Sodium Hypochlorite
Balta (North & South), Shetland Islands (trout)	0	0.039	0.828	Tegodyne, Para Bleach, Sodium Hypochlorite
Lewis Salmon	40	0.368	7.790	Iodophor, MS-222
Arbhair	40	0.368	7.790	Iodophor, MS-222
Mainstream Scotland, Orkney	0	2.099	44.475	None reported
Bay of Ham Site, Rousay	0	0	0	n/a
Bay of Vady Site, Egilsay	0	1.077	22.820	None reported
Kirk Noust Site, Rousay	0	1.022	21.655	None reported
Mainstream Scotland, Shetland	26,500	1.426	30.218	None reported
Bunya Sand Site, Mid Yell Voe	26,500	1.426	30.218	None reported
West Minch/Atlantic West	0	5.042	96.8826	
Upper Loch Laxadale, Harris	**	**	**	**
Loch Marulaig, South Uist	**	**	**	**
Loch Kearinish, South Uist	**	**	**	**
Loch Duin Na Cille, South Uist	**	**	**	**
Petersport, Benbecula	**	**	**	**
Uiskevagh, Benbecula	0	1.200	25.455	None reported
Meanarvagh, Benbecula ***	0	0.735	5.565	None reported
Mult, North Uist	0	0	0	n/a
Treany, North Uist	0	0	0	n/a
Loch Grosebay, Harris	0	2.638	55.923	FAM 30, Oxofoam
Loch Stockinish, Harris	0	0.469	9.940	MS-222, FAM 30
Westray Salmon	0	0.841	17.830	None reported
Scaffall Point, Pierowall	0	0.075	1.597	None reported
Bay of Cleat (South)	0	0.181	3.833	None reported
Bay of Cleat (North)	0	0.585	12.400	None reported
TOTAL	26,540	10	209	See above

Organic Food Federation refused to give data on sites

New Data from Other Salmon Farming Regions...

Atlantic Fare: An Irish Organic Salmon Farming Company on...

What makes a salmon organic?

“A high tidal exchange rate (which is defined in the organic standards) characterise the area in which the farms are situated and ensure that sea water continually flushes through the cages and **prevents the accumulation of parasites and pollutants.**”

“Atlantic Fare together with 3 Irish Salmon farms Mannin Bay, Muirachmhainni Teo and Muir Gheal Teo have pioneered the organic salmon farming on the west coast of Ireland.”

Source: www.atlanticfare.com/products.php?id=7 

Irish Sea Lice Data

Total Sea Lice Loads on Salmon and Trout Farms (Nov 2006)

Company	Farm Site	Species	F + eggs	Total
Mannin Bay Salmon Co Ltd. (ORGANIC)	Corhounagh	Atlantic salmon, 2005	17.30	85.93
Marine Harvest		Atlantic salmon, 2005	8.65	51.61
Mannin Bay Salmon Co Ltd. (ORGANIC)	Hawks Nest	Atlantic salmon, 2006	1.34	50.18
Marine Harvest	Cranford A	Atlantic salmon, 2006 S 1/2	8.48	31.04
Muirachmhainni Teo (ORGANIC)	Daonish	Atlantic salmon, 2006 S 1/2	3.93	27.05
Marine Harvest	Millstone	Atlantic salmon, 2006 S 1/2	1.00	11.32
Eany Fish Products Ltd	Inver Bay	Rainbow trout 2006 (2)	2.83	9.25
Marine Harvest	Millstone	Atlantic salmon, 2005	1.61	7.33
Eisc Ui Flathartha Teo	Ardmore	Atlantic salmon, 2006	1.19	6.88
Marine Harvest	Glinsk	Atlantic salmon, 2006	0.31	6.79
Celtic Atlantic Salmon (Killary) Ltd	Inishdeighil	Atlantic salmon, 2006	0.65	6.46
Bifand Ltd	Fraochoilean	Atlantic salmon, 2006 S 1/2	0.47	6.26
Muir Gheal Teo (ORGANIC)	Cnoc	Atlantic salmon, 2006 S 1/2	1.46	5.19
Clare Island Seafarms Ltd (ORGANIC)	Seastream Inner	Atlantic salmon, 2005	0.88	4.71
Curran Fisheries Ltd.	Curraun	Rainbow trout 2006 (2)	0.50	3.60
Marine Harvest	Cranford C	Atlantic salmon, 2007 S 1/2	0.00	3.50
Muirachmhainni Teo (ORGANIC)	Golam	Atlantic salmon, 2007 S 1/2	0.00	3.40
Curran Fisheries Ltd.	Curraun	Rainbow trout 2006 (1)	0.32	3.18
Silver King Seafoods Ltd.	Roanarraig Smolt site	Atlantic salmon, 2006 S1/2	0.20	2.40
Marine Harvest	Milford	Atlantic salmon, 2006	0.41	2.23
Clare Island Seafarms Ltd (ORGANIC)	Portlea	Atlantic salmon, 2006	0.28	1.70
John Power Ltd.	Waterfall	Rainbow trout 2006 (1)	0.11	0.97
Muirachmhainni Teo (ORGANIC)	Cuigeal	Atlantic salmon, 2006	0.29	0.97
Silver King Seafoods Ltd.	Roanarraig Smolt site	Atlantic salmon, 2006	0.27	0.87
Lasingers	Cuan Baoi Seafarms Ltd	Atlantic salmon, 2006	0.00	0.00
Lasingers	Cuan Baoi Seafarms Ltd	Atlantic salmon, 2005		Harvested out

