

Cefas contract report C5666-C5667

Annual report on the results of the Biotoxin and Phytoplankton Official Control Monitoring Programmes for Scotland - 2015

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Quality statement: This report is a compilation of the information included on the reports provided daily/weekly to FSS and showing the results of the phytoplankton and toxin analyses undertaken on samples submitted via the Official Control programme. All results were quality checked and approved prior to release to FSS and the results compiled in this report have been further checked against a copy of the original reports held on a central database. Information relating to the origin of the samples (place (including co-ordinates), date and time of collection) is as provided by contracted sampling staff and has not undergone verification checks by Cefas.

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1. Executive summary

This report describes the results of the Official Control Biotoxin and Phytoplankton Monitoring Programmes for Scotland for the period 1st January to 31st December 2015.

The laboratory analyses for biotoxins in shellfish, co-ordination of the programme and its logistics were conducted by the Centre for Environment, Fisheries and Aquaculture Science (Cefas) Weymouth Laboratory, whilst the laboratory phytoplankton analyses, co-ordination of the programme and its logistics were performed by the Scottish Association for Marine Science (SAMS - SRSL) in Oban under the scope of the contracted Shellfish Partnership.

The programmes were delivered on behalf of Food Standards Scotland (FSS), the national competent authority for food safety and are aimed at delivering the testing required for the statutory monitoring of biotoxins in shellfish and for identification and enumeration of potentially harmful algal species in selected shellfish harvesting areas, as described in EC Regulations 854/2004, 882/2004 and 2074/2005.

Toxin monitoring

A total of 3,012 bivalve shellfish samples from 100 inshore sampling locations (Figure 1) were submitted to Cefas for toxin analyses in the reporting period. They comprised of: common mussels (2,121), Pacific oysters (517), razors (200), common cockles (137), surf clams (31) and carpet clams (6).

Thirty four king scallop verification samples were also collected from 12 commercial establishments under the scope of the FSS official control verification programme and were submitted for toxin analysis during the reporting period.

Sixteen inshore samples (0.5% of those received) and one king scallop verification sample were rejected on arrival at the laboratory – eight of these were submitted in error as testing was not required in these areas and eight arrived at the laboratory in a condition unsuitable for analyses.

All samples received and assessed as suitable for testing provided sufficient material to perform all of the required analyses.

Phytoplankton monitoring

A total of 1,308 seawater samples from 52 inshore sampling locations (Figure 2) were submitted to SAMS Research Services Ltd. (SRSL) for the identification and enumeration of potentially harmful algal species during the reporting period and 1306 were analysed. Two samples were not analysed as they were not required, due to the reduced autumn sampling schedule.

Figure 1: Scottish inshore shellfish sampling locations – Food Standards Scotland biotoxin monitoring programme in 2015



Figure 2: Scottish water sampling locations – Food Standards Scotland phytoplankton monitoring programme in 2015



Monitoring for lipophilic toxins

Monitoring for lipophilic toxins (LTs) was conducted using a liquid chromatography with tandem mass spectrometry (LC-MS/MS) method. The method is able to characterise and quantify the following LT groups; Okadaic Acid (OA)/Dinophysis Toxins (DTXs) and Pectenotoxins (PTXs) – reported as μ g OA equivalent (eq.)/kg shellfish flesh, Azaspiracid toxins (AZAs) – reported as μ g AZA1 eq./kg shellfish flesh and Yessotoxins (YTXs) reported as mg YTX eq./kg shellfish flesh.

During this reporting period, 206 inshore samples breached maximum permitted levels (MPL) for lipophilic toxins. Where monitoring for lipophilic toxins had occurred in the previous two weeks, the LC-MS method provided an early warning, detecting low toxin levels either one or two weeks prior to closure in all bar one instance, indicating the methods performance and advantage as an early warning mechanism, when applied to risk management practices such as the <u>FSS "traffic light" guidance</u>.

In total, lipophilic toxins analyses were performed on 2,938 samples from inshore locations and 33 verification samples collected from commercial establishments. Results are summarised below.

OA/DTX/PTX group

- OA/DTX/PTX group toxins were detected in 887 inshore samples, comprising of mussels (852 samples), Pacific oysters (22), surf clams (11) and razors (2).
- OA/DTX/PTX group toxins were detected in all months throughout the reporting period, with the majority of recorded results occurring between June and November 2015 (773 samples).
- The distribution of OA/DTX/PTX toxins was widespread, affecting sites within all monitored council regions, with the exception of Comhairle nan Eilean Siar: Uist & Barra and East Lothian.
- Two hundred and six samples comprising of mussels (204 samples) and Pacific oysters (2) from 31 sites recorded results above the MPL. All above MPL results were recorded between June and December 2015 (Figure 3).
- The highest level recorded during 2015 was 1,214µg OA eq./kg, more than seven times the regulatory limit, in a sample from Loch Beag (Highland: Lochaber) in mid July 2015. Levels of OA/DTX/PTX group toxins at this site rose from 64µg OA eq./kg to 1,214µg OA eq./kg within a two week period.
- Elsewhere, OA/DTX/PTX group toxins were detected below the MPL in a further 681 samples from 69 sites (Figure 4), between January and December 2015.
- YTX group toxins were detected in 12 samples which contained OA/DTX/PTX group above the MPL between June and December 2015, none of which exceeded the YTX group MPL. A further 10 samples were found to contain YTX and OA/DTX/PTX group toxins below the relative MPLs between January and October 2015.
- OA/DTX/PTX group toxins below the MPL were detected in four whole king scallop verification samples from the Clyde 02, Jura 11 and Jura 12 scallop grounds received between June and September 2015.

Figure 3: Inshore locations recording OA/DTX/PTX group results above the maximum permitted limit (>160µg OA eq./kg) in 2015



Figure 4: Inshore locations where toxins of OA/DTX/PTX group were detected below the maximum permitted limit (≤160µg OA eq./kg) in 2015



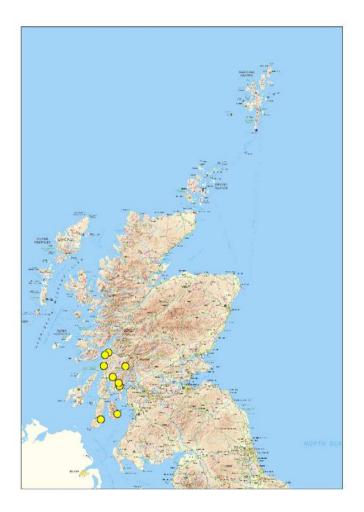
AZA group

• AZA group toxins were not detected above quantifiable levels in any inshore or scallop verification samples analysed in 2015.

YTX group

- YTXs were detected in 29 mussel samples from 9 sites during the reporting period. In comparison with 2014 (130 samples), this represents a significant decrease in the occurrence of YTX toxins in 2015.
- The occurrence of YTX toxins in 2015 was limited to sites within the Loch Fyne, Firth of Clyde and Firth of Lorn regions.
- Results from 2011 & 2012 indicated the distribution of the YTX group was fairly localised, predominantly within the Loch Fyne, Firth of Clyde and Firth of Lorn regions. Results from 2013 & 2014 indicated a geographic shift in the distribution of YTXs, with the above regions and Shetland Isles also being affected.
- YTXs were detected throughout the year, and were largely prevalent between April and August 2015, during which time they were detected in 19 samples.
- No samples exceeded the MPL (3.75mg YTX eq./kg) in 2015. The highest level recorded was 0.5mg/kg in two samples from Campbeltown Loch: Kildalloig Bay Indicator (Argyll & Bute) in mid to late June. The remaining samples recorded results between 0.2 and 0.4mg/kg (Figure 6).
- OA/DTX/PTX group toxins above the MPL were detected in 12 mussel samples, which also contained YTXs below the MPL (see above). OA/DTX/PTX group toxins below the MPL were also detected in 10 samples where YTX group toxins were present below the MPL.
- YTX toxins below the MPL were detected one whole King scallop verification sample from the Jura 12 scallop ground in August 2015. OA/DTX/PTX group toxins below the MPL were also present in this sample.

Figure 5: Inshore locations where toxins of the YTX group were detected below the maximum permitted limit (≤3.75mg YTX eq./kg) in 2015



Phytoplankton associated with the production of lipophilic toxins

- *Dinophysis* spp.* were present in 551 samples (42.2%) analysed during 2015 and was detected from February to October.
- It was observed at or above trigger level (set at 100 cells/L) in 252 samples (19.3%) between April and September.
- The earliest bloom exceeding trigger level was recorded in Loch Melfort (Argyll & Bute) in late April. *Dinophysis* spp. remained in Loch Melfort at or above trigger level for a continuous period of sixteen weeks, from late May until mid September.
- The densest *Dinophysis* spp. blooms were both observed in north-west Scotland in Highland: Ross & Cromarty. An abundance of 16,960 cells/L was recorded in Loch Torridon on 30th June and 9,540 cells/L in Loch Ewe on 28th July.
- Overall, the majority of *Dinophysis* spp. blooms occurred around the Scottish coast in July and August, with 51.5% of the samples exceeding threshold counts in July.
- *Dinophysis* spp. blooms were widespread around Argyll & Bute, and the Highland region from late May to early September, with associated DSP toxicity reported in shellfish. Toxic blooms also occurred in Loch Roag (Lewis & Harris) in July and August. The blooms of *Dinophysis* spp. that were observed around the Shetland Islands in July and August 2015 were not as dense as those that occurred in 2013, although *Dinophysis* spp. recorded in August and September did have some associated DSP toxicity.
- The percentage of *Dinophysis* spp. blooms at or exceeding trigger level over the reporting period was similar to that in 2014.

*references to Dinophysis spp. in this report also include Phalacroma rotundatum (synonym Dinophysis rotundata)

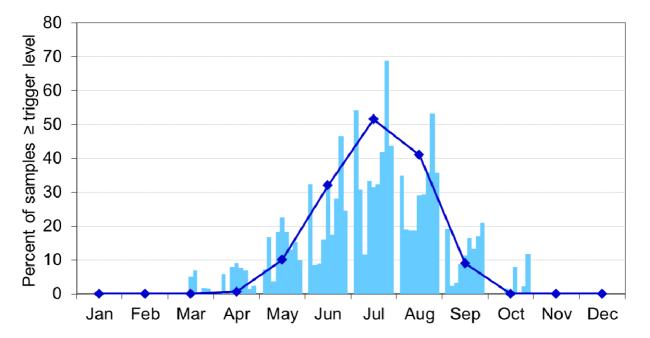


Figure 6: The percentage of samples in which *Dinophysis* spp. equalled or exceeded the trigger level of 100 cells/L in 2015 is indicated by the line. For comparison, the bars show the percentage of samples in which *Dinophysis* cells equalled or exceeded the trigger level between 2006 and 2014.

- Prorocentrum lima was present in 187 samples (14.3%) analysed during 2015 from March to December, and was generally most abundant in June and July. It was detected at or above the trigger level (set at 100 cells/L) in 19 samples (1.4%) between March and August. It was most frequently observed in samples from Colonsay: The Strand East and Loch Melfort (Argyll & Bute), Traigh Mhor (Uist & Barra) and Tingwall Pier (Orkney: mainland). The densest bloom of 2015 was 500 cells/L recorded in Vaila Sound: East of Linga (Shetland Islands) on 12th August.
- Protoceratium reticulatum was detected in 33 samples (2.5%) between March and September, and was most frequently observed in April and May. The densest bloom occurred in North Ayrshire, with 180 cells/L recorded in Arran: Lamlash Bay on 7th April and some associated YTX toxicity was detected at this site.
- Lingulodinium polyedrum was detected from June to September 2015 on only seven occasions (0.5 % of samples). It occurred most frequently in Loch Creran, where it appears to bloom annually, although it is rarely abundant. One other observation was recorded in Loch Leven (Highland: Lochaber), as was the case in 2014. The maximum bloom density of 380 cells/L was observed in Loch Creran on 26th August.

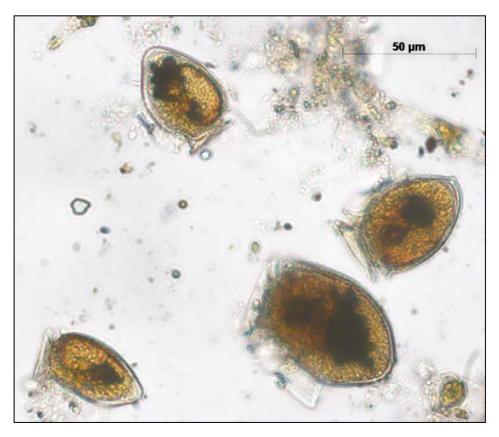


Figure 7: Species belonging to the genus *Dinophysis* were observed at a concentration of 3,580 cells/L on 2nd June at North Bay: Barassie (South Ayrshire).

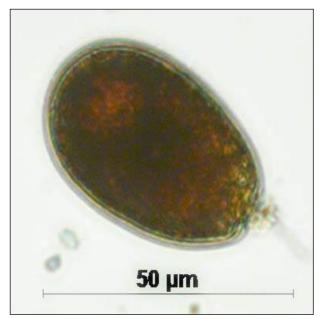


Figure 8: *Prorocentrum lima* recorded from Basta Voe (Shetland Islands) on 1st September at a concentration of 20 cells/L.

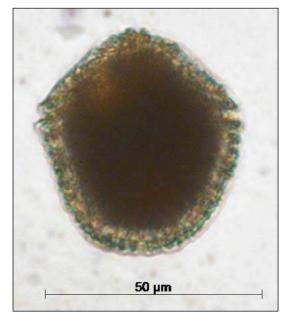


Figure 9: *Protoceratium reticulatum* was observed at a concentration of 20 cells/L in Loch Melfort (Argyll & Bute) on 22nd June.

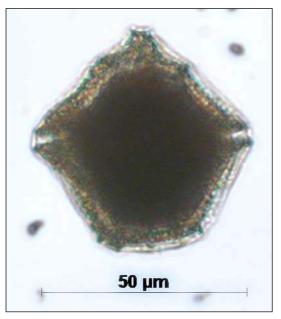


Figure 10: *Lingulodinium polyedrum* was recorded in Loch Creran (Argyll & Bute) on 26th August at a density of 380 cells/L.

Figure 11. Phytoplankton concentrations of Dinophysis spp. observed between Jan and Dec 15

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Argyll & Bute	Campbeltown Loch					:	-	•		•				
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	Loch Fyne: Otter Ferry					•	•		•	•	•			
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	Isle of Mull: Loch Scridain				•	-	•	•	•	•	•			
	Isle of Mull: Loch Na Keal			•	•	•	•	•	•	•	•			
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Hinhland: Skve & Lochalsh	Loch Eishort		,						•	•		•		
	Loch Slidachan					-				•	•			
Highland: Ross & Cromarty	I och Torridon				•	-				•				
	Loch Ewe					-				•	•			
Highland: Sutherland	Loch Laxford					•	•		•					
	Loch Inchard					-				•				
	Dornoch Firth			1			•	•	•	:	•	•		
Fife	Forth Estuary: Largo Bay			-				•		•	1			
Uist & Barra	Barra: Traigh Mhor		1			10 10 10	-	-	•	1 1 1				
Lewis & Harris	Loch Stockinish					1 1 1 1	•	•	•	•	1 1 1			
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	Cells per litre • 200 - 299	•	1.000 - 1.249	2.000	2.000 - 2.999	6.000	6.000 - 6.999	10.00	10.000 - 10.999		13,000 - 13,999	3,999	16,0	16,000 - 16,999

Monitoring for PSP toxins

A total of 1,841 samples from inshore locations and 33 king scallop verification samples collected from commercial establishments were tested for paralytic shellfish poisoning (PSP) toxins. All samples were tested by a high performance liquid chromatography (HPLC) method, and are summarised below.

- Thirty eight mussel and four Pacific oyster samples from 15 separate inshore sites were found to contain PSP toxins above the MPL of 800µg STX eq./kg shellfish flesh between April and July 2015 (Figure 12). The highest level recorded was 27,822µg/kg, nearly thirty five times the regulatory limit in a mussel sample from Campbeltown Loch: Kildalloig Bay Indicator (Argyll & Bute) collected in April 2015. This result represents the highest level of PSP toxins recorded in shellfish analysed via the OC programme from inshore Scottish waters since 2001, eclipsing the previous highest result of 14,730 µg/kg recorded in mussels from Loch Striven: Troustan in June 2014. PSP toxin concentrations rose from trace levels to 27,822µg/kg within a two week period at this site.
- PSP toxins above reporting levels, but below the MPL were detected in a further 33 samples comprising of mussels (32) and Pacific oysters (1) from 16 sites (Figure 13). All occurrences were recorded between March and September 2015.
- Results from 2008 to 2014 indicated that PSP toxicity episodes began typically in March/April and tended to conclude by July or August. The March onset and duration into September indicate that in addition to the highest PSP toxin levels recorded, 2015 witnessed the longest PSP season since 2008.
- Overall, the period January to December 2015 saw a similar number of samples found containing PSP toxins in comparison with 2014. However, it must be noted that, as a consequence of the risk assessment, testing frequencies are reduced in many areas and monitoring for PSP toxins was suspended at sites where harvesting restrictions were placed due to the presence of lipophilic toxins above MPL. Given the high prevalence of lipophilic toxins in this reporting period and alterations to the testing frequencies, the PSP statistics for 2015 may therefore not be a true reflection of the prevalence of PSP toxins in Scotland but more a result of targeted monitoring throughout the high risk period.
- A range of PSP toxins, most notably the toxins STX, GTX1&4, GTX2&3, NEO and C1&2, were identified throughout the reporting period in samples breaching the MPL (data not shown). Lower concentrations of GTX5 and dcGTX2&3 were also detected. Proportions of each toxin were found to vary widely but indications were provided for these to fall into three specific groups of profiles. These were found to be similar to those expected from shellfish contaminated with *Alexandrium* as evidenced by validation work and similar to toxin distributions seen in previous years (Turner et al., 2014).
- Two whole king scallop verification samples, both originating from the Jura 12 scallop ground in June and August 2015 exceeded the MPL, recording a levels of 1,120 and 2,321 µg/kg respectively.
- In addition, trace levels of PSP toxins, but below quantifiable limits were detected in three whole king scallop and twelve shucked product samples between March and December 2015.

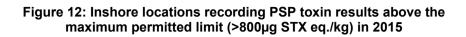




Figure 13: Inshore locations recording PSP toxin results below the maximum permitted limit (≤800µg STX eq./kg) in 2015



Phytoplankton associated with the production of PSP toxins

- Alexandrium spp. were observed between February and October and were detected in 414 samples (31.7%) analysed during 2015. They were recorded at or above the trigger level (set at 40 cells/L) in 283 samples (21.7%) mostly between April and August, and were recorded at or exceeding trigger level in 30.2% of the samples analysed during April.
- The densest recorded Alexandrium spp. blooms were observed at Tingwall Pier (Orkney Islands) on 27th July with an abundance of 10,400 cells/L, and Loch Eishort (Highland: Skye & Lochalsh) on 25th May with an abundance of 9,600 cells/L.
- Highly toxic *Alexandrium* spp. blooms were detected around North Ayrshire and Argyll & Bute during April and May, most notably Arran: Lamlash Bay, Campbeltown Loch, Loch Striven, Loch Fyne: Otter Ferry and Loch Fyne: Ardkinglas. Blooms associated with PSP toxicity also occurred throughout Highland region in May and June around Loch Eishort (Skye & Lochalsh), Loch Torridon (Ross & Cromarty), Loch Laxford and Loch Inchard (Sutherland). Toxic *Alexandrium* spp. blooms were observed in Loch Roag: Miavaig and Loch Roag: Barraglom (Lewis & Harris) in early July.
- *Alexandrium* spp. blooms at or exceeding trigger level were less frequently detected in 2015 compared with both 2013 and 2014, which may be due in part to the absence of prolonged blooms around the Shetland Islands, in contrast to previous years.

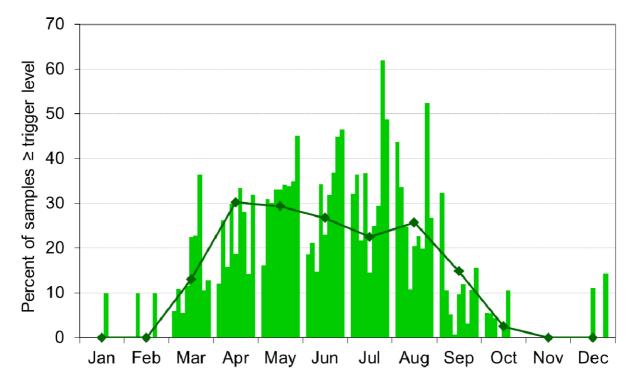
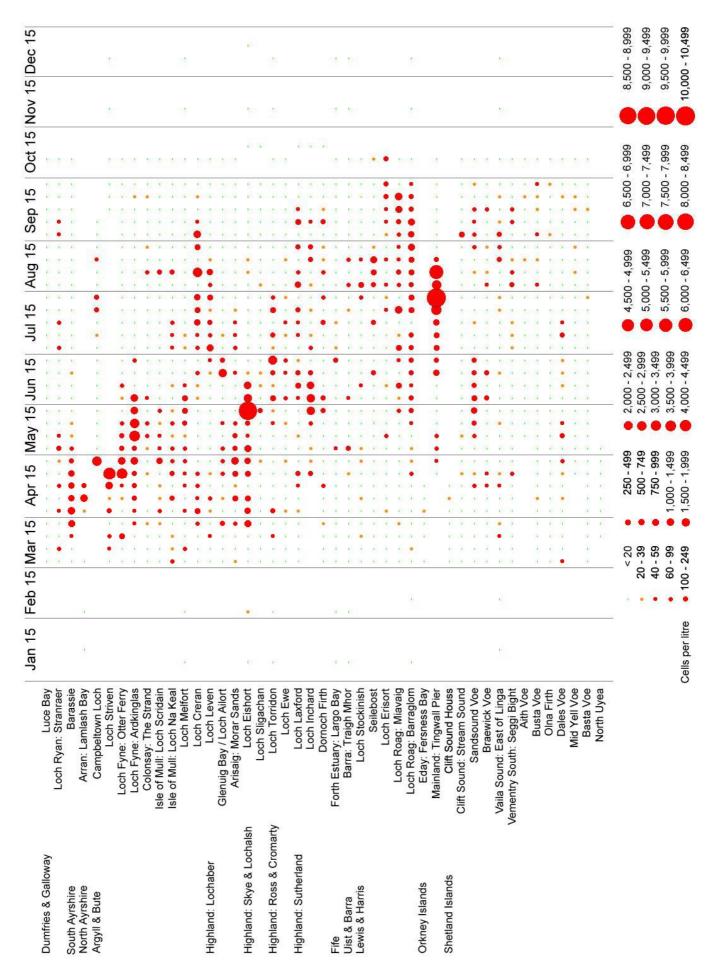


Figure 14: The percentage of samples in which *Alexandrium* spp. equalled or exceeded the trigger level of 40 cells/L in 2015 is indicated by the line. For comparison, the bars show the percentage of samples in which *Alexandrium* spp. equalled or exceeded the trigger level between 2006 and 2014. NOTE: Data collected prior to July 2014 have been adjusted to the revised trigger level of 40 cells/L for comparative purposes.



Figure 15: *Alexandrium* spp. were recorded at a density of 3,840 cells/L on 21st April at Loch Fyne: Otter Ferry (Argyll & Bute). This bloom developed rapidly and was associated with a PSP toxic event in shellfish.

Figure 16. Phytoplankton concentrations of *Alexandrium* spp. observed between Jan and Dec 15



Monitoring for ASP toxins

Analyses for amnesic shellfish poisoning (ASP) toxin were conducted on 1,326 samples from inshore locations and 33 king scallop verification samples collected from commercial establishments. All samples were analysed by an HPLC method. Results are summarised below.

- ASP was detected in 55 inshore samples comprising of: common mussels (18 samples), razors (12), Pacific oysters (8), common cockles (7), surf clams (7) and carpet clams (3).
- These samples originated from 29 sites, predominantly on the West Coast, Western Isles, Shetland Isles and Forth Estuary. All incidences were recorded between May and November 2015, with the peak period occurring between July & September, during which time, ASP was detected in 40 samples.
- No inshore samples exceeded the MPL of 20mg [domoic/epi domoic acid] (DA)/kg shellfish flesh. The highest level recorded was 6.1mg/kg in a cockle sample collected in mid July 2015, originating from Traigh Mhor: Traigh Mhor (Uist & Barra). The remaining samples recorded levels below the MPL at ranges between 1 and 6mg/kg (Figure 17).
- The periods where ASP was detected during this reporting period are consistent with previous years, with significant decrease in occurrence in comparison with 2014. However, it must be noted that, as a consequence of the risk assessment, testing frequencies are reduced in many areas and monitoring for ASP toxins was suspended at sites where harvesting restrictions were placed due to the presence of PSP and/or lipophilic toxins above the MPL. Given the high prevalence of lipophilic toxins in this reporting period and alterations to the testing frequencies, the statistics may therefore not be a true reflection of the prevalence of ASP toxins in Scotland but more a result of targeted monitoring throughout the high risk period.
- ASP was detected in 20 king scallop verification samples from 9 establishments. Six of these samples comprised of whole king scallop material, the remaining fourteen of shucked product. These shellfish samples were originally harvested in the following offshore scallop grounds; Jura (14 samples), Clyde (4 samples), South Minch (1 sample) with one further sample from unknown scallop grounds between February and December 2015. Toxin levels ranged between 1.2 and 278mg/kg DA/shellfish flesh, five of which exceeded the MPL.
- The five samples which exceeded the MPL comprised of whole scallop samples originating from the Clyde 03, Jura 02, Jura 11 and Jura 12 offshore scallop grounds collected by Argyll & Bute Council between February and December. The highest level recorded was 278mg/kg in a sample from the Jura 02 scallop ground in February 2015.

Figure 17: Inshore locations where ASP toxins were detected below the maximum permitted limit (≤20mg/kg) in 2015



Phytoplankton associated with the production of ASP toxins

- Pseudo-nitzschia spp. were detected every month in 2015 and at all sites, and were present in 1,196 (91.6%) of the samples analysed. Blooms (here referred to as cell densities exceeding 50,000 cells/L) were detected between March and October, and were most frequently observed in September, although none were detected in May.
- Pseudo-nitzschia spp. counts at or above the trigger level (set at 50,000 cells/L) were recorded in 116 samples (8.9%), with 16.9% of the samples analysed in September exceeding this level. The earliest blooms were recorded around the Shetland Islands, Dornoch Firth (Highland: Sutherland) and Loch Scridain (Argyll & Bute) during early March.
- Pseudo-nitzschia spp. were widespread around the Highland region, Lewis & Harris, and the Orkney Islands in June and July, and then around the Shetland Islands in August. The densest *Pseudo-nitzschia* spp. bloom was observed in Loch Ailort (Highland: Lochaber) on 21st September, where a maximum abundance exceeding 1.2 million cells/L was recorded. Some associated ASP toxicity was reported in Pacific oysters from Loch Ailort at this time. *Pseudo-nitzschia* spp. blooms were also detected nearby at Arisaig: Morar Sands (Highland: Lochaber) and in Argyll & Bute around the Isle of Mull (Loch Scridain, Loch Na Keal) and Loch Melfort through September and into early October.

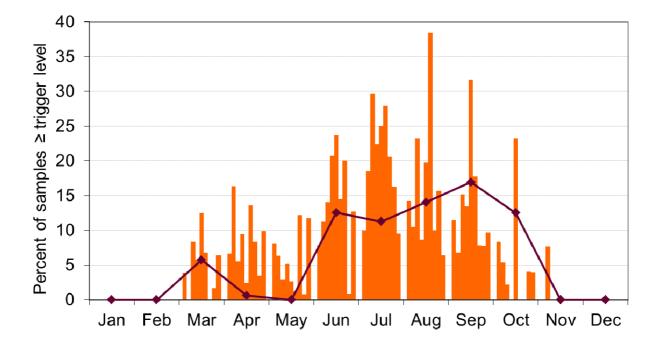


Figure 18: The percentage of samples in which *Pseudo-nitzschia* spp. equalled or exceeded the trigger level of 50,000 cells/L in 2015 is indicated by the line. For comparison, the bars show the percentage of samples in which *Pseudo-nitzschia* spp. equalled or exceeded the trigger level between 2006 and 2014.

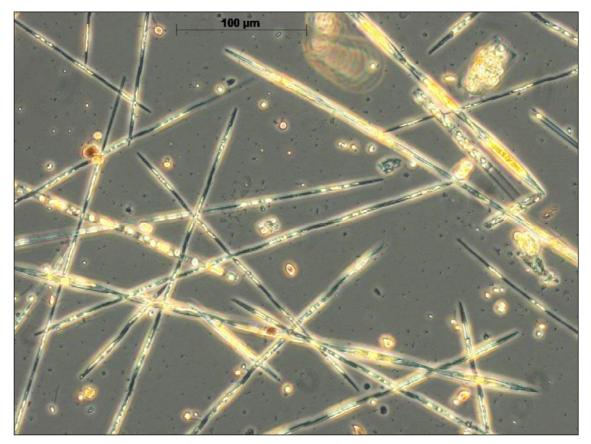
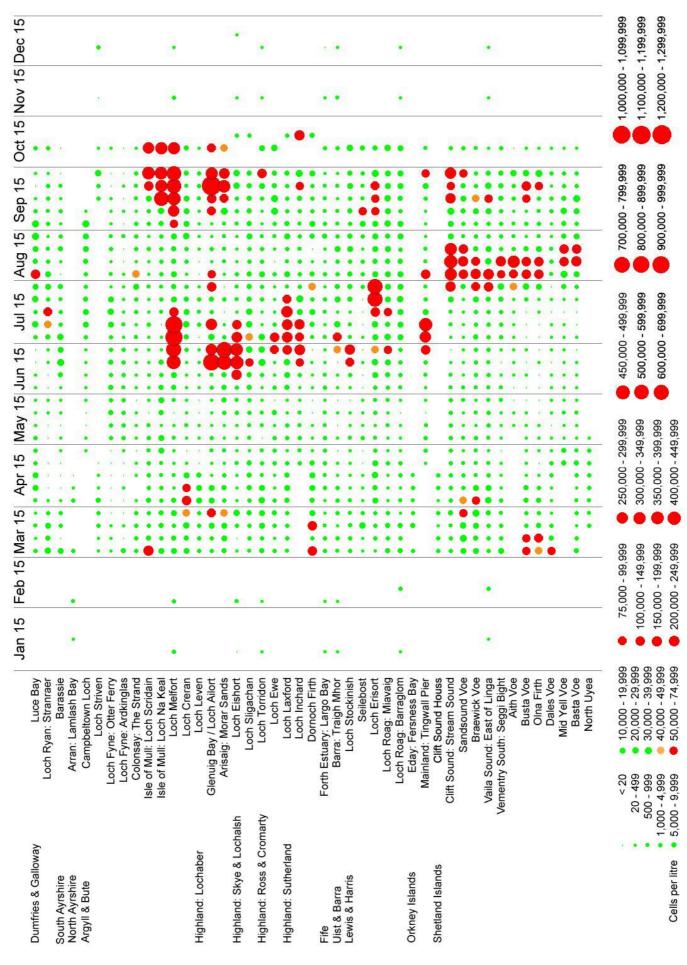


Figure 19: *Pseudo-nitzschia* spp. were observed at a concentration of greater than 1.2 million cells/L in Loch Ailort (Highland: Lochaber) on 21st September.

Figure 20: Phytoplankton concentrations of Pseudo-nitzschia spp. observed between Jan and Dec 15



Other potentially harmful phytoplankton

Prorocentrum cordatum was detected in 694 samples analysed in 2015 (53.1%). It was observed from February through to October and was most abundant in May and June, being recorded in 81.9% and 81.7% of the samples analysed, respectively. The densest blooms of 2015 occurred in Largo Bay (Fife) at a concentration of 162,769 cells/L on 13th July, and also in Braewick Voe (Shetland Islands) at 123,898 cells/L on 3rd June.

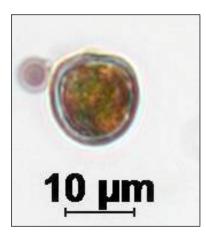


Figure 21: *Prorocentrum cordatum* observed in Loch Scridain (Argyll & Bute) on 5th May at a density of 720 cells/L.

Similar to 2014, the potentially problematic dinoflagellate *Karenia mikimotoi* was not observed in densities likely to negatively impact aquaculture during 2015, and was detected in only 3.5% of the samples analysed. This species is not an issue in terms of shellfish harvesting, as it does not produce biotoxins that are harmful to human health. However, it does produce ichthyotoxins that can kill finfish, and dense blooms may result in both fish and invertebrate mortality as a result of hypoxia. The densest *Karenia mikimotoi* bloom was observed in Arran: Lamlash Bay on 7th April, with an abundance of 340 cells/L.

2. Abbreviations used in the text

AHA AOAC ASP AZA AZP CI DA DSP DTX	Associated Harvesting Area AOAC International Amnesic Shellfish Poisoning Azaspiracid Azaspiracid Poisoning Cyclic Imines Domoic Acid Diarrhetic Shellfish Poisoning Dinophysistoxin
dcSTX	decarbamoyl saxitoxin
EC	European Commission
EU EURL	European Union
EHO	European Union Reference Laboratory for Marine Biotoxins Environmental Health Officer
EPT	End product test
FSA	Food Standards Agency
FSS	Food Standards Scotland
GTX	Gonyautoxin
HPLC	High Performance Liquid Chromatography
LA	Local Authority
LC-MS/MS	Liquid Chromatography with tandem Mass Spectrometry
LOD	Limit of detection
	Limit of quantitation
LT(s) MPL	Lipophilic Toxin(s) Maximum Permitted Level
ND	Not Detected
UKNRL	UK National Reference Laboratory for Marine Biotoxins
OA	Okadaic Acid
PSP	Paralytic Shellfish Poisoning
PST(s)	Paralytic Shellfish Toxin(s)
PTX	Pectenotoxin
PTX2	Pectenotoxin 2
PTX2sa	Pectenotoxin 2 seco-acid
RL	Reporting limit
RMP SAMS	Representative Monitoring Point The Scottish Association for Marine Science
SOP(s)	Standard Operating Procedure(s)
STX	Saxitoxin
YTX	Yessotoxin

3. Introduction

Phytoplankton are the organisms at the bottom of the marine food chain and are the primary food source for filter-feeding marine animals, such as bivalve molluscs.

Marine waters contain a diverse array of phytoplankton, the vast majority of which are harmless. However, under certain conditions, a relatively few species produce toxins, some of which can accumulate in the tissue and organs of filter-feeding shellfish and also sometimes in other shellfish such as grazing gastropods. The ingestion of shellfish contaminated with biotoxins above certain levels is known to pose risks to the human consumer.

All phytoplankton grow by harvesting light energy from the sun through the process of photosynthesis, primarily using the pigment chlorophyll. Some phytoplankton species may also exhibit mixotrophic growth, being able to both photosynthesize and ingest smaller phytoplankton. Phytoplankton are characteristic of relatively shallow depths where sunlight can still penetrate into the water column. Photosynthesis allows phytoplankton to take up dissolved carbon dioxide from the water, along with inorganic nutrients such as nitrate, phosphate, silicate and trace metals, such as iron, which are also required for growth. Phytoplankton require sufficient light, warmth and nutrients to grow.

In winter, in temperate regions, the day length is too short and the water too cold for growth to occur in most species. However, at this time, mixing of the water column returns nutrients to the surface layers.

In spring, with increasing daylight and water temperatures, rapid phytoplankton growth begins. This growth phase is called the spring bloom and is, in Scottish waters, characterised by diatom species that are capable of rapid utilisation of available nutrients and fast growth. Diatoms often dominate the spring bloom and early spring blooms may be large if the population of zooplankton grazers has not yet begun to increase. The spring bloom is terminated by the exhaustion of nutrients (usually the elements nitrogen or silicon) in the water column, and a rapid decline in phytoplankton density may occur as cells die, or are grazed down. This will also serve to return some nutrients, particularly nitrogen, into the water.

During summer, the composition of the phytoplankton community is of a different character to that of spring and contains a greater proportion of dinoflagellate species. Autumnal phytoplankton blooms can also occur due to enhanced nutrient availability following water column mixing and the breakdown of any summer stratification.

To date, eight major classes of marine phytotoxins have been identified and are distinguished by their chemical structure and physico-chemical behaviour. Five of these groups are known to induce human illness - Okadaic acid and Dinophysistoxins (OA/DTXs), Azaspiracids (AZAs), and the Saxitoxin (STX), Domoic Acid (DA) and the Brevetoxin groups. These groups are responsible for Diarrhetic Shellfish Poisoning (DSP), Azaspiracid Poisoning (AZP), Paralytic Shellfish Poisoning (PSP), Amnesic Shellfish Poisoning (ASP) and Neurotoxin Shellfish Poisoning (NSP) respectively. Pectenotoxins (PTXs), Yessotoxins (YTXs) and Cyclic Imines (CIs) form the remaining three groups and currently, there is a lack of toxicological evidence regarding human illness from these compounds.

