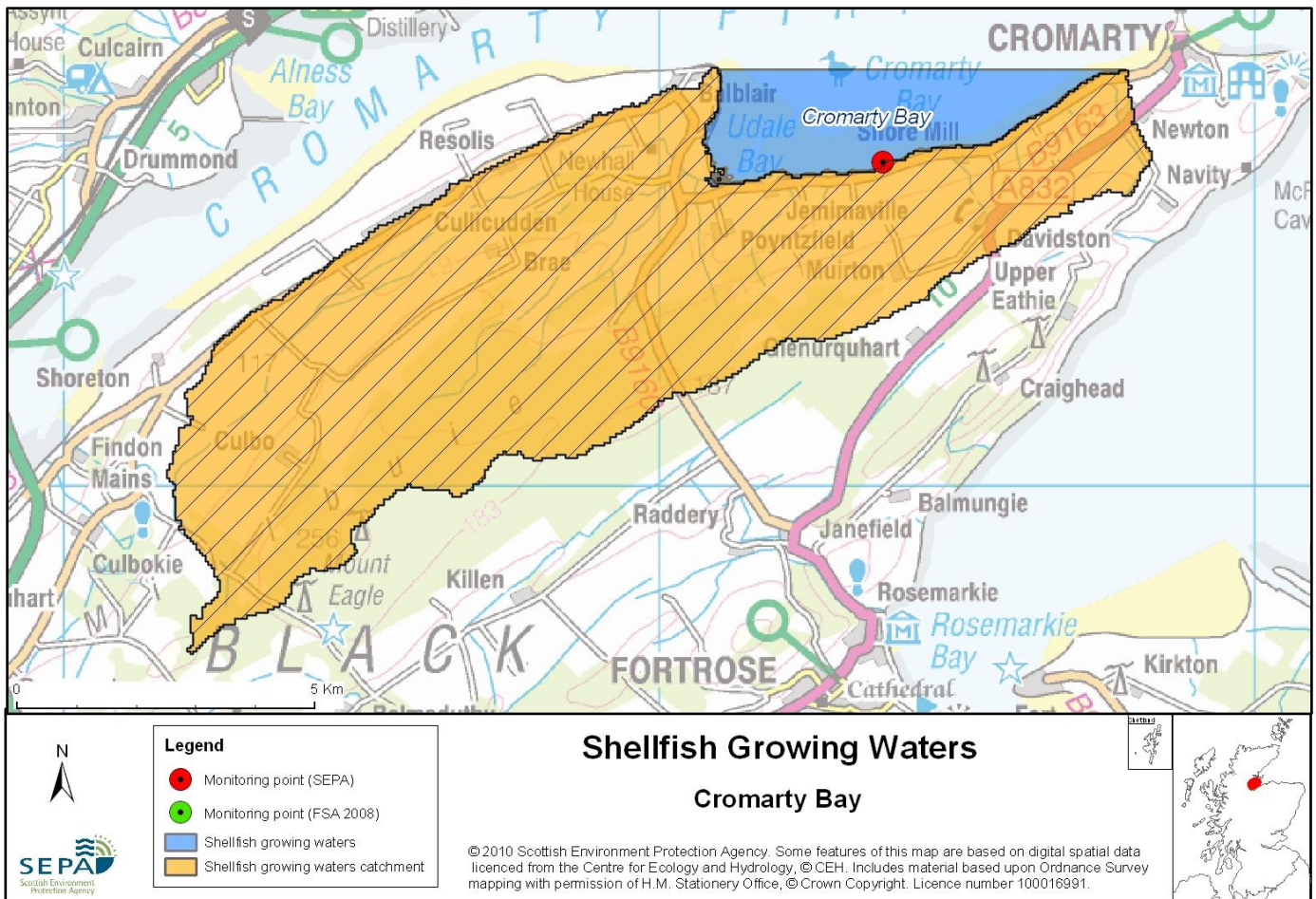


## 17 Cromarty Bay



<b>Name</b>	<b>Cromarty Bay</b>
<b>Report Reference Number</b>	17
<b>WFD Code</b>	UKS7992317
<b>Local Information</b>	An area inshore of a line drawn between the point NH7101667000 and NH7783267000, and extending to MHWS.
<b>Designated Area (km<sup>2</sup>)</b>	8.63
<b>Year of Designation</b>	1998
<b>Sampling Points</b>	Cromarty Bay Mussel Site - NH 73767 65440
<b>Commencement of Monitoring</b>	1998

## 17.1 Commercial Shellfish Interests

There is commercial interest in harvesting cockles from the water, with one Crown Estates Commission (CEC) lease having been granted. The production area has been declassified by the Food Standards Agency (FSA).