This detailed data has not yet been made available from Scotland, Norway, Chile, or BC

Norway's Antibiotic Use 1987 -2004

Provided by the Ministry of Fisheries and Coastal Affairs, 9 March 2007

SALG AV ANTIBAKTERIELLE MIDLER I KG AKTIV SUBSTANS TIL BEHANDLING AV OPPDRETTSFISK 1987 - 2004

Tallene omfatter legemidler solgt fra grossister og fôrprodusenter i Norge. Tallene er utarbeidet i samarbeid med Norges veterinærhøgskole, Institutt for mattrygghet og infeksjonsbiologi (MatInf).

	Florfenikol	Flumequin	Nifurazolidon	Oksolinsyre	Oxytetracyklin-klorid	Trimetoprim + sulfadiazin (Tribrissen)	TOTALT
1987			15840	3700	27130	1900	48570
1988			4190	9390	18220	670	32470
1989		329	1345	12630	5014	32	19350
1990		1959	118	27659	6257	1439	37432
1991		3837	131	11400	5751	5679	26798
1992		9833	0	7687	4113	5852	27485
1993	56	2177	78	2554	583	696	6144
1994	14	227	0	811	341	3	1396
1995	64	182	0	2800	70	0 ¹	3116
1996	64	105	0	841	27	0 ¹	1037
1997	123	74	0	507	42	0 ¹	746
1998	135	53	0	436	55	0 ¹	679
1999	65	7	0	494	25	0 ¹	591
2000	148	52	0	470	15	0 ¹	685
2001	109	7	0	517	12	0 ¹	645
2002	205	5	0	998	11	0 ¹	1219
2003	154	60	0	546	45	0 ¹	805
2004	111	4	0	1035	5 ²	0 ¹	1159

Norway's Antibiotic & Antiparasitic Use 2001 -2005

*Provided by the Ministry of Fisheries and Coastal Affairs,
9 March 2007*

Antibakterielle midler (kg aktiv substans)

	2001	2002	2003	2004	2005
Florfenikol	109	205	154	111	202
Flumekin	7	5	60	4	28
Oksytetracyklin	12	11	45	9	8
Oksolinsyre	517	998	546	1035	977
Totalt	645	1219	805	1159	1215

Lakselusmidler (kg aktiv substans)

	2001	2002	2003	2004	2005
Cypermethrin	69	62	59	55	45
Deltamethrin	19	23	16	17	16
Teflubenzuron	28	-	-	-	-
Emamectin	12	20	23	32	39
Totalt	128	105	98	104	100

Norway - Other Chemical Use Reported

*Provided by the Ministry of Fisheries and Coastal Affairs,
9 March 2007*

Midler mot innvollsorm (kg aktiv substans)

	2001	2002	2003	2004	2005
Fenbendazol	21	8	2	23	78
Praziquantel	100	152	232	412	122
Totalt	121	160	234	435	200

Soppmidler (kg aktiv substans)