Of the five major shellfish biotoxin groups known to induce human illness, there are currently three which are subject to statutory testing across the European Union (including the UK) to protect human health:

- <u>PSP toxins</u>: PSP is associated with algae of the genus *Alexandrium* in Scottish waters. The active component in PSP is STX and its derivatives, which act upon blocking the voltage dependent sodium channels in nerves, thereby blocking nerve conduction. The symptoms seen following consumption of PSP contaminated shellfish include numbness in the mouth and fingertips followed by impaired muscle co-ordination. Respiratory distress and paralysis can occur and this may be fatal. PSP outbreaks have occurred in Scottish waters such as those along the west coast, Shetlands, Orkney Isles and Offshore Scallop Grounds. PSP toxicity is usually an annual event at the above locations, although levels may not exceed the maximum permitted limit (MPL) of 800 µg STX equivalence (STX eq.) per kg of flesh (EC Regulation 853/2004).
- 2. <u>Lipophilic toxins</u>: Of the lipid-soluble toxins, it is the OA/DTXs, AZAs, YTXs, PTXs that contribute to this class and collectively, they are referred to as lipophilic toxins (LTs). OA/DTXs are responsible for human DSP, whilst AZAs are responsible for AZP if present in shellfish flesh at concentrations above those defined as the MPL by EC Regulation 853/2004. Predominant symptoms include diarrhoea, nausea, vomiting and abdominal pain. OA and DTX-1 have also been shown to be cancer promoters in mouse skin bioassays and this poses another possible health problem (van Egmond *et al.* 1993). In the UK, LT positive samples have been found mostly in Southern English waters and throughout Scotland, where approximately 5 10% of samples submitted through the official control programme record results above the MPL.

DSP toxins (OA and DTX groups) are produced by algae of the genera *Dinophysis, Phalacroma* and *Prorocentrum.* AZAs are produced by dinoflagellates of the genera *Azadinium* and *Amphidoma*, whilst PTX toxins are produced by algae of the genera *Dinophysis.* YTX toxins are produced by a number of algal species including, *Lingulodinium polyedrum, Gonyaulax spinifera* and *Protoceratium reticulatum.*

 <u>ASP toxins</u>: ASP is caused by DA produced by marine diatoms of the genus *Pseudo-nitzschia*. Symptoms include vomiting, diarrhoea, abdominal cramps and loss of short term memory which may be permanent. In a small number of cases ASP has been fatal. ASP toxins can often be detected in Scottish shellfish during the period April to November, at concentrations which at times exceed the MPL of 20 mg per kg of flesh (EC Regulation 853/2004).

Because of the above health risks to consumers of shellfish, legal controls are placed on the production and marketing of fishery products worldwide. In the European Union controls are prescribed in Regulation (EC) 854/2004. Regulation (EC) 853/2004 Chapter V of Section VII, Annex III prescribes the statutory maximum levels of biotoxins permitted in live bivalve molluscs being placed on the market by food business operators (Table 1).

Toxin group	Maximum Permitted Limits
ASP	>20 mg Domoic/epi-domoic acid/kg [shellfish flesh]
LTs	Diarrhetic shellfish poisoning (DSP) toxins and pectenotoxins (PTXs) together, >160µg okadaic acid eq./kg [shellfish flesh] or Yessotoxins, >3.75mg yessotoxin eq./kg [shellfish flesh] or Azaspiracids, >160µg azaspiracid eq./kg [shellfish flesh]
PSP	>800µg saxitoxin eq./kg [shellfish flesh]

Table 1: Maximum Permitted Limits of toxins in shellfish flesh

Regulation (EC) 882/2004 provides a regulatory framework for competent authorities including general requirements for the methods used for analysis of official control samples and the validation of these methods. The regulations are further supported by Regulation (EC) 2074/2005 which sets out the analytical methods to be used for shellfish toxins. The above packages of EU Regulations are directly applicable across all member states and are intended to ensure a uniform approach to feed and food law across Europe. The Regulations are enabled in Scotland by The Food Hygiene (Scotland) Regulations 2006 (as amended).

Whilst it is the responsibility of Food Business Operators to ensure that the products they sell do not contain toxins above regulatory limits, there are very specific requirements placed upon 'Competent Authorities' in all member states. The legal requirements essentially require EU Member States to have in place an 'Official Control' monitoring system which checks i) for the presence of regulated marine biotoxins in shellfish production and relaying areas, and in products placed on the market and ii) checks for the possible presence of toxin producing phytoplankton in production and relaying areas. The competent authority is required to take action to close the production or relaying area and prevent further harvesting or sale of products found to contain levels of biotoxins above the limits prescribed in the legislation.

Under EU legislation the competent authority has the statutory responsibility for ensuring delivery of an effective official control programme including such aspects as the monitoring scope and frequency, test methods used, etc. The competent authority is required to act within the legal framework set by the legislation including, for example, the use of methods prescribed by the legislation.

In Scotland, the national Competent Authority is Food Standards Scotland (FSS), which, through its office in Aberdeen, delegates certain official control functions through Local Authorities e.g. local enforcement and sampling activities in some parts of the country. In 2012, the delivery of the FSA/FSS official control shellfish monitoring programmes (coordination, logistics and analyses) was contracted out to a consortium of UK laboratories and organisations known as the Shellfish Partnership. Within the context of the marine Biotoxin programmes, activities relating to the shellfish toxin programme in Scotland are delivered by the Centre for Environment, Fisheries and Aquaculture Science (Cefas) whilst those relating to the phytoplankton monitoring are delivered by the Scottish Association for Marine Science (SAMS). Within Scotland, monitoring for algal biotoxins is divided into two aspects, the flesh and phytoplankton monitoring programmes. For the flesh monitoring programme, samples of shellfish from designated shellfish harvesting areas and wild pectinidae from commercial processors are tested. In the phytoplankton monitoring programme, water samples are collected from fixed sites within selected harvesting areas and the composition of marine algae identified and enumerated. The presence of toxin-producing phytoplankton in the water column does not necessarily mean that toxin will be present. While the reasons for toxin production remain unclear, some phytoplankton may produce toxins as a deterrent for grazers, with some species only becoming toxic as a stress response to nutrient unavailability or other, as yet poorly understood environmental factors. Even when toxic phytoplankton are present in the water column, to some extent the amount ingested by filter-feeding shellfish will depend on the availability of other harmless phytoplankton species. Different genera of bivalves also vary in their rates of biotoxin accumulation and retention. Furthermore, the toxicity of harmful species may vary with the condition of the water column or the physiological state of the cell and the current analysis cannot be used to determine actual toxin production.

The shellfish monitoring programme encompassed two elements:

- The inshore biotoxin monitoring programme whereby shellfish production areas are sampled through representative monitoring points (RMPs) and associated harvesting areas (AHAs). Under the current inshore monitoring programme, classified shellfish production areas are grouped into 'pods', where sites within a pod are thought to be similar hydrographically and environmentally. The pods are sampled through RMPs, which were chosen as the sites most likely to be representative or indicative of any toxicity in the area. Other sites within the pods are designated as AHAs.
- Wild pectinidae control in the form of onshore verification checks by authorised officers of the Local Authorities, as required under Regulations (EC) 854/2004 and 882/2004.

During this reporting period, the pods were monitored in accordance with the FSS risk assessment, at the following pod specific routine frequencies prior to and during periods of expected or active harvesting:

- PSP: either weekly, fortnightly or monthly, as determined by risk assessment
- LTs: weekly March to December, monthly January and February
- ASP: either weekly, fortnightly or monthly, as determined by risk assessment

The phytoplankton monitoring programme focuses on a number of selected sampling locations amongst the active shellfish RMPs. During the reporting period, monitoring frequency was set by the FSS as follows:

- Weekly for all sites between March and September;
- Fortnightly in October;
- Monthly sampling from November to February in a limited number of selected areas, to reflect the low abundance of phytoplankton in the water column during the winter months.

Monitoring at the selected water sampling locations focuses on those algal species which are considered as potentially harmful. In the reporting period, water samples collected from designated shellfish harvesting areas were monitored for seven potentially toxic genera or species of phytoplankton (Table 2).

Toxin group	Genus/species	
ASP toxins	Pseudo-nitzschia (genus)	
PSP toxins	Alexandrium (genus)	
OA/DTX/PTX	Dinophysis & Phalachroma (genera)	
OA/DTX	Prorocentrum lima	
Unknown	Prorocentrum cordatum	
YTX	Protoceratium reticulatum	
YTX	Lingulodinium polyedrum	

Table 2: The eight genera or species of phytoplankton monitored inScottish coastal waters in 2015

In addition, the monitoring programme will report unusually large occurrences of any of the other harmful species detailed on the IOC-UNESCO taxonomic reference list of harmful micro algae at <u>http://www.marinespecies.org/hab/index.php</u>

Pseudo-nitzschia spp. are associated with the production of ASP toxins. Nine species have been observed in Scottish coastal waters, although it is not possible to routinely discriminate between species of *Pseudo-nitzschia* using light microscopy. Hence, determination of *Pseudo-nitzschia* spp. is only carried out to genus level. In Scotland, a trigger level of 50,000 cells/L for *Pseudo-nitzschia* spp. was defined by the UKNRL network. Cell counts above this level are regarded as having the potential to cause an ASP toxic event in shellfish.

In Scottish waters, species belonging to the dinoflagellate genus *Alexandrium* are associated with the production of PSP toxins. Dense blooms are not required before there is a cause for concern, and the presence of *Alexandrium* spp. (40 cells/L) is taken as an indication of the potential for a PSP event. Four species have been reported from around Scotland, one of which is thought to be non-toxic (*Alexandrium tamutum*) and both toxic and non-toxic strains of another species (*Alexandrium tamarense*) have been found at some locations. However, it is difficult to determine *Alexandrium* spp. to species level in a Lugol's-fixed sample using light microscopy and *Alexandrium* spp. are therefore reported to genus level within the monitoring programme.

Dinoflagellate phytoplankton are also associated with the production of toxins belonging to different LT groups. Okadaic acid and dinophysistoxins are produced by several species of *Dinophysis* and *Phalachroma*, and also by the benthic dinoflagellate *Prorocentrum lima*. In addition to these toxins, *Dinophysis acuta* is also associated with pectenotoxins, although this species is not particularly abundant in Scottish coastal waters.

Prorocentrum lima is epiphytic in nature and it is unlikely that abundance in the water column is a true reflection of the actual abundance of this species. Algal cells of the genus *Dinophysis* and *Phalachroma rotondatum* are reported as *Dinophysis* spp. within the monitoring programme, and cell counts above a threshold level of 100 cells/L for both *Dinophysis* spp. and *Prorocentrum lima* may be regarded as having the potential to cause a DSP toxic event in shellfish.

Prorocentrum cordatum is a small dinoflagellate that can form highly dense blooms, often exceeding several million cells/L, resulting in a visible discolouration of the water. One strain isolated from the French Mediterranean coast was found to be a neurotoxin producer, although the toxicity of *Prorocentrum cordatum* around UK waters is currently unknown.

Protoceratium reticulatum and *Lingulodinium polyedrum* are not frequently observed in Scottish coastal waters, but both species are associated with the production of yessotoxins. No threshold level has been applied to these species within the monitoring programme.

The azaspiracid producers, *Azadinium* and *Amphidoma*, are difficult to accurately identify using light microscopy and are not currently monitored as part of the programme.

4. Biotoxin Methodology

4.1. Shellfish collection

Inshore Monitoring Programme (classified shellfish production areas):

For the monitoring period of 1st January to 31st December 2015, 3,012 samples from 100 inshore sampling locations were submitted for toxin analyses. These sampling locations covered 85 pods within 13 Local Authority regions.

The inshore samples received by Cefas during the reporting period comprised of mussels (*Mytilus* spp.) (2,121samples - 70% of all samples), Pacific oysters (*Crassostrea gigas*) (517 - 17%), razors (*Ensis* spp.) (200 – 7%), common cockles (*Cerastoderma edule*) (137 – 5%), surf clams (*Spisula solida*) (31 - 1%) and carpet clams (*Venerupis senegalensis*) (6 - <1%).

Samples were collected by officers operating on behalf of several contractors appointed by FSS. A list is provided in Table 3. The majority of samples were collected by appointed sampling officers. However, in specific incidences and dependent on location or accessibility, FSS also allowed the collection of samples by the industry. These samples qualified as "unverified" were collected under the direction of the responsible sampling contractor. During this reporting period, 14% of the samples received were of unverified origin. Numbers however, varied significantly between Local Authority regions. A further breakdown of unverified samples received (by species and fishery type) is provided in Table 4.

Local Authority	Sampling contractor	No. samples received	No. verified samples received	No. unverified samples received
Argyll & Bute Council	Argyll & Bute Council	775	742 (96%)	33 (4%)
Comhairle nan Eilean Siar: Lewis & Harris	Hall Mark Meat Hygiene	349	306 (88%)	43 (12%)
Comhairle nan Eilean Siar: Uist & Barra	Hall Mark Meat Hygiene	159	149 (94%)	10 (6%)
Dumfries & Galloway Council	FSS Operations	81	43 (53%)	38 (47%)
Fife Council	Hall Mark Meat Hygiene	82	18 (22%)	64 (78%)
East Lothian Council	Hall Mark Meat Hygiene	35	0	35 (100%)
Highland Council: Lochaber	Highland Council	245	143 (58%)	102 (42%)
Highland Council: Ross & Cromarty	Highland Council	131	129 (98%)	2 (2%)
Highland Council: Skye & Lochalsh	Highland Council	130	129 (99%)	1 (1%)
Highland Council: Sutherland	Highland Council	205	161 (79%)	44 (21%)
North Ayrshire Council	FSA Operations	59	58 (98%)	1 (2%)
Orkney Islands Council	Hall Mark Meat Hygiene	0	0	0
Shetland Islands Council	Hall Mark Meat Hygiene	722	715 (99%)	7 (1%)
South Ayrshire Council	FSS Operations	39	1 (3%)	38 (97%)
Totals		3,012	2,594 (86%)	418 (14%)

Table 3: Number of verified and unverified inshore biotoxin samples collected during the reporting
period by Local Authority region and by sampling contractor.

Table 4: Number of unverified inshore biotoxin samples collected during the reporting period byspecies and fishery type.

Species	Fishery type	No. unverified samples received	Proportion of unverified samples received per species
Common cockles	Wild harvest	0	0%
Common mussels	Aquaculture	173	8.5%
Common mussels	Wild harvest	9	
Pacific oysters	Aquaculture	4	1%
Razors	Wild harvest	5	97.5%
Surf clams	Wild harvest	31	100%
Carpet clams	Wild harvest	6	100%

Shellfish were collected and packaged in accordance with the Shellfish Partnership sampling and transport protocol, itself based upon UKNRL guidance and sent to the Cefas Weymouth laboratory for analyses. All samples were posted using Royal Mail next day delivery service. The majority of samples (~99%) arrived at the laboratory within one or two working days of sample collection (84 and 15%, respectively) (Table 5). When delays occurred, these were generally attributed to the time at which the samples were collected, thus missing the routine post office collection deadline or to other events outside of the laboratory or sampling officers' control, such as inclement weather or transport network problems.

Table 5: Number of inshore samples received from each Local Authority region in 2015 and time
taken between collection and receipt at Cefas

Local Authority	No. samples received	No. received 1 working day post collection	No. received 2 working days post collection	No. received 3 working days post collection	No. received 4 working days post collection
Argyll & Bute Council	775	655	115	5	0
Comhairle nan Eilean Siar: Lewis & Harris	349	313	34	2	0
Comhairle nan Eilean Siar: Uist & Barra	159	102	50	7	0
Dumfries & Galloway Council	81	70	10	1	0
Fife Council	82	61	20	1	0
East Lothian Council	35	24	11	0	0
Highland Council: Lochaber	245	158	78	9	0
Highland Council: Ross & Cromarty	131	117	12	2	0
Highland Council: Skye & Lochalsh	130	93	34	3	0
Highland Council: Sutherland	205	193	12	0	0
North Ayrshire Council	59	53	6	0	0
Orkney Islands Council	0	0	0	0	0
Shetland Islands Council	722	666	52	4	0
South Ayrshire Council	39	15	22	2	0
Totals	3,012	2,520 (84%)	456 (15%)	36 (1%)	0 (0%)

Careful programme management, training and liaison with sampling officers minimised the occurrence and impact of delays on the programme, with only 1% of samples (n=36) being received three working days post collection throughout this reporting period. None of these late samples were rejected as unsuitable for analyses, based on poor organoleptic properties upon arrival at the laboratory (see section 4.2).

Wild pectinidae - Onshore Surveillance Programme:

Thirty four king scallop samples (comprising of shucked product (n=27) or whole shellfish (n=7)) were collected from 12 separate premises by authorised officers from five LA regions (Argyll & Bute, Comhairle nan Eilean Siar: Uist & Barra, Fife, Shetland Isles and South Ayrshire) during the reporting period and submitted to Cefas for toxin analyses.

These premises represented approximately 17% of the circa 70 approved shellfish processing, auction and dispatch centres in Scotland.

The scallop samples were originally harvested from the following offshore scallop grounds: Clyde (C01, C02 & C03), Jura (J02, J05, J06, J08, J11 & J12), Shetlands (S06, S09, S10, S11 & S14) and South Minch (SM01 & SM05) (Figure 23, page 152). One further sample was received from an un-specified offshore scallop ground.

Thirty three samples arrived within one working day of collection, with one sample received two working days post collection.

4.2. Shellfish analysis

Assessment of suitability of the samples for analysis

On arrival at the laboratory, all samples were assigned a unique laboratory number and assessed for their suitability for analysis.

Shellfish which failed to respond to a percussion test, and/or did not exhibit the correct organoleptic characteristics associated with freshness or were accompanied by incorrect or missing paperwork were rejected and reported as unsuitable for analyses. A summary of the number of samples assessed as unsuitable during the reporting period is given in Table 6. Overall, only sixteen inshore samples were rejected in 2015. One king scallop verification sample was rejected as unsuitable for analysis, the remaining 33 samples collected from commercial establishments were received in a suitable condition for analyses. Therefore 99.5% of all samples received were assessed as suitable for analysis and tested in 2015.

Local Authority	No. samples received	No. rejected due to unsatisfactory quality or provenance	No. rejected due to other reasons (eg: arrived late or unscheduled sample)
Argyll & Bute Council	775	0	0
Comhairle nan Eilean Siar: Lewis & Harris	349	0	0
Comhairle nan Eilean Siar: Uist & Barra	159	0	0
Dumfries & Galloway Council	81	2	1
Fife Council	82	1	0
East Lothian Council	35	0	0
Highland Council: Lochaber	245	0	1
Highland Council: Ross & Cromarty	131	1	0
Highland Council: Skye & Lochalsh	130	0	0
Highland Council: Sutherland	205	1	0
North Ayrshire Council	59	2	5
Orkney Islands Council	0	0	0
Shetland Islands Council	722	0	0
South Ayrshire Council	39	1	1
Totals	3,012	8 (0.26 %)	8 (0.26%)

Table 6: Summary of inshore samples found unsuitable for toxin analyses, by Local Authorityregion.

Insufficient samples

Samples which were assessed as suitable for analysis were then prepared for ASP, LTs and/or PSP analyses (as required). The analyses to be conducted on each batch of samples were defined by the current risk assessment and co-ordinated by Cefas. All inshore and king scallop verification samples assessed as suitable for analyses yielded sufficient material for the required tests.

Analytical Methods

The methods used for routine toxin analysis of shellfish were those specified by FSS and involved the application of a range of analytical methods. These included liquid chromatography (LC) with Ultra-violet (UV) or fluorescence (FLD) detection or LC with tandem mass spectrometry (MS/MS) for either qualitative screening of samples (screen), semi-quantitation or full toxin quantitation. The methods used for toxin testing were as follows:

ASP testing

 Shellfish species received in the reporting period were tested by LC-UV analysis following extraction with 50% aqueous methanol and filtration of the crude extracts. The quantitative method was applied to all shellfish species and is based on the method of Quilliam et al., 1995.

PSP testing

- Shellfish species received in the reporting period have all been validated at Cefas for the use of a refined LC-FLD method based on AOAC 2005.06. Samples were all extracted with 1% acetic acid and forwarded for qualitative screening and semiquantitation by LC-FLD. Any samples returning a positive LC screen result and a semi-quantitative total toxicity of >400 µg STX eq/kg were then forwarded for quantitation by LC-FLD.
- Screen positive samples under this limit were reported as <400 µg STX eq/kg. Since implementation, this approach has significantly increased the number of sample results reported within 1 day of sample receipt and increased the ability of the laboratory to deal with large numbers of positive samples during periods of high PSP toxicity.
- Quantitation was conducted following the fully quantitative AOAC 2005.06 method, with final results reported as total toxicities in µg STX eq/kg.

Lipophilic toxins testing

 All shellfish species were analysed by LC-MS/MS for the quantitation of all EU regulated lipophilic toxins. The method used was validated at Cefas based on the conditions stipulated by the EU Reference Laboratory (EU RL) for Marine Biotoxins.

Table 7 summarises the methods of analysis used throughout this reporting period together with a summary of the current UKAS accreditation status of each method to ISO 17025:2005 standard.

Toxin group	Methods employed	Species tested	Dates	Accreditation status (as of 31 st December 2015) to ISO 17025:2005 standard
ASP	LC-UV	All species	1 st January to 31 st December 2015	Accredited
PSP	LC-FLD (screen, semi – quantitative screen & full quantitation)	All species	1 st January to 31 st December 2015	Accredited
Lipophilic toxins	LC-MS/MS	All species*	1 st January to 31 st December 2015	Accredited

Table 7: List of analytical methods used in 2015

*With the exception of carpet clams

Test outcome

Samples were considered as positive if they were found to breach the maximum permitted limits (MPL) for marine toxins specified in EC regulation 853/2004 (Table 1, Page 32). Where these levels were exceeded, recommendations were that temporary harvesting restrictions be put in place on the affected area until two consecutive negative or below action level (action level equals MPL) results were achieved for the toxin which was the cause of the closure, and negative or below action level results for the toxin groups which had not exceeded the MPL.

In accordance with the FSS risk assessment, requests were made for weekly shellfish monitoring to be instigated (if not already ongoing) when set trigger levels, indicative of heightened toxicity risk were breached. The trigger levels used in the 2015 reporting period are summarised in Table 8.

Toxin group	Levels of toxin or cell concentrations triggering additional monitoring if breached
ASP	≥10mg domoic/epi-domoic acid/kg shellfish flesh
70	and/or <i>Pseudo-nitzschia</i> spp. ≥ 50,000 cells/L
	OA/DTX/PTX group: ≥80 µg OA eq/kg shellfish flesh
LTs	AZA group: ≥80 μg AZA1eq./kg shellfish flesh
LIS	YTX group: ≥1.8mg/kg shellfish flesh
	and/or Prorocentrum lima/Dinophysis spp. ≥ 100 cells/L
PSP	≥400µg STX eq./kg shellfish flesh
P3P	and/or Alexandrium spp. (40 cells/L)

Table 8: Flesh and phytoplankton trigger levels

4.3. Reporting of results

Upon completion of the required analyses, the results were collated and quality control checked prior to submission to FSS.

Results were reported on a daily basis. During this reporting period, Cefas were able to report all results from 93% of all samples received within one working day of receipt and 100% within three working days (Table 9).

Of the 203 samples results which were reported after one working day of receipt, 110 samples (54%) required additional PSP LC-FLD quantitative analyses, thus incurring a delay in the reporting timeframe.

For reference, the turnaround times agreed with FSS and required from Cefas during the reporting period were as follows:

Table 9: Sample turnaround times (from sample receipt) specified by FSS and achieved by the laboratory

Toxin and analysis method	FSA specified targets	Laboratory statistics in the reporting period (all results combined)		
ASP by HPLC	80% within 1 working day 100% within 3 working days			
Lipophilic toxins by LC- MS	70% within 1 working day 100% within 3 working days	93% within 1 working day 99.8% within 2 working days		
PSP by HPLC (screen)	80% within 1 working day 100% within 3 working days	100% within 3 working days		
PSP by HPLC (quantitation)	80% within 2 working days 100% within 4 working days			

Required turnaround times were therefore all met and for all analyses, delivery by the laboratory exceeded the targets agreed with FSS.

In addition to daily reports, all results from samples received between Monday and Friday the previous week were collated and reported in a weekly results sheet to FSS, released by the following Tuesday.

A summary of results turnaround times, for inshore samples from day of receipt to completion of all required analyses for the period 1st January to 31st December 2015 is given in Table 10.

Table 10: Turnaround times, by Local Authority region, for samples received from inshore areas in2015

Local Authority	No. samples received	No. completed results reported within one working day of receipt of sample	No. completed results reported two working days after receipt of sample	No. completed results reported three working days after receipt of sample
Argyll & Bute Council	775	714	61	0
Comhairle nan Eilean Siar: Lewis & Harris	349	321	25	3
Comhairle nan Eilean Siar: Uist & Barra	159	153	6	0
Dumfries & Galloway Council	81	77	4	0
Fife Council	82	77	5	0
East Lothian Council	35	35	0	0
Highland Council: Lochaber	245	235	9	1
Highland Council: Ross & Cromarty	131	119	11	1
Highland Council: Skye & Lochalsh	130	115	15	0
Highland Council: Sutherland	205	187	18	0
North Ayrshire Council	59	50	9	0
Orkney Islands Council	0	0	0	0
Shetland Islands Council	722	690	32	0
South Ayrshire Council	39	36	3	0
Totals	3,012	2,809 (93%)	198 (7%)	5 (<1%)

5. Phytoplankton Methodology

5.1. Water collection

For the monitoring period 1st January to 31st December 2015, a total of 1,308 seawater samples were collected from 52 sampling locations within 13 Local Authority regions (Table 11). As for shellfish samples, seawater samples were collected by officers operating on behalf of several contractors appointed by the FSS. A list is provided in Table 11.

Local Authority	Sampling contractor	No. samples received	No. samples rejected
Argyll & Bute Council	Argyll & Bute Council	262	1
Comhairle nan Eilean Siar: Lewis & Harris	Hall Mark Meat Hygiene	164	
Comhairle nan Eilean Siar: Uist & Barra	Hall Mark Meat Hygiene	37	
Dumfries & Galloway Council	FSS Operations	64	
Fife Council	Hall Mark Meat Hygiene	36	
Highland Council: Lochaber	Highland Council	96	
Highland Council: Ross & Cromarty	Highland Council	69	1
Highland Council: Skye & Lochalsh	Highland Council	68	
Highland Council: Sutherland	Highland Council	89	
North Ayrshire Council	FSS Operations	6	
Orkney Islands Council	Hall Mark Meat Hygiene	31	
Shetland Islands Council	Hall Mark Meat Hygiene	354	
South Ayrshire Council	FSS Operations	32	
TOTAL		1,308	2

Table 11: Number of water samples collected during the reporting period by Local Authority region	
and by sampling contractor.	

Samples were collected and packaged in accordance with SRSL's guidance and protocols and sent to the SRSL Oban laboratory for analysis. Two samples were not analysed as they were not required, due to the reduced autumn sampling schedule.

The sampling protocol used by appointed officers followed that described by the UKNRL SOP for the collection of water samples for toxic phytoplankton analysis. The aim of this method is to collect samples of phytoplankton that are representative of the community in the water body. The water sample is taken as close to the shellfish bed as possible and at the same location from where shellfish samples for tissue analysis are collected. The sampling method used depends on the depth of water at the site, and water samples are collected with either a PVC sample tube (the preferred method) or a bucket, as appropriate. A well-mixed 500 mL sub-sample of this water is then preserved using Lugol's iodine and returned (usually by post) to SRSL for analysis.

The majority of samples (99.31%) arrived at the laboratory within one or two working days of sample collection, 87.23% and 12.08%, respectively (Table 12). Of the samples taking more than one working day to arrive, over 88.6% were from remote areas, with the majority of these samples being collected on islands (77.7%). Delays from non-remote areas were generally attributed to the time at which the samples were collected, thus missing the routine post office collection deadline.

Table 12: Number of phytoplankton samples received from each Local Authority region and time taken between collection and receipt at SRSL in 2015.

Local Authority	No.	No. received	No. received	No. received	No. received
	samples	1 working	2 working	3 working	≥4 working

	received	day post collection	days post collection	days post collection	days post collection
Argyll & Bute Council	262	229	31	2	0
Comhairle nan Eilean Siar: Lewis & Harris	164	149	15	0	0
Comhairle nan Eilean Siar: Uist & Barra	37	23	11	2	1
Dumfries & Galloway Council	64	64	0	0	0
Fife Council	36	25	11	0	0
Highland Council: Lochaber	96	70	24	2	0
Highland Council: Ross & Cromarty	69	61	8	0	0
Highland Council: Skye & Lochalsh	68	51	17	0	0
Highland Council: Sutherland	89	87	2	0	0
North Ayrshire Council	6	4	1	1	0
Orkney Islands Council	31	22	9	0	0
Shetland Islands Council	354	327	27	0	0
South Ayrshire Council	32	29	2	0	1
Totals	1,308	1,141 (87.23%)	158 (12.08%)	7 (0.54%)	2 (0.15%)

5.2. Phytoplankton analysis

Assessment of suitability of the samples for analysis

On arrival at the laboratory, all samples were assigned a unique laboratory number and assessed for their suitability for analysis.

<u>Methodology</u>

The UKNRL protocol for the identification and enumeration of potential toxin-producing phytoplankton was used to analyse all water samples. In the laboratory, a sub-sample of 50 mL is routinely settled (Figure 22), but if the amount of sediment present in the sub-sample is excessive, 25 mL or 10 mL sub-samples may be used.





Figure 22: Phytoplankton cells in a 50 mL sub sample of Lugol's-fixed seawater are allowed to settle onto the base plate of the chamber prior to analysis.

The phytoplankton cells within the sub-sample are allowed to sink onto the base of a settling chamber for a minimum period of 20 hours (for a 50 mL sub-sample) before analysis. The cells are then identified and enumerated using an inverted light microscope. Final cell densities are calculated to express phytoplankton concentration as the number of cells per litre (cells/L) of sample. The method is accredited to ISO 17025 standard.

Test outcome

"Trigger" levels for toxic phytoplankton concentrations in the water column have been determined historically by comparing phytoplankton count data with the presence of biotoxins in shellfish tissue. Trigger levels remained at the same cell concentrations as used in 2014 (Table 8, Page 41).

5.3. Reporting of results

Upon completion of analyses, results were collated and quality control checked prior to submission to the FSS. During 2015, SRSL was able to report all results within three working days of sample receipt. This turnaround time is in full compliance with the targets specified by the FSS (98% of results reported within 3 working days of sample receipt).

In addition to the daily reporting schedule, all results from samples received the previous week were collated and reported in a weekly results sheet to FSS, released by the following Tuesday.

6. Results of the inshore biotoxin & phytoplankton monitoring programmes

The following section gives an overview of all shellfish biotoxin and phytoplankton sampling locations and results by Local Authority region and pod for the period 1st January to 31st December 2015.

Site locations and corresponding maps are correct as of 31st December 2015, in accordance with the FSS Biotoxin RMP information list.

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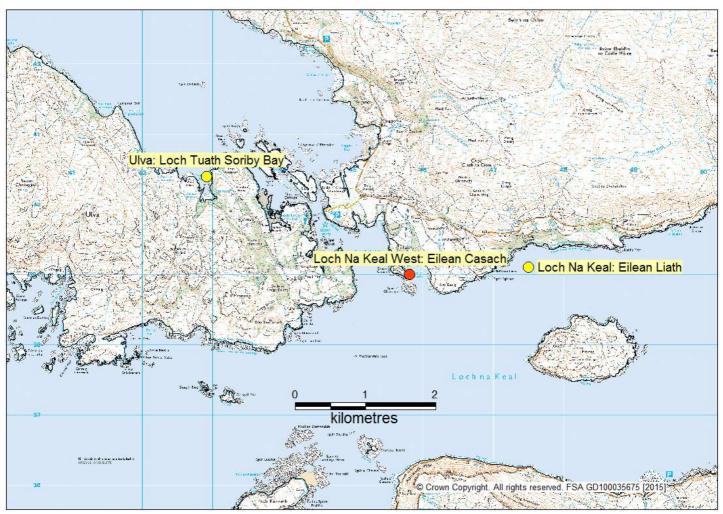
No sample received/No result
Test not required
ASP: <limit (loq)<br="" of="" quantitation="">LTs: <reporting (rl)<br="" limit="">PSP: Not detected (ND), <400 ug/kg (by semi quantitative analyses) or <rl (by="" full="" quantitative<br="">analyses)</rl></reporting></limit>
ASP: >LOQ but ≤20mg/kg LTs: >RL but ≤MPL PSP: Quantifiable levels ≤800ug/kg
ASP: >20mg/kg LTs: >MPL PSP: >800ug/kg
Toxin levels increasing from previous week(s)
Toxin levels decreasing from previous week(s)

Key to shellfish results summary

Key to phytoplankton results summary

No sample received/No result
Test not required
Pseudo-nitzschia spp.: <40,000 cells/L
Dinophysis spp.: <80 cells/L
Prorocentrum lima: <80 cells/L
Alexandrium spp.: Not detected
Pseudo-nitzschia spp.: 40,000 to <50,000 cells/L
Dinophysis spp.: 80 cells/L
Prorocentrum lima: 80 cells/L
Alexandrium spp.: 20 cells/L
Pseudo-nitzschia spp.: ≥50,000 cells/L
Dinophysis spp.: ≥100 cells/L
Prorocentrum lima: ≥100 cells/L
Alexandrium spp.: ≥40 cells/L

6.1. ARGYLL & BUTE COUNCIL



RMP position: AHA position:

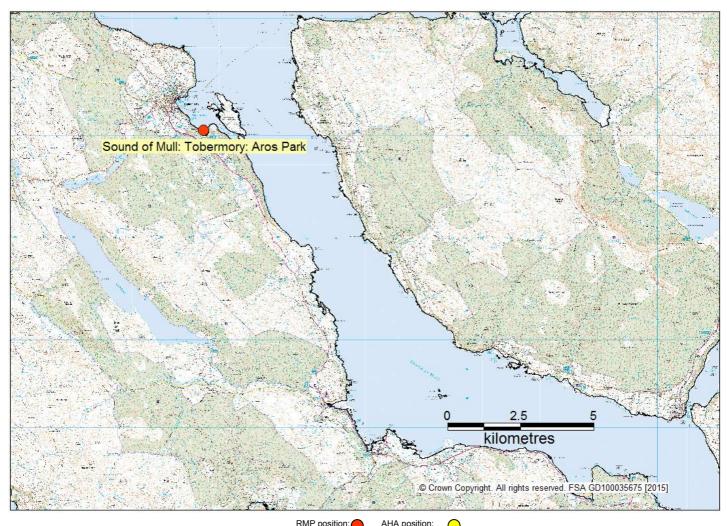
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
1	Argyll and Bute Council	Loch Na Keal West	Eilean Casach	AB 286 082 13	Pacific oysters	Yes	NM45723919
1	Argyll and Bute Council	Ulva: Loch Tuath Soriby Bay	Loch Tuath Soriby Bay	AB 285 081 13	Pacific oysters		NM42944022
1	Argyll and Bute Council	Loch Na Keal	Eilean Liath	AB 284 080 13	Pacific oysters		NM47423929

Biotoxin results from Loch Na Keal West: Eilean Casach

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Pseudo - nitzschia			0	82		1	1				100	-							-			1		-	100									1					14			1			2		100	8.8		1
Dinophysis		2.23	100	10	2		1					-							1									-									1		2			1	1				10.0	2.2		10
Prorocentrum lima			~	20			1	1				-																			T		-				1		1								100	0.0		10
Alexandrium		2.25	100	10		1	1	1	-										1.00								1							1	1		1.000		1			0.3	1.0		2.13		1811	2.13		100

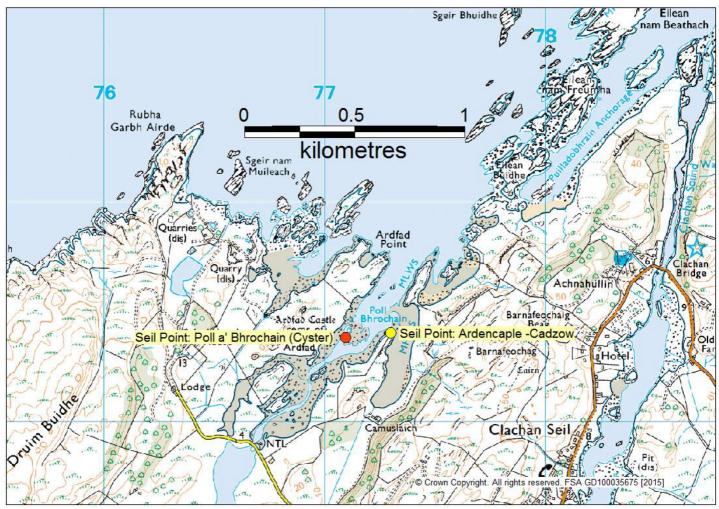




		1.00					
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
2	Argyll and Bute Council	Sound of Mull: Tobermory	Aros Park	AB 258 076 08	Common mussels	Yes	NM51505420