For more information on Food Standards Agency Classification please visit:

<http://www.food.gov.uk/scotland/safetyhygienescot/shellmonitorscot/shellclassesscot/>

## 17.2 Bathymetric Information

This shellfish water is situated on the south side of the Cromarty Firth in an area south of the navigable channel. The area is 6 km long by a maximum of 2 km wide. The maximum charted depth (at LAT) is 5 m. Approximately half of the area is <0 m chart depth, i.e. intertidal area exposed at low tide. The slope from the min to max depth has a very shallow gradient (spread over 2 km, south to north). The substrate consists mainly of fine sand and mud material. This part of the Firth is sheltered from prevailing winds by the Black Isle but is very exposed from north and north-easterly winds, which produces a fetch that suspends a lot of fine material into the water column. There is morphology pressure in the area due to land reclamation at Nigg Bay.

## 17.3 Conservation Designations

### National Nature Reserve – [Nigg and Udale Bays](#)

The Udale part of the Nature Reserve is situated within the Shellfish Water. Designated 21/09/1978.

### RAMSAR – [Cromarty Firth](#)

Designated 22/03/1999 for internationally important habitat (mudflat) and internationally important bird species (Bar-tailed godwit (*Limosa lapponica*), Greylag goose (*Anser anser*), and Waterfowl assemblage).

### Special Protected Areas (SPA) – [Cromarty Firth](#)

Designated 22/03/1999 for internationally important bird species Bar-tailed godwit (*Limosa lapponica*), Common tern (*Sterna hirundo*), Curlew (*Numenius arquata*), Dunlin (*Calidris alpina alpina*), Greylag goose (*Anser anser*), Knot (*Calidris canutus*), Osprey (*Pandion haliaetus*), Oystercatcher (*Haematopus ostralegus*), Pintail (*Anas acuta*), Red-breasted merganser (*Mergus serrator*).

### Special Area of Conservation (SAC) – [Moray Firth](#)

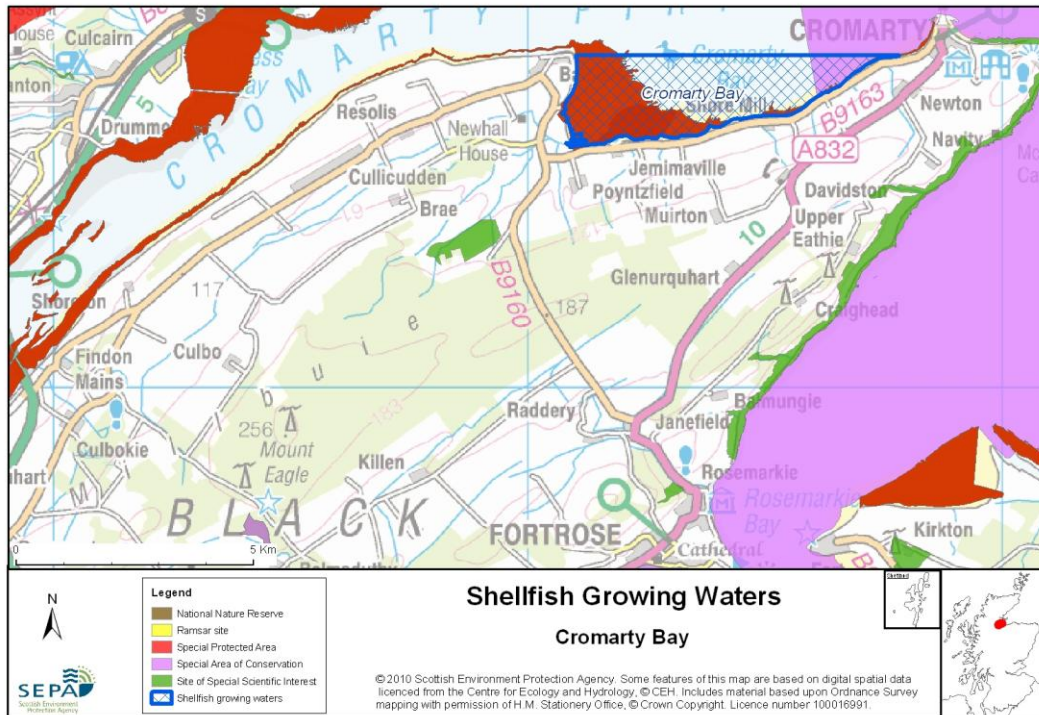
The Moray Firth SAC extends into part of the Shellfish Water. Designated 17/03/2005 for important habitats (Subtidal sandbanks) and internationally important species Bottlenose dolphin (*Tursiops truncatus*)