	2001	2002	2003	2004	2005
Bronopol	392	396	422	314	377
Malakittgrønt	7	8	4,5 ¹⁾	0,7 ¹⁾	0,9 ¹⁾
Totalt	399	404	427	315	378

¹⁾Har ikke gått til produksjon av matfisk

Bedøvelsesmidler (kg aktiv substans)

	2001	2002	2003	2004	2005
Benzokain ²	ca 500	ca 500	ca 500	ca 500	ca 400
Klorbutanol	1	-	-	-	-
Metakain	440	827	699	737	960
Isoeugenol ³	3	1	1,5	2,5	-
Totalt	944	1328	1201	1240	1360

² Beregnet salg til fiskeoppdrett. Benzokain benyttes også i humanmedisin.

³ Isoeugenol er bare benyttet i forskning

Chilean Escapes Figures

*Provided by the National Director of Fisheries, 15
March 2007*

- Reply took 2 months (request on 10 January 2007)
- Provided the following data for 2004 -2005 (data collection began in 2003):
 - Date
 - Location (province, community)
 - Species
 - Number of escapes
 - Weight of escapes (not reported in Scottish data)
 - Cause (not provided in Scottish escapes data)
 - No company-specific data

Between 2004 -2005, there were reportedly 15 escapes incidents with 2,303,605 escapees in Region X and XI

Chilean Escapes Figures

*Provided by the National Director of Fisheries, 15
March 2007*

X Region

Date	Province	Commune	Place	Species	N° escapees	Average weight (kg)	Causes
01.07.2004	Chiloé	Quinchao	Coñao, Quinchao Island	Salmon coho	4,034	1,4	Counterweight detachment Net breakage
03.07.2004	Llanquihue	Cochamo	Chapo Lake, Coluli Bay	Rainbow trout	140,000	0.18	Storm
13.07.2004	Chiloé	Quemchi	Tac Island	Rainbow trout	60,000	0.7	Net and net-cage breakage
04.05.2004	Llanquihue	Calbuco	Metrencue	Salmo salar	12,406	3.67	Collision of vessel with net-cage
23.01.2005	Llanquihue	Puerto Varas	Desague	Rainbow trout	7,600	0.425	Net and net-cage breakage
17.03.2005	Llanquihue	Puerto Montt	Huelmo	Salmo salar	14,585	2.9	Net unstitch
29.03.2005	Chiloé	Ancud	Butacheuques Island	Salmo salar	110,972	1	Net and net-cage breakage
10.04.2005	Chiloé	Quinchao	Alao Island	Salmo salar	67,209	1.24	Mistake in the installation of fishing net
06.06.2005	Valdivia	Ranco Lake	Illahuape Peninsula	Salmo salar	44,474	0.125	Tow of mobile net-cage with breakage of fishing net
20.09.2005	Chiloé	Castro	North-east Chelin Island	Salmon coho	30,000	1.371	Storm with winds and groundswell
24.09.2005	Llanquihue	Calbuco	Guar Island	Salmo salar	4,000	1.3	Net breakage caused by sea lion attack
20.12.2005	Chiloé	Quinchao	Coñao	Salmon coho	1,400	3.3	Fishing net breakage

XI Region

Date	Province	Commune	Place	Species	N° escapees	Average weight (kg)	Causes
14.05.2004	Aysén	Aysén	Chacabuco Port	Salmon coho	2,925	0.5	Not specified
01.07.2004	Aysén	Aysén	Acantilado Bay	Salmon coho Rainbow trout	1,779,000	0.95	Storm with winds and rain
01.07.2004	Aysén	Aysén	Partida Island, Chacabuco Bay	Rainbow trout	25,000	Without Information	Storm with winds and rain

Chile - Sea Lice Statement

*Provided by the National Director of Fisheries, 15
March 2007*

“Regarding parasitary diseases,
I must mention that in spite of the fact that those
diseases are not contained at the previously
mentioned list of diseases of high risk, it is known
that *Caligus spp.* is a highly prevalent parasitism
in marine and estuarine culture environments of
the X Region, been its prevalence a little less
extended t the XI Region. It must be noted that
our Agency, to date do not have records of the
parasitary charge in those areas.”

[Translated by Cristian Perez from Spanish]