No samples received from Pod 2 between 1^{st} January and 31^{st} December 2015





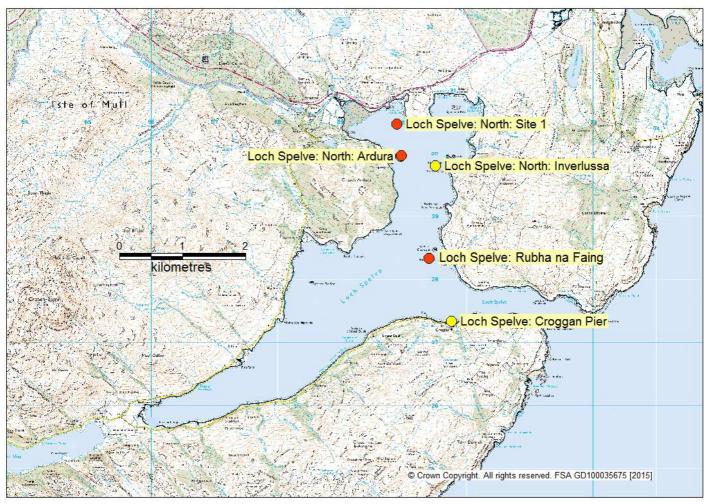
RMP position:	AHA position:
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
4	Argyll and Bute Council	Seil Point	Ardencaple - Cadzow	AB 245 069 13	Pacific oysters		NM773194
4	Argyll and Bute Council	Seil Point	Poll a' Bhrochain (Cyster)	AB 245 070 13	Pacific oysters	Yes	NM77091938

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Biotoxin results from	Seil Point: Poll a	Bhrochainn (Cyster)
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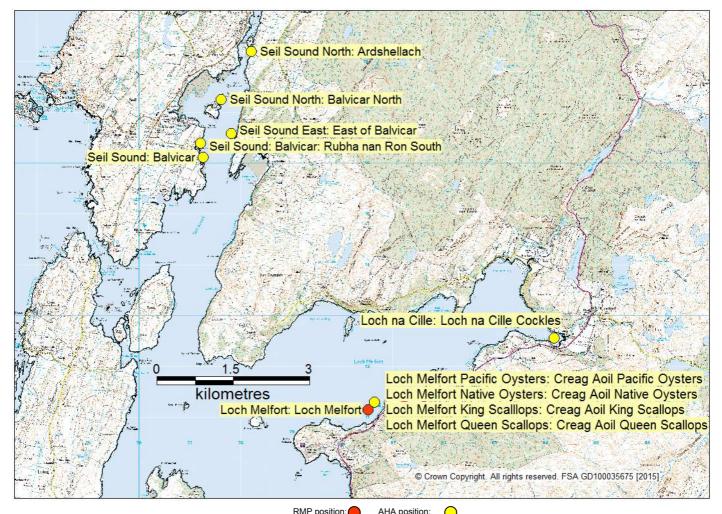


		RM	MP position: 🔴 AH	A position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
5	Argyll and Bute Council	Loch Spelve: North	Inverlussa	AB 200 056 08	Common mussels		NM705298
5	Argyll and Bute Council	Loch Spelve: North	Site 1	AB 200 057 08	Common mussels	Alternate RMP	NM69893046
5	Argyll and Bute Council	Loch Spelve: Rubha na Faing	Rubha na Faing	AB 202 059 08	Common mussels	Alternate RMP	NM70402833
5	Argyll and Bute Council	Loch Spelve: Croggan Pier	Croggan Pier	AB 199 055 13	Pacific oysters		NM70752733
5	Argyll and Bute Council	Loch Spelve: North	Ardura	AB 200 1915 08	Common mussels	Yes	NM69952995

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Biotoxin results from Loch Spelve: North: Site1

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		Г		A position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
6	Argyll and Bute Council	Loch Melfort	Loch Melfort	AB 178 051 08	Common mussels	Yes	NM80441090
6	Argyll and Bute Council	Seil Sound East	East of Balvicar	AB 247 703 08	Common mussels		NM77801659
6	Argyll and Bute Council	Seil Sound North	Ardshellach	AB 247 071 13	Pacific oysters		NM782182
6	Argyll and Bute Council	Seil Sound: Balvicar	Balvicar	AB 247 072 13	Pacific oysters		NM77251612
6	Argyll and Bute Council	Seil Sound North	Balvicar North	AB 247 735 13	Pacific oysters		NM77601726
6	Argyll and Bute Council	Seil Sound: Balvicar	Rubha nan Ron South	AB 247 728 13	Pacific oysters		NM772164
6	Argyll and Bute Council	Loch na Cille	Loch na Cille Cockles	AB 617 1204 04	Common cockles		NM84231259
6	Argyll and Bute Council	Loch Melfort Pacific Oysters	Creag Aoil Pacific Oysters	AB 671 1448 13	Pacific oysters		NM80611113
6	Argyll and Bute Council	Loch Melfort Native Oysters	Creag Aoil Native Oysters	AB 672 1449 12	Native oysters		NM80611113
6	Argyll and Bute Council	Loch Melfort King Scallops	Creag Aoil King Scallops	AB 673 1450 07	King scallops		NM80611113
6	Argyll and Bute Council	Loch Melfort Queen Scallops	Creag Aoil Queen Scallops	AB 674 1451 15	Queen scallops		NM80611113

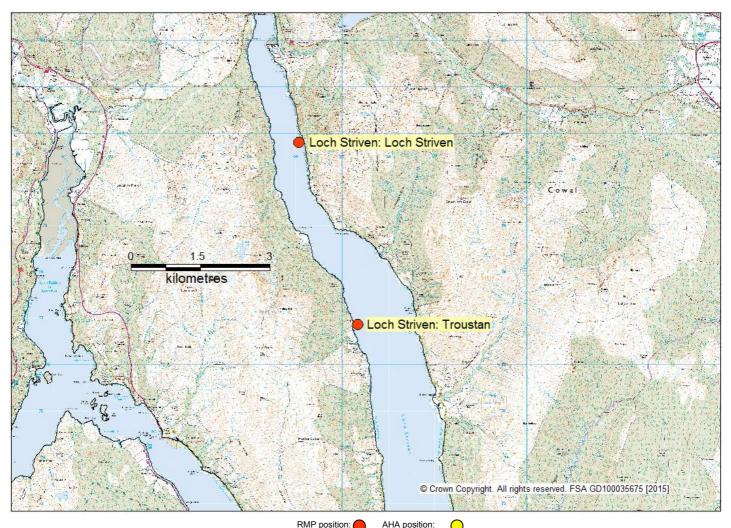
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ASP	÷.,										2			14			1		1	10	-	100		2	1	-		8 0	8				1	1		- 23					1 1					0.0					7
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LT - AZAs											-		T								1																									1.1	-			T	
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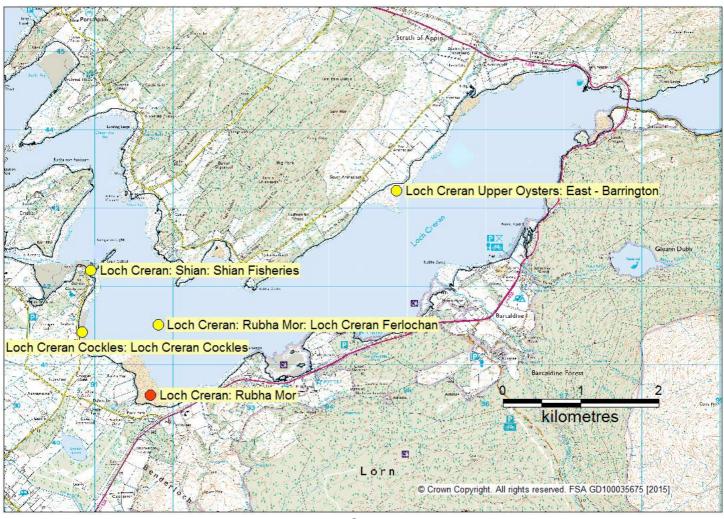
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
7	Argyll and Bute Council	Loch Scridain East	Aird Fada	AB 314 054 08	Common mussels	Yes	NM454652484
7	Argyll and Bute Council	Kilfinichen Bay	Kilfinichen Bay	AB 695 1507 04	Common cockles	Alternate RMP	NM48792838
7	Argyll and Bute Council	Loch Scridain East Pacific Oysters	Aird Fada Pacific Oysters	AB 663 1439 13	Pacific oysters		NM4595724892
7	Argyll and Bute Council	Loch Scridain East Pacific Oysters	Slochd Bay Pacific Oysters	AB 663 1443 13	Pacific oysters		Not given
7	Argyll and Bute Council	Loch Scridain East King Scallops	Aird Fada King Scallops	AB 665 1441 07	King scallops		NM4595724892
7	Argyll and Bute Council	Loch Scridain East King Scallops	Slochd Bay King Scallops	AB 665 1445 07	King scallops		Not given
7	Argyll and Bute Council	Loch Scridain East Queen Scallops	Aird Fada Queen Scallops	AB 666 1442 15	Queen scallops		NM4595724892
7	Argyll and Bute Council	Loch Scridain East Queen Scallops	Slochd Bay Queen Scallops	AB 666 1446 15	Queen scallops		Not given

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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
8	Argyll and Bute Council	Loch Striven	Troustan	AB 205 063 08	Common mussels	Alternate RMP	NS07337686
8	Argyll and Bute Council	Loch Striven	Loch Striven	AB 205 062 08	Common mussels	Yes	NS06078086

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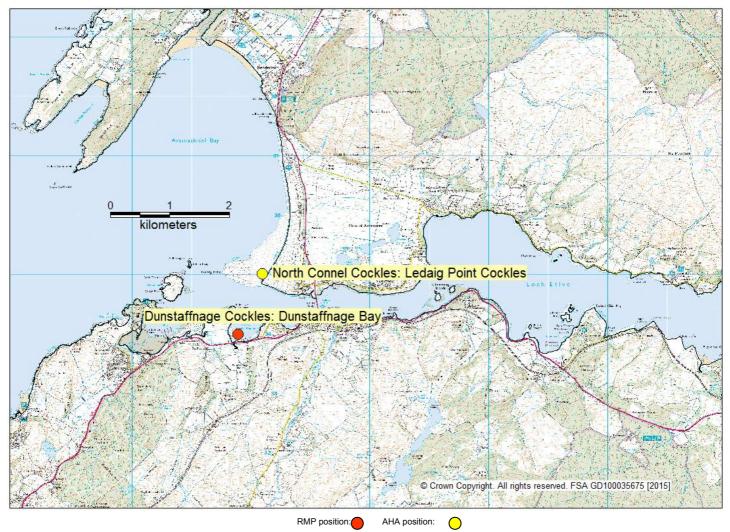
			RMP position: Al	HA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
9	Argyll and Bute Council	Loch Creran: Shian	Shian Fisheries	AB 131 023 13	Pacific oysters		NM90944220
9	Argyll and Bute Council	Loch Creran Upper Oysters	East - Barrington	AB 129 021 13	Pacific oysters		NM94854322
9	Argyll and Bute Council	Loch Creran: Rubha Mor	Rubha Mor	AB 130 022 13	Pacific oysters	Yes	NM917406
9	Argyll and Bute Council	Loch Creran: Rubha Mor	Loch Creran Ferlochan	AB 130 742 13	Pacific oysters		NM918415
9	Argyll and Bute Council	Loch Creran Cockles	Loch Creran Cockles	AB 729 1685 04	Common cockles		NM90834140

Biotoxin results from Loch Creran: Rubha Mor: Rubha Mor

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Phytoplankton results from Loch Creran: Rubha Mor: Rubha Mor

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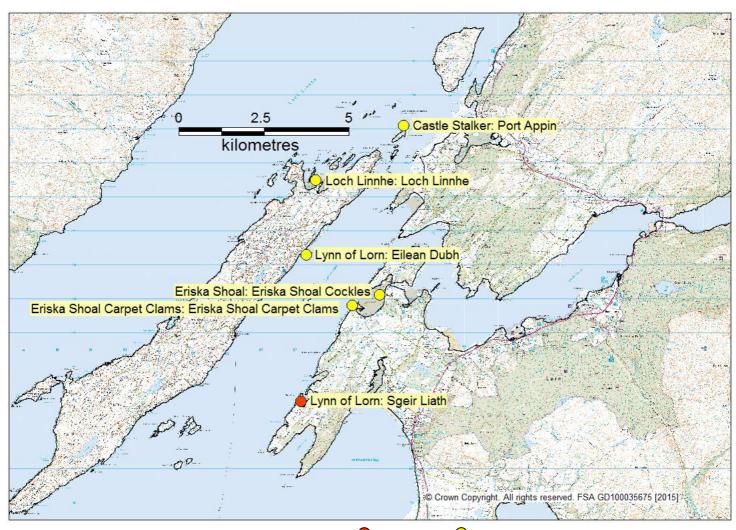


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RMP position:	AHA pos

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
10	Argyll and Bute Council	North Connel Cockles	Ledaig Point Cockles	AB 758 1909 04	Common cockles		NM90183500
10	Argyll and Bute Council	Dunstaffnage Cockles	Dunstaffnage Bay	AB 696 1511 04	Common cockles	Yes	NM88973420

Diatovia regulto from	Dunatoffnaga	Cookloo	Dunatoffnaga Pa	Indicator	(muccolo)
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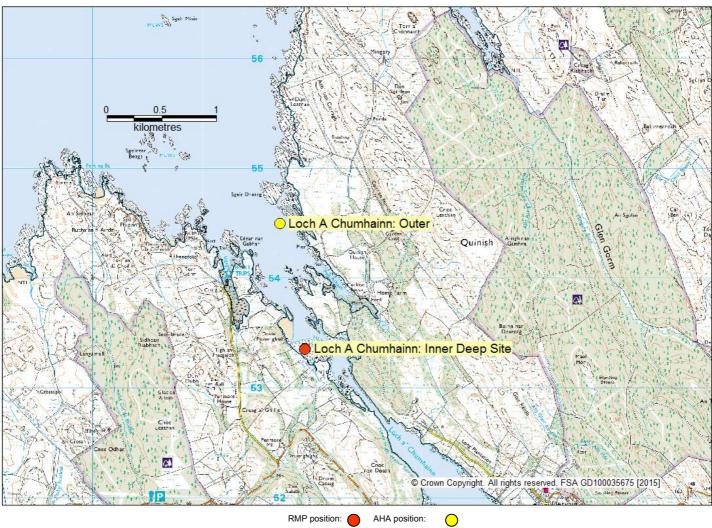
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
11	Argyll and Bute Council	Lynn of Lorn: Sgeir Liath	Sgeir Liath	AB 318 068 13	Pacific oysters	Yes	NM87163899
11	Argyll and Bute Council	Loch Linnhe	Loch Linnhe	AB 172 047 13	Pacific oysters		NM87614548
11	Argyll and Bute Council	Lynn of Lorn: Eilean Dubh	Eilean Dubh	AB 319 066 08	Common mussels		NM873433
11	Argyll and Bute Council	Eriska Shoal	Eriska Shoal Cockles	AB 490 907 04	Common cockles		NM89474213
11	Argyll and Bute Council	Eriska Shoal Carpet Clams	Eriska Shoal Carpet Clams	AB 547 1006 02	Carpet clams		NM88774188
11	Argyll and Bute Council	Castle Stalker	Port Appin	AB 492 909 04	Common cockles		NM90194710

Biotoxin results from Lynn of Lorn: Sgeir Liath (mussels)

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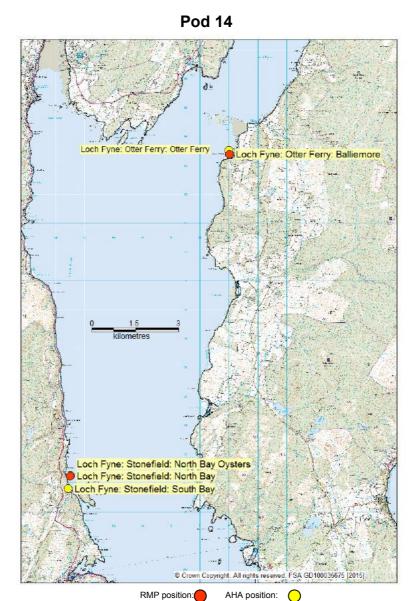


RMP position:		AHA position:
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
12	Argyll and Bute Council	Loch A Chumhainn: Inner Deep Site	Inner Deep Site	AB 112 017 13	Pacific oysters	Yes	NM40935336
12	Argyll and Bute Council	Loch A Chumhainn: Outer	Outer	AB 113 018 13	Pacific oysters		NM40705450

Biotoxin results from Loch A Chumhainn: Inner Deep	Site
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ASP		1								1						- 2	2			8	2.23		1 - C		×.		14	10	2	0			0.0			2.23		0 8			2.0					S 8			2		1
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LT - YTXs		1										-									1		-				-		2				1			1								1		1.0					Π
PSP													1		-		2				2.23		1				14			10	-		0.0			2. 23		6 - S	1.0		10			1		63 - S	1.10		1	1	



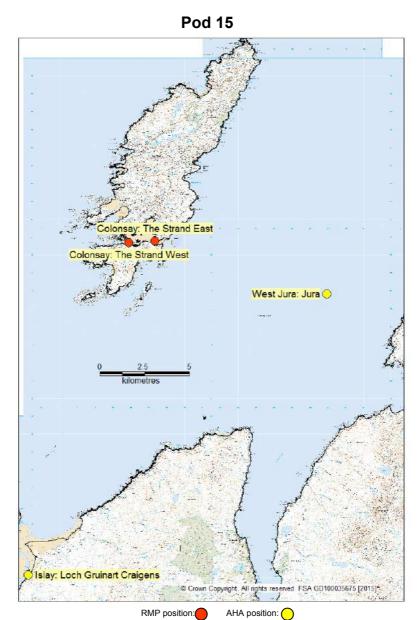
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
14	Argyll and Bute Council	Loch Fyne: Stonefield	North Bay	AB 154 043 15	Queen scallops	Yes	NR86487225
14	Argyll and Bute Council	Loch Fyne: Stonefield	South Bay	AB 154 044 15	Queen scallops		NR864718
14	Argyll and Bute Council	Loch Fyne: Otter Ferry	Balliemore	AB 151 039 13	Pacific oysters	Alternate RMP	NR92178350
14	Argyll and Bute Council	Loch Fyne: Otter Point	Otter Point	AB 714 1659 04	Common cockles		NR91998340
14	Argyll and Bute Council	Loch Fyne: Stonefield	North Bay Oysters	AB 435 840 13	Pacific oysters		NR86487225

Biotoxin results from Loch Fyne: Otter Ferry: Balliemore
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		1.4	Jan		- 11		Fe	b			Ma	r			A	pr				Ma	y	1		Ju	n			5	Jul		- 1		Aug		12		Se	p		1	C	oct		1	N	ov			D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	3 1	4 1	5	16 1	7 1	8	19 2	20	21	22	23	24	25	26	27	28	29	30	31	32 3	33 3	4 3	5 3	6 3	7 3	8 39	9 40	41	42	43	3 44	45	46	47	48	49	50	51	52
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LT - AZAs											-							1	1				-					-															-				-				
LT - YTXs											-							1	1		1		-					-			1												-			1.1	-				
PSP													-	- 4		*			-	-	-	-	-		-	5 2	-											10	3 3 3		1		1			100	S 2 - 22		8 - C		

Phytoplankton results from Loch Fyne: Otter Ferry: Balliemore

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Pseudo - nitzschia			0	31.0	2			12			-	1				-		-				-								100			1				1			10	8		1	*	12		1	
Dinophysis		2.20	0	30.0		10 0		100	1			-																		1			-				1			10	3		1	1	12		2	
Prorocentrum lima			0	32.0	8			1	1									-																						10	2			1	12			
Alexandrium	100	2	10	30.0	3	S 3		100	S					1							1.00																1			100	3			1	100			100

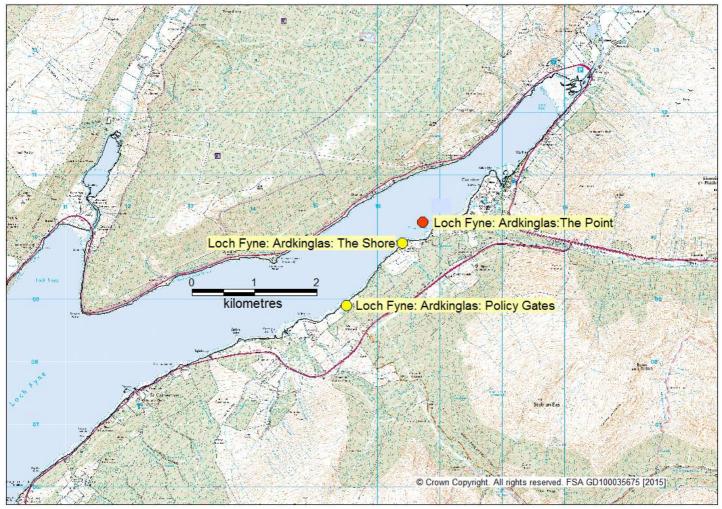


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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
15	Argyll and Bute Council	Colonsay	The Strand East	AB 041 1199 13	Pacific oysters	Yes	NR37318979
15	Argyll and Bute Council	Colonsay	The Strand West	AB 041 009 13	Pacific oysters	Alternate RMP	NR35858971
15	Argyll and Bute Council	Islay	Loch Gruinart Craigens	AB 094 011 13	Pacific oysters		NR30247116
15	Argyll and Bute Council	West Jura	Jura	AB 482 805 16	Razors		NR46908684

Biotoxin	results	from	Colonsay:	The	Strand	East

1			Jan		- 11		Fe	eb		-	Ma	ar			1	Apr		-1		M	ay		1	Ju	In	- 7			Jul			1	AL	g			1	Sep				Oc	t	-1-		Nov		1	I	Dec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43 4	4 4	5 4	6 4	7 48	49	9 5	0 5	1 8
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LT - AZAs				8				1																													1														
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PSP				1									- 22					-			-							-			1	-							-							1	-				

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Pseudo - nitzschia		2.20		2 8 2		1				-	100				110						-			127	-				1			1				-	- 6		2		1	1000			
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Prorocentrum lima		2.20		2 8 2		1		18													-			1.5													8					8 8			
Alexandrium				2.5		1		1							1									1.5													1				2				



RMP position:	AHA position:	\bigcirc
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	The Point	AB 147 035 08	Common mussels	Yes	NN16731024
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	Policy Gates	AB 147 034 08	Common mussels		NN155089
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	The Shore	AB 147 036 13	Pacific oysters		NN164099
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	The Point	AB 147 035 13	Pacific oysters	Alternate RMP	NN17411015
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	Policy Gates	AB 147 034 13	Pacific oysters		NN155089
16	Argyll and Bute Council	Loch Fyne: Ardkinglas	The Shore	AB 147 036 08	Common mussels		NN164099

Biotoxin results from Loch Fyne: Ardkinglas: The Point (mussels)

12			Jan				Feb		1	M	lar				Ap	r			M	lay			Ju	ın				Jul				Aug		1		Sep				0	ct			No	v	- 1		De	+C
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LT - AZAs														1.0						1		10						1						11															
LT - YTXs														1.0				-	-	-		1	-	-			-							100			-									-			
PSP											8.3	8 A		1.5			-	-	-	-	-	-	-		0 0			8 8	1			8			1.0		0 S	1.0							63 - S	1.10			

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Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	3 19	9 20	0 21	1 22	2 2	3 24	25	5 26	5 27	7 2	28 2	9 3	0 3	31 3	2	33 :	34 3	35	36	37	38	39	40	41	42	43	44	45	46	47	4	8 4	9 5	0 5	51 5
Pseudo - nitzschia				2 3			° *					1.0	-					-		1					-										-										0.5				1	14	1	-	10
Dinophysis				2 2			0					-	-				8			-	1														-										0.5				1	14	1	2	10
Prorocentrum lima				5 5			× ×						-																						-										0.0				1	1	1		10
Alexandrium				2.5			е. – е																		115										-										0.5				1	12	1	2	10





RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
18	North Ayrshire Council	Machrie Bay	Machrie Bay Razors	AB 510 929 16	Razors		NR88853380
18	Argyll and Bute Council	Campbeltown Loch	Kildalloig Bay	AB 029 008 04	Common cockles	Yes	NR752198
18	Argyll and Bute Council	Carradale Bay	Carradale Bay Razors	AB 511 930 16	Razors		NR80503690
18	Argyll and Bute Council	Saddell Bay	Saddell Bay Razors	AB 512 931 16	Razors		NR7915031420
18	North Ayrshire Council	Arran: Pirnmill	Pirnmill	NA 008 330 16	Razors		NR87004400

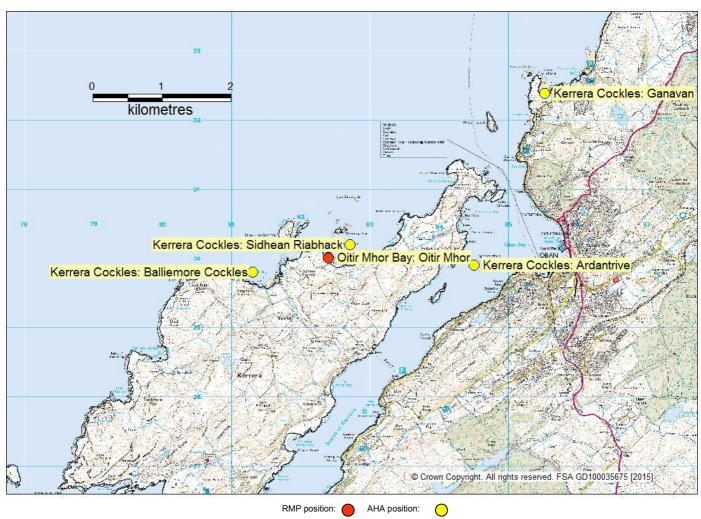
Biotoxin results from Campbeltown Loch: Kildalloig Bay (mussels)

			Jan		- 12		Fe	b			Mai	1	1		A	pr			N	lay		1	Ju	In				Jul	-	-1	10	Aug				Sep	0			Oc	t			Nov		- 1		De	c	
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Phytoplankton results from Campbeltown Loch: Kildalloig Bay

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Pseudo - nitzschia	8	0.0		S 8			° °			2.33		0 S						-						-		1						11	-		1			S		8.8			() S						5 - 53		0
Dinophysis	8 3	0 - 0		S - S	- 2		8 3			2 - 23		65 - S																					F	-				S - S		2			8 S	1				2.1	2 2		8
Prorocentrum lima	8 3	0.0		0 S	- 2.		S. 3			2 - 23		65 - S						-																				2 - X		8.0			S 3						2.23		1
Alexandrium	8 8	2.23		9 S			8 - X		8.7	2.33		6 S								-				-		1			-1			1.			1			0 - 0		8.8			0.3	1.1		8		1	0.00		1



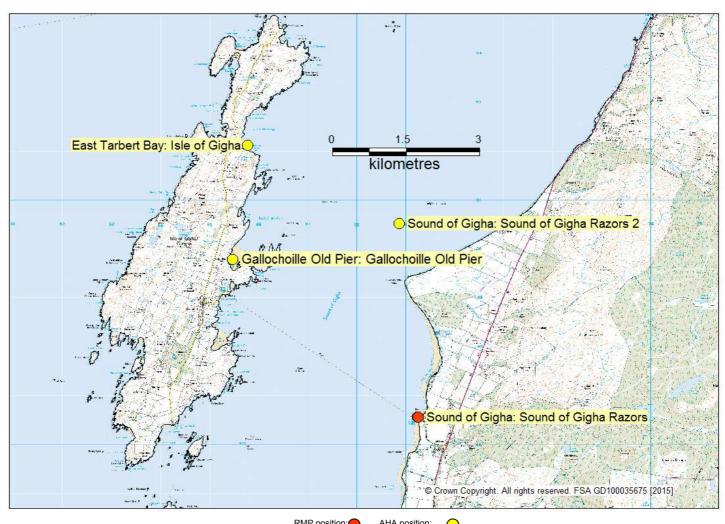


RMP position:		AHA position:
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
84	Argyll and Bute Council	Oitir Mhor Bay	Oitir Mhor	AB 308 701 13	Pacific oysters	Yes	NM82393001
84	Argyll and Bute Council	Kerrera Cockles	Ganavan	AB 697 1512 04	Common cockles		NM85523239
84	Argyll and Bute Council	Kerrera Cockles	Ardantrive	AB 697 1513 04	Common cockles		NM8405129900
84	Argyll and Bute Council	Kerrera Cockles	Sidhean Riabhack	AB 697 1514 04	Common cockles		Not given
84	Argyll and Bute Council	Kerrera Cockles	Balliemore Cockles	AB 697 1515 04	Common cockles		Not given

								I	Bio	to	kin	res	sult	s f	ror	n C	Ditii	r M	lho	r B	ay	0	itir	Mł	nor	(m	nus	sel	ls)								
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5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	47

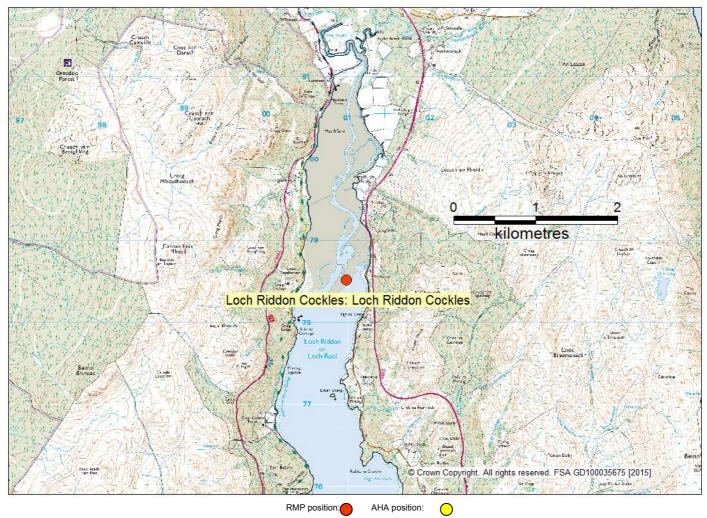
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Week	1	2	3	4	5	6	7	8	9	10	11 .	12	3	14 1	5	16 1	17 1	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	3 44	45	46	47	48	49	50	5	1
ASP													1	1									1	10							5 8			-			2.7		12.3			1					100				1	
T - OA/DTX/PTXs																												-			*	-	-	-	*	-	+	-	+	-	-	-						-				
LT - AZAs																															-								1									-				
LT - YTXs		-																													-								-									-		-	-	-
PSP													4.	1			2						1						6 - S		2 8						2.1		13 3								10.0			1		



			RIVIP position.				
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
123	Argyll and Bute Council	Sound of Gigha	Sound of Gigha Razors	AB 515 935 16	Razors	Yes	NR69234656
123	Argyll and Bute Council	East Tarbert Bay	Isle of Gigha	AB 541 972 13	Pacific oysters		NR65765212
123	Argyll and Bute Council	Sound of Gigha	Sound of Gigha Razors 2	AB 515 1250 16	Razors		NR68855052
123	Argyll and Bute Council	Gallochoille Old Pier	Gallochoille Old Pier	AB 699 1519 13	Pacific oysters		NR64504806

Biotoxin results from Sound of Gigha: Sound of Gigha Razors (mussels)

			Jan		- 11		Fe	b	-		Ma	r			Ap	r		1	M	lay		1	Ju	ın			5	Jul		-1		Aug		1		Se	p			0	oct		1	No	ov	- 1	1	De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 14	1 15	5 16	5 17	18	19	20	21	22	23	24	25	26	27	28	29	30 :	31	32 :	33 34	4 35	5 36	5 37	38	3 39	40	41	42	43	3 44	45	46	47	48	49	50	51	i
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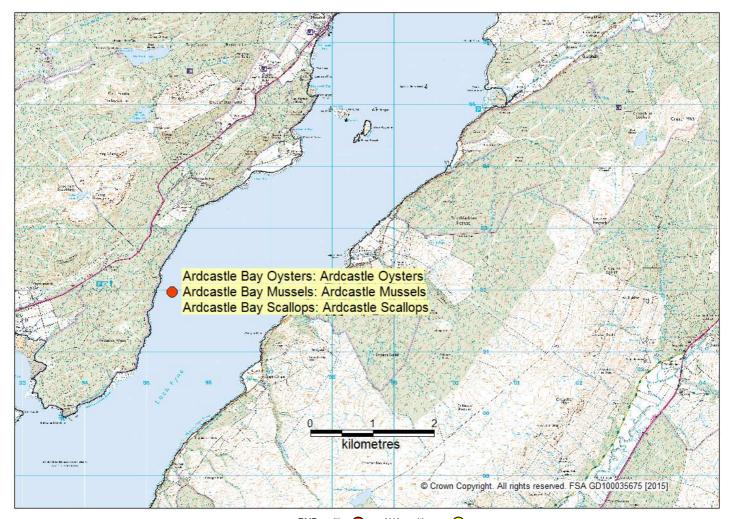


RMP position:	AHA position:
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	Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
ſ	123	Argyll and Bute Council	Loch Riddon Cockles	Loch Riddon Cockles	AB 656 1409 04	Common cockles	Yes	NS01157880

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Week	1 2	2 3	4	5	6	7	8	9	10	11 1	2 1	3 1	14	15	16	17	18	19	20	21	22	2 23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	4:	3 44	45	5 4	6 4	17 4	8 4	9 5	0 5	1 8
ASP	1 C			-			111		-	-							-					1			2			1	-	-			2 V		1	- 75		0.0			1	-	-								
LT - OA/DTX/PTXs				-						-										-	+	-	-	-	-	٠	-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-					
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Biotoxin results from Loch Riddon Cockles: Loch Riddon Cockles (mussels)



		RI	AHA	position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
145	Argyll and Bute Council	Ardcastle Bay Mussels	Ardcastle Mussels	AB 635 1281 08	Common mussels	Yes	NR95349200
145	Argyll and Bute Council	Ardcastle Bay Oysters	Ardcastle Oysters	AB 634 1280 13	Pacific oysters		NR95349200
145	Argyll and Bute Council	Ardcastle Bay Scallops	Ardcastle Scallops	AB 636 1282 15	King scallops		NR95349200

Biotoxin results from Ardcastle Bay Mussels: Ardcastle Mussels

		J	lan				F	eb		1	M	ar				Ap	r i			N	lay		1	Ju	In				Jul		1	· · · · ·	AL	g				Sep				0	ct	1		No	vc			De	ec
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
ASP										1					171	-		2		1	82.3		100	1.1		2.3			5 - 53		0 S	2.02		5 - 3		8. 3	2 23		0 X	1.0		S - S		20 X	2 - 23		60 - S			S - S	
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LT - AZAs					-					1		1						2		1	20.3		0	1.00		1											-		1												
LT - YTXs					-												*			1	80.3		100			1		-				-		-	-				-					-	1						
PSP					-		1						-	-		-	-	-	-	-	-	-	-	-	-	+	-		2 - 23		0 - S			S ()			2 23		0 S			0.0			2 - 23		60 - S			S - 0	

6.2. COMHAIRLE NAN EILEAN SIAR: LEWIS & HARRIS

Cattle 47 Beinn Fhada Tom Ta Alrigh Beinn Lèigh Beinn Bhuidhe Cnoc na h-lolaire Sheep Dip Liurbost FIMans Hamarshader Creag na Cuilce 53 32 Cnoc Rainich Ci Eilean Orasaigh Druim an Aoil Buaile Mhòr Cnoc a Stalcair Cnoc a' Bhuachaile Creag MLoch Leurbost: Loch Leurbost Loch Leurbost: Creag an Rainich CC Loch Leurbost: Eilean Mhiabhaig 🔾 10 Wr Crosbost hàrtain Cer 🕽 Eilean Mhiabhaig Fe Cnoc nan Each Loch Leurbost: Crosbost: Site 1 Crosbost - Cnoc nan Laog SEC. Âi Féil Stepping Stones Loch Leurbost: Crosbost: Site 2 Crosbost Carnan Mor och Holabha 0 Eilea Beinn Bhuidhe 0.5 Secir na h-Aon Chaorach 0 Na h-Eile n. Sgein h-Act kilometres Riosaigh Cnoc Berul Ceannmhoir Beinn a' Chladaich Mhain Chladaich Mhain © Crown Copyright. All rights reserved. FSA GD100035675 [2015]" Cnoc Glaic na Blathaich Beinn Tuirc

Pod 21

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
21	Comhairle nan Eilean Siar - Lewis & Harris	Loch Leurbost	Loch Leurbost	LH 168 114 08	Common mussels	Yes	NB37252492
21	Comhairle nan Eilean Siar - Lewis & Harris	Loch Leurbost	Creag an Rainich	LH 168 113 08	Common mussels		NB373249
21	Comhairle nan Eilean Siar - Lewis & Harris	Loch Leurbost	Eilean Mhiabhaig	LH 168 732 08	Common mussels		NB374247
21	Comhairle nan Eilean Siar - Lewis & Harris	Loch Leurbost: Crosbost	Site 1 Crosbost	LH 339 795 13	Pacific oysters		NB392243
21	Comhairle nan Eilean Siar - Lewis & Harris	Loch Leurbost: Crosbost	Site 2 Crosbost	LH 339 721 13	Pacific oysters		NB394242

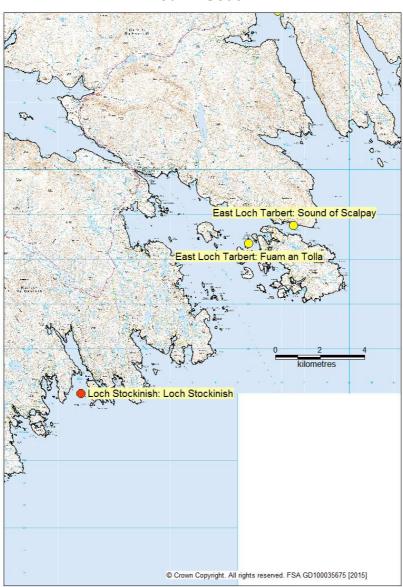
RMP position

AHA position.

