



29.1 Background Information

Cruden Bay is a long sandy stretch of beach with the village of Cruden Bay and its small harbour at its northern end. It is approximately 2.5 km in length backed by well established sand dunes and is popular with day trippers, water sport enthusiasts and for sea fishing. The entire bay is designated, with the sampling point towards the northern end roughly half way between the two access points to the beach area (Fig 29A). In 2007 Cruden Bay was awarded a Seaside Award for the first time in the rural category. The Seaside Award acknowledges those beaches with good management, which are clean, safe and display up-to-date information to the public.

Cruden Bay historically regularly failed to meet EC mandatory quality standards, thought largely to be attributable to the short sea outfall at the harbour, which previously discharged untreated sewage from the village of Cruden Bay to sea immediately adjacent to the bathing water. Sewerage improvement plans came into effect prior to the 2003 season, when the unsatisfactory discharge was removed. Local sewage is now pumped to the Peterhead STW, with the former outfall retained only as a storm and emergency overflow. Following these improvements mandatory standards have been achieved at this bathing water for the last five years. In 2007 Cruden Bay achieved good quality status overall.

The main remaining pressure on the bathing water quality is bacterial inputs from the Water of Cruden, which flows into the sea at the northern end of the bathing water. As well as draining an agricultural catchment, this watercourse receives treated sewage effluent from a sewage treatment works serving the village of Hatton. A large septic tank at Bridgend previously also discharged to this river, but has recently been replaced and now discharges to a soakaway.

In March 2006 the revised Bathing Water Directive (2006/7/EC) entered into force and was enacted in the UK by Regulations in 2008. Key features are tighter

microbiological standards to be met by 2015 and increased provision of public information.

Compliance and pollution improvement required for the designated EU Bathing Waters will be co-ordinated through the Water Framework Directive (WFD) programme of measures which will form part of the river basin management plan. The programme of measures will outline measures (actions) that are being taken to protect and improve the water environment in the river basin district. This EU designated bathing water (protected area) pollution reduction plan will identify measures relevant to this bathing water and associated water bodies that are being undertaken as part of the programme of measures.

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Poor	Poor	Good	Poor	Good	Poor	Good	Good	Good	Good	Good

Table 29A: Record of Compliance for Cruden Bay, 1997-2007.