### Sites of Special Scientific Interest (SSSI) – [Cromarty Firth](#)

Designated 06/04/1988 for habitat (Mudflat, Saline lagoon, Saltmarsh, Sandflat, shingle) and species (Bar-tailed godwit (*Limosa lapponica*), Red-breasted merganser (*Mergus serrator*), Redshank (*Tringa totanus*), Whooper swan (*Cygnus cygnus*), Wigeon (*Anas penelope*))

### Sites of Special Scientific Interest (SSSI) – [Braelangwell Wood](#)

Designated 26/02/1985 for habitat (Fen, marsh and swamp (Wetland), Upland birch woodland) and species (molluscs and flies)



### 17.4 Topography and Land Use – Potential Diffuse Pollution Sources

The dominant land use around the bay is intensive arable agriculture, together with small areas of improved pasture and semi-natural woodland. The B9163 road runs very close to the southern shore of the bay, and in places is immediately behind a sea wall. The small village of Jemimaville is the only settlement adjacent to the designated area. The most significant freshwater input is the Newhall Burn, which flows into the southwest corner of the bay and is classified by SEPA as being of excellent quality. There are numerous small burns draining the surrounding farmland, none of which are more than 2 km in length.

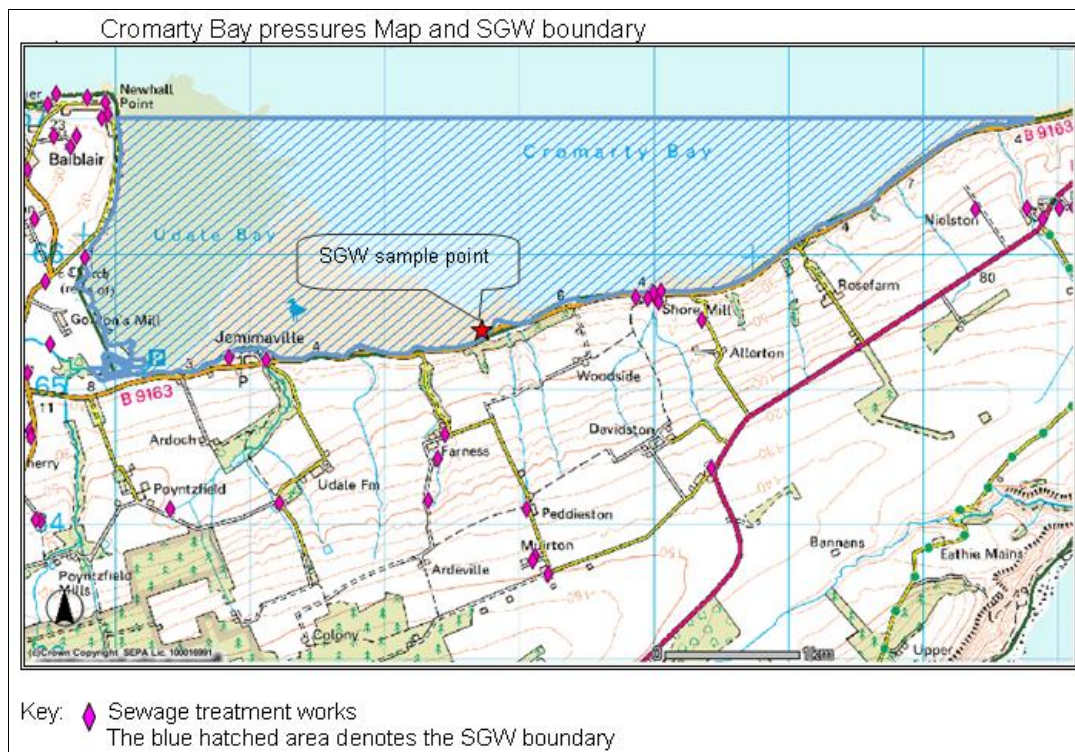
Diffuse pressure is the most likely cause of standard failures for this Shellfish waters, this could be from mixed farming or sewage disposal. Bacterial source tracking may be required to verify the origin of diffuse source pollution to the shellfish water

## 17.5 Point Source Discharge

There are two marine cage fish farms within the Cromarty Firth, one is located outside the designated water but the other is on the border. This farm is consented for salmon and sea trout. The farms have a total consented biomass of 2350 tonnes.

Type	Name	Treatment	Consent No.	NGR	PE	Additional Information
Scottish Water Asset	Jemimaville STW	Tertiary	CAR/L/1002980	NH 72107 65216	160	-
	Shore Street Pumping Station	Screened	CAR/L/1002909	NH 79907 67222	N/A	Spill frequency increased over design level due to problems with Cromarty STW
	Cromarty STW	Tertiary equivalent	CAR/L/1002909	NH 79907 67222	1500	Problems experienced with operation of the membrane treatment plant, may require future investment under future investment period
Other	Private household ST	-	-	Numerous	100	-
Industrial	Invergordon distillery	Dark grains plant	CAR/L/1003978	NH 7196 6883	-	-
	Cromarty Firth Industrial park	Secondary	CAR/L/1002064	NH 725 688	-	-
Category	Name		Consent No.	NGR	Biomass (t)	Additional Information
Fish Farm	Udale Bay		WPC/N/55632(02) *	NH 7515 6725	350	-

\* There is no CAR authorisation for this site at present.