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Biotoxin results from Loch Leurbost: Loch Leurbost

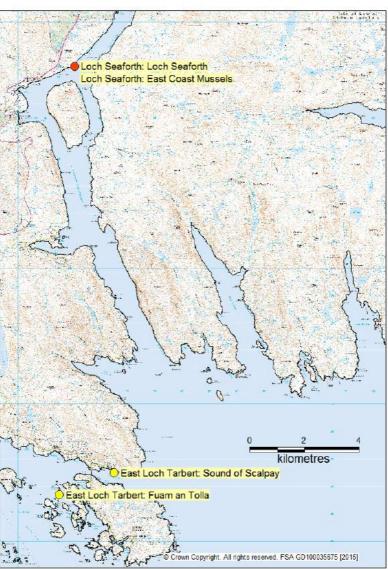
		5	Jan		- 11		Fe	b			Mar				Ap	r		-	N	lay			J	un	- 2		5	Jul		- 3		Aug		- 87-		Se	p			0	ct	-1		No	v	1		De	ec	-
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LT - AZAs															F															-							-					-				-				
LT - YTXs														111	F					F																	-					-			1	-				
PSP											1		1	1	31	3					8	1			1						+	1	8	-		1	0.3			100					0 8					



Pod 22 South

RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
22	Comhairle nan Eilean Siar - Lewis & Harris	Loch Stockinish	Loch Stockinish	LH 203 127 08	Common mussels	Yes	NG13319076
22	Comhairle nan Eilean Siar - Lewis & Harris	East Loch Tarbert	Fuam an Tolla	LH 057 104 08	Common mussels		NG205967
22	Comhairle nan Eilean Siar - Lewis & Harris	East Loch Tarbert	Sound of Scalpay	LH 057 106 08	Common mussels		NG225975
22	Comhairle nan Eilean Siar - Lewis & Harris	Loch Seaforth	Loch Seaforth	LH 193 126 08	Common mussels		NB21051239
22	Comhairle nan Eilean Siar – Lewis & Harris	Loch Seaforth	East Coast Mussels	LH 484 811 08	Common mussels	Alternate RMP	NB21051239



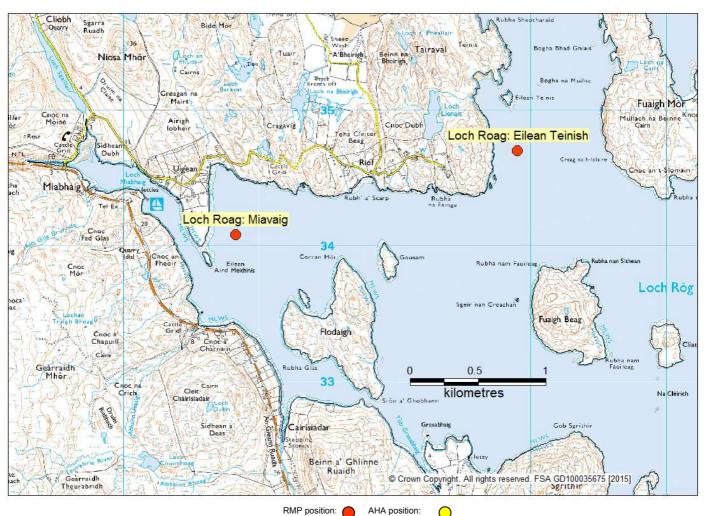
Pod 22 North

Biotoxin results from Loch Stockinish: Loch Stockinish

12		Ja	n				Fe	b			M	ar		1		1	Apr			1	1	May		1		Ju	n				Jul	Ę.		1	A	ug		1		Se	р		1		Oct	t	- 10-		Nov	1			De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	1:	3 14	1 1	15	16	17	18	19	2	0 2	1 2	22	23	24	25	26	27	28	29	30	31	32	2 33	34	35	36	37	38	39	40	0 4	1 4	2 4	43 4	4 4	15	46 4	47	48	49	50	51	1
ASP												1	1		14				2		1	1	1	1		1					0.0		100	-		-		1	2.7		1			1		1			0				- V		T
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Phytoplankton results from Loch Stockinish: Loch Stock	1111511

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Alexandrium				0 S			1	2				1								1	E				1	100		1	-														- 0	1	8	10	2	100	5 - 61		0.3



Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
23	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Miavaig	Miavaig	LH 188 123 08	Common mussels	Yes	NB09893423
23	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Eilean Teinish	Eilean Teinish	LH 338 720 08	Common mussels	Alternate RMP	NB119347

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PSP		1							1	1.0			14				_	-			1											_		-	_				1	-	100	S 2 - 23		1.2		
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RMP position:	AHA position:
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
24	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Barraglom	Loch Barraglom	LH 185 120 08	Common mussels	Alternate RMP	NB16693413
24	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Eilean Chearstaigh	Eilean Scarastaigh	LH 344 697 08	Common mussels		NB196328
24	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Eilean Chearstaigh	Buckle Point	LH 344 791 08	Common mussels	Yes	NB201324
24	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Ceabhagh	Keava	LH 381 772 08	Common mussels		NB20053450

Biotoxin results from Loch Roag: Eilean Chearstaig: Buckle Point

			Jan				Fel	b			Mar	1			Ap	r		-	M	ay			Jui	n				Jul		- 1		Aug		17		Se	р			0	ct		*	N	ov			De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1:	14	15	5 16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4 35	5 36	5 37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	5
ASP										1	1			14	200		N		8	2 23					1 2			- 11				1			-		1			1					0.0	S		8 V		
LT - OA/DTX/PTXs														1.1	-		1			-			111			*		*	-	-	-		-	-	-	-	-	-	-	-			1		1.1	-				
LT - AZAs														1.			1			-																	1													
LT - YTXs											- 1			1.5	-					-											- 1				T			E		1						1				
PSP		5									1		2	- ê			÷							-	*	*	-	-	-			2			1		1			1					- C			8 X		

Phytoplankton results from Loch Roag: Barraglom: Loch Barraglom

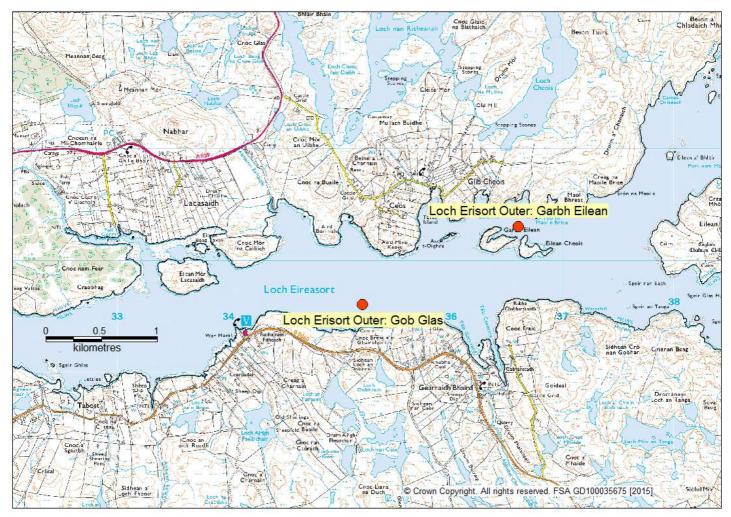
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Pseudo - nitzschia	1			0.8			1						1				-		1					-	1						100	-		-				1			10	3	1		1				0
Dinophysis		74		63 - S	1.12		2 - X					-					1		-						1									-				1			10	3	2		1				8
Prorocentrum lima	8	- 7		03 - S			¥ (-		-																						1	3			1				÷.,
Alexandrium				0.8			1										1		1									-										10						1		100			



		R					
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
76	Comhairle nan Eilean Siar - Lewis & Harris	Seilebost	Seilebost	LH 249 129 04	Common cockles	Yes	NG078978

1		J	n			Fel	0			Mai				1	Apr				M	ay			J	un				Jul		- 0		Aug	1	1		S	Sep				00	:t			Nov	1			Dee	C
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ASP			1				1		1	2		1	10	3	1	1	-		9 8	5 23		20	1		10			2 23			-	1	-			-									0	- 5	1	1		
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Week	1	2	3	4	5	. 1	6	7	8	9	10	11	12	13	14	15	16	17	18	3 19	20	0 21	1 22	2 2	3 24	1 25	5 26	27	28	29	30	31	32	33	34	35	36	37 3	38 3	9 4	0 4	1 4	2 4	3 44	4 4	5 46	5 47	7 4	18 4	9	50 8	51 4	2
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Prorocentrum lima	8.0	2 0		10	80.0		- P		1										1		1								110			1									1			10	3	2		2	13	10	- 23		
Alexandrium	8. 9	2 2		10	10				1																				11						10						1			1	3	2		1	1	10	1		

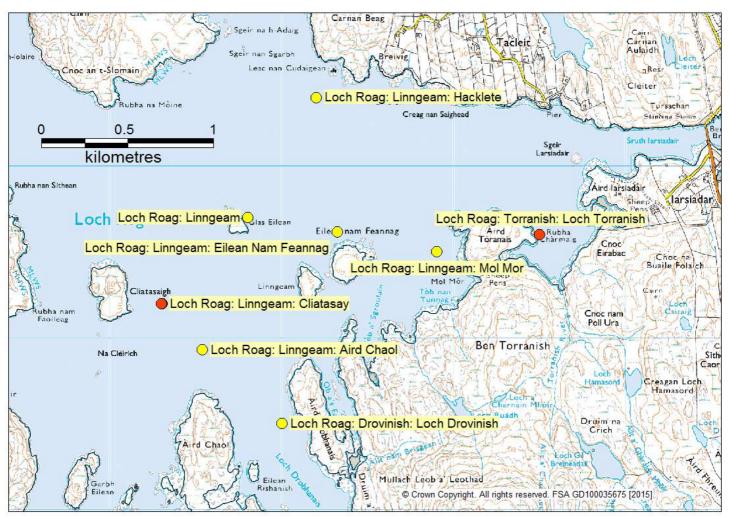


RMP position:	AHA position:	${\circ}$
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
124	Comhairle nan Eilean Siar - Lewis & Harris	Loch Erisort Outer	Gob Glas	LH 357 711 08	Common mussels	Yes	NB352206
124	Comhairle nan Eilean Siar - Lewis & Harris	Loch Erisort Outer	Garbh Eilean	LH 357 747 08	Common mussels	Alternate RMP	NB366213

Biotoxin results from Loch Erisort Outer: Gob Glas

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ASP						1							2	3	22	17	- 34						10																												
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		Jan				eb		2		ar		1		A					Ma					un				Jul		- 3		Aug		1			Sep		- 12		00			1-		Nov				Dec	
Week	1 2	3	4	5 1	5 7	8	9	10	11	12	13	14	1	5 1	6 1	7 1	8 1	9 2	0	21	22	23	24	25	5 26	27	28	29	30	31	32	33 3	4	35 3	36	37	38 ;	39	40	41	42	43	44	45	4	6 4	7 44	8 4	19 5	0 5	1
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LT - YTXs PSP Week 2seudo - nitzschia Dinophysis	1		-	5	6	1000						1		F	pr		- 1		Ma	ay		F.	J	lun		1		Ju	Î.			Au	g	35	36			39	40	41			44	48				8 4			
LT - YTXs PSP Week Pseudo - nitzschia	1		-	5	6	1000						1		F	pr		- 1		Ma	ay		F.	J	lun		1		Ju	Î.			Au	g	35	36			39	40	41			44	45				8 4			
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LT - YTXs PSP Week Seudo - nitzschia Dinophysis rorocentrum lima	1	2 3	4	5	6	7 8	9		0 1	1 1	2 1	3 1	14	15 Dpla	anl	17 kto	18	19	Ma 20	21 S fr	22	23	J 3 24	un 4 2 ch	Eri	6 2	/ 28	Ju 29	30 30 er:	31	32	Au 33	9 34 ea		36	37	38		40	41	42	43	44	4	5 4	6 4	17 4	84	49 5	i0 5'	1
LT - YTXs PSP Week seudo - nitzschia Dinophysis rorocentrum lima Alexandrium		2 3	4 			7 8	9		0 1	Ma	2 1	3 1 Phy	yto	15 Dpla	anl	17 kto	18 n r	es	Ma 20 ults	ay 21 s fr	22 ror	n l	J 3 24	un 4 2 ch	Eri	5 2 SOI	7 28 1	Ju 29 29 0 0 0 0 0 0 0 0 0 0 0 0 0	30 30 er:	31 Ga	32 rbł	Au 33 Ei	9 34 ea	n		37	38 Sep				42	43 ct			5 4	6 4	4		19 5	Dec	1
LT - YTXs PSP Week seudo - nitzschia Dinophysis rorocentrum lima Alexandrium Week		2 3	4 			7 8 Feb	9		0 1	Ma	2 1	3 1 Phy	yto	15 Dpla	anl	17 kto	18 n r	es	Ma 20 ults	ay 21 s fr	22 ror	n l	J 3 24	un 4 2 ch	Eri	5 2 SOI	7 28 1	Ju 29 29 0 0 0 0 0 0 0 0 0 0 0 0 0	30 30 er:	31 Ga	32 rbł	Au 33	9 34 ea	n		37	38 Sep				42	43 ct			5 4	6 4	4		19 5	Dec	1
LT - YTXs PSP Week 'seudo - nitzschia Dinophysis rorocentrum lima Alexandrium Week 2seudo - nitzschia		2 3	4 			7 8	9		0 1	Ma	2 1	3 1 Phy	yto	15 Dpla	anl	17 kto	18 n r	es	Ma 20 ults	ay 21 s fr	22 ror	n l	J 3 24	un 4 2 ch	Eri	5 2 SOI	7 28 1	Ju 29 29 0 0 0 0 0 0 0 0 0 0 0 0 0	30 30 er:	31 Ga	32 rbł	Au 33 Ei	9 34 ea	n		37	38 Sep				42	43 ct			5 4	6 4	4		19 5	Dec	1
LT - YTXs PSP Week seudo - nitzschia Dinophysis rorocentrum lima Alexandrium Week 2seudo - nitzschia Dinophysis		2 3	4 			7 8	9		0 1	Ma	2 1	3 1 Phy	yto	15 Dpla	anl	17 kto	18 n r	es	Ma 20 ults	ay 21 s fr	22 ror	n l	J 3 24	un 4 2 ch	Eri	5 2 SOI	7 28 1	Ju 29 29 0 0 0 0 0 0 0 0 0 0 0 0 0	30 30 er:	31 Ga	32 rbł	Au 33 Ei	9 34 ea	n		37	38 Sep				42	43 ct			5 4	6 4	4		19 5	Dec	1
LT - YTXs PSP Week Pseudo - nitzschia Dinophysis Prorocentrum lima Alexandrium Week Pseudo - nitzschia		2 3	4 			7 8	9		0 1	Ma	2 1	3 1 Phy	yto	15 Dpla	anl	17 kto	18 n r	es	Ma 20 ults	ay 21 s fr	22 ror	23 n l	J 3 24	un 4 2 ch	Eri	5 2 SOI	7 28 1	Ju 29 29 0 0 0 0 0 0 0 0 0 0 0 0 0	30 30 er:	31 Ga	32 rbł	Au 33 Ei	9 34 ea	n		37	38 Sep				42	43 ct			5 4	6 4	4		19 5	Dec	18



		R	AP position: AH	A position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Linngeam	Cliatasay	LH 187 699 08	Common mussels	Yes	NB13283323
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Linngeam	Mol Mor	LH 187 710 08	Common mussels		NB149335
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Linngeam	Linngeam	LH 187 122 08	Common mussels		NB138337
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Linngeam	Hacklete	LH 187 698 08	Common mussels		NB142344
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Torranish	Loch Torranish	LH 189 124 08	Common mussels	Alternate RMP	NB155336
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Drovinish	Loch Drovinish	LH 186 121 08	Common mussels		NB140325
125	Comhairle nan Eilean Siar - Lewis & Harris	Loch Roag: Linngeam	Eilean Nam Feannag	LH 187 939 08	Common mussels		NB143336
125	Comhairle nan Eilean Siar – Lewis & Harris	Loch Roag: Linngeam	Aird Chaol	LH 187 941 08	Common mussels		NB135329

Biotoxin results from Loch Roag: Linngeam: Cliatasay

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LT - YTXs							1										-												1		÷.								1		-			1		-			11						1
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RMP position:	AHA position:	\bigcirc
	AnA position.	\bigcirc

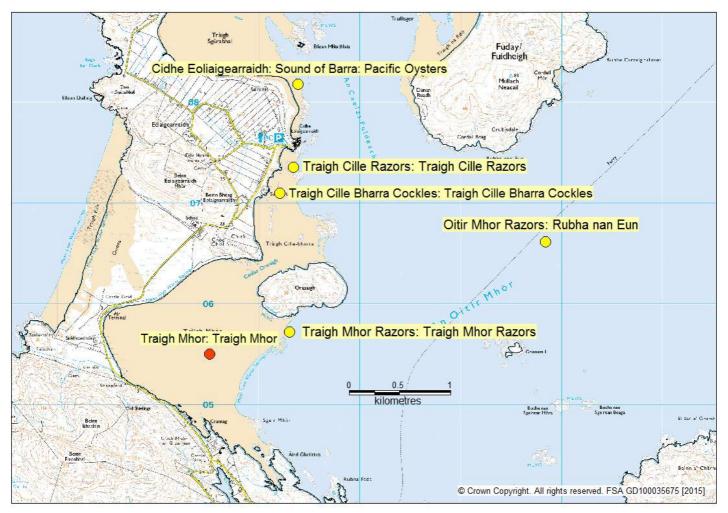
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
138	Comhairle nan Eilean Siar - Lewis & Harris	Tong Sands	Tong Sands Cockles	LH 605 1100 04	Common cockles	Yes	NB44613523
138	Comhairle nan Eilean Siar - Lewis & Harris	Broad Bay Aiginish	Aiginish	LH 743 1740 16	Razors	Alternate RMP	NB50003534

Biotoxin results from Broad Bay Aiginish: Aiginish

			Jan				Fel	b			Mar		1		A	or		1		May	1	-1		Jun	1	-1-			Jul				Aug	1	-		Se	ep		1		Oct			- 1	Nov	1			De	C		1
Week	1	2	3	4	5 6	5	7	8	9	10 1	1 1	2 1	3 1	4 1	5 1	6 1	7 1	8 1	19 2	20 2	21 2	2 2	23 2	24 2	25 2	26 2	27 2	28	29	30	31	32 3	33 3	4 3	5 :	36 3	37 3	8 3	9 4	0 4	1 4	2 4	3 4	4 4	5 4	16 4	47 4	48 4	49 5	50	51	52	
ASP		1						111			1			17		111				-	-	-				+	-	-	-								-						-1-										
LT - OA/DTX/PTXs		1			1									11							1										1						1								T								
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6.3. COMHAIRLE NAN EILEAN SIAR: UIST & BARRA





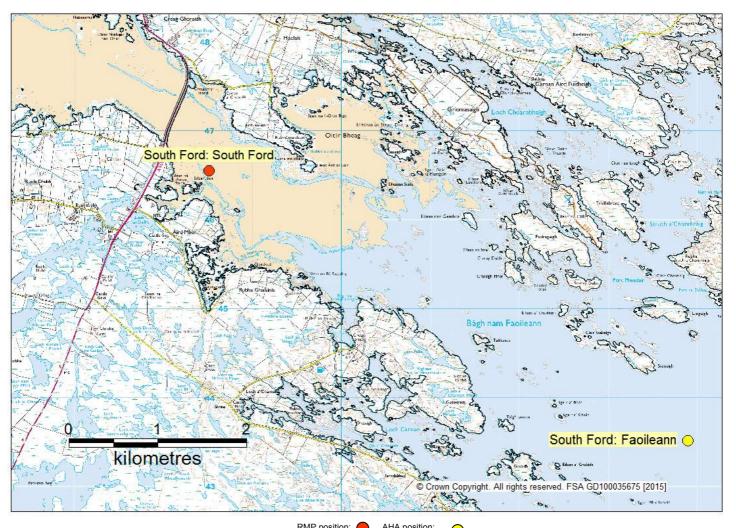
RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
77	Comhairle nan Eilean Siar - Uist & Barra	Traigh Mhor	Traigh Mhor	UB 282 165 04	Common cockles	Yes	NF705055
77	Comhairle nan Eilean Siar - Uist & Barra	Cidhe Eolaigearraidh	Sound of Barra: Pacific oysters	UB 427 830 13	Pacific oysters		NF71200710
77	Comhairle nan Eilean Siar - Uist & Barra	Traigh Cille Bharra	Traigh Cille Bharra Cockles	UB 392 790 04	Common cockles		NF71380818
77	Comhairle nan Eilean Siar - Uist & Barra	Oitir Mhor Razors	Rubha nan Eun	UB 683 1484 16	Razors		NF73840660
77	Comhairle nan Eilean Siar - Uist & Barra	Traigh Cille Razors	Traigh Cille Razors	UB 711 1574 16	Razors		NF71590729
77	Comhairle nan Eilean Siar - Uist & Barra	Traigh Mhor Razors	Traigh Mhor Razors	UB 615 1194 16	Razors		NF71300571



			lan				F	eb				Mar				1	Apr				N	lay		1	8	Jun				1	lul			-	Au	g				Sep				0	ct		1	N	vo			D	ec	
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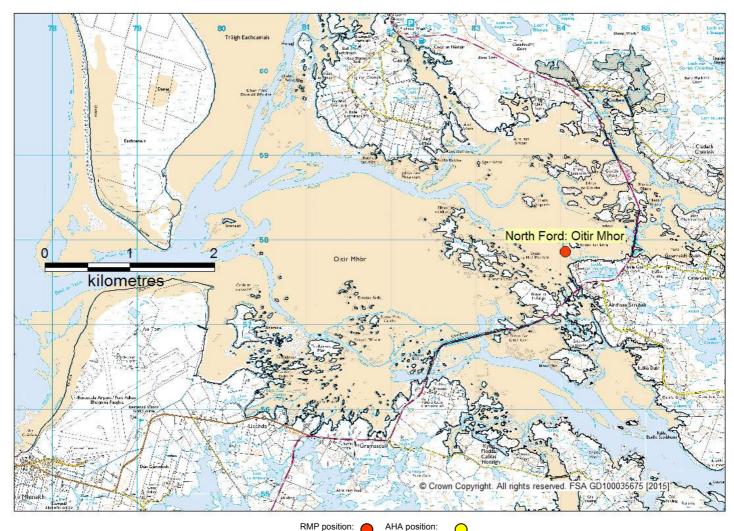
	9 <u></u>	194	Jan		- 10		Fe	b	- 9		Ma	r	2		Ap			1		sult _{Aav}		1		un				Jul	Ű			ua			S	ep		12	10	Oct		1	No	vo	- 1		De	C
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Pseudo - nitzschia	100			0.0													-		1						-			-				-		-										1		1		
Dinophysis	2			0.0	- 2		2 0						-		T		-		1	1	F			-	1			-				-		-				1			1000			8 V		2		
Prorocentrum lima	1	- 7					1						-	-	1		-		1	1			1	-	1.00			-				-		-				1						1		2	- 77	
Alexandrium	1			8 S S			1		2					-		1	1		1					-	1.00													1						2.5		8		



Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
86	Comhairle nan Eilean Siar - Uist & Barra	South Ford	South Ford	UB 259 162 04	Common cockles	Yes	NF8050146551
86	Comhairle nan Eilean Siar - Uist & Barra	South Ford Faoileann	Faoileann	UB 734 1705 16	Razors		NF85904350

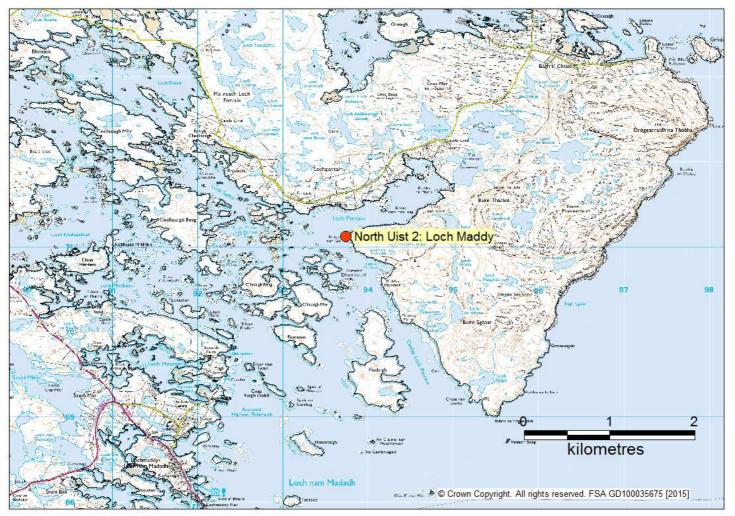
Biotoxin	results	from	South	Ford.	South	Ford
DIOLOXIII	resuits	nom	Journ	i uiu.	Journ	i uiu

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_								
	Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
	133	Comhairle nan Eilean Siar - Uist & Barra	North Ford	Oitir Mhor	UB 493 852 04	Common cockles	Yes	NF84055786

10			Jar	1			Fe	b			Ma	r	11		Ap	or		- 7		Ma	у			Jui	n			Ju	Ľ.			Aug	3	- 11		Se	p		1	0	ct		ð	No	v			Dec	\$
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ASP		1			2			- 2			1		N.	i é		2		1	1		- 11		7 - I	111				-	-	-	-	-		11			1			1					2.5				
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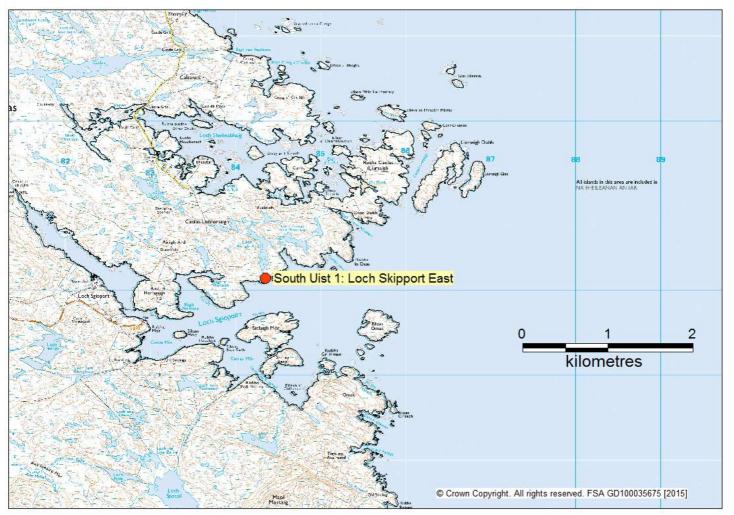


RMP position: AHA position:

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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
135	Comhairle nan Eilean Siar - Uist & Barra	North Uist 2	Loch Maddy	UB 540 969 08	Common mussels	Yes	NF93737112

Biotoxin results from North Uist 2: Loch Maddy

		1.	Jan				Fel	b		N	lar			Ap	r			Ma	у	- 1	Ju	n			Jul	Ú.	- 1		Aug		9 <u>7</u>	Se	p			Oct	t	-	No	ov		D	ec	
Week	1	2	3	4	5	6	7	8	9	10 11	12	13	14 1	15 16	5 17	18	19	20	21 2	22 2:	3 24	25	26 2	7 28	29	30	31	32 3	3 34	35	36	37 3	8 39	40	41	42 4	43 4	4 45	46	47	48 4	9 50	51	52
ASP		5			-																																							
LT - OA/DTX/PTXs					1																																							
LT - AZAs																																												
LT - YTXs																																												
PSP		1 - I			-																																							



RMP position: AHA position:

				v			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
136	Comhairle nan Eilean Siar - Uist & Barra	South Uist 1	Loch Skipport East	UB 537 966 08	Common mussels	Yes	NF84353914

Biotoxin results from South Uist 1: Loch Skipport East

			Jan				Feb)	1	M	ar			Apr		2	Ma	ay		Jur	1		Ju	1		Aug		1	Se	р			Oct		8	Nov	1		Dec	
Week	1	2	3	4	5	6	7	8 9	10	11	12	13 14	15	16	17 18	3 19	20	21 2	2 23	24 2	25 26	27 2	28 29	30 3	1 32	33 34	4 35	36 3	37 38	3 39	40	41 4	2 4	3 44	45	46 4	17 48	49 4	50 51	52
ASP							-	1																																
LT - OA/DTX/PTXs								1																																
LT - AZAs								11																																
LT - YTXs																																								
PSP								1																																

Phytoplankton results from South Uist 1: Loch Skipport East

	1		Jai	n				Fel	2	1		Ma	Ir				Apr		1		Ma	ay		2	Ju	n			J	ul			A	ug				Sep	<u>6</u> –		1	0)ct		1	N	ov		1	D	ec	
Week	1	2	3	4	5	. 1	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	6 2	27 :	28 2	9 3	0 31	32	33	34	35	36	37	38	39	40	41	42	43	3 44	45	46	47	48	49	50	51	52
Pseudo - nitzschia	1	0			8													8. 3	2 23		8 S			8 - 8							[×]	2		10.00		0 S			8 - 4		100	10.13		10	80.0	3	19. S		100	10.13		
Dinophysis	8 3	2 2		1	3	2	1		1				- 3					2	5 - 63		8 8	0		0			1					1	1	10 X		0 3	0		0 - V		8 3	0.3		10	80.0		30. S		8 3	8.3		
Prorocentrum lima	8.7	8 8		1	1			1	1				2.5					8. 8	2 22		S 8			2 - X			10				×.	1	1	0.0		0.3			8 - X		8.3	0.0		10	80.0				8.3	0.0		
Alexandrium	83	2.2		10	3				1							· · · ·		2	2 23		0 8			8 - 8			1			1	1	1	1	10.00		0.3			\$ X		8	2.3		10	30.0		1		8	2.3		10

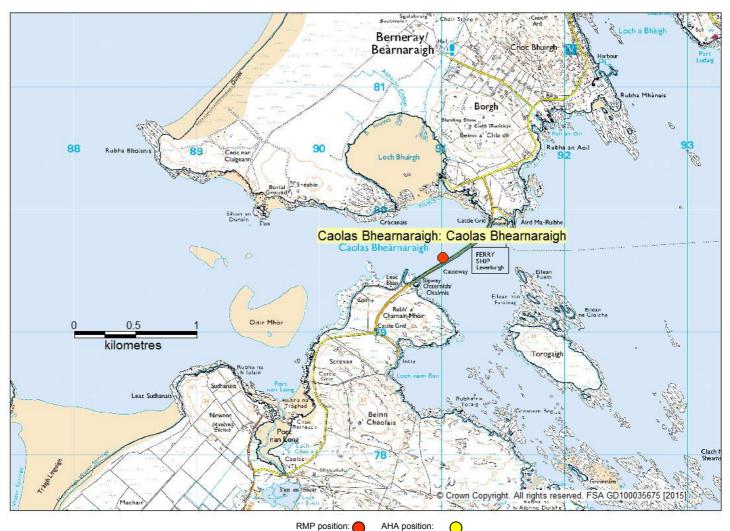


RMP position:	AHA position:	\bigcirc

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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
141	Comhairle nan Eilean Siar - Uist & Barra	Caolas Eiriosgaigh Razors	Eiriosgaigh Razors	UB 684 1485 16	Razors	Yes	NF79821245

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			Ja	n				F	eb			A	lar					Apr			1	P	May	1			Ju					Jul			Ŭ	Au				S	ер			3	Oct		1		Nov	÷.			De	ec	
Week	1	2	3		4	5	6	7	8	9	10	11	12	2 1	3	14	15	16	17	18	19	2	0 2	1 2	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38 3	9 4	0 4	1 4	2 4	3 4	4 4	5 4	16 4	7 4	48	49	50	51	52
ASP																																														1			1.5		-		-		
T - OA/DTX/PTXs																																																					-		
LT - AZAs																																																			- 11		-		
LT - YTXs																																																			- 11		-		
PSP																																																					-		





Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
147	Comhairle nan Eilean Siar - Uist & Barra	Caolas Bhearnaraigh	Caolas Bhearnaraigh	UB 735 1706 16	Razors	Yes	NF910769

No samples received from Pod 147 between 1st January and 31st December 2015

6.4. DUMFRIES & GALLOWAY COUNCIL



Pod 26

RMP position: AHA position:

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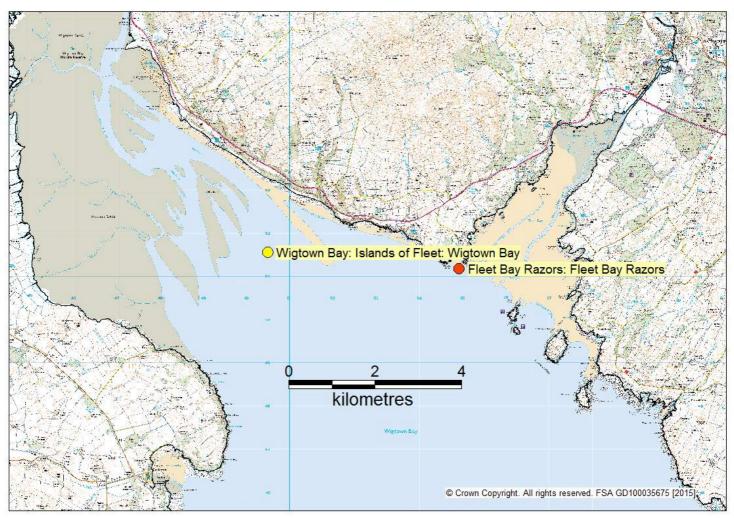
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
26	Dumfries and Galloway Council	Loch Ryan	Loch Ryan	DG 191 175 12	Native oysters	Yes	NX035665
26	Dumfries and Galloway Council	Loch Ryan	Leffnoll Point	DG 191 174 12	Native oysters		NX072652
26	Dumfries and Galloway Council	Loch Ryan Cockles	Loch Ryan Cockles	DG 746 1809 04	Common cockles		NX07106140
26	Dumfries and Galloway Council	Loch Ryan Soleburn	Soleburn Cockles	DG 762 1935 04	Common cockles		NX04016786

Biotoxin results from Loch Ryan	: Loch Ryan (mussels)
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		1.4	an				Fe	eb		-	M	ar	1			Apr	r			M	lay		1	J	un				Jul			°	Au	g			5	Sep				0	ct		1	1	lov			I	Dec	2	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	3 44	45	46	6 47	4	8 4	9 5	0 5	51	5
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LT - AZAs												-	-			-					-							-											-														
LT - YTXs												-	-			-					-							-									1		-					-									
PSP		1											1. 1		-	1.0		10.00								12	-		59		14 - X								8 S					18			1	3	1				

Phytoplankton results from Loch Ryan: Loch Ryan (Stranraer Pier)

	2	199	an				Feb		1	P	Aar				Apr	r			N	lay		1	Ju	in	1		10	Jul				Aug				Se	р		14	17	Oct	t	-		Nov	v		6	De	ec	
Week	1	2	3	4	5	6	7	8 !	9 1	0 11	1 12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4 3	5 3	6 3	7 38	3 39	9 4) 4	1 4	2 4	43 4	14 1	45	46 4	47	48	49	50	51	52
Pseudo - nitzschia		2.53	1	2 8 2				12		1	12.7	-		1		110	-		1					-	1.00		1						1						1				1								÷.,
Dinophysis	8.3			3 80				2		1	1.11	-		1			1		-																			T	1				1	1							8
Prorocentrum lima				3 8 9				12		1	1.5	-							1															1					1												8
Alexandrium		2.23		1.1				1								1.0											1.0												100			100							200		



RMP position: AHA position:

			F				
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
27	Dumfries and Galloway Council	Fleet Bay Razors	Fleet Bay Razors	DG 752 1880 16	Razors	Yes	NX54905118
27	Dumfries and Galloway Council	Wigtown Bay: Islands of Fleet	Wigtown Bay	DG 305 182 16	Razors		NX50475156

Distantia assults from Elect De	Deserver Elect Dev Deserve
Biotoxin results from Fleet Ba	ly Razors: Fleet Bay Razors

																	-				•••	~~		•••	•••	•••		•••					۰.		~~			,		~	-																			
			J	an				1	Feb)				Ma	r				A	pr				P	May				Ju	in				Ju	I		1		Au	g		2		Se	p				Oct	t	- 7		N	ov			1	Dec		
Week	1	2		3	4	5	6	1	7 1	8	9	10) 1	1 1	2	13	14	1	5	16	17	18	19	2	0 2	1 2	22	23	24	25	26	27	28	3 29	9 3	0 3	31	32	33	34	35	36	37	38	39	4	0 4	1 4	12 4	43	44	45	46	47	48	3 4	9 5	0 5	1 5	52
ASP																															m		1				-																							
LT - OA/DTX/PTXs																																	-				-																							
LT - AZAs																																	-																											
LT - YTXs																																	-																											
PSP																								-		-					1		-				-			1																				





RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
89	Dumfries and Galloway Council	Luce Bay Razors	Luce Sands Razors	DG 499 865 16	Razors	Yes	NX120510
89	Dumfries and Galloway Council	Luce Bay Gapers	Luce Sands Gapers	DG 784 2010 18	Sand gapers		Not given
89	Dumfries and Galloway Council	Luce Bay Razors	Auchenmalg Bay	DG 499 1823 16	Razors		Not given
89	Dumfries and Galloway Council	Luce Bay Gapers	Auchenmalg Bay Gapers	DG 784 2011 18	Sand gapers		Not given
89	Dumfries and Galloway Council	Luce Bay Drummore	Drummore Razors	DG 751 1824 16	Razors		NX12993958
89	Dumfries and Galloway Council	Luce Bay Drummore Gapers	Drummore Gapers	DG 783 2009 18	Sand gapers		Not given

	Biotoxin	results fro	m Luce B	ay Razors:	Luce Sa	inds Razors	
10.00	11 State 1				27.2	200 200 PA	

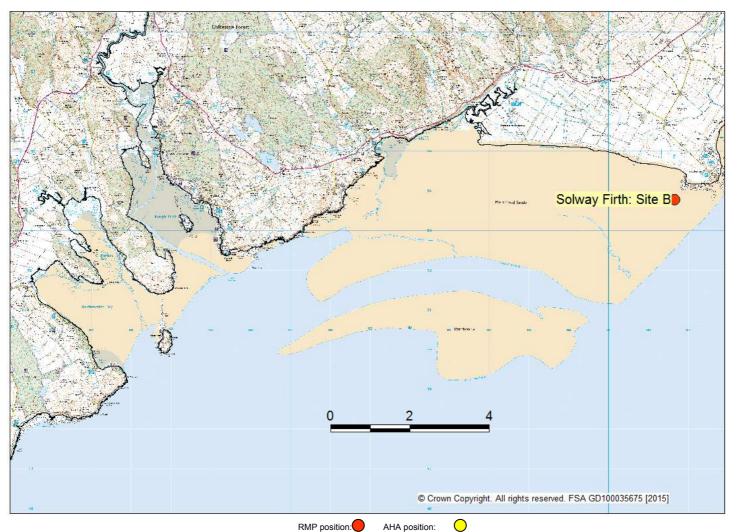
		1.4	lan				Fe	eb			Mai	r .			Ap	r		1	M	lay		1	Jur	1			Ju	IL		-	AL	g			S	ep			(Dct		1-	No	v		1	Dec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 14	15	16	17	18	19	20	21	22	23	24 2	25 2	6 2	7 2	8 2	9 3	0 31	32	2 33	34	35	36	37	38 3	9 4	0 41	42	2 4	3 44	45	46	47	48	49 5	0 5	1
ASP		5															8 D			2. 5.				-		-		-				1		1						1		1						
LT - OA/DTX/PTXs																				1.1						-						5			-													
LT - AZAs																				1.1						1						5																
LT - YTXs																				1						1																						
PSP											1									1.1												1																

Biotoxin results from Luce Bay Drummore: Drummore Razors 8.0.