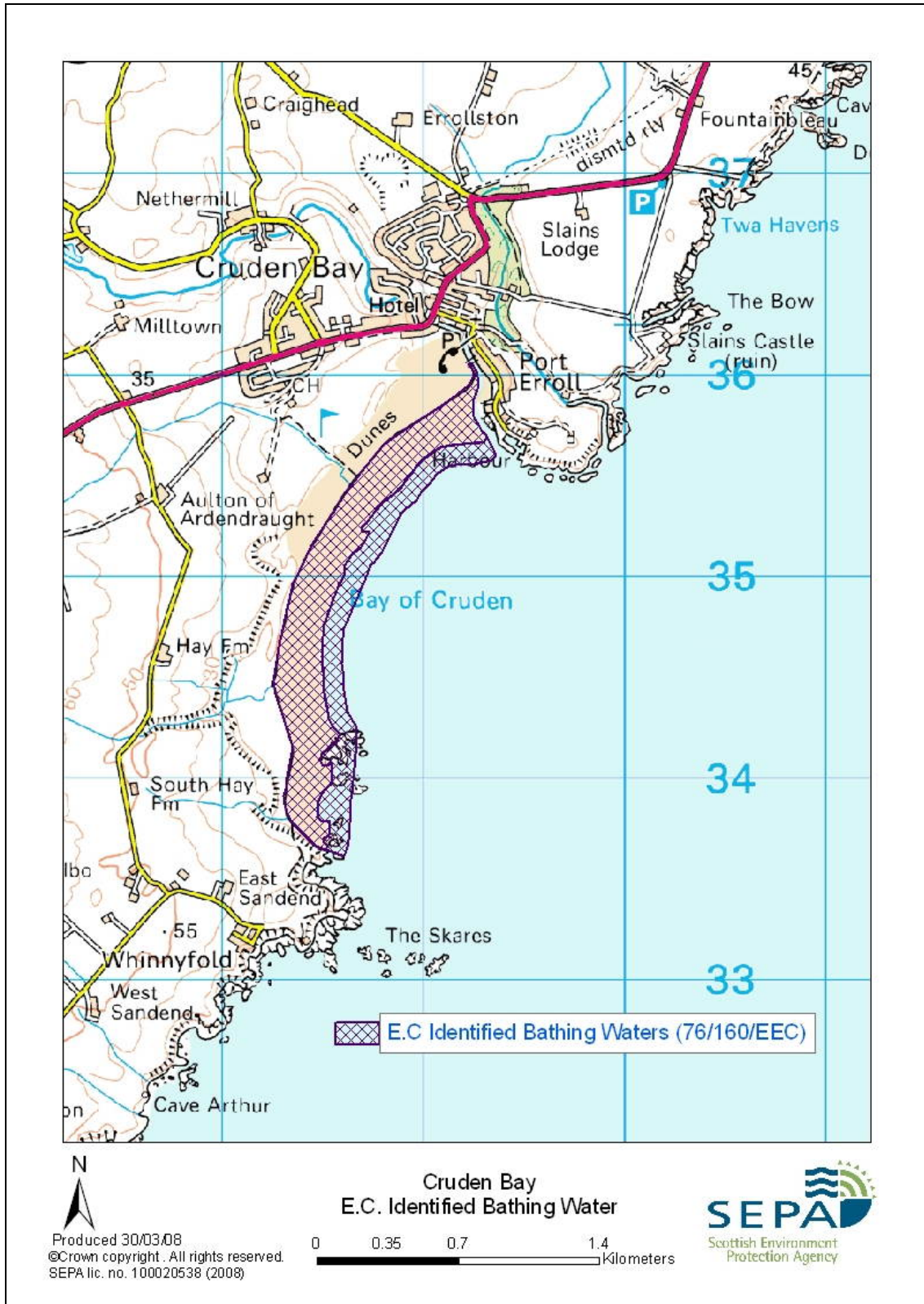


Figure 29A: Map of Cruden Bay designated bathing beach and surrounding local area.

29.2 Results for 2007

Cruden Bay Results				
Date	Total Coliforms (colonies/100ml)	Faecal Coliforms (colonies/100ml)	Faecal Streptococci (colonies/100ml)	Salinity
24-May-2007	700 (M)	100 (G)	330	29.5
6-Jun-2007	200 (G)	78 (G)	420	34.3
12-Jun-2007	50 (G)	50 (G)	2 (G)	35.3
19-Jun-2007	1000 (M)	200 (M)	240	30.6
27-Jun-2007	18 (G)	16 (G)	4 (G)	34.6
2-Jul-2007	1400 (M)	800 (M)	200	35
6-Jul-2007	110 (G)	66 (G)	15 (G)	-
8-Jul-2007	34 (G)	34 (G)	12 (G)	-
10-Jul-2007	800 (M)	200 (M)	76 (G)	-
20-Jul-2007	2300 (M)	200 (M)	270	28.6
24-Jul-2007	24 (G)	12 (G)	9 (G)	34.6
27-Jul-2007	46 (G)	42 (G)	15 (G)	31.3
30-Jul-2007	46 (G)	36 (G)	20 (G)	32.4
2-Aug-2007	800 (M)	300 (M)	130	27.8
7-Aug-2007	1000 (M)	140 (M)	76 (G)	29.9
8-Aug-2007	700 (M)	106 (M)	43 (G)	31.7
15-Aug-2007	46 (G)	34 (G)	20 (G)	34.8
21-Aug-2007	300 (G)	300 (M)	70 (G)	33.1
28-Aug-2007	2900 (M)	300 (M)	480	24.6
4-Sep-2007	700 (M)	160 (M)	30 (G)	32.9

Table 29B: Microbiological results for Cruden Bay bathing beach, May-Sept 2007.