## 17.6 Compliance Monitoring Regime

The following monitoring regime of the designated area was implemented in July 2005.

Year	Monitoring Regime
2005 -	<ul style="list-style-type: none"> <li>• Quarterly for Sal, DO, pH, temperature, visible oil</li> <li>• Twice yearly for metals in water</li> <li>• Annually for metals and organohalogens in mussels</li> <li>• Quarterly for faecal coliforms in mussels</li> </ul>

## 17.7 Compliance History

UKS7992317 - Cromarty Bay				
	Compliance history for Waters and Biota, excluding faecal coliforms data			Compliance history for faecal coliforms
Year	Overall Result	Imperative	Guideline	Guideline
1998	Pass	Pass	Fail	Not monitored
1999	Fail	Fail <sup>1</sup>	Fail	Fail
2000	Fail	Fail <sup>2</sup>	Fail	Fail
2001	Pass	Pass	Fail	Fail
2002	Pass	Pass	Pass	Fail
2003	Pass	Pass	Pass	Fail
2004	Pass	Pass	Pass	Pass
2005	Fail	Fail <sup>3</sup>	Fail	Pass
2006	Pass	Pass	Pass	Fail
2007	Pass	Pass	Pass	Fail
2008	Pass	Pass	Pass	Pass
2009	Pass	Pass	Pass	Fail
2010	Pass	Pass	Pass	Fail

<sup>1</sup>In 1999, there was a failure to observe the Imperative (I) standard for mercury. This was due to a single result breaching the relevant Environmental Quality Standard (EQS).

<sup>2</sup>In 2000, a single sample failed to observe I standards for arsenic, cadmium, chromium, copper, lead, nickel and zinc. These two failures are thought to be the result of one-off aberrations in sampling and/or analysis rather than indicators of real pollution events. These metals concentrations recorded were much higher than those observed on a regular basis in marine waters throughout Scotland, including the more industrialised Forth and Clyde Firths. Moreover, sampling adjacent to the industrial discharges in the vicinity of Cromarty Bay has not revealed any significantly elevated concentrations of metals, and none of the local sewage discharges could constitute a source of such pollution.

<sup>3</sup>Failure relates to the Shellfish Water's imperative results of 5.45 mg/kg for copper taken in water at Cromarty Firth in December 2005. This single fail caused an overall fail at this site due to the breach of mandatory EQS standards.

The waters have only complied with guideline standards for faecal coliforms 3 times since the site was designated in 1998. It has passed in 2004, 2005 and 2008. In 2009 and 2010 the waters failed.

## 17.8 Future Monitoring

The monitoring regime (17.6 Compliance Monitoring Regime) will be followed. In the event of any chemistry parameter failing to meet any EQS, the site will be revisited and resampled for the failed parameter.

Samplers are asked to identify any evidence of visible harm to the shellfish population at the site.

## 17.9 Improvement Actions

A new waste water treatment plant has been built at Jemimaville under Q&SII, to replace the existing 2 septic tanks which discharge directly into the designated water. This plant incorporates full biological treatment and the discharge will be made to freshwater. A new waste water treatment plant incorporating full biological treatment and removal of bacteria was also built under Q&SII at Cromarty and the discharge is now outside the shellfish water.

Other discharges into the shellfish water consist of a relatively small number of private septic tanks. There are two industrial discharges to the Cromarty Firth across from the designated area. The consent governing the discharge from Invergordon Distillery has been reviewed to ensure compliance with EQS and UWWTD.

## WFD Objectives

Under the Water Framework Directive, the target objectives expect this shellfish water to Pass by 2015 (first River Basin Management Plan Cycle) for Imperative Shellfish Growing Water Standards, with high confidence The Guideline Shellfish Growing Water Standards are also predicted to pass by 2015 but with low confidence.

<b>Objective</b>	<b>First Cycle 2015</b>	<b>Confidence</b>	<b>Second Cycle 2021</b>	<b>Confidence</b>	<b>Third Cycle 2027</b>	<b>Confidence</b>
Imperative Shellfish Growing Waters Standard	Pass by 2015	High	Pass by 2021	High	Pass by 2027	High
Guideline Shellfish Growing Waters Standard	Pass by 2015	Low	Pass by 2021	Low	Pass by 2027	Low

### 17.10 Summary of Actions

<b>Action</b>	<b>Deadline</b>
Q&SII improvements, Jemimaville and Cromarty	Done