														BIO	to	kin	re	sul	ts 1	roi	mι	Luc	ce I	вау	<i>י</i> ט	run	าm	ore	e: L	Jru	mm	nore	e Ra	azo	rs																
			Ja	n			Fe	b			N	lar				A	pr			1	May	1			Jun	10			Ju	1		1	Aug	3	12		Se	ер			Ĵ.	Oct	t			Nov			D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	1:	3 14	4 1	5 1	6 1	17 1	8 1	9 2	0 2	1 2	2 2	3 2	4 2	5 26	27	7 28	8 29	30	31	32	33 3	34 3	5 3	6 3	7 3	8 3	9 4	0 4	1 4	2 4	13 4	4 4	15 4	6 4	7 4	8 49	50	51	52
ASP																				11																															
LT - OA/DTX/PTXs																																																			
LT - AZAs																																																			
LT - YTXs																																																			
PSP																																																			

Phytoplankton results from Luce Bay Razors: Luce Sands Razors

			Jan				Fe	b	- 1		Ma	ar			A	pr				May	У			Jur	n				Jul				A	ug		1		Sep)		1	C	Dct		- T	1	Nov				De	1C	
Week	1	2	3	4	5	6	7	8	9	10		12	13 1	4 1	5 1	6 17	7 1	18 1	19 2	20 2	21 2	22	23 2	24 2	25	26 2	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	2 4:	3 4	4 4!	5 4	6 4	7	48	49 !	50	51	52
Pseudo - nitzschia	1	2 23		8 S 8			с		1										1										-							-					1			100	1			1					
Dinophysis					10		с. — С					-					Т		- 1																	-								100	3			- 2			- 21		
Prorocentrum lima	8.3	2 22		2 2 2			с. – С																													-					1			100									
Alexandrium		2.33		2 S 1			÷			1							T														-					1.00					1				3								1

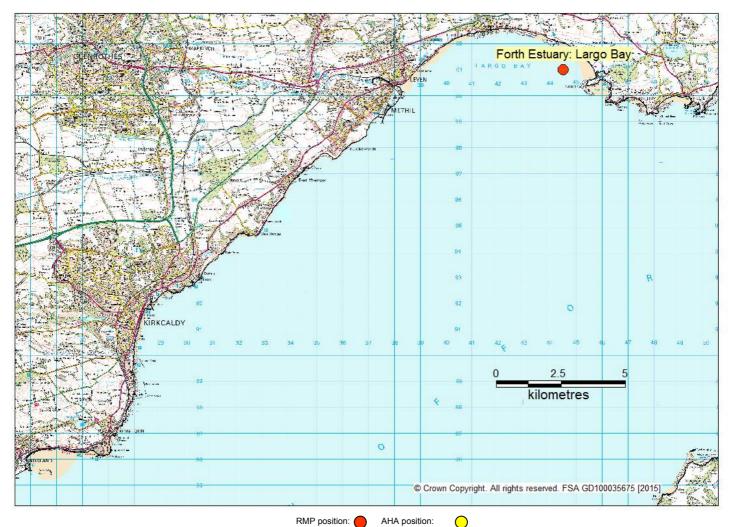


				•			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
142	Dumfries and Galloway Council	Solway Firth	Site B	DG 253 1509 04	Common cockles	Yes	NX96665378

No samples received from Pod 142 between $1^{\rm st}$ January and $31^{\rm st}$ December 2015

6.5. FIFE COUNCIL





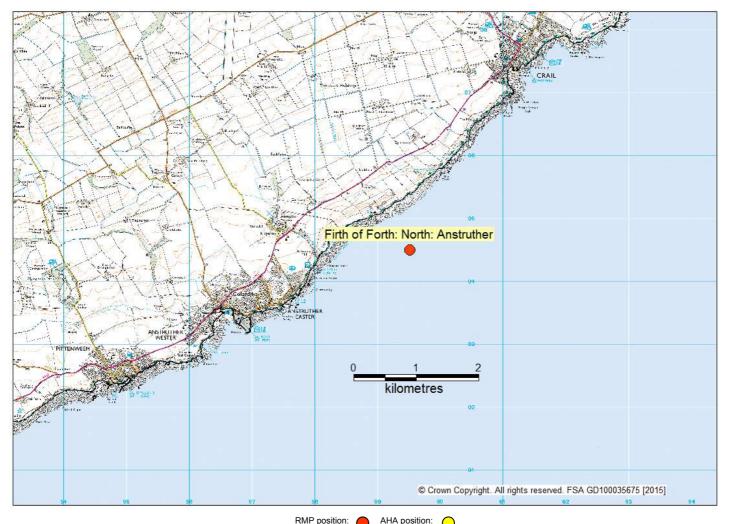
				· · · · · ·			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
80	Fife Council	Forth Estuary: Largo Bav	Largo Bay	FF 072 188 16	Razors	Yes	NO445010

Biotoxin results from Forth Estuary: Largo Bay (razors)

1		J	an			1	eb			1	Aar					Ap	r		-1		N	Aay		-1		J	un					JL	1		-1		A	ug		-		S	ep				C	oct		1		Nov	š —	- 1		De	C	
Week	1	2	3	1	6	1	8	9	1	0 1	1	2 1	3	14				7 1	18	19				22	23	24	2	5 2	26	27	28	2	9 3	30	31	32			35	5 3	6 3			39	40	41	42	43	44	4	5 4	6 4	7 4	18	49	50	51	5
ASP			20	3							14	1							10		8		-								-				-	+		-		-		-	÷						-				ŝ.	1				
T - OA/DTX/PTXs			10	3	-					-					-	-															-	T		-	-			-			-						-		-	T			-	-				
LT - AZAs			100	3							-																				-							1									-		-	T								
LT - YTXs			1	3								T			-							T									-							1									-		-	T								
PSP													11			-						1									-				-			1									-		-				÷					
		J	an		1	1	eb			,	Aar		1	Bi				re	sul	lts				or	th				ry:	L	arę	200		ay	(n	าน	SSE)	12		Se	ep				0	ct		T		Nov		-		De	c	
Week	4	-	an		6	1	eb	0			Aar		1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		24	6 3		ep	20	40	44		ct	44	46		Nov		2		De		6
Week	1	J 2	an 3 4	I E	6	1	eb 8	9	1	0 11		2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		30	6 3			9	40	41			44	45		Nov 6 4		8 4				5
ASP		-	an 3 4	1 5	6	1	eb 8	9	1			2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		i 3(6 3			9	40	41			44	45				8 4				5
ASP		2	an 3 4	4 8	6	7	eb 8	9	1			2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		30	6 3			39	40	41			44	45				8 4				5
ASP T - OA/DTX/PTXs		2	an 3 4	i 8	6	7	eb 8	9	1			2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		30	6 3			9	40	41			44	45				8 4				5
ASP T - OA/DTX/PTXs LT - AZAs		2	an 3 4	i E	6	7	eb 8	9	1			2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		30	6 3			39	40	41			44	45				8 4				5
ASP T - OA/DTX/PTXs LT - AZAs LT - YTXs		2	an 3	1 5	6	7	eb 8	9	1			2 1	1		10	Ap	r		1		N	lay		- K		J	un	'n.	Í			Ju	ıl		Ì		A	ug		30	6 3			9	40	41			44	45				8 4				5

Phytoplankton results from Forth Estuary: Largo Ba	ay
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	84	123	Jan				F	eb		r	M	ar				Apr	23			N	lay			100	Jun				J	ul				Au	9			S	ep				0	ct			N	lov		- 12	D)ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	2 2	3 24	4 2	5 2	6 2	7 2	28 2	9 3	30	31	32	33 :	34 :	35	36	37	38	39	40	41	42	43	44	45	46	4	7 4	8 49	50	51	52
Pseudo - nitzschia				8 S			1	2					-							1					1												-								100			1					100
Dinophysis				2				2												-																									100				1	1			
Prorocentrum lima				00 - S			1	°.	1			1	-							-					-												-								100					1			
Alexandrium				0 - S				2												-					1					12															100								



Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
87	Fife Council	Firth of Forth: North	Anstruther	FF 068 184 19	Surf clams	Yes	NO59500450

Biotoxin results from Firth of Forth: North: Anstruther (surf clams)

1		Jai	1			Fe	b	1		Mar				Apr				M	ay		1	J	lun		1		Ju	1		1	A	ug		12	12	Sep		- 1		Oc	ť	1		Nov			D	ec	
Week	1 2	3	4	5	6	7	8	9 1	0 1	1 1:	2 13	14	15	16	17	18	19	20	21	22	23	3 24	1 25	5 26	6 27	28	3 29	30	31	32	33	34	1 35	36	37	38	39	40	41	42	13 4	4 4	5 4	6 47	7 4	8 49	50	51	5
ASP			20	1					1	12	10-0		16 A			8. j.		1	-								-	-	-	-	-	-	-														1	1	
T - OA/DTX/PTXs	-			1					-	-	1		1.1	+	-			+				-	-		-	-	-	-	-	-	-	-	-																
LT - AZAs				1									1																																				
LT - YTXs				192						1			1																11	-																			
PSP	1		1.00						1	-	-		1.00		*	-										-			15	-		-															1		
12		Ja	n			Fe	b			Mar		1		Apr				M	lay		1		Jun		1		Ju	I		3	A	ug		12	10	Sep		- 19		Oc	ť	1		Nov		1	D	ec	
Week	1 2	3	4	5	6	7	8	9 1	10 1	1 1	2 13	14				18	19			22	23			5 26	6 27	28			31	32				36				40	41			4 4	5 4	16 47	7 4	8 49	50	51	5
ASP									- 22																																								
T - OA/DTX/PTXs									+								*				-	-																											
LT - AZAs									-																																								
LT - YTXs									- 1																																								
PSP									- 2																																								

6.6. EAST LOTHIAN COUNCIL



RMP position:		AHA position:
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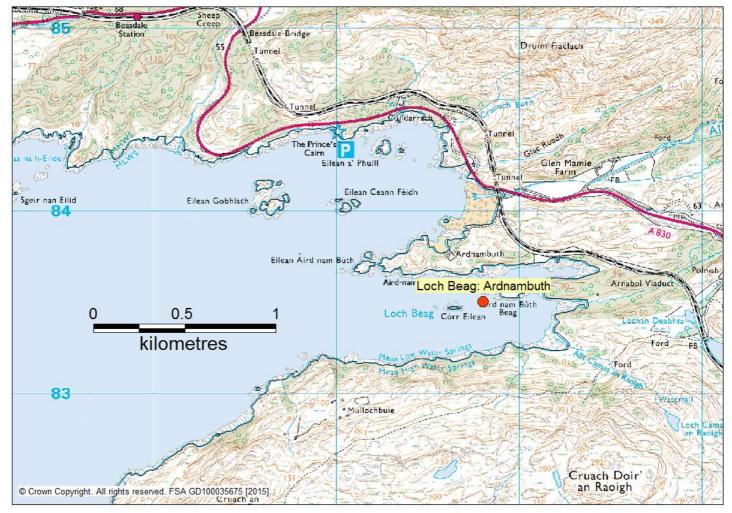
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
90	East Lothian Council	Gullane Point North	Gullane North	EL 601 1087 16	Razors	Yes	NT47008400
90	East Lothian Council	Gullane Point South	Gullane South	EL 703 1525 16	Razors		NT43508100

 \bigcirc

Biotoxin results from Gullane Point North: Gullane North

		J	an		11		Feb		1	1	Mar		1		Apr				Ma	iy	- 1		Jun		-		Jul				Aug	3			Se	p			00	t	-1		Nov				Dec	\$
Week	1	2	3 4	1 5	5 6	5 7	7 8	3 9	10	1	1 12	13	14	15	16	17	18	19	20	21	22	23 2	4 2	5 26	5 27	28	29	30	31	32	33 3	34 3	5 36	37	38	3 39	40	41	42	43	44	45	46 4	7 4	18 4	9 5	50 5	1
ASP			80	3							1	1					2 0						11		-	-	1		1	-		-	-	-	-						-			2	100			
- OA/DTX/PTXs			80	3											-								1			-	1			-											-	-			11			
LT - AZAs			20	3							1									-			111			-	1			-											-							
LT - YTXs			20	3																-			1			-			1	-	1			-		1												
DCD			1.2								14															-								1				-				1						

6.7. HIGHLAND COUNCIL: LOCHABER



Pod 28

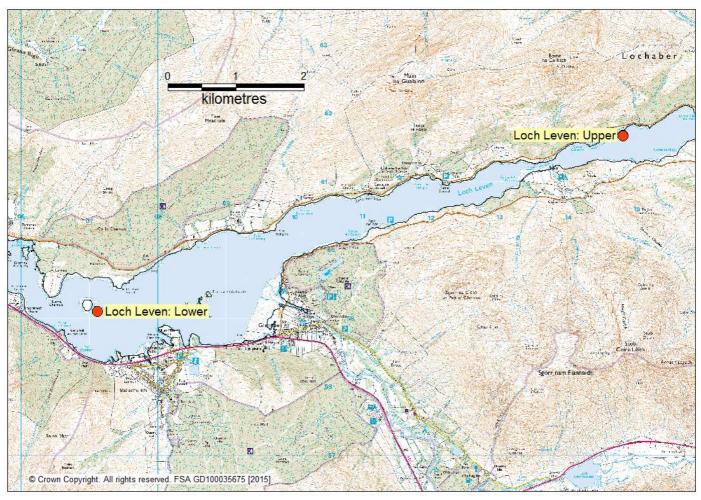
RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
28	Highland Council: Lochaber	Loch Beag	Ardnambuth	HL 118 215 08	Common mussels	Yes	NM728835

Biotoxin results from Loch Beag: Ardnambuth

		10	Jan		- 1		F	eb		1	P.	lar			A	pr		-		Ma	у			Jun		-		Ju	1		1	A	ug			1	Sep			1	0	oct		-	N	lov		1	D	Dec		1
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 1	18	19 2	20	21 2	22 2	3 2	4 25	5 2	26 2	28	8 29	3	0 3	1 32	2 33	34	35	36	37	38	39	40	41	42	43	3 44	45	46	47	4	8 49	9 50	51	1 57	Ē.
ASP																									1	34				10	3		10-1	-		2.23		0 X			-											1
LT - OA/DTX/PTXs																							-	-		*	-		-	-	-	-	-	-		+	+	+	+	-	-											
LT - AZAs																										1												-			1											
LT - YTXs																														1.5						1		-			1											
000																								_		10				100	1		10.1			-		1.000			1.0				<u> </u>							



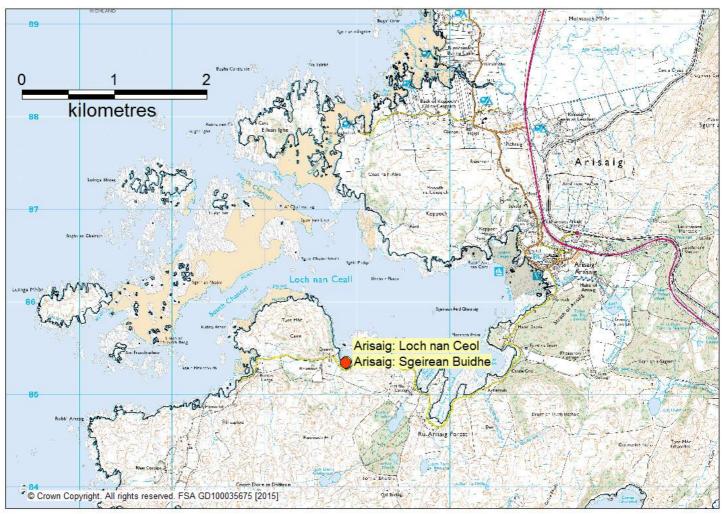


RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
31	Highland Council: Lochaber	Loch Leven: Lower	Lower	HL 170 222 08	Common mussels	Yes	NN0710059105
31	Highland Council: Lochaber	Loch Leven : Upper	Upper	HL 171 223 08	Common mussels	Alternate RMP	NN1480061680

																				E	Bic	otc	ЭX	in	re	ะรเ	ults	s fi	ror	n I	Lo	ch	Le	eve	n:	Lo	ow	er																								
12			Ja	n					Fel	b			1	Mar					Ap	or			1		M	ay				Ju	ın		1		J	ul			1		Aug	3				Se	p		- 1		C	oct		1		No	v			D	ec	
Week	1	2	3		4	5	6		7	8	9	10	1	1 1	2 1	3	14	15	11	6 1	17	18	1	9	20	2	1 2	2	23	24	25	26	2	7 2	8 2	9	30	31	32	3	3 3	34	35	36	37	3	8 3	9	40	41	42	4	3 4	4 4	45	46	47	48	49	50	51	1 52
ASP																										2	0					1			2	1		0 P				1					2	30	2		A) - 3	1										
LT - OA/DTX/PTXs																										-		*							1	-	-	*	-	-		-	-				1															
LT - AZAs																																															1															
LT - YTXs																																	1							t		-1						1														
PSP																		2								2						2	1					4		t	+						2		- 22		4											
			Ja	n		ľ			Fel					Mar		1			Ap	or			1		M	ay				Ju	ın	och	1		J	ul			1		Aug			87		Se			1			oct		T		No					ec	
Week	1	2	3		4	5	6		7	8	9	10	1	1 1	2 1	3	14	15	11	6 1	17	18	1	9	20	2	1 2	2	23	24	25	26	2	7 2	8 2	9	30	31	32	3	3 3	34	35	36	37	3	8 3	9	10	41	42	4	3 4	4 4	45	46	47	48	49	50	51	1 52
ASP																1			ŝ.	22														14	3											2	1						8	3			-				1	
LT - OA/DTX/PTXs															1				1				-	•					-				4		-																							-				
LT - AZAs																																																										-				
LT - YTXs															1																																						1									
PSP																																														-	1						- 8								3	
																					yto	р	la	nk				su	Its	fr	om	۱L	эc	h L	.ev	/er	ו: ו	Lo	we	er																						
			J	an					F	eb			_	Ma				_		pr	85					May			-		un					Jul					Au					Se				1	- 00	Oct				- 65	ov		1		lec	
Week	1		2	3	4	5	5	6	7	8	9	1	0	11	12	13	14	1	5	16	17	1	8	19	21	0 2	21	22	23	24	2	5 2	6 2	7 2	8	29	30	31	3	2 3	33	34	35	36	5 3	7 3	8 :	39	40	41	42	2 4	3 4	4	45	46	47	48	49	50	51	1 52
Pseudo - nitzschia		1			-				•		1				17								1		1						1			1										100									100				° - '			8-3		
Dinophysis	1	1	1						× •		1																																							1			100				×			2 3		1
Prorocentrum lima	1		1		с -				× •																								1									-		1						1			1	0					1	2 3		1
Alexandrium		18								1	1																											1						1									100				1	1	1	23		12





RMP position:	AHA position:	

			RMP position: 🔴 AHA p	oosition: 🔘			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
33	Highland Council: Lochaber	Arisaig	Sgeirean Buidhe	HL 004 202 13	Pacific oysters	Yes	NM6387085350
33	Highland Council: Lochaber	Arisaig	Loch nan Ceol	HL 004 198 13	Pacific oysters		NM6387085350

Distantin		£	A	Callerate	Duidha
BIOTOXIU	results	Trom	Arisaid:	Sgeirean	Bulane
				- 3	

12			Jan				F	eb		1	P.	lar		1		Ap	r		1	N	lay			Ju	un				Jul				A	g		1		Sep				0	ct		e	N	ov		1		De	с
Week	1	2	3	4	5	6	7	8	9	1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	4	8 4	9 5	0	51
ASP											1	8.3	8 4		Q 3			8		1	10.0		26	1		2 3			2 23		S 8	+		S. 3		-	2.23		0 S			-		1	1		0.0	8	1	1		
T - OA/DTX/PTXs												1-			1						-		1						1		+	+							1					-	1		1.1					
LT - AZAs												-			1						1							-									-							-				T				
LT - YTXs												-			1						1											-												-				T				
PSP		1										181 1	12 - 3		16-3			0.1	-	8	12.1	3	10	1 3		0.14		S 3	2 23		63 - 36						2 23		-83 - 8			18 19		8	100		10.0	3		1	1	

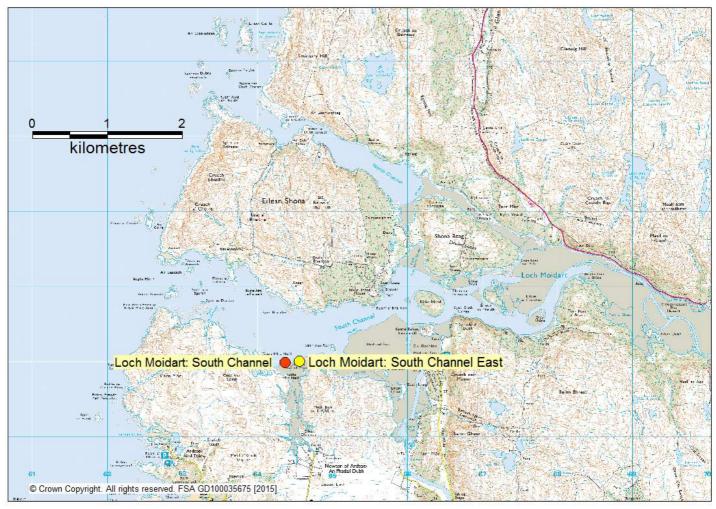


RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
34	Highland Council: Lochaber	Loch Eil: Fassfern	Fassfern	HL 136 219 08	Common mussels	Yes	NN02977815
34	Highland Council: Lochaber	Loch Eil	Duisky	HL 134 216 08	Common mussels		NN00527753
34	Highland Council: Lochaber	Loch Eil	Garvan	HL 134 217 08	Common mussels		NN005786

Biotoxin results from Loch Eil: Fassfern

			Jar	1		1	F	Feb			R.	lar				Ap	or				Ma	y			Jun				Jul	Ú.		1	Au	g				Sep				0	ct		1	N	ov		1	D	ec	
Week	1	2	3	4	5	6	7	8	9	11	11	12	13	14	15	10	5 17	7 18	3 1	9 2	20	21	22 1	23 2	4 2	5 2	6 2	7 28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
ASP												18 1	2 3		19 A					1									1.3		100								5 5			1		1			0.0	30.0		1	1	
LT - OA/DTX/PTXs												-	1		1.0														1.00		1.7.7	-							-					-	1.1		1.2	-			T	
LT - AZAs												-	1			F			T										1		1.0	-												-				-			T	
LT - YTXs												-	1			F			T										1.4		1.5	-												-				-			T	
PSP												18 3			14 ×					í	1								1.3		10.0								5 8					1			1000	1	2	1		



		RMF	P position: AHA p	osition:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
85	Highland Council: Lochaber	Loch Moidart	South Channel	HL 179 227 13	Pacific oysters	Yes	NM64397197
85	Highland Council: Lochaber	Loch Moidart: South Channel East	South Channel East	HL 761 1925 04	Common cockles		Not given

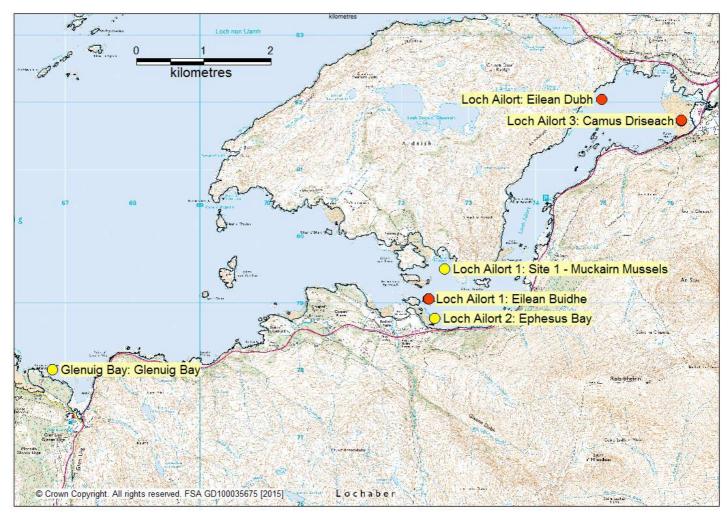
12			Jar	1		1	1	Feb			A	Aar		1	- 22	Apr				Ma	y		J	un	- 2			Jul		- 30		Aug		12		Sep				Oct	t	1		Nov		1	D	ec	
Week	1	2	3	4	5	6	7	8	9	1	0 11	12	13	14	15	16	17	18	19 :	20 3	21 2	22 23	24	25	26	27	28	29	30	31 3	32 3	33 34	35	36	37	38	39	40	41	42 4	43 4	44	45 4	6 4	7 48	49	50	51	5
ASP								5	2			100	2		94 <u>8</u>	1.12	1				1									2.20	10	1	2	1	2.20						1								
LT - OA/DTX/PTXs								F. C	20			-			1.1	-		-			-			-		*	-	-	-	-	-		-	-	-	-	2				-	-							
LT - AZAs								Ŧ.	20			-			1.0	-											-			1				110															
LT - YTXs								F. C	22			-			1															1																			
PSP												-			-		*	-	*		-							2.23		5 S S	1	1									1	4							



		RMP p	osition: 🔴 AHA posit	ion: 🔵			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
88	Highland Council: Lochaber	Arisaig: Morar Sands	Morar Sands	HL 005 204 16	Razors	Yes	NM66209280

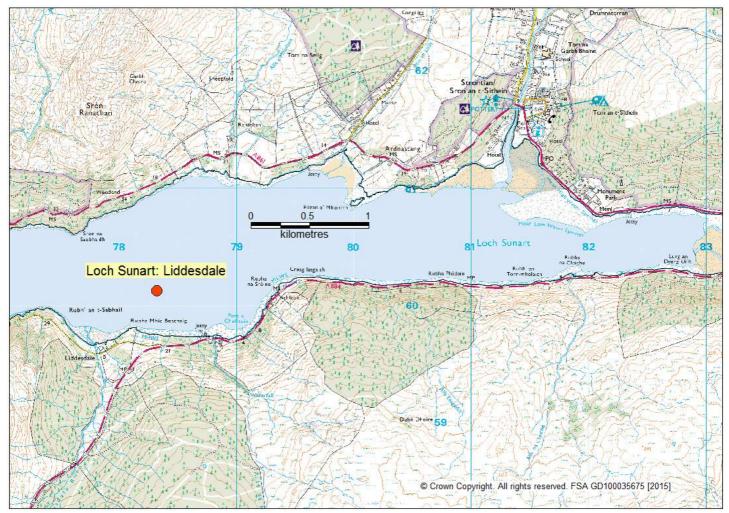
Phytoplankton results from Arisaig: Morar Sands

		1	an				Fe	b	- 1		Ma	ır			A	\pr		1		M	ay		-	Ju	ın				Jul	t -			A	ug				Se	p		1	C	ct		°	No	v			De	ec	-
Week	1	2	3	4	5	6	7	8	9	10	11	12	13 1	14 1	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Pseudo - nitzschia			1					1					- 22							1								111					11								1						° °			2 23		
Dinophysis					10							-	- 1					-		-																-					1			0.5			0 - V					
Prorocentrum lima			1																									1.1	-												1			0.0	1.1		8 - 8			2 23		
Alexandrium			10					1																						1.1						1.00								- C - S			° °			2 23		



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
126	Highland Council: Lochaber	Loch Ailort	Eilean Dubh	HL 114 937 08	Common mussels	Yes	NM7498082040
126	Highland Council: Lochaber	Glenuig Bay	Glenuig Bay	HL 075 205 08	Common mussels		NM668780
126	Highland Council: Lochaber	Loch Ailort 1	Site 1 – Muckairn Mussels	HL 114 214 08	Common mussels		NM7264079510
126	Highland Council: Lochaber	Loch Ailort 1	Eilean Buidhe	HL 114 209 08	Common mussels	Alternate RMP	NM72397906
126	Highland Council: Lochaber	Loch Ailort 3	Camus Driseach	HL 114 207 13	Pacific oysters	Alternate RMP	NM7616081720
126	Highland Council: Lochaber	Loch Ailort 2	Ephesus Bay	HL 539 968 12	Native oysters		NM72497877

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		Jan		1	F	eb			Ma	r	1		Apr	r			Ma	1	T	Ju	n	1		Jul		1	A	pu		8	5	Sep		1		Oct		1	No	v	19	0	ec
Week	1 2	3	4 5	6	7	8	9	10	11 1	12 1	3 14	1 15	16	17	18	19	20 2	1 2	2 23	24	25 2	6 27	28	29	30 3	1 32	2 33	34	35	36	37	38	39	40	41 4	2 4	3 4	4 45	46	47 4	48 4	19 50	51 52
ASP	· · ·					e 9		1		2	-20	19	8 C (2)		1				-				1		0	1					1 20		+	+			1			0.00	10	1	1
LT - OA/DTX/PTXs	×					e S					1	1.5	-		-			-	-				-	1.1																		-	
LT - AZAs						r S						1.							1																								
LT - YTXs						e e						1.5											-	1.1																			
PSP												-	-	-	-			-	-		-			1.1											1					9 - S - S	1	1	2
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		Jan				eb	_		Ma		1	-	Apr			-	May		-	Ju				Jul		1		ug				Sep				Oct		1	No				ec
	1 2	3	4 5	6	7	8	9	10	11 1	12 1	3 14	1 15	16	17	18	19	20 2	1 2	2 23	24	25 2	6 27	28	29	30 3	1 32	2 33	34	35	36	37	38	39	40	41 4	2 4	3 4	4 45	46	47 4	48 4	19 50	51 52
ASP																																											
LT - OA/DTX/PTXs																		^																									
LT - AZAs																																											
LT - YTXs																																											
PSP																							-				_																
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Pseudo - nitzschia		-				_			1			_	_	1		_							-		_	_	- Ú		1	1				_		-		-				_	
Dinophysis					-	-			_				-			-									_	_			_					_				-					
Prorocentrum lima	3				-	-							+	0		-									_	_			_					\rightarrow		_		-			- 0		
Alexandrium	1111									11 P					11															11 I					111						1		
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Week	1	2 3	4	5	6	7 8	3 9	10	11	12	13	14 1	5 14	6 17	18	19	20	21 2	22 2	3 24	25	26 2	7 28	29	30	31 3	32 3	3 34	4 35	36	37	38	39	40	41 4	12 4	13 4	4 45	46	47	48 4	19 50	51 52
Pseudo - nitzschia		-	0.5		1	1	1								1															1							1	91.0		× ×	1		
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Dinophysis		_		_	_	_	_	_																													_	_		_	_		
Dinophysis Prorocentrum lima Alexandrium	3	-	0 S		1	-	8								-								1.5						-	-						- 24	0	3		· · ·	2		



RMP position:	AHA position:
TAMI POSILIOII.	

_			RMP	position: AHA po	osition:			
	Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
	137	Highland Council: Lochaber	Loch Sunart	Liddesdale	HL 206 1237 08	Common mussels	Yes	NM78306012

		1	an				Fe	eb			M	ar				A	pr				1	Ma	y		1	J	un				Ju	1		1	A	ug		1		S	ep		- 23		0	ct			1	lov				De	с
Week	1	2	3	4	5	6	7	8	9	10	11	12	1	3 1	4	15	16	17	18	19	9 2	20 2	21	22	23	24	25	26	27	28	29	3	3	3	2 3:	3 34	3	5 3	6 3	7 :	38	39	40	41	42	43	44	45	4	6 47	1 41	8 4	9 5	0	51
ASP																									2			1		-												-					-								
T - OA/DTX/PTXs																													-	-	-	-	-	-		-	-		-	-	-	+	+				-								
LT - AZAs																									1					1																	-								
LT - YTXs																														1			1				T					-					-								
PSP																										4	-	-	1-	-	1-	1-		+	-	1		t			-						-					+		1	



_			RMP p	osition: AHA posit	tion:			
	Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
	150	Highland Council: Lochaber	Camas Garbh Clams	Sound of Sleat Clams	HL 765 1961 02	Carpet clams	Yes	NG74200840

Biotoxin re	sults from	Camas	Garbh	Clams:	Sound	of Sleat Clams	

		5	Jan		- 11		Fel	b		1	Mar			A	pr			N	Aay		1	Jur	n			Jul		- 3	A	ug			Se	p			0	ct		e	N	ov			De	ec	
Week	1	2	3	4	5	6	7	8	9	10 1	1 12	13	14	15	16 1	7 18	19	20	21	22	23	24	25 3	26 2	7 28	29	30	31	32 33	34	35	36	37 3	3 39	40	41	42	43	44	45	46	47	48	49	50	51	52
ASP																																					*	*	-	-			-				
T - OA/DTX/PTXs																																							-								
LT - AZAs																																							-								
LT - YTXs																																							-								
PSP																																						+								-	

6.8. HIGHLAND COUNCIL: ROSS & CROMARTY





			RMP position: AHA	A position: 🔵			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
35	Highland Council: Ross & Cromarty	Inner Loch Torridon	Ob Gorm Mor	RC 090 245 08	Common mussels		NG86975502
35	Highland Council: Ross & Cromarty	Inner Loch Torridon	Ob Gorm Beag	RC 090 1617 08	Common mussels		NG860547
35	Highland Council: Ross & Cromarty	Inner Loch Torridon	Dubh Aird	RC 090 1616 08	Common mussels	Yes	NG8753655034

Dubh Aird RC 090 1616 08

Biotoxin results from Inner Loch Torridon: Dubh Aird

			Jar	1			1	Feb		-		Ma	r				A	pr				M	lay				Jun				J	ul				Au	g		1		Sep)			ç	Dct			- 17	Nov	v			De	9C	
Week	1	2	3	4	5	6	1	7 8	3 9	9 1	10	11	12	13	14	15	5 1	6 1	7 1	18	19	20	21	22	2 2	3 24	4 2	5 2	6 2	7 2	8 2	9	30	31	32	33	34	35	36	37	38	39	40	41	42	4	3 44	4 45	5 4	16 4	47	48	49	50	51	52
ASP											1					14	3	1					0.3		- 22-		2		1	12	10	- 20		2 3					8.0	0 - 33		- X					12			8				e		
LT - OA/DTX/PTXs		-	1			-						-	+	*	-									-	-	-					-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-				-	-	*	-	*	-	
LT - AZAs																	T																																							
LT - YTXs																									1										-																					
PSP		÷															Т						-	-							•	1		2	10				8.0	0.00		- C					100					1		2 - S		

Phytoplankton results from Inner Loch Torridon: Dubh Aird

			Jan				Fe	eb	- 1	÷	Ma	ar			A	pr			1	May			J	un		1		Jul	1			AL	g	1		5	iep		1		Oc	t	- 1		No	v			De	36		L
Week	1	2	3	4	5	6	7	8	9	10	11	12	13 1	4 1	5 1	6 1	7 1	8 1	9 2	0 2	1 2	2 2	3 24	25	5 26	27	28	3 29	30	31	32	33	34	35	36	37	38 3	39 4	0 4	1 4	12	43 4	14 4	15	46 4	47	48	49	50	51	52	L
Pseudo - nitzschia	1			0 S			1					111												1			1								-							1									1	L
Dinophysis	2 B			0.5			-		1			-	-																								- 1		1			0										L
Prorocentrum lima	8			0.8			1					1.1												1	1		1.1	-											1			0									1	L
Alexandrium	1			0.8			1																				1												1			1										L

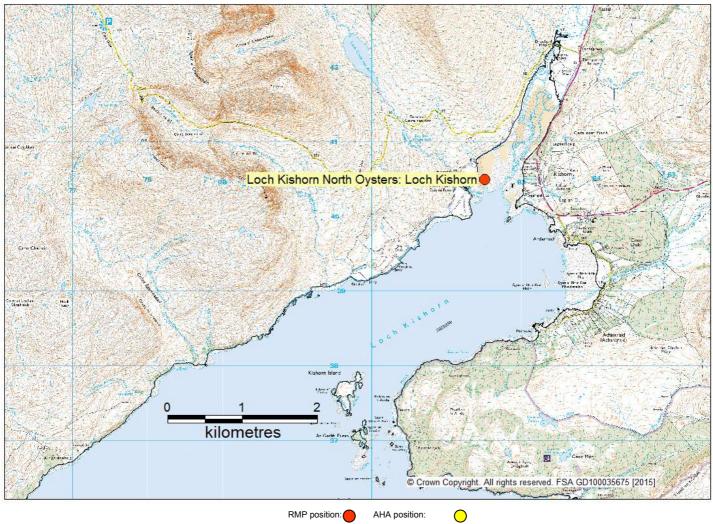


		RMP po	osition: 🔴 AHA p	position: 🔵			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
36	Highland Council: Ross & Cromarty	Loch Ewe & Loch Thurnaig Scallops	Loch Ewe	RC 142 250 07	King scallops	Yes	NG85708880

			an		1		E	eb		1		Ma			1		Ac			1		We		_			un	- 8	9		Jul		- 3	-	Au		ì			Sep			1	6	Oct		1		Vov	-	- 23	Dec	
Week	1	2	3	4	5	6	7	8	1	9 .	0		-	13	14	15	1.1	-	7 1	8 1	_		·	22	23	-		26	27	-			31	32		-	35	36			-	40	41	-		44	45	-		7 4	48	 50 5	
ASP														- 1		14	1				-			14.75	11-1			2.2			2 23	_	() S								24												
T - OA/DTX/PTXs		*				+						-	-	-									-	-	+	-	-	-		-	-	-	-	-	-	-	-	-	-	+	-	*	-	-							-		
LT - AZAs													-												1																-									T			
LT - YTXs													-																					-					-		-									T			
DSD													8 9	6 - B		36-	3 5 - 5	S	2		10		2.2		16 - H			8.0		2 2	8 - 88		8 S	2		2 3		2	- 23		16 - 1	a (8)		1.5		12			100	13	- 22		

Phytoplankton results from Loch Ewe & Loch Thurnaig: Loch Ewe

	1		Jan		- 1		Fe	b	- 1		Ma	ar			A	pr			A	Aay		2	Ju	n	1			Jul				Aug				Sep)		1	0	ct			No	v			Dec	2	-1
Week	1	2	3	4	5	6	7	8	9	10	11	12	13 1	14 1	15 1	16 1	7 1	8 1	9 20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4 35	5 36	37	38	39	40	41	42	43	44	45	46	47	48	49 5	i0 8	51 8	52
Pseudo - nitzschia		2 22		0 - S			e e					1							1					100										1								60 S			· ·		11		10	1
Dinophysis		2 23		2			0					-								T		1																	1			2						0		
Prorocentrum lima		2 22		0 - S			8 - S					1							1								-	-						1								0 S						- 2	10	1
Alexandrium		a (1)		8			e e					1															11							1								69 - S			· ·			- 23	10	1



	\frown	
RMP position:		AHA posit

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
37	Highland Council: Ross & Cromarty	Loch Kishorn North Oysters	Loch Kishorn	RC 329 254 13	Pacific oysters	Yes	NG825405

No samples received from Pod 37 between 1st January and 31st December 2015

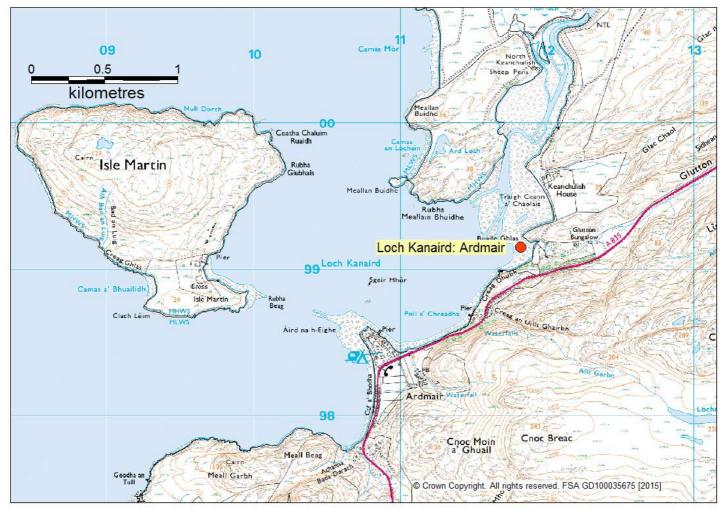


RMP position: AHA position:

 \bigcirc

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
39	Highland Council: Ross & Cromarty	Little Loch Broom	Little Loch Broom	RC 110 247 08	Common mussels	Yes	NH05028983

No samples received from Pod 39 between 1^{st} January and 31^{st} December 2015



RMP position: AHA position:

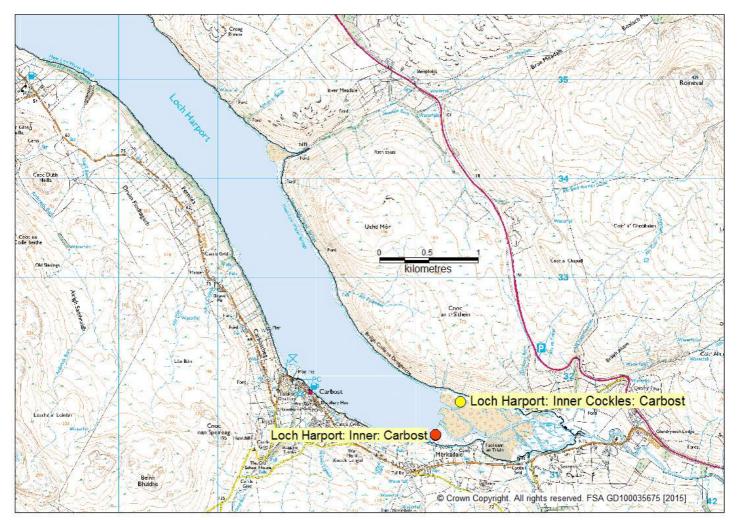
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
144	Highland Council: Ross & Cromarty	Loch Kanaird	Ardmair	RC 625 1233 13	Pacific oysters	Yes	NG11799917

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Biotoxin results	s from	Loch	Kanaird: Ardmair	

1		50	Jan				Fe	eb			R	Aar				Ap	or				Ma	y			Ju	ın		1		Jul			1	A	ug		1		Sep	3			C	oct		1	Ne	ov			D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	5 1	6 1	7 1	8 1	19 2	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
ASP		1									-	-			1							-				*	-		-			1.0	-										-			-							
LT - OA/DTX/PTXs							-					-										-		-					-				-					-	+														
LT - AZAs							-					-										-		1			1		-				-					-															
LT - YTXs							-					-			11							-							-			1.1	-																				
DSD		S		1.1				-																	-		-		-	1										1.													

6.9. HIGHLAND COUNCIL: SKYE & LOCHALSH

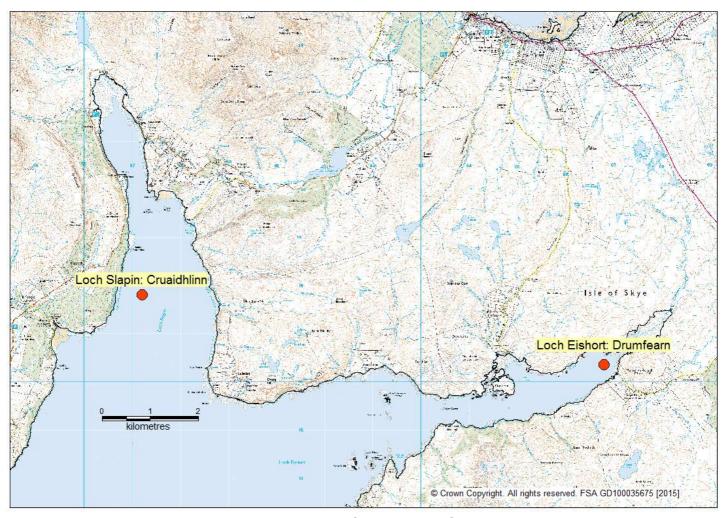


RMP position: 🥚 AHA position: 🜔

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
40	Highland Council: Skye & Lochalsh	Loch Harport: Inner	Carbost	SL 159 286 13	Pacific oysters	Yes	NG392314
40	Highland Council: Skye & Lochalsh	Loch Harport: Inner Cockles	Carbost	SL 159 286 04	Common cockles		NG39443174

Biotoxin results	from Loch	Harnort [.]	Inner: Carbost	
DIDIONITTESUIS	ILOUIT LOCIT	Tialport.		

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LT - AZAs												-			1						-		1								1.0	-					-										11					
LT - YTXs												-			-						-		1								1.0	-															1.5					
PSP													2. 30		4.3	1.10		N. 4		8	10.0		- 25			2 3		Se	0.00		() S			0 0					6 S			-		20 - E			19	3	1	1	-	



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
41	Highland Council: Skye & Lochalsh	Loch Eishort	Drumfearn	SL 137 281 08	Common mussels	Yes	NG66771629
41	Highland Council: Skye & Lochalsh	Loch Slapin	Cruaidhlinn	SL 194 290 08	Common mussels	Alternate RMP	NG572178

Biotoxin results from Loch Eishort: Drumfearn

			Jan		- 11		Fe	b		-	Ma	r			- 2	Apr				M	ay	- 1	1	Ju	n			1.	Jul		-1		Aug		- 2-		Se	p			0	ct			No	v	- 1		De	tC:
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4 3	5 3	5 37	38	3 39	40	41	42	43	44	45	46	47	48	49	50	51
ASP										X			- 10		16 - 3			2		1			0 S			1					9 - S -										5					0.5				
LT - OA/DTX/PTXs		-				•					-	-	-		-	+				1	-	*	(S			-	-	-	-	-	-	-			-	-	-	+	-	-		-	-			1	-			
LT - AZAs															1								10 10					1										1					-				-			
LT - YTXs															-								17 S									-											-				-			
PSP												-		-	*	-	*	-	-	-	-	-	-	-	-	-		-	1		9 8	1.0						1			1					6 S			8 - V	

Phytoplankton results from Loch Eishort: Drumfearn

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Pseudo - nitzschia							1					-																1												1		10	8	1		1		1.55		
Dinophysis		- 75					1					-							-														1	1			1		1		0	19 -	3	8		1	2	2 86		18 X
Prorocentrum lima	1	- 77		2.00			1					-												-	1			-						1					1			10	3	2		×	19	2 55		
Alexandrium	1			2 8																				1							1						17		1	1 X 1		14	3		1	1		0.55		



_				RMP position: AHA pos	ation:			
	Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
	42	Highland Council: Skye & Lochalsh	Loch Sligachan	Loch Sligachan- Pier	SL 195 292 07	King scallops		NG525324
	42	Highland Council: Skye & Lochalsh	Loch Sligachan	Loch Sligachan	SL 195 291 07	King scallops	Yes	NG546324

Biotoxin results from Loch Sligachan: Loch Sligachan (mussels)		Biotoxin results	from Loch	Sligachan:	Loch Sligachan	(mussels)
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13		5	Jan		- 13		F	eb		-	N	lar		1		Ar	or				Ma	v	1	1	J	In		1		Ju	ĭ		1	. A	uq		Ĺ		Se	ab		1		Oct	t		8 <u>—</u>	N	ov		1		De	ec	
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LT - OA/DTX/PTXs		-				-					-	-												-			-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-									
LT - AZAs												-																																						T					
LT - YTXs												-			11														-			11																		T					
PSP		1											1																		8	1.5															-		10	3			£ 0		

Phytoplankton results from Loch Sligachan: Loch Sligacha	an
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		J	an				Feb		1	I	Mar				A	pr				N	lay			J	ın				Jul				A	Jg		1		Se	р			1	Oc	t			No	v		2	De	ec	
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Pseudo - nitzschia			10	32			1	1												-									-							1					1	1	2	1				2 V		2			
Dinophysis			1	2			1	12												-																-				T	1	1	20	1						2			1
Prorocentrum lima	8		1	10	2			10																				12.1	-					-							1		1					2 V		8.0			Т
Alexandrium				10				12			15										T								-											1	1			1						1			Т

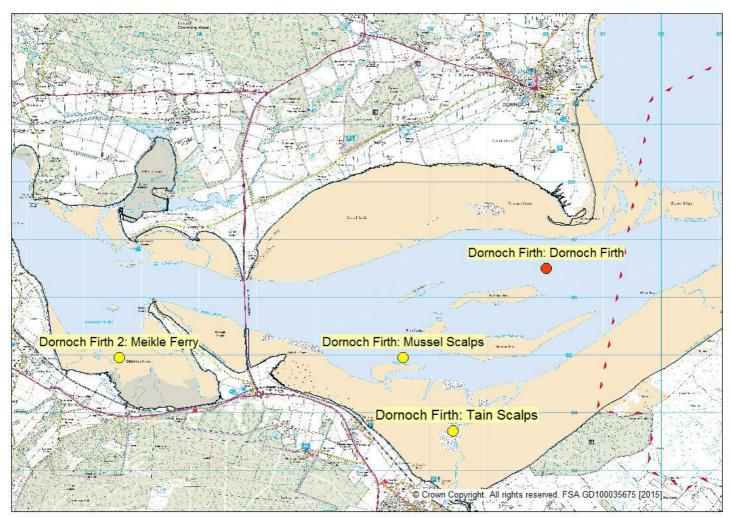




Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
43	Highland Council: Skye & Lochalsh	Loch Bay	Loch Bay	SL 117 275 04	Common cockles	Yes	NG262541

No samples received from Pod 43 between 1st January and 31st December 2015

6.10. HIGHLAND COUNCIL: SUTHERLAND



RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
38	Highland Council: Sutherland	Dornoch Firth	Dornoch Firth	HS 054 239 08	Common mussels	Yes	NH800865
38	Highland Council: Sutherland	Dornoch Firth 2	Meikle Ferry	HS 466 876 08	Common mussels		NH72608495
38	Highland Council: Sutherland	Dornoch Firth	Mussel Scalps	HS 464 872 08	Common mussels		NH77528495
38	Highland Council: Sutherland	Dornoch Firth	Tain Scalps	HS 465 873 08	Common mussels		NH7735981952

Biotoxin results from Dornoch Firth: Dornoch Firth

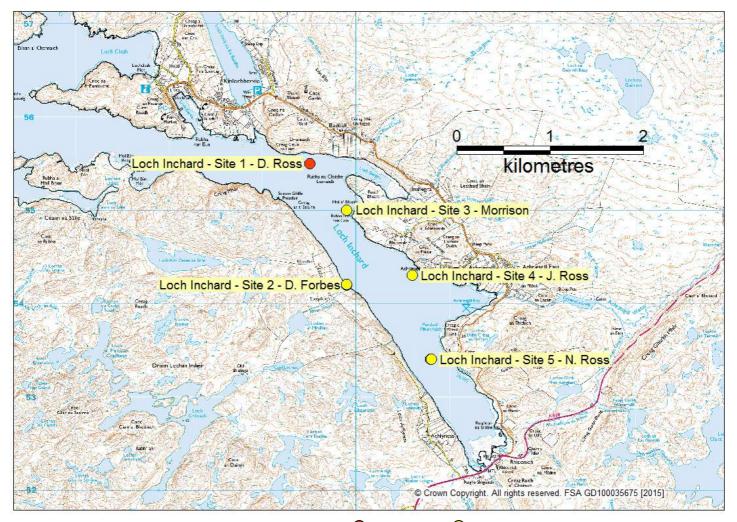
2			Jan		1		F	eb		2	Ma	r			1	Apr				Ma	ay			Ju	in	- 7			Jul			1	A	g		1		Sep				C	Dct		-	N	lov			E	Dec	
Week	1	2	3	4	5	6	7	8	9	10	11	12 1	13 1	14 1	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	2 4	3 4	4 45	46	47	48	49	50) 5	1
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LT - AZAs					1																1																-															
LT - YTXs					1.1																1							-	1		1.5	-															1.5	-				
PSP					1.1										-								+		-			-	-								-	+		-	-						10	3 2 3	2			

Phytoplankton results from Dornoch Firth: Dornoch Firth

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Pseudo - nitzschia		0.00		0.5			8 - 8 - 8		100	6 83		0.50	1		1	1			10	32.5		1				1				1	1	0.0		1			1				0	33	10	1	1	10	10	-		
Dinophysis		0 - 23		0.5			8 X		8.3	6 - 83		0 S	1	2	1	10			10	3 2 3										2	12	0.00			1 23				8		0		- 22	8	1	12	1	2		
Prorocentrum lima		0 8		0.0			S - 3		8.3	6 - 88		() ()	- 23	Č		1			1	1									1		1000	2.20		7	1 33		1				0	1	12	2		10				
Alexandrium		0.0					S. 8		11	8 83		0.50	100	~		1			100	3 2 3										1		10 - XX									10		100							

Phytoplankton results from Dornoch Firth 2: Meikle Ferry

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Pseudo - nitzschia		8 - XX	100		2	1						1				1					1		1			1			1					1			1					÷.	3	2	1	×		2 23		8 - X
Dinophysis					2																					1								100						12 A		-6		2	1	1				0
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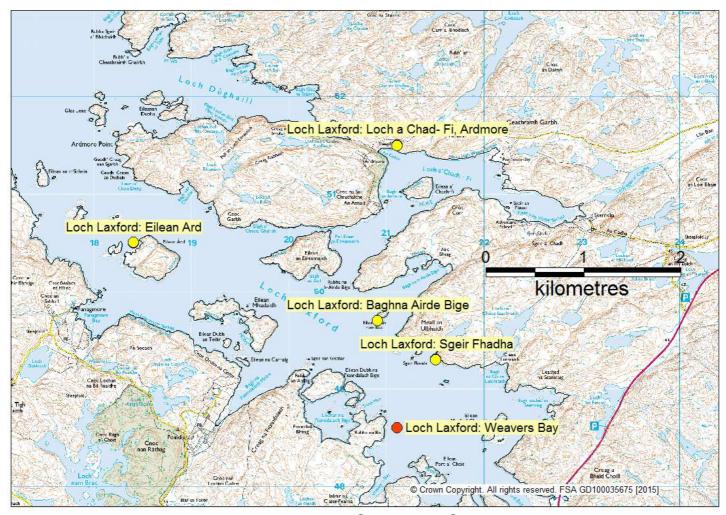
			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
47	Highland Council: Sutherland	Loch Inchard	Loch Inchard - Site 1 - D. Ross	HS 162 311 08	Common mussels	Yes	NC235555
47	Highland Council: Sutherland	Loch Inchard	Loch Inchard - Site 2 - D. Forbes	HS 162 312 08	Common mussels		NC239542
47	Highland Council: Sutherland	Loch Inchard	Loch Inchard - Site 3 - Morrison	HS 162 313 08	Common mussels		NC239550
47	Highland Council: Sutherland	Loch Inchard	Loch Inchard - Site 4 - J. Ross	HS 162 314 08	Common mussels		NC246543
47	Highland Council: Sutherland	Loch Inchard	Loch Inchard - Site 5 - N. Ross	HS 162 315 08	Common mussels		NC248534

Biotoxin results from Loch Inchard: Loch Inchard - Site 1 - D. Ross

19			Jan				Fe	eb		2	M	ar	- 13			Ap	r			M	lay		1	J	un		1		Jul				Au	g			S	ер				0	ct		1	Ne	ov			E	Dec	2
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34 :	35	36 :	37	38 3	39 4	40	41	42	43	44	45	46	47	48	49	50	0 5	51
ASP										1			5 - Y		0.8		1	2		1	0.0		27			2		1	0.0		0.0	0.00	1				1	0	3	1							0.0					
T - OA/DTX/PTXs		-				-				+	*	-	-	-	-	-				11	-			-		1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					+	-				
LT - AZAs																												-	1								- 1															
LT - YTXs																				100								-	1			-					- 1														T	
020		S								1			- 30			-	-			1.00				1		1		200	10 0		13 3	1.00	10		1	8 - 1 X	- 23	13	3.5	- 32		4 3			1000		13 3	8 1 2		1	1	

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		lan					eb																						Jul									Sep			2	0	ct	
T	2	3	4	5	6	7	8	1	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	4

		1	an				Feb	2	1	1	Mar		1		Ap	r			1	May			Ju	IN				Jul			1	Aug				Sep		1		Oc	:t			Nov	1	1		Dee	с	
Week	1	2	3	4	5	6	7	8	9 1	0 1	1 1	2 13	3 14	15	16	17	7 18	8 19	9 2	0 21	1 22	23	24	25	26	27	28	29	30 3	1 3	32 3	3 3	4 35	36	37	38	39 4	40 4	11	42	43	44	45	46 4	47	48	49	50	51	52
Pseudo - nitzschia	8			- 8 F				1	1	-	10	32.5			*			1													11		1	1				1		1		2.0		1						2
Dinophysis	2				2			2	10	-	10	32.3		2	1																			1				1		- 20								- 23		8
Prorocentrum lima					2			1			10	30.0		2	-																		1	1				1		- 22								10		
Alexandrium										1	10	31.3			1				1															1				1						1				100		



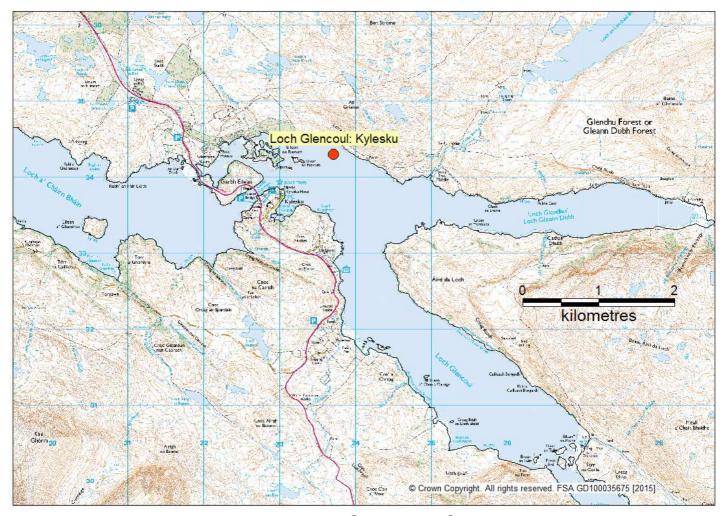
RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
48	Highland Council: Sutherland	Loch Laxford	Weavers Bay	HS 167 320 08	Common mussels	Yes	NC211486
48	Highland Council: Sutherland	Loch Laxford	Eilean Ard	HS 167 317 08	Common mussels		NC184505
48	Highland Council: Sutherland	Loch Laxford	Baghna Airde Bige	HS 167 316 08	Common mussels		NC209497
48	Highland Council: Sutherland	Loch Laxford	Loch a Chad- Fi, Ardmore	HS 167 318 08	Common mussels		NC211515
48	Highland Council: Sutherland	Loch Laxford	Sgeir Fhadha	HS 167 319 08	Common mussels		NC215493

Biotoxin results from Loch Laxford: Weavers Bay

			Jan		- 12		Fe	b			Ma	r			A	pr				Ma	у	1		Ju	n				Jul			-	Au	g			12	Sep		- 18		0	ct		č	N	lov		1	D	Dec	;	
Week	1	2	3	4	5	6	7	8	9	10	11 .	12 1	13 1	4 1	15	16 1	7 1	8	19 :	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	0 5	1	5
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LT - AZAs																																							-									-					
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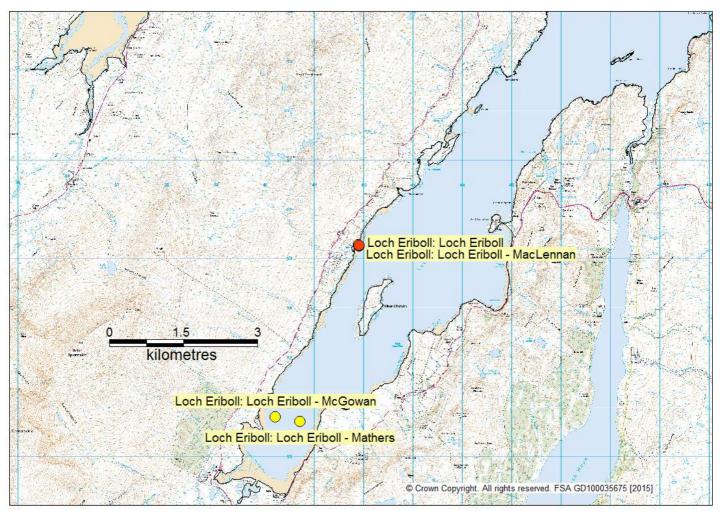
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Pseudo - nitzschia		2.33		0.8				1		1	11	-								11			1.0									-	1			1		1	2.0		1			0.0			6 (S)	1	
Dinophysis	2	2 - 23		0.5				1		1	11	-												1										1		1		14	10 - A		- 14 - 14 - 14 - 14 - 14 - 14 - 14 - 14			0.0		8.3	2.20	10	1
Prorocentrum lima		2 22		0 S				1				-									T					1.0								1		1		1			10			0 0		8	2 X	1	7
Alexandrium		2 - 23		0 8				1			11			1					-					1														1	10.0		19 - S			0.0				1	2



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
49	Highland Council: Sutherland	Loch Glencoul	Kylesku	HS 157 310 08	Common mussels	Yes	NC237343

Biotoxin results from Loch Glencoul: Kylesku

12		5	Jan		- 11		Fe	eb			Ma	r	1		1	Apr				M	ay			Ju	n				Jul			1	Aug	3	- 12		Se	ep		1		Oct				Nov	1	- 22		De	c	
Week	1	2	3	4	5	6	7	8	9	10	11	12 1	3 1	14	15	16 1	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	34 :	35 3	36 3	37 3	8 3	9 4	0 4	1 4	2 4	3 4	4 4	5	46 4	47 4	48	49	50	51	52
ASP													-20	1						8.3	2.23		1			1	-		S. 23		0 X			1				100		11	1		1			10		1				
LT - OA/DTX/PTXs		-																					1	+	*	-	-		-	*	-	-	-	-	-	-	-															
LT - AZAs																					1										1																					
LT - YTXs		5									-										1										1.0						-															
PSP		5											- 20								-	*	-	-	-	-	*				0 S												1					12		1		



			RMP position:	IA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
50	Highland Council: Sutherland	Loch Eriboll	Loch Eriboll - MacLennan	HS 139 307 08	Common mussels		NC41895928
50	Highland Council: Sutherland	Loch Eriboll	Loch Eriboll - McGowan	HS 139 309 08	Common mussels		NC402558
50	Highland Council: Sutherland	Loch Eriboll	Loch Eriboll - Mathers	HS 139 308 08	Common mussels		NC404564
50	Highland Council: Sutherland	Loch Eriboll	Loch Eriboll	HS 139 305 08	Common mussels	Yes	NC41885923

No samples received from Pod 50 between $1^{\,\text{st}}$ January and $31^{\,\text{st}}$ December 2015



			RIMP position.				
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
51	Highland Council: Sutherland	Kyle of Tongue	Kyle of Tongue	HS 103 303 13	Pacific oysters	Yes	NC59105900

Biotoxin results from Kyle of Tongue: Kyle of Tongue

1		5.	Jan		1		Fe	eb			Ma	r			A	pr			1	May	1	1		Jui	n	1			Jul				AL	g			10	Sep				0	oct		- P	1	Nov				De	c	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 1	4 1	5 1	16 1	7 1	8 1	9 2	0 2	21 2	2 2	23 2	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	4:	3 44	4 45	5 40	6 47	7 4	8 4	9 5	50	51	5
ASP											2	3		14	3	1			1	2		15		12					0.00			+		8 D			1.00			e 02		1		18			10	2	1				
LT - OA/DTX/PTXs											-					-											-	*	-	-	-	-	+	-			-																
LT - AZAs											-																	-									1.1																
LT - YTXs											-																	-									1.1																
PSP				1.000						1	- 8	3		14	1	- 22			- 81	3		- 13	-	- 22		2	-	1	2 - 83		10			\$ - ji			- 25			£ 9		10-10		14			100	1	22		1		e.

6.11. NORTH AYRSHIRE COUNCIL



Pod 52

RMP position: AHA position:

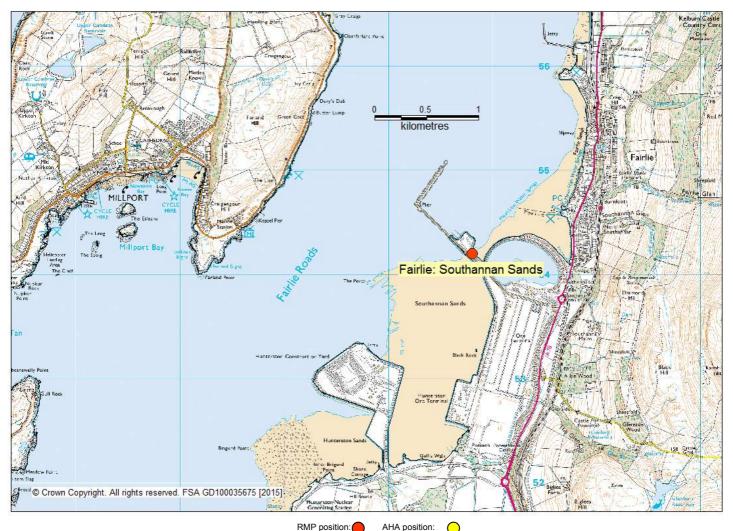
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
52	North Ayrshire Council	Arran: Lamlash Bay	Lamlash Bay	NA 007 329 08	Common mussels	Yes	NS035298

Biotoxin results from Arran: Lamlash Bay

12			Jan		- 11		Fe	b			Mar	1	1		Ap	r			Ma	iy		J	un		1	J	Jul		- 1	A	ug		1	Se	p			0	ct	- 1		Nov	1		D	lec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 14	15	16	17	18	19	20	21 1	22 2	23 24	25	26	27	28 2	29 3	30 3	1 3	32 33	34	35	36	37 3	8 39	40	41	42	43	44	45	46 4	47 4	18 49	50	51	52
ASP		5 - L								1				14		2		1																							1.2				×		
T - OA/DTX/PTXs		-				-				-			-	+	-																										1.20				-		
LT - AZAs														1.0				-																							2.30						
LT - YTXs		×												1.5	-																										2. 20				*		
PSP		1											-	14-14	-	-		-																							-				-		

Phytoplankton results from Arran: Lamlash Bay

			Jar	1		1	F	Feb		1-	M	ar	12			Apr	23	- 13		Ma	ay		2	Ju	n			1	ul		- 1		Aug	J			S	ер		1		0	ct		-	N	vc		2	D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	29 3	30 3	31 3	32	33 3	4 3	5 3	36 3	37 :	38 3	39 4	40	41	42	43	44	45	46	47	48	49	50	51	52
Pseudo - nitzschia	8-7	6 S		100						×								2 - 33		0 R			0 - V.			- 23		2 2 2	1			1			1		1		1			2 23		0 B			S - 3		100	2 - 8		1
Dinophysis		6 5		1														2 - 23		0 - N			8 - V					2 2 2														2.23		100					100	2.3		1
Prorocentrum lima		6 F		1														2 - 43		9 S			e e				1	3 S S																1			2			2.3		
Alexandrium	2	6 F		1	80.00			1	12									2 - 23		9 R			8 - V			- 23		2 8 2	1					- 23								2.23		2.5			е с		100	8-8		10

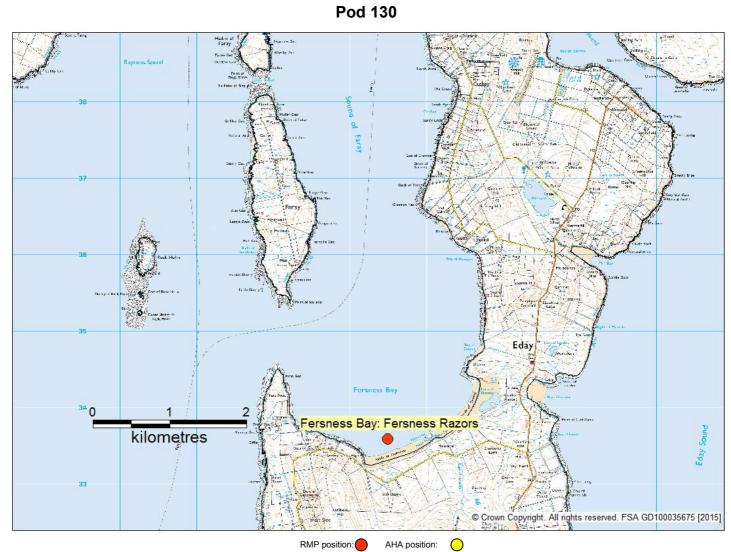


Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
53	North Ayrshire Council	Fairlie	Southannan Sands	NA 065 332 13	Pacific oysters	Yes	NS198542

Biotoxin re	esults from	Fairlie:	Southannan	Sands

12			Jan				F	Feb		1	M	lar				Ap	r			1	Ma	у	1		Ju	n	- 2			Jul			° .	Au	g			12	Sep	13			C	oct		1	1	lov				De	с	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	5 17	18	11	9 2	0	21	22	23	24	25	26	27	28	29	30	31		33	34	35	36	37	38	39	40	41	42	4	3 44	45	4	6 4	7 4	8 4	9 5	0	51	5
ASP												80.0	8 A		10-1		2	1		1	10								1	2 23		0.34						2.23		0.5					18			10	20	1	1			
T - OA/DTX/PTXs		÷									-	-	1		1.00							-			-	-			-	1.00		1.00		-			*	-		-					-									
LT - AZAs		÷										-			1.0	F													-															1	-									
LT - YTXs		-										-			1.0	F													-	1			-											1	-			11						
PSP		1								1		1000	8 8		16 8			-	-	. 8		- 3							8 S	2 - 23		0.6						8.88		6 8	1.0				12			10	3		1			

6.12. ORKNEY ISLANDS COUNCIL



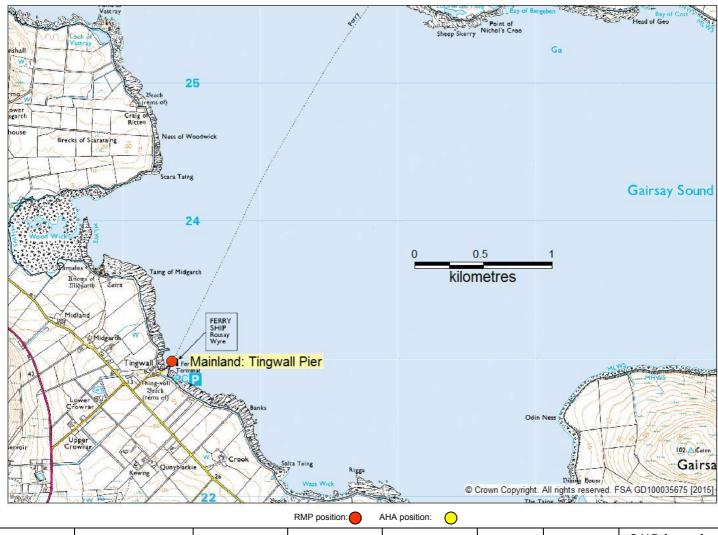
RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
130	Orkney Islands Council	Fersness Bay	Fersness Razors	OI 455 859 08	Razors	Yes	HY54503358

Phytoplankton results from Fersness Bay: Fersness Razors

		133	Jan				F	eb		e	N	lar				Apr				M	ay			Ju	ın	12			Jul				Au	g			S	Sep				0	ct		1	N	ov		1	D	Dec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	0 51	1 5:
Pseudo - nitzschia		0.0	_	0 S	1.1		1	1					-					6 X		0.3			× *		89 - R	5 - 53		0.5	1.11		÷ *					2 8 2						8 X		2				*	100	1	1	10
Dinophysis	2	2 23	_	63 - S	0.00		2			-			-					6 X		8 8			P - 3		20 - X	5 - 53		0.5	1.0		с С					2 8 2						2 23		0.1			1	2	12		2	10
Prorocentrum lima	8.0	2 23		8 - S	1.12		2	1	1	-								0 23		S 3			2		20 X	8 8		0 S					2			3 - S 0						a 10		0.0				×	14	100	1	
Alexandrium	8.7	a 18		0.3	1.1		8 - S	1	1			-					8	5 8		S 3			2		S 8	2 23		63 - S	1.12		÷ ÷			1.10		2 8 2	1					8 8) 8		0.3			÷	1	14	10.0	0	100

Phytoplankton monitoring point only

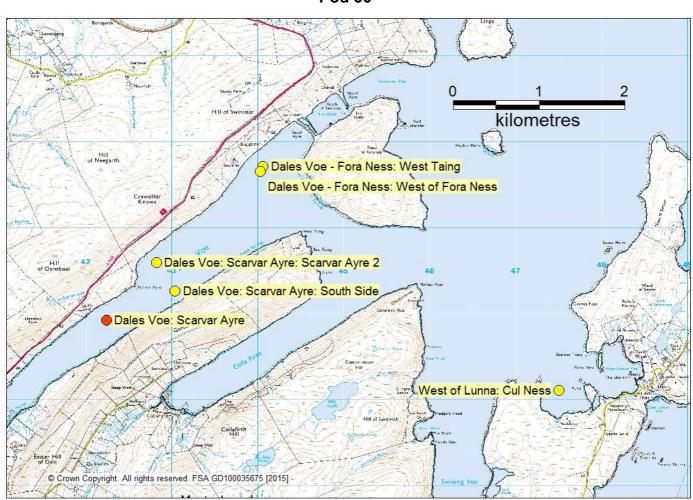


Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
N/A	Orkney Islands Council	Mainland	Tingwall Pier	N/A	N/A	N/A	HY40392298

Phytoplankton results from Mainland:	Tingwall Pier
--------------------------------------	---------------

		J	an				Fel	b	- 10		Ma	r			Ap	or			- 1	May			Ju	ın			-	lul			A	ug			S	iep		1		Oc	t			Nov	1	1		De	tC.	
Week	1	2	3	4	5	6	7	8	9 1	10 1	1 1	2 1	3 1-	4 1	5 14	5 1	7 1	8 1	9 2	0 2	1 22	23	24	25	26	27	28	29 3	0 31	32	2 33	34	35	36	37	38	39 4	40 4	11 4	12	43	44	45	46 4	17	48	49	50	51	52
Pseudo - nitzschia			0	- 62							13	37	-	[*]	1			1				1		100				111				1										2 8 2		1	2					1
Dinophysis			1	- 32				1		- 2	- 3	3	2	1	1							1																1						8	- 2			2 23		8
Prorocentrum lima			1	20				1		- 2	8	2			~			1	-												112	-										2 8 2		1	1			2.12		8
Alexandrium			1	100						1	10	10	1		1							1																1				2 8 1		10	1					8

6.13. SHETLAND ISLANDS COUNCIL



Pod 56

RMP position: AHA position:

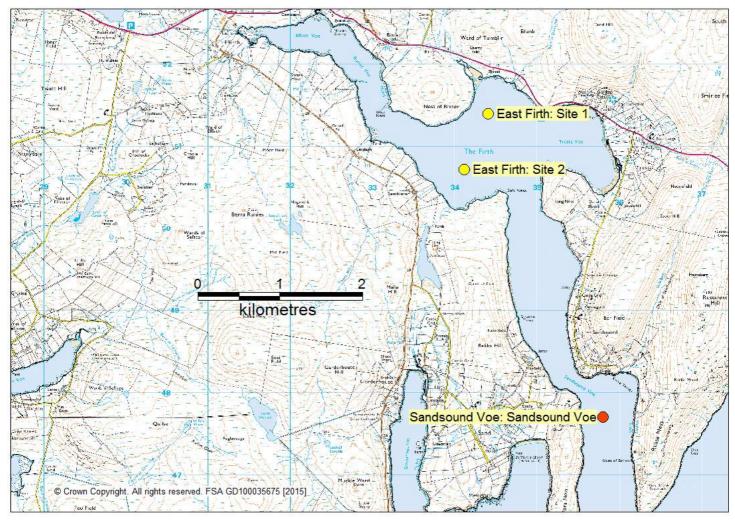
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
56	Shetland Islands Council	Dales Voe: Scarvar Ayre	Scarvar Ayre	SI 050 420 08	Common mussels	Yes	HU42236992
56	Shetland Islands Council	Dales Voe – Fora Ness	West Taing	SI 502 869 08	Common mussels		HU44057171
56	Shetland Islands Council	West of Lunna	Cul Ness	SI 380 770 08	Common mussels		HU475691
56	Shetland Islands Council	Dales Voe – Fora Ness	West of Fora Ness	SI 503 870 08	Common mussels		HU44027165
56	Shetland Islands Council	Dales Voe: Scarvar Ayre	South Side	SI 501 868 08	Common mussels		HU43037026
56	Shetland Islands Council	Dales Voe: Scarvar Ayre	Scarvar Ayre 2	SI 504 871 08	Common mussels		HU42817059

Biotoxin results from Dales Voe: Scarvar Ayre

		5	Jan				Fe	eb		1	M	ar	1			Ap	r			M	ay		1	Ju	un				Jul			1	AL	g		1		Sep				00	:t		ľ –	N	ov			De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
ASP								i i				1	5 35		10-0			2		8	0.00					1		-	1		1.11	1				1			-	111					1		0.0	5 1 1 2		8 V.		
LT - OA/DTX/PTXs												-			-	-					-		-				-	-	-	-	-	-	-	-	-	-	*	-	+	-	-	+	-	-			1.1	-	+	-		
LT - AZAs												-			1.0	-					-							-	1		1.1						-											-				
LT - YTXs												-			1.0	-					-					1		-			1.5	-															1.1	-				
PSP												1	8 A)		14 - X	-		÷			-					-		1	1		1.5	-		· ·			i - 54										0.3	5 2 22				1

Phytoplankton results from Dales Voe: Scarvar Ayre

			Jan	1			Fe	eb		°	Ma	r			Ap	r			1	May			J	un				Jul			1	Au	g			S	ep		11	0	Dct		3	No	ov		12	De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12 1	3 1-	4 1	5 14	5 17	18	8 1	9 2	0 2	1 2	2 23	3 24	25	26	27	28	29	30	31	32	33	34	35	36	37 3	8 3	9 4	0 41	42	2 43	3 44	4 45	46	47	48	49	50	51	52
Pseudo - nitzschia		8 - 88		0 S			÷ *					11	1					1	1					1	1		1.1	-		1			-		-							10	31.5		1	2	100	2.1		
Dinophysis		5 23		0.0			8 - S		2				-				1							1											-				1			10	32.3			2	10.0	2.5		0-3
Prorocentrum lima		6 - 88		8.3			S																	-			1.1								-				1			10	3			×.	100			
Alexandrium		0.00		100													1																									10	1			2	100	2.10		<u> </u>



RMP position: AHA position:

 \bigcirc

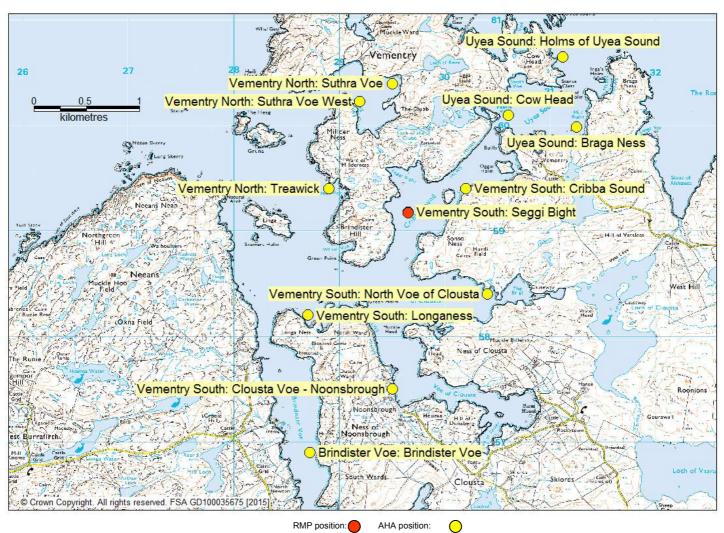
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
57	Shetland Islands Council	Sandsound Voe	Sandsound Voe	SI 242 443 08	Common mussels	Yes	HU358477
57	Shetland Islands Council	East Firth	Site 1	SI 379 769 08	Common mussels		HU344514
57	Shetland Islands Council	East Firth	Site 2	SI 379 831 08	Common mussels		HU34115072

Biotoxin results from Sandsound Voe: Sandsound Voe

			Jan			1	Feb	0		2	N	lar		1		A	pr				M	lay			58	Jun		- 1		5.	lul		- 6		AL	g		1		Se	р			1	Oct	ŧ	-		No	v			D	ec
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	5 1	16	17	18	19	20	21	2	2 2	3 24	4 2	5 2	26	27 :	28	29	30	31	32	33	34	35	36	37	38	39	4	0 4	1 4:	2 4	43 4	44	45	46	47	48	49	50	51
ASP				8								8			14	2	1		- 2		8	10.0		10		2		1	-		- 23		3 3			8 V					100		2					- 11		6 S			2	
LT - OA/DTX/PTXs		*		2								-										-			-	-	~ ·	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	*	-	*	-
LT - AZAs				2								-			11																																							
LT - YTXs		1										-			11							-											-									T												
PSP										-		1			14	- 1			-		8		T						1							s - 0		-	-		-		1							6 - S			1	

Phytoplankton results from Sandsound Voe: Sandsound Voe

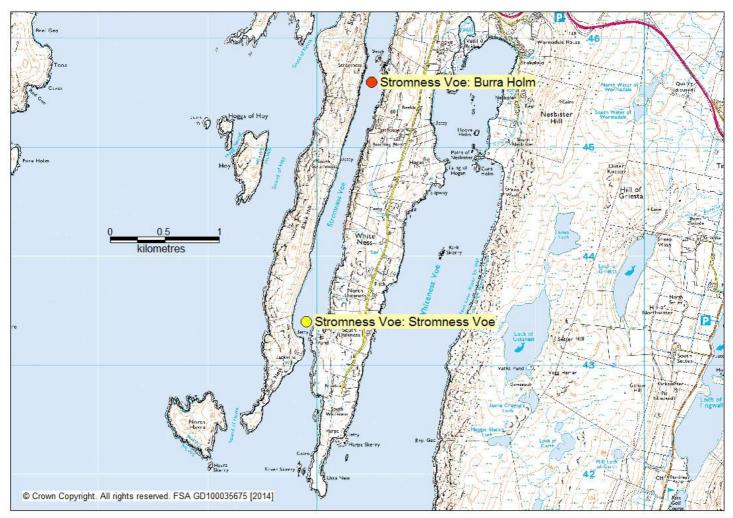
		139	Jan				Fe	eb		1	M	ar				Apr			1	N	lay		1	Ju	In			ل	Jul				Aug	1	1		Se	р			10	Oct	t			Nov		12	1	Dec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30 3	31 3	32	33 3	4 3	5 3	6 3	7 38	B 39	9 4) 4	1 4:	2 4	13 4	4 4	15 4	6 4	7 4	8 4	9 5	0 5	1 5
Pseudo - nitzschia		2 (2)		6 N			e e							-	1														-											1			100	1	10	2	~	14			100
Dinophysis		2 23		3 3			0 0		1									-		1	1								1											1			8	1	- 2	10		12		2	10
Prorocentrum lima		0 - 23		0 - S			0.0			10 - L		1								1																				1			8	1	1	1	×	12			10
Alexandrium		2 (2)		6 - S			e e						-				1																							1			10	1	1	2	~	12			



	ſ	1			1		1
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
58	Shetland Islands Council	Vementry South	Seggi Bight	SI 321 462 08	Common mussels	Yes	HU29655918
58	Shetland Islands Council	Vementry South	Cribba Sound	SI 321 460 08	Common mussels		HU302594
58	Shetland Islands Council	Vementry South	Clousta Voe - Noonsbrough	SI 321 459 08	Common mussels		HU295575
58	Shetland Islands Council	Vementry South	North Voe of Clousta	SI 321 461 08	Common mussels		HU304584
58	Shetland Islands Council	Vementery North	Suthra Voe	SI 322 463 08	Common mussels		HU295604
58	Shetland Islands Council	Vementery North	Suthra Voe West	SI 322 464 08	Common mussels		HU29196023
58	Shetland Islands Council	Vementery North	Treawick	SI 322 465 08	Common mussels		HU289594
58	Shetland Islands Council	Brindister Voe	Brindister Voe	SI 023 406 08	Common mussels		HU28725690
58	Shetland Islands Council	Uyea Sound	Cow Head	SI 441 845 08	Common mussels		HU306601
58	Shetland Islands Council	Vementry South	Longaness	SI 321 885 08	Common mussels		HU287582
58	Shetland Islands Council	Uyea Sound	Holms of Uyea Sound	SI 487 842 08	Common mussels		HU31126065
58	Shetland Islands Council	Uyea Sound	Braga Ness	SI 441 874 08	Common mussels		HU31255999

		Jan			_	Feb			3	Mai	r .				Ap	r				- N	lay			1	Ju	un				Ju	ę			Α	ug				S	ep	8	1		0	Oct			_	No	v			E	ec	
Week	1 2	3	4	5 1	5	1 8	9	1	0 1	1 1	2	13	14	15	10	5 1	7 1	18	19	20	2	1 2	22	23	24	25	26	27	28	29	30	31	32	33	34	35	5 3	6 3	7 :	38	39	40	41	42	4	3 4	4 4	15	46	47	48	49	50	5	1
ASP										1		- 22		(<u>)</u>						1		22								200		10									2 3									2 - 21				1	
T - OA/DTX/PTXs	1									-		*	-		-	2										*	-	-	-	-	-	+	-	-	-	-			-	-	-	-	*	-			-	-		-					
LT - AZAs																													-																										
LT - YTXs										- 1					Г	T					Г							1	1							T	T	Т									Т				-			Т	
PSP												2			Г	T					Т							T	1				-				T	Т	1															1	
													Р	hy			nk	to	n١				fro	om	۱V	em		ntry	S			Se	ggi			t							12				-					12			
	17	Ja				Fe	b	- 1		M	ar					pr					Ma									Ju					luq					iep					Oct				No					lec	

WOOK		~	2	-				10	 12	1.2	 13	10	 10	15	20	21	2.0	2.	27	20	20	21	20	20	50	 52	500	1.54	30	100	31	50	33	40		72	1-3		 140		-	1 40	50	10		~
Pseudo - nitzschia	2	8 - SS	1	2 8		· ·									1					1			1.1							1.00								с. -		1					1	
Dinophysis				5 - 3																-							1								2			8 - S	3	1	2			8	- 0	1
Prorocentrum lima	8.7			5 8									-		1					-			1.5	-						1.00					2			0	8	1	1	12			1	
Alexandrium	2	2 - 22		5 8		° °			-	-					1				-	-			1															8	1	1	2	12			0	1
																								_																-			-			-



RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
59	Shetland Islands Council	Stromness Voe	Burra Holm	SI 273 467 08	Common mussels	Yes	HU385456
59	Shetland Islands Council	Stromness Voe	Stromness Voe	SI 273 446 08	Common mussels		HU379434

Biotoxin results from Stromness Voe: Burra Holm

		10	Jan				F	eb			N	lar				Apr				Ma	y			Jur	n			Jul				Aug		1		Se	p			Č.	Oct	t	- 16		Nov	š –		E	Dec	1
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23 2	24 2	25 2	6 2	7 28	29	30 ;	31	32	33 3	4 3	5 3	6 37	7 3	8 3	9 4	0 41	1 4	2 4	13	14 4	15 4	6 4	7 4	18 4	9 50	0 5	1
ASP				1	2							81.1	8 Q		19 A	2.2																				20	10		11		- 24							×		
LT - OA/DTX/PTXs				8	1								1																			-	-	-		-	-			-	-		-					-	-	-
LT - AZAs				8																																												5		
LT - YTXs				8																																												1		
DSD		5 - C										20 - C	2 B		16-1																					8	10	3 5	12		- 04	10	(



RMP position:	AHA position:	\bigcirc
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
60	Shetland Islands Council	South of Houss Holm	South of Houss Holm	SI 261 444 08	Common mussels	Yes	HU37343083
60	Shetland Islands Council	South Voe Mussels	South Voe Mussels	SI 421 825 08	Common mussels	Alternate RMP	HU37243206
60	Shetland Islands Council	Clift Sound Houss	Clift Sound Houss*	SI 633 1270 08	Common mussels	Alternate RMP	HU38503195
60	Shetland Islands Council	Clift Sound Houss	South Holms Geo*	SI 633 1690 08	Common mussels		HU38573195
			*Maura d ta Dad CZ				

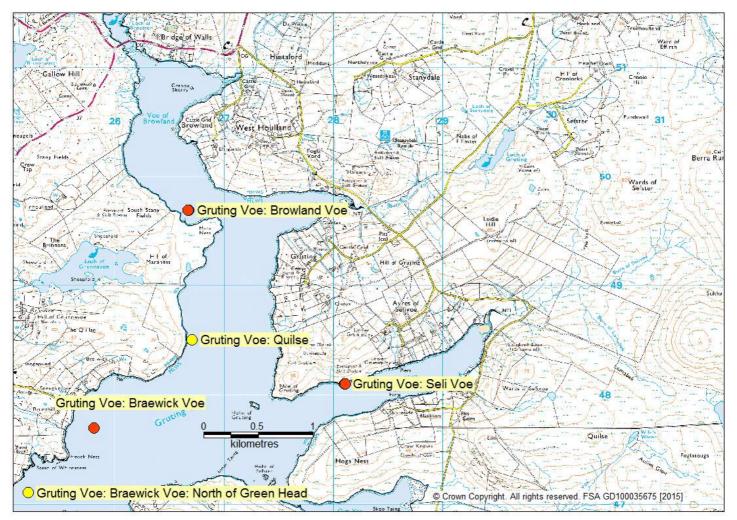
*Moved to Pod 67 November 2015

Biotoxin results from South of Houss Holm: South of Houss	Holm
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1	19	Jan			Feb		N	lar			Apr	1	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Week	1 2	3	4 5	6	7 8	3 9	10 11	12	13 1	4 1	5 16 17 1	3 19	20 21 22	23 24 25 26	27 28 29 30 31	32 33 34 35	36 37 38 39 40	41 42 43 4	4 45 46 47 48	49 50 51 52
ASP																				1
LT - OA/DTX/PTXs																				10 m m
LT - AZAs																				1 million (1997)
LT - YTXs																				1 million (1997)
PSP									B	lioto	oxin resu	ılts fr	om Clif	t Sound Ho	uss: Clift Sou	nd Houss				
PSP		lan		1	Feb		N	lar	В	ioto		lts fr		2000	ouss: Clift Sou		Sen	Oct	Nov	Dec
PSP Week		Jan 3	4 5	6	Feb			lar	1		Apr	1	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	1 2		4 5	6	Feb 7 8				1		Apr	1	May	Jun	1 87753	Aug				
Week			4 5	6	-				1		Apr	1	May	Jun	Jul	Aug				
Week ASP			4 5	6	-				1		Apr	1	May	Jun	Jul	Aug				
Week ASP LT - OA/DTX/PTXs			4 5	6	-				1		Apr	1	May	Jun	Jul	Aug				

Phytoplankton results from Clift Sound Houss: Clift Sound Houss

		132	Jan				F	eb		1	N	lar		1		Ap	r		2	N	lay		1	Ju	ın	1			Jul	t –			A	ug				Se	p		1	(Oct		-82	- 1	Nov		1	D	ec	
Week	1	2	3	4	5	6	7	8	9	10) 11	12	13	14	15	16	17	18	3 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	3 39	3 40	0 41	42	2 4	3 4	4 4	5 4	6 4	7 48	49	50	51	5
Pseudo - nitzschia		a (13		0.5	2.2		2		1			1	-				1	1	8	10	3 2 3	2	18. C			0.0		10 S						0.3	1	10	50.0	8	8	*	12	10.0	2	10	3	1		1	1	2.3		10
Dinophysis		1.10		8 S									F				1		8	10	3	2	- C			2.2		8 A			0.0		1	0 3		10	3	8	10	8	12			10	3	2		1	12	0.3		10
Prorocentrum lima		2 23		0 S			1	1	1				-				1		8	10	3 2 3	2	8 S			0.0		02.5			0.0		19	10 3		10	30.0	2	1	8	14		2	0	3	1		1	100	6.3	1	1
Alexandrium		a 18		0.3	1		1					1.5	-				1	1	<u>ه</u>	10	8 1 1	2	8. 6			0.0		() () ()			8 8			10.13		10	1	2	1	1		10.0	1	10	3	1		1	1	10.0		10



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
61	Shetland Islands Council	Gruting Voe: Browland Voe	Browland Voe	SI 081 425 08	Common mussels	Alternate RMP	HU26674969
61	Shetland Islands Council	Gruting Voe: Seli Voe	Seli Voe	SI 084 428 08	Common mussels	Alternate RMP	HU281481
61	Shetland Islands Council	Gruting Voe: Quilse	Quilse	SI 083 427 08	Common mussels		HU267485
61	Shetland Islands Council	Gruting Voe: Braewick Voe	Braewick Voe	SI 080 424 08	Common mussels	Yes	HU25784770
61	Shetland Islands Council	Gruting Voe: Braewick Voe	North of Green Head	SI 442 846 08	Common mussels		HU252471

Biotoxin results from Gruting Voe: Braewick Voe

1			Jan		12		Fe	eb			M	ar				Ap	r		-		Aav		1		lun		-		Ju	Ľ.		1	A	I.C.		34		Sep			1		Oct		10-	-	Nov				De	-	
Week	1	2	3	4	5	6	7	8	9	10	-	-		14	15	1.11	-	18	3 19	-		1 2	2 2		-	5 26	5 27	28	-	-	31	32	33	-	35	36	_		-	40	41	-	-	3 4	4 45		-	-	48	49	-	-	1
ASP								i i		-			8 <u>8</u>				1			1	1	1	1			1		1			1	-					-					-						35			e 7		1
T - OA/DTX/PTXs				+				-					1			-				11	-	-	-					-			+	-	-	-	*	-	-	-	-	-	-	+			-			-	+	-	-	-	Ē
LT - AZAs																F												-																									
LT - YTXs																T				11	Т			T				-			1.5	-					-			Г			T										
DSD				1.00				1				8.1	2 8		16 A	8 1 3	8			- 87	12	0	- 25			1		14	22.3		10			4 V			-	-	-		8	1	1	12			100				÷ 5		7

Phytoplankton results from Gruting Voe: Braewick Voe

	-	19	Jan				Feb)		P	Mar		1		Ap	r			- 1	May			J	un				Jul				Au	g			S	ep		- 1		0	ct	3	-	N	ov		12	D	Dec		
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Pseudo - nitzschia		2 - 23		1		1		1			11							1	1				1	-	1		1.2	-															() S			1		1	12.3			
Dinophysis		2 - 23			2	1		2		1	1 fr	-				1			1				1	-	1		1.1																0 S			2		12				1
Prorocentrum lima		2 - 23			1	1		1			11	-												-	1		1.5																0 S			2		12				
Alexandrium	8	2		1.1	10			100																1	1							1											0.3	1.1			2	10	12.0			



RMP position: AHA position:

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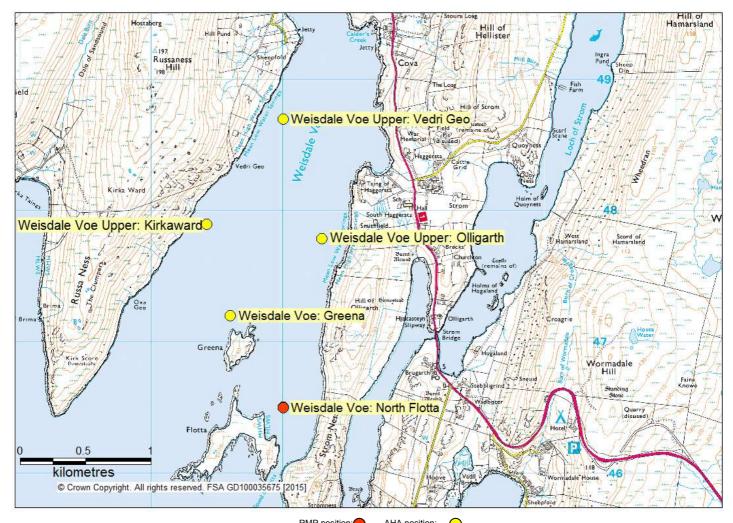
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
62	Shetland Islands Council	Catfirth	Catfirth	SI 032 412 08	Common mussels	Yes	HU44715361
62	Shetland Islands Council	Wadbister Voe	Wadbister	SI 294 466 08	Common mussels	Alternate RMP	HU43445045

Biotoxin results from Catfirth: Catfirth

			Ja	n				Fe	eb			1	Mar		1		Ap	or		1	1	May	1			Jun	1			J	lul		1	A	ug		2		Sep		- 22		Oc	t	1	1	Nov		1	D	ec	
Week	1	2	3		4	5	6	7	8	9	10	1	1 12	13	14	15	1	5 1	7 1	3 11	9 20	0 2	1 2	22 2	23 2	24 2	25 2	6 2	7 2	8	29 3	0 3	1 32	2 3:	34	35	36	37	38	39	40	41	42	43 4	4 4	5 4	6 47	48	49	50	51	52
ASP																					1	10	1						111																							
LT - OA/DTX/PTXs																													- 1									-														
LT - AZAs																													- 1																							
LT - YTXs																													- 17																							
PSP																													1	4																						
																																ام م																				

Biotoxin results from Wadbister Voe: Wadbister

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Week	1	2	3	4	5	6	5 7	7	8	9	10 1	1 1	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	4	2 4	3 4	4 4	15	46	47	48	49	50	51	52
ASP																													1						-	-																	
LT - OA/DTX/PTXs																													1				-	-	-	-																	
LT - AZAs																																																					
LT - YTXs																																																					
PSP																																				1																	



			RMP position: AHA	position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
63	Shetland Islands Council	Weisdale Voe	North Flotta	SI 297 469 08	Common mussels	Yes	HU380465
63	Shetland Islands Council	Weisdale Voe	Greena	SI 297 468 08	Common mussels		HU376472
63	Shetland Islands Council	Weisdale Voe Upper	Vedri Geo	SI 378 768 08	Common mussels		HU380487
63	Shetland Islands Council	Wesidale Voe Upper	Kirkaward	SI 378 1523 08	Common mussels		HU374479
63	Shetland Islands Council	Weisdale Voe Upper	Olligarth	SI 378 1521 08	Common mussels		HU383478

Biotoxin results from Weisdale Voe: North Flotta

			Jar	1				Fe	b			N	lar				A	pr				M	ay		1	Ju	ın				Jul			·	A	ug		1		Se	р		1	(Oct		1	N	lov				De	с	
Week	1	2	3	4	5	6	6	7	8	9	10	11	12	13	14	1	5 1	6 1	7 1	8	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	4	8 4	9 5	50	51	5
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LT - YTXs					3							1	1			11									1																1					-			1.5						
PSP		1											12			4	1					20 A				1.0		1		94			1			×		-	2		100	-		-		1				3	22	1			

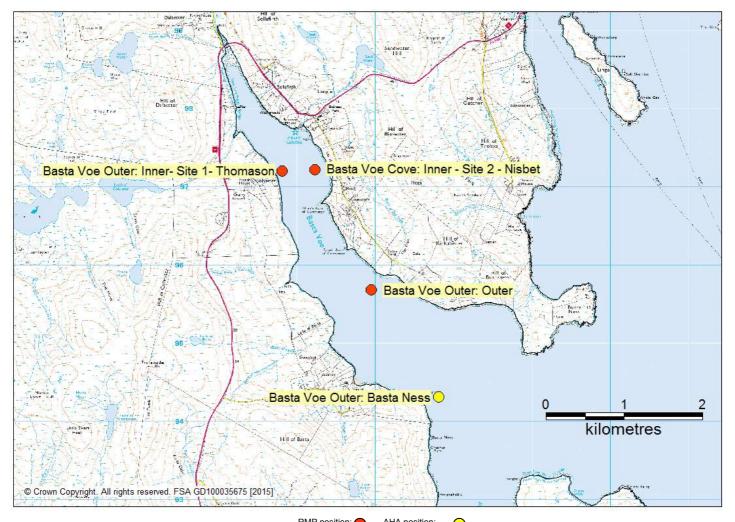


			RMP position: Al	HA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
64	Shetland Islands Council	Busta Voe Lee North	Busta Voe Lee	SI 327 410 08	Common mussels	Yes	HU34616498
64	Shetland Islands Council	Busta Voe Lee North	Busta Voe	SI 327 409 08	Common mussels		HU347663
64	Shetland Islands Council	Busta Voe Lee North	Wetherstaness	SI 327 754 08	Common mussels		HU359648
64	Shetland Islands Council	Busta Voe Lee North	Hevden Ness	SI 327 755 08	Common mussels		HU357662
64	Shetland Islands Council	Busta Voe Lee North	North of Linga	SI 327 753 08	Common mussels		HU354645
64	Shetland Islands Council	Busta Voe Lee South	Linga	SI 328 411 08	Common mussels		HU358639
64	Shetland Islands Council	Busta Voe Lee South	Greentaing	SI 328 767 08	Common mussels		HU344643
64	Shetland Islands Council	Busta Voe Lee South	Buddascord	SI 328 936 08	Common mussels		HU34176369

Biotoxin results from Busta Voe Lee North: Busta Voe Lee

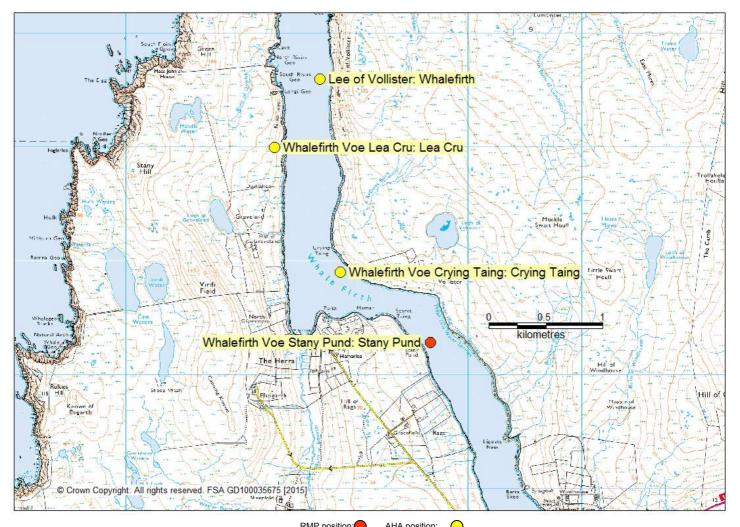
1		Jan			F	eb			Ma	r			- 8	Apr				Ma	ay	1		Jui	1			Jul		1		Aug	3	- 12		Se	p				Oct		e	No	v			De	с
Week 1	2	3	4	5 6	7	8	9	10	11	12	13	14	15	16	17 1	18	19	20	21	22	23	24	25 2	26 2	7 28	29	30	31	32	33 3	34 3	5 3	6 3	7 3	3 39	9 40	41	42	2 43	44	45	46	47	48	49 5	50	51
ASP										1			6 8				1		2 22	1				1	1	10.00		() B	1		1				100				1	1			() ()			- 2	
LT - OA/DTX/PTXs										-			1	-								111				1				•		-			-	-	-		-	-	-		1.1		*	•	
LT - AZAs													1						-						-	1								1						-				-			
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		J	n			Fel	b	-	N	lar	1			Apr		1		Ma	ay			Jur	1			Jul	1			A	ug				Sep				0	ct			No	vc		1	D	ec	
Week	1	2	3 4	5	6	7	8 9	9 1	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24 2	25 2	5 27	7 28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	5
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Alexandrium			10	51.0		9 - 9 -	1			1.0			-									-			15	-															0.3	1		9 9		8.3	6 8		



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
65	Shetland Islands Council	Basta Voe Outer	Outer	SI 323 403 08	Common mussels	Yes	HU52949568
65	Shetland Islands Council	Basta Voe Outer	Basta Ness	SI 323 396 08	Common mussels		HU538943
65	Shetland Islands Council	Basta Voe Outer	Inner- Site 1 - Thomason	SI 323 399 08	Common mussels	Alternate RMP	HU518972
65	Shetland Islands Council	Basta Voe Cove	Inner - Site 2 - Nisbet	SI 324 400 08	Common mussels	Alternate RMP	HU52239724

													Bi	otc	oxir	n re	esι	ılts	fro	m	Ba	ista	a V	oe	C	ove	e:	Inn	er	- 8	Site	2	- N	isb	et																	
		Ja	n				Fel	b			Ma	r			A	pr				Ma	у			Ju	in	- 2			Jul	Ú.			A	ug		1		Sep				C	oct		1	1	lov			De	ec	-
Week	1	2 :	4	1	5	6	7	8	9	10	11	12	13 1	4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	6 47	48	49	50	51	52
ASP													- 20		5	10																																				
LT - OA/DTX/PTXs												-	1					-			-																															
LT - AZAs												-																																								
LT - YTXs												-									-																															
PSP													- 24					-	-																																	
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		Ja	n		1		Fel	b			Ma	r			A	pr				Ma	y			Ju	in	- 8			Ju	Ú.		1	A	ug		3		Sep			1	C	Oct		T	1	Nov		1	De	ec	
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LT - AZAs																												1=		F												t	T	-		T	1.5					
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Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	2 33	34	35	36	37	38	39	40) 41	42	2 43	3 44	4 45	5 4	6 4	7 48	49	50	51	52
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Dinophysis	2.1		1				0 0		8	10.0		0 S					8 3	2 - 23		0 S					-	1	T	11							1	-			-		1			10	200	8	1	1	12	10 10		2
Prorocentrum lima	10		1		1		8 - 8			0.0		0 S	1		1		2	2 - 33		0 S					-	1		11	-							-			-					10	3 2 3	2		1	1	10.00		-
Alexandrium	2				1		s - 9		2			0.8	1.1				2	2		0.8					-		T	17	1					1		-	E			T	1			10	3 1 1	1		1	1	10.00		1
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
66	Shetland Islands Council	Whalefirth Voe Stany Pund	Stany Pund	SI 612 1165 08	Common mussels	Yes	HU47679328
66	Shetland Islands Council	Lee of Vollister	Whalefirth	SI 760 1920 08	Common mussels	Alternate RMP	HU467956
66	Shetland Islands Council	Whalefirth Lea Cru	Lea Cru	SI 613 1167 08	Common mussels		HU46395000
66	Shetland Islands Council	Whalefirth Crying Taing	Crying Taing	SI 616 1195 08	Common mussels		HU46889390

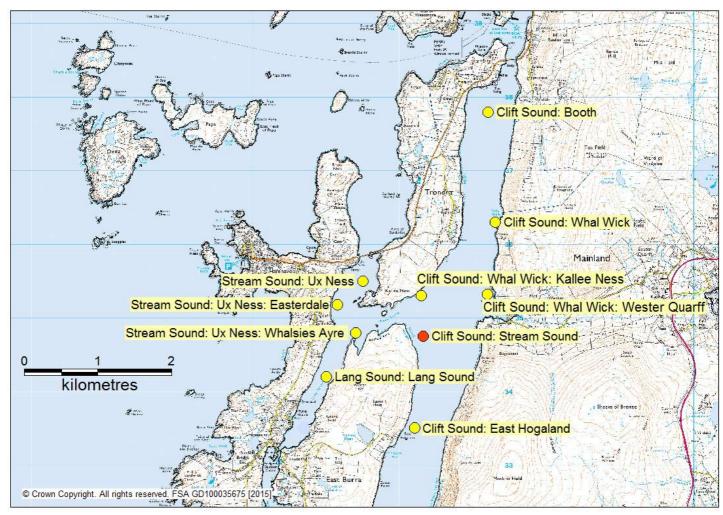
Biotoxin results from Whalefirth Voe Stany Pund: Stany Pund

		Jai	n	11		Feb		1	Mai			Α	pr			M	ay	1		Jur	1		J	ul	- 3	1	Aug		1	S	ep			Oc	t	-1-	N	lov	- 1	1	Dec
Week 1	1 7	2 3	4	5	6 7	8	9	10	11 1	2 13	14	5 1	6 17	18	19	20	21	22	23	24 1	25 26	27	28 2	9 30	31	32	33 34	35	36	37	38 39	9 40	41	42	43 4	4 4	5 46	47	48	49 5	0 51 5
ASP																																						111			
T - OA/DTX/PTXs																																			*	-		11			
LT - AZAs																																						11			
LT - YTXs																																						111			
PSP																																			-			1.2.2			

		5	Jan				Fe	eb		-	Ma	ar			4	Apr				Ma	y			Ju	n				Jul				Aug		î.	S	sep				0	lct	*8	Nov			Dec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 1	18	19 2	20	21	22	23	24	25	26	27	28	29	30	31	32	33 34	35	36	37	38	39	40	41	42	43 44	45	46 4	7 48	49	50 5	1 52
ASP																							-			1					+																	
LT - OA/DTX/PTXs																										1						+				-	-	-	*	-								
LT - AZAs																							-			1																						
LT - YTXs																							-			1																						
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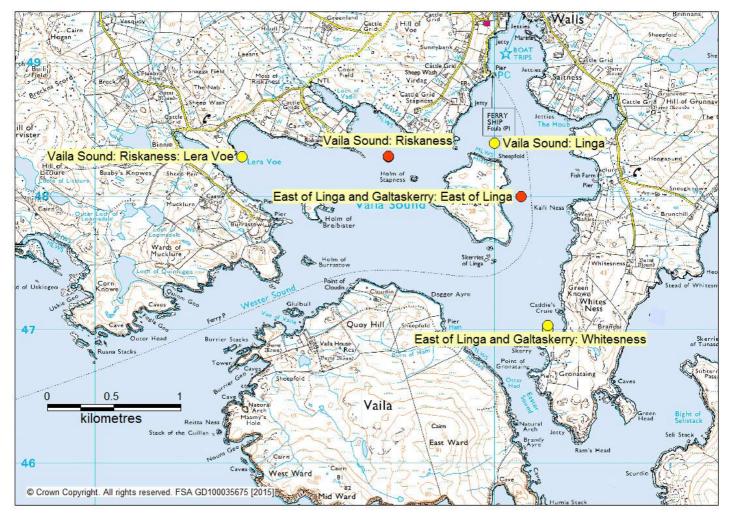
Biotoxin results from Whalefirth Lea Cru: Lea Cru

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ASP																																												
T - OA/DTX/PTXs																																				+								
LT - AZAs																																				-								
LT - YTXs																																												
PSP	1																																			-								



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
67	Shetland Islands Council	Clift Sound: Stream Sound	Stream Sound	SI 037 415 08	Common mussels	Yes	HU39323475
67	Shetland Islands Council	Clift Sound: Whal Wick	Whal Wick	SI 038 416 08	Common mussels		HU403363
67	Shetland Islands Council	Clift Sound: Booth	Booth	SI 036 413 08	Common mussels		HU402378
67	Shetland Islands Council	Stream Sound: Ux Ness	Whalsies Ayre	SI 518 945 08	Common mussels		HU384348
67	Shetland Islands Council	Lang Sound	Lang Sound	SI 107 429 08	Common mussels		HU380342
67	Shetland Islands Council	Stream Sound: Ux Ness	Easterdale	SI 373 1096 08	Common mussels		HU38153518
67	Shetland Islands Council	Stream Sound: Ux Ness	Ux Ness	SI 373 762 08	Common mussels		HU385355
67	Shetland Islands Council	Clift Sound	East Hogaland	SI 035 414 08	Common mussels		HU392335
67	Shetland Islands Council	Clift Sound: Whal Wick	Wester Quarff	SI 038 1522 08	Common mussels		HU40183532
67	Shetland Islands Council	Clift Sound: Whal Wick	Kallee Ness	SI 038 2007 08	Common mussels		HU39303532

		Ja	n			Feb	0	1		Mar		1		Apr	r			M	lay		1	Jui	n			Jul		- 1	2.0	Aug		1		Sep)			00	ct	- Y	è	No	ov			De	ec	
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ASP			8						- 1	20		N.	12	90.00				1	10.0		20-2		1		100	2 23		2.12	11			11			20 - P			1 2		2			0.3	S		4		
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LT - AZAs									1				1.	-					-		1							1												-								
LT - YTXs									1				1.5	-					1		1				-			1					1							-			1.0					
PSP								1		20		30	14	-		÷		1														-	-		-	1.0	-	5		20 - P			0.3	S		4		
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122220202	-			1 5	6		10.0	9	10			10		Ap	or		2	1	May	ί		Ju	IN			Jul		- 2		Aug		5 31	5 37			40	41	- 0070		44	45		100	48	49			5
Pseudo - nitzschia	1			1 5	6		10.0	9	10			10		Ap	or		2	1	May	ί		Ju	IN			Jul		- 2		Aug		5 31	5 37			40	41	- 0070		44	45		100	48	49			5



			RMP position: AH	A position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
68	Shetland Islands Council	Vaila Sound: Riskaness	Riskaness	SI 289 458 08	Common mussels	Alternate RMP	HU232483
68	Shetland Islands Council	East of Linga and Galtaskerry	East of Linga	SI 288 455 08	Common mussels	Yes	HU242480
68	Shetland Islands Council	East of Linga and Galtaskerry	Whitesness	SI 288 1061 08	Common mussels		HU244470
68	Shetland Islands Council	Vaila Sound	Linga	SI 288 457 08	Common mussels		HU240484
68	Shetland Islands Council	Vaila Sound: Riskaness	Lera Voe	SI 289 805 08	Common mussels		HU221483

Biotoxin results from East of Linga and Galtaskerry: East of Linga

		-	lan				Fe	b			Ma	r			A	pr				Ma	iy			Ju	in				Jul				Aug	1	-		Se	ep		1		Oct	t	-		No	vc			D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 1	4 1	5	16 1	17 1	8 1	19 2	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4 3	5 :	36 3	7 3	8 3	9 4	0 4	1 4	2 4	43 4	4 .	45	46	47	48	49	50	51	52
ASP							1				10		1	14		1	1		1							× 4		2						1													8 - S	1				
LT - OA/DTX/PTXs			-																		*	÷						-			+	-		-	-							-		-				*	-	-	-	
LT - AZAs																												-																								
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Phytoplankton results from East of Linga and Galtaskerry: East of Linga

			Jar	1			F	eb		1	M	ar			A	pr				Ma	iy		-	Ju	IN				Ju	ut –		1	-	Aug		1		Se	p		1	1.1	Oct		1		Nov	1			De	С	-
Week	1	2	3	4	5	6	7	8	9	10	11	12	13 1	14 1	5 1	16 1	7	18	19	20	21	22	23	24	25	26	27	28	29	3	3	1 32	2 3	3 3	4 3	5 3	6 3	7 3	3 3	9 4) 4	1 4:	2 4	13 4	4 4!	5 4	6 4	17	48	49 5	50	51	52
Pseudo - nitzschia	81.7	2 50		16			1																		-											1					1		T	100	3		1						2
Dinophysis	1	2.5		10 ×													Т	-																			-						T	100	3								
Prorocentrum lima	8 3	S 80		10	1																																				1		T	8	3		1						
Alexandrium	81.1	2.5		10.0	1.0				100			1	-			10				1.00						1000															100			100	3						100	1	3.3



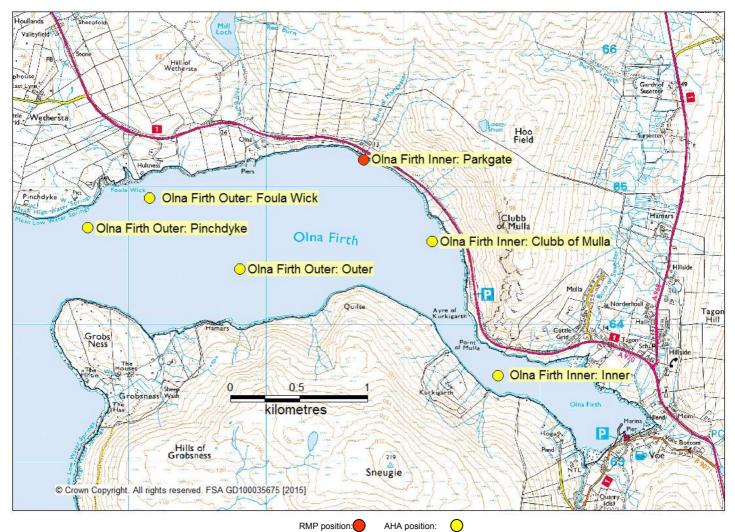
RMP position:	AHA	position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
69	Shetland Islands Council	Baltasound Mussels	Baltasound Harbour	SI 010 395 08	Common mussels	Yes	HP643089
69	Shetland Islands Council	Baltasound Mussels	Buness	SI 010 1128 08	Common mussels	Alternate RMP	HP63200876

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Biotoxin results from Baltasound Mussels: Baltasound Harbour

1			Jan				F	eb		2	Ma	r			1	Apr				Ma	ay			Ju	n				ul			A	ug		2		Sep		- 23		C	ct		10		Nov	1			D	ec	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17 1	18	19	20	21	22	23	24	25	26	27	28	29	30 3	1	32 33	34	35	36	37	38	39	40	41	42	43	3 4	4	5 4	46 4	47	48	49	50	51	1 5
ASP																																							1.12		1		12	1		2				1		
T - OA/DTX/PTXs																																						+	*	-	*	-						-				
LT - AZAs																																												T				-				
LT - YTXs																																												T								
PSP																																						-		-	-					2		1.11		4		



RMP position:	AHA position:

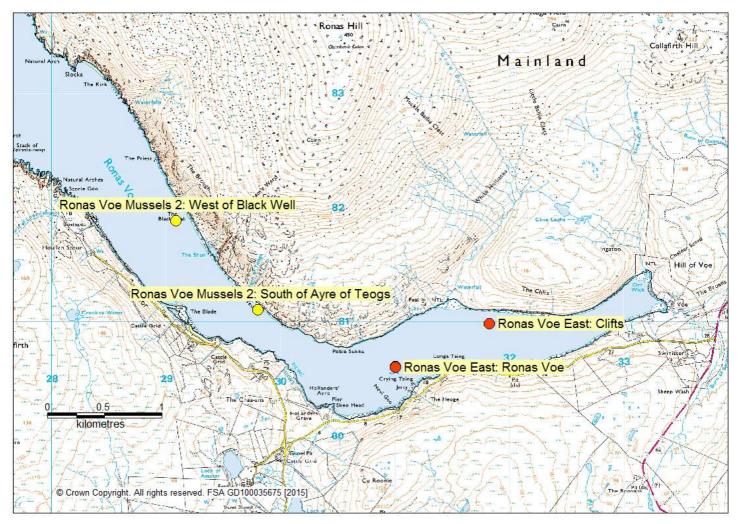
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
70	Shetland Islands Council	Olna Firth Inner	Parkgate	SI 232 438 08	Common mussels	Yes	HU387652
70	Shetland Islands Council	Olna Firth Outer	Foula Wick	SI 232 434 08	Common mussels		HU37146492
70	Shetland Islands Council	Olna Firth Inner	Inner	SI 232 435 08	Common mussels		HU39686363
70	Shetland Islands Council	Olna Firth Outer	Outer	SI 232 437 08	Common mussels		HU378644
70	Shetland Islands Council	Olna Firth Outer	Pinchdyke	SI 232 439 08	Common mussels		HU367647
70	Shetland Islands Council	Olna Firth Inner	Clubb of Mulla	SI 232 731 08	Common mussels		HU392646

Biotoxin results from Olna Firth Inner: Parkgate

1			Jan				F	Feb		1	M	ar			Ap	or				Ma	y			Ju	ın				Jul				Au	3			S	ep				0	ct		8	N	lov		1		De	c	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	15	16	5 17	7 18	8 1	9 2	20	21	22	23	24	25	26	27	28	29	30	31	32	33 :	34 3	35	36	37	38	39	40	41	42	43	44	45	46	6 47	4	8 4	9 5	50	51	1
ASP		-											2-71	4 .	5	2	2		Î					0.00		1		1	2 23		0.3		-	-								1		1			10	3	1	1	2		ľ
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LT - AZAs		1													1	-												-				-												-									1
LT - YTXs		1																										-				-												-									l
PSP		1											2 - 5		-		-						-			-						-												-									ľ

Phytoplankton results from Olna Firth Inner: Parkgate

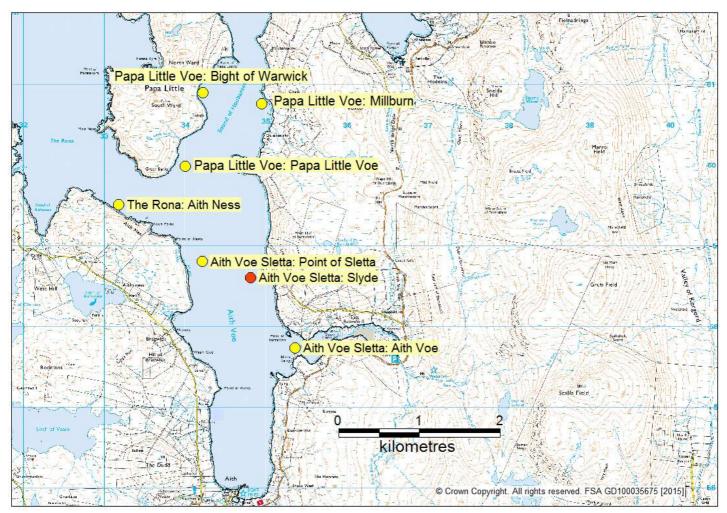
	2	199	lan				Fe	b	-		Ma	r	1		A	pr		1	1	May			J	un	13		10	Jul			-	Aug				Se	р		1	0	ct		°	No	v		1	De	ec	
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Pseudo - nitzschia			1		1			1										1				117			100		100	-														0 S	2.0		\$ \$			2.0		
Dinophysis		2 23			- 2			1										1						-	1			-						1	1				1			0.3	0.0		с. — С			2 22		
Prorocentrum lima		2.00			- 23			1										1						-	1			-							1				1			0 S	9 Q		8 - S			2 - 33		
Alexandrium			1					1									T	1						-	1			-							1				1			0.3	2.0		\$ - \$			2.10		



			RMP position:	AHA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
71	Shetland Islands Council	Ronas Voe East	Ronas Voe	SI 239 441 08	Common mussels	Alternate RMP	HU310806
71	Shetland Islands Council	Ronas Voe Mussels 2	South of Ayre of Teogs	SI 239 442 08	Common mussels		HU298811
71	Shetland Islands Council	Ronas Voe East	Clifts	SI 523 919 08	Common mussels	Yes	HU31828098
71	Shetland Islands Council	Ronas Voe Mussels 2	West of Black Well	SI 522 918 08	Common mussels		HU29088188

Biotoxin results from Ronas Voe East: Clifts

			lan				Fel	b	- 1	- 3	Mar			A	pr		1	Ma	y		Jur	n	7	J	ul		1	Aug			Se	D	-	0	ct	- 10-	No	v		Dec	С
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ASP										1	12	2.2																													
LT - OA/DTX/PTXs												100																													
LT - AZAs											-	1																													
LT - YTXs											-																														
PSP												1																													



			RMP position: AHA	position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
72	Shetland Islands Council	Aith Voe Sletta	Slyde	SI 326 733 08	Common mussels	Yes	HU348586
72	Shetland Islands Council	Aith Voe Sletta	Point of Sletta	SI 326 393 08	Common mussels		HU342588
72	Shetland Islands Council	Aith Voe Sletta	Aith Voe	SI 055 863 08	Common mussels		HU35355773
72	Shetland Islands Council	The Rona	Aith Ness	SI 517 944 08	Common mussels		HU33175951
72	Shetland Islands Council	Papa Little Voe	Papa Little Voe	SI 235 1271 08	Common mussels		HU339600
72	Shetland Islands Council	Papa Little Voe	Bight of Warwick	SI 235 1351 08	Common mussels		HU342609
72	Shetland Islands Council	Papa Little Voe	Millburn	SI 235 1350 08	Common mussels		HU34936076

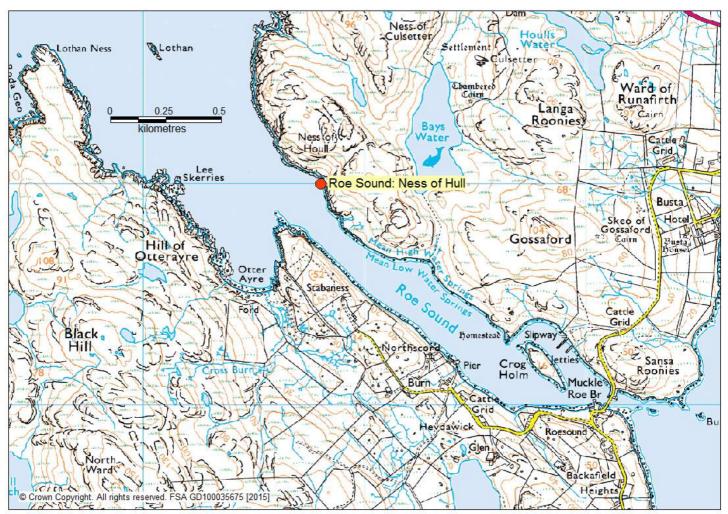


		5.	Jan				F	eb			1	Mar		1		4	Apr			1	1	May	1	-1		J	un		1		J	ul		-1		Au	g		1		Se	p		1		Oc	t	-		N	ov		1		De	C	
Week	1	2	3	4	5	6	7	8	9	10	1	1 1	2 1	3 1	4 1	15	16	17	18	19	2	0 2	1	22	23	24	25	5 20	5 2	7 2	8 2	9	30	31	32	33	34	35	36	37	38	3 39	4	0 4	1 4	12	43 4	44	45	46	47	7 4	8 4	9 5	50	51	52
ASP												8		10	10	- 2			8 P		1		- 22			- 0		1		1	10	10	8		1							100	8	2	1						100	3	2				
LT - OA/DTX/PTXs																	-						-												-	-	-	-	-	-	-	-				-	-	-				-	-	-	-		
LT - AZAs											E		T				-				11	Т																																			
LT - YTXs											Г		Т				-				T	Т	1						T	1	Т				-						Г		Т														
PSP		5												2					-	-	-	-							-						-		-			-	-										1		1				

Phytoplankton results from Aith Voe Sletta: Slyde

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Week	1	2	3	4	5	6	7	8	9	10	11	12	13 1	4 1	5 1	6 1	7 1	8 19	9 20	21	22	23	24	25 2	6 27	7 28	29	30 3	1 3	2 33	3 34	35	36	37	38	39 4	0 4	1 4	12	13 4	4 4	5 46	47	48	49	50	51	52
Pseudo - nitzschia		8 8		100		8	18. S			2.00		8 S S	- 23	1		1	1	-	100							120	1		1				-				1			0	- 5 5	2	1		100	2 - 23		0 Y
Dinophysis		3 - 23		100		2			2	2 - 23		0.00	- 2	1		12	1	-	26	1						111	-	1	-				-				1			0	32	2	1		8.3	2 - 22		8
Prorocentrum lima	8.0	2 23		100		2	1			2 - 23					×.	1			100							111	-										1			8	10	2	1		100	2 - 22		2
Alexandrium		2 23		100		2				2 23						1				T						1.5											1			10	10	1	1		100	2 - 22		1





DMD	A11A
RMP position:	AHA position:

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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
73	Shetland Islands Council	Roe Sound	Ness of Hull	SI 334 715 08	Common mussels	Yes	HU328670

Biotoxin results from Roe Sound: Ness of Hull

12			lan		- 12		Fe	b			Mar	8	1		Ap	r		1	M	lay		1	Jui	n			J	ul		1	A	ug			5	Sep				00	t	- 1		No	v			De	c	
Week	1	2	3	4	5	6	7	8	9	10	11 1	2 1	3 14	1	5 16	17	18	19	20	21	22	23	24	25 2	26	27 2	28 2	9 3	0 31	32	2 33	34	35	36	37	38 ;	39	40	41	42	43	44	45	46	47	48	49	50	51	5
ASP																															-	S. 2		-		10				1										
T - OA/DTX/PTXs																															-	-	-	-	-	-	+	-	-	-										
LT - AZAs																																								1										
LT - YTXs																																								1										
DSD																															-			8 - S	2 B.	-	-	4		-										



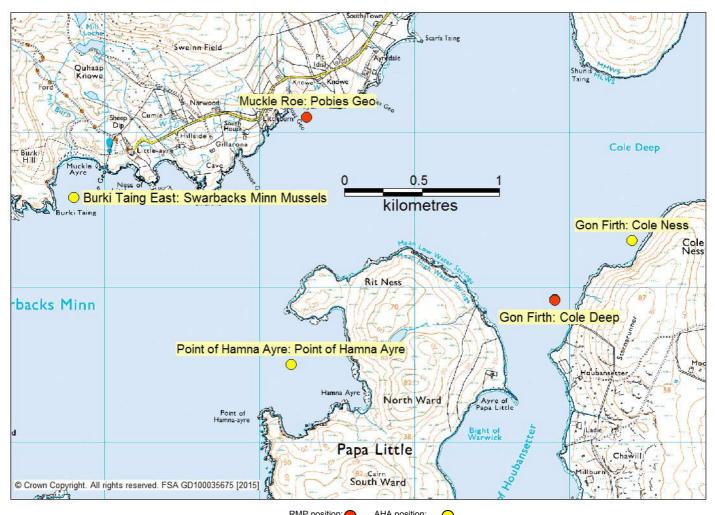
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
81	Shetland Islands Council	North Uyea	North	SI 230 453 08	Common mussels	Yes	HU60119997
81	Shetland Islands Council	South Uyea	South	SI 263 454 08	Common mussels		HU607981

Biotoxin results from North Uyea: North

			Jan		1		Fe	eb		-	M	ar	- 1		1	Apr				M	lay		1	Ju	In	- 1		1	ul			10	Aug		1		Sep)			0	oct		1	N	lov			1	Dec		-
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	29 3	0 3	1 3	2 3	3 34	1 35	36	37	38	39	40	41	42	43	\$ 44	45	46	6 47	48	49	9 5	0 5	1 5	2
ASP		1											- 20					× 1												10			1	-				63 - S	0		1					100	3 2 3	2				
LT - OA/DTX/PTXs													*	-	-	-																		-	-	-	-	-	*	-	-	-	-	-	-			-				
LT - AZAs																																																				
LT - YTXs																														17											1					1.5	T					
PSP		1											- 22		-															15				-	-	-		-	*	-	1		1			10	3 2 3	2				

Phytoplankton results from North Uyea: North

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Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	2	2 23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Pseudo - nitzschia		2 23	_	0.3	1.00		2		100	0.0		1	-					-		10	32.3		1	1	1	10.0		100			8 - 8 - 8		100	8 - C)		0 8			1			a 33		0.8	1.11		* *					2.13
Dinophysis		2 23		0 3	0.00		S	1	121	0.0		1	-					1		10	20.0		1	1	1	10.0		0.5			0		201	2 23		0 S						- 13		0 - S	0.00		s 0					3
Prorocentrum lima	8 - F	2 23		0 S	1.1		1		1000	0.0			-					-		1	200	2	1	1	1	10.0		0.00			S. 3		100	2.22		8 - S						s - 13		0 8	1.1		0 0					
Alexandrium		2 23		0.3	1 - 12		P	1		0.00			-		1			F		1	100		1	-		10.0		100.00			e			2 22		0 S						a 23		0.5	1		• •					1

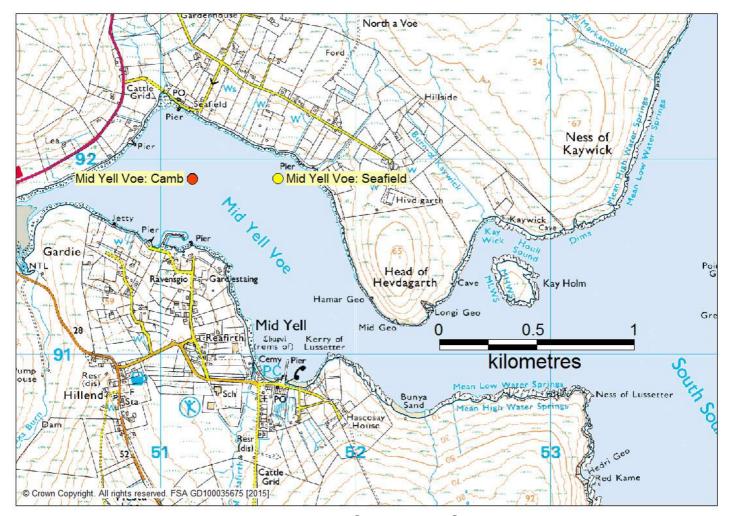


		-	RMP position: AHA				
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
127	Shetland Islands Council	Muckle Roe	Pobies Geo	SI 221 433 08	Common mussels	Yes	HU333631
127	Shetland Islands Council	Point of Hamna Ayre	Point of Hamna Ayre	SI 374 763 08	Common mussels		HU332615
127	Shetland Islands Council	Gon Firth	Cole Ness	SI 076 423 08	Common mussels		HU354623
127	Shetland Islands Council	Gon Firth	Cole Deep	SI 076 1338 08	Common mussels	Alternate RMP	HU34916192
127	Shetland Islands Council	Burki Taing East	Swarbacks Minn Mussels	SI 755 1897 08	Common mussels		HU318626

Biotoxin results from Muckle Roe: Pobies Geo

1		5.	Jan				Fe	b		1	N	lar					4	Ap	r					M	ay		1		J	un				5	Jul				A	ug		12		S	ep		-1		C	Oct		-1		N	ov				De	C
Week	1	2	3	4	5	6	7	8	9	10	11	1	2	13	14	1	5	16	1	7	18	19	3 2	20	21	1 2	22	23	24	2	5 2	6	7	28	29	30	31	32	33	34	3	5 3	6 3	37	38 3	39	40	41	42	2 4	3 4	4	45	46	47	7 4	18	49	50	51
ASP																																																												
LT - OA/DTX/PTXs							+																																																					
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LT - YTXs																																																												
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	1	2	Jan 3	4	5	6	Fe 7	b 8	9	10	N 11	-	_	13	14	1		Apr	r.				1	Ma	ay				J	un			-	13	Jul		- 3				3	5 3	6 3			19	10	41	_		3 4	4	45	-	-	7 4	18 4	49	-	
Week ASP	1			4	5	6	Fe 7	-	9	10		-	_	13	14	1		Apr	r.				1	Ma	ay				J	un			-	13	Jul		- 3				2				38 3	1	40	41	_	2 4	3 4	4	45	-	-	7 4	18 4	49	-	
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PSP



			RMP position:	HA position:			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
128	Shetland Islands Council	Mid Yell Voe	Camb	SI 216 430 08	Common mussels	Yes	HU51169190
128	Shetland Islands Council	Mid Yell Voe	Seafield	SI 216 432 08	Common mussels		HU516919

		Ja	n				Feb				M	ar	_			A	pr		- 1		M	ay		1	J	un				Jul		- 0	20	Aug	1			14	Sep	0			1	Dct		10		Nov	8			De	C	
Week	1 2	2			5	6	7 8	3	9	10	11	12	13	14	15	5 1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33 3	4	35	36	37	38	39	40	41	4	2 4	3 4	4 45	5 4	6 4	7 4	18	19	50	51	1
ASP						1						8	8 A		1		1		- 2		8	10 3				2	1			2 22		S 8								8.3				1	12			10	10					F
LT - OA/DTX/PTXs												17	1		11		-		-			-					1.7		-	1.00		*	-		-	-	-	+	-	-	-	-									*	-		
LT - AZAs													1		11				-			F		1					-	1								-																
LT - YTXs															11				-			F		1					-	1			-							-														
PSP													5-9						-				-						-			-						-	*	-					1				1					
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Pseudo - nitzschi	200															0				F	F	t	t	1	ł		F	F	ł												F					80		0	-		-			

Alexandrium

146



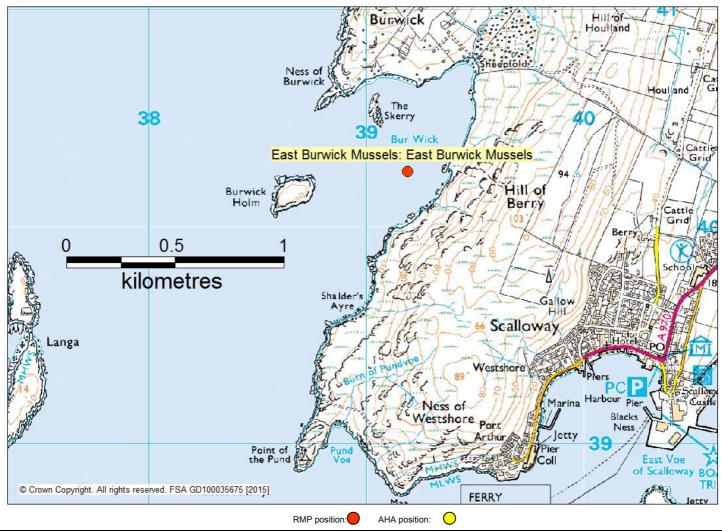
RMP position:	AHA position:
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Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
129	Shetland Islands Council	Hamnavoe	Copister	SI 348 736 08	Common mussels	Yes	HU486795

Biotoxin	results	from	Hamnavoe:	Copister
		1		SS2.02

		54	Jan				F	eb		1	Ma	ar	1		A	pr		1		May	1		5	Jun		1		Jul	ġ.	3	e - 2	Auc		12		Sep		19		Oc	t	1		Nov	č.	1	1	Dec		
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	7 1	8 1	9 2	0 2	1 2	22 2	23 2	4 2	5 26	6 27	7 28	29	30	31	32	33 3	4 35	36	37	38	39	40	41	42	43 4	4 4	5 4	46 4	7 4	18 4	9 5	0 5	51	52
ASP																																																		
T - OA/DTX/PTXs																																																		
LT - AZAs																																																		
LT - YTXs																																																		
PSP															1																																			





Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
132	Shetland Islands Council	East Burwick Mussels	East Burwick Mussels	SI 583 1060 08	Common mussels	Yes	HU39194027

Biotoxin results from East Burwick Mussels: East Burwick Mussels

19			Jan				Fe	b	1	1	Mar		1	1	Apr				Ma	iy	1		Jun				Jul		1	F	ug		1	Se	ер				Oct		<u>r – </u>	No	v	10		De	c	
Week	1	2	3	4	5	6	7	8	9	10 1	1 12	13	14	15	16	17	18	19	20	21	22	23	24 2	5 26	5 27	28	29	30	31 3	32 3:	34	35	36	37 3	38	39 4	0 4	1 4	2 43	44	45	46	47	48	49	50	51	52
ASP														-																																		
LT - OA/DTX/PTXs														1	*	-																																
LT - AZAs															-																																	
LT - YTXs															-																																	
PSP															-		-	+																														

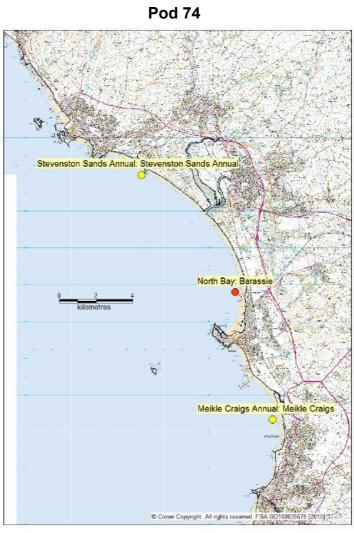


Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
146	Shetland Islands Council	Hamar Voe	Hamar Voe	SI 655 1404 08	Common mussels	Yes	HU30717621

Biotoxin results from Hamar Voe: Hamar Voe

		1.4	Jan		18		Fe	eb		2	M	ar				Apr				M	ay		1	Ju	in			E.	Jul		1		Aug	1			Se	p		1	Ĵ,	Oct		1	N	lov		1	E	lec		-
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32 3	33 3	4 3	5 3	36 3	7 3	8 3	9 4	0 4	4	2 4:	3 4	4	46	47	48	49	50	5	1 5	52
ASP										177		-	-					5			-						-																									
LT - OA/DTX/PTXs										1.1			-								1																															
LT - AZAs										1.00																																										
LT - YTXs										1			-								-																															
PSP										1			-																																							

6.14. SOUTH AYRSHIRE COUNCIL



RMP position: AHA position:

Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
74	South Ayrshire Council	North Bay	Barassie	SA 337 719 16	Razors	Yes	NS319334
74	North Ayrshire Council	Stevenston Sands Annual	Stevenston Sands Annual	NA 207 1238 23	Wedge clams		Not given
74	South Ayrshire Council	Meikle Craigs Annual	Meikle Craigs	SA 643 1316 16	Razors		NS33892672

Biotoxin results from North Bay: Barassie

1		10	Jan				F	eb			M	lar				Apr				M	ay			Ju	n	1			Jul				Aug		1		Se	p			C	oct			N	ov			De	ec	
Week	1	2	3	4	5	6	7	8	9	10	0 11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32 3	33 3	4 35	5 36	5 37	7 38	3 39	40	41	42	43	3 44	45	46	47	48	49	50	51	52
ASP																					1.00					1							10 a				1				17									1	
T - OA/DTX/PTXs																										1										1	-	-						111							
LT - AZAs																							1			1															-										1
LT - YTXs															-											1					-		×			1					-										
PSP																							-	-		1							×				-	1						-						-	

Phytoplankton results from North Bay: Barassie

		123	Jan				Fe	b	1		M	ar				Apr	1			N	lay			Ju	In	- 23			Jul		- 1		Au	g			5	Sep				0	ct			N	ov		12	D	Dec		
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34 :	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	1 5	2
Pseudo - nitzschia	8	2 33		2.5			° °						-				112			1					-	1		1.00	-		-			1		-								0.5			1		14	10.0	1	10	Ĩ
Dinophysis	8 8	2 33		2 2 2			S - 0										110	-											-															0.5			18. S	1	12		1	10	ſ
Prorocentrum lima	8	2 23		2 8			S. ()													1									-												8			0.5				×.	14			10	Ĩ
Alexandrium	1	2.0		2.5			е е													1					1			1.00														-		0.8				1	1				ī



			•	<u> </u>			
Pod Number	Local Authority	Production Area	Site Name	Site SIN Number	Species	Biotoxin RMP	Grid Reference for Sample
140	South Ayrshire Council	Croy Bay	Culzean Bay	SA 681 1482 16	Razors	Yes	NS23921110

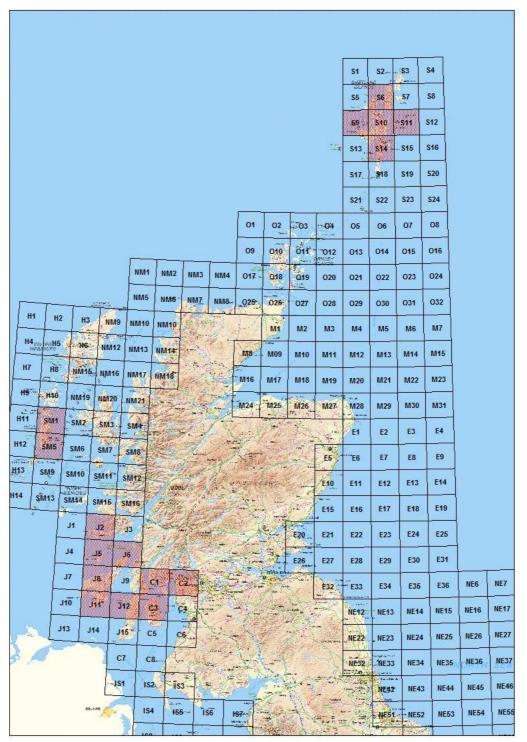
Biotoxin results from Croy Bay: Culzean Bay

		5	Jan				Fe	eb		-	Ma	r			Ap	r			P.	Aay			Ju	n			J	ul				Aug		12		Sep	0		1	0	ct		°	N	vo			De	ec	
Week	1	2	3	4	5	6	7	8	9	10	11 1	12 1	3 14	1 15	5 16	17	18	19	20	21	22	23	24	25	26	27 2	28 2	29 3	30 ;	31	32 3	3 3	4 35	36	5 37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	5
ASP																									1		-					1					1													
- OA/DTX/PTXs																									1							1					1													
LT - AZAs																									1												1													
LT - YTXs																																1																		
PSP																																1					1						1							

7. Results of the wild pectinidae onshore verification programme

ASP, PSP and LTs analyses were performed on 33 samples from 12 separate establishments received via the wild pectinidae onshore verification programme. The origin of harvest for the scallop samples received during the reporting period (when specified by the sampling officer) is indicated by the shaded cells in Figure 23.

Figure 23: Origins of the wild pectinidae samples received via the FSS onshore official control verification programme in 2015



ASP results

- ASP was detected in 20 king scallop verification samples from 9 establishments. Six of these samples comprised of whole king scallop material, the remaining fourteen of shucked product. These shellfish samples were originally harvested in the following offshore scallop grounds; Jura (14 samples), Clyde (4 samples), South Minch (1 sample) with one further sample from unknown scallop grounds between February and December 2015. Toxin levels ranged between 1.2 and 278mg/kg DA/shellfish flesh, five of which exceeded the MPL.
- The five samples which exceeded the MPL comprised of whole scallop samples originating from the Clyde 03, Jura 02, Jura 11 and Jura 12 offshore scallop grounds collected by Argyll & Bute Council between February and December. The highest level recorded was 278mg/kg in a sample from the Jura 02 scallop ground in February 2015.

Lipophilic toxin results

- OA/DTX/PTX group toxins below the MPL were detected in four whole king scallop verification samples from the Clyde 02, Jura 11 and Jura 12 scallop grounds received between June and September 2015.
- YTX toxins below the MPL were detected one whole King scallop verification sample from the Jura 12 scallop ground in August 2015. OA/DTX/PTX group toxins below the MPL were also present in this sample.
- AZA group toxins were not detected in the any of the 33 samples analysed via the onshore verification programme.

PSP results

- Two whole king scallop verification samples, both originating from the Jura 12 scallop ground in June and August 2015 exceeded the MPL, recording a levels of 1,120 and 2,321 µg/kg respectively.
- In addition, trace levels of PSP toxins, but below quantifiable limits were detected in three whole king scallop and twelve shucked product samples between March and December 2015.

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