29.3 Scottish Water Assets

Sewage from the village of Cruden Bay is now pumped to Peterhead STW, with the former outfall retained only as a storm and emergency overflow from the pumping station. SEPA monitors the consented discharges from the pumping station to ensure they are operating to the required standard in order to protect the bathing waters. Problems with the pumping station were linked to a single sample mandatory exceedance during the 2005 season. Pre-season joint inspections between SEPA and Scottish Water and information submitted to SEPA during the 2006 season have found the problems associated with Cruden Bay PS have been resolved. New impellers have been installed on both pump sets demonstrating compliance with the Enforcement Notice that was served on this asset prior to the 2006 bathing season. Ongoing SEPA inspections have found no further problems and further joint inspections will be carried out here prior to the start of the 2008 bathing season.

Hatton STW discharges to the Water of Cruden, a few kilometres inland from the bathing water. As this has been identified as a pollution source impacting on the bathing water quality, the works have been upgraded to incorporate UV disinfection however the UV lights are still not achieving the required kill rates. Scottish Water had been investigating this together with the contractors, and it is believed that the cleaning system for the UV lights may be faulty. Consequently an Enforcement

Notice has been served on Scottish Water requiring the issues to be resolved prior to the 2008 bathing season.

A septic tank serving a number of properties at Bridgend which previously discharged to the Water of Cruden was also previously identified as potentially impacting the bathing water quality. Scottish Water replaced this with a new septic tank in 2006 which now discharge to a soakaway, thus removing this potential pressure on the bathing waters.

An unsatisfactory and unconsented Scottish Water combined sewer overflow (CSO) discharging to the Water of Cruden at Hatton has in the past been responsible for sewage solids in the watercourse. SEPA are working with Scottish Water to address this, to block off the discharge and provide suitable screening at an alternative CSO which is due to be re-instated instead. It is unlikely that this is having a significant impact on the bathing water quality however, due to its relative size and distance from the bathing water.

There are several other consented CSOs to the Water of Cruden, both at Hatton and Cruden Bay. However, these are not believed to be impacting on the bathing water quality.

29.4 Other Discharges

There are no other significant discharges to the bathing water. There are a number of septic tank discharges to the Water of Cruden from private dwellings but they are not believed to pose a significant risk to the bathing water quality.

29.5 Agriculture

Over 60 farms in the catchment were visited in 2003 as part of a national plan to determine potential sources of bathing water pollution. Revisits to some of these farms have been carried out to check compliance with the measures outlined after the initial visits, and indications are that pollution from agricultural steadings is not contributing significantly towards bathing water quality at this location.

As this is a largely agricultural catchment, there is also some risk to the bathing water quality from run-off from the land during periods of wet weather however. SEPA will continue to promote best practices and the PEPFAA code where possible, to help minimise diffuse agricultural pollution. In addition, the Scottish Executive's Four Point Plan for the reduction of agricultural pollution sources should prove helpful in tackling this issue.

The Water of Cruden catchment lies within a designated Groundwater Nitrate Vulnerable Zone (NVZ) under the terms of the European Nitrates Directive 91/676/EEC, which aims to reduce water pollution from agricultural sources. As a result of the Directive, The Action Programme For Nitrate Vulnerable Zones (Scotland) Regulations 2003 came into force in February 2003 and introduce legally binding rules in the form of action programmes for farmers in designated NVZs. Programme measures focus on limiting nitrate input by matching it to crop requirement, and controlling storage and application of certain fertilisers and organic waste to minimise leaching and run-off.

Scottish Government has completed a consultation on General Binding Rules (GBRs) designed to protect the water environment from agricultural diffuse pollution. The proposed GBRs which are part of the Controlled Activities Regulations (CAR)

came into force in April 2008. The measures are based on widely accepted standards of good practice such as the Scottish Government's Prevention of Environmental Pollution from Agricultural Activity (PEPFAA) Code, the 4 Point Plan, Farm Soils Plan and the Forestry Commission's Forests and Water Guidelines.

The GBRs will establish basic activities that should be undertaken to reduce pollution risk. They also propose that draining lightly contaminated farmyard water to a Constructed Farm Wetland (CFW), specifically designed for the purpose should be permitted as an alternative to collection and storage of the run-off. These measures will help to protect bathing water quality from agricultural diffuse pollution.

Even with these national GBRs in place, there are likely to still be problems associated with certain pollutants in some catchments. For these areas, it may be necessary – in conjunction with river basin management planning – for the national rules to be supplemented by further localised controls on a particular land use activity within a catchment.

29.6 Hydrometric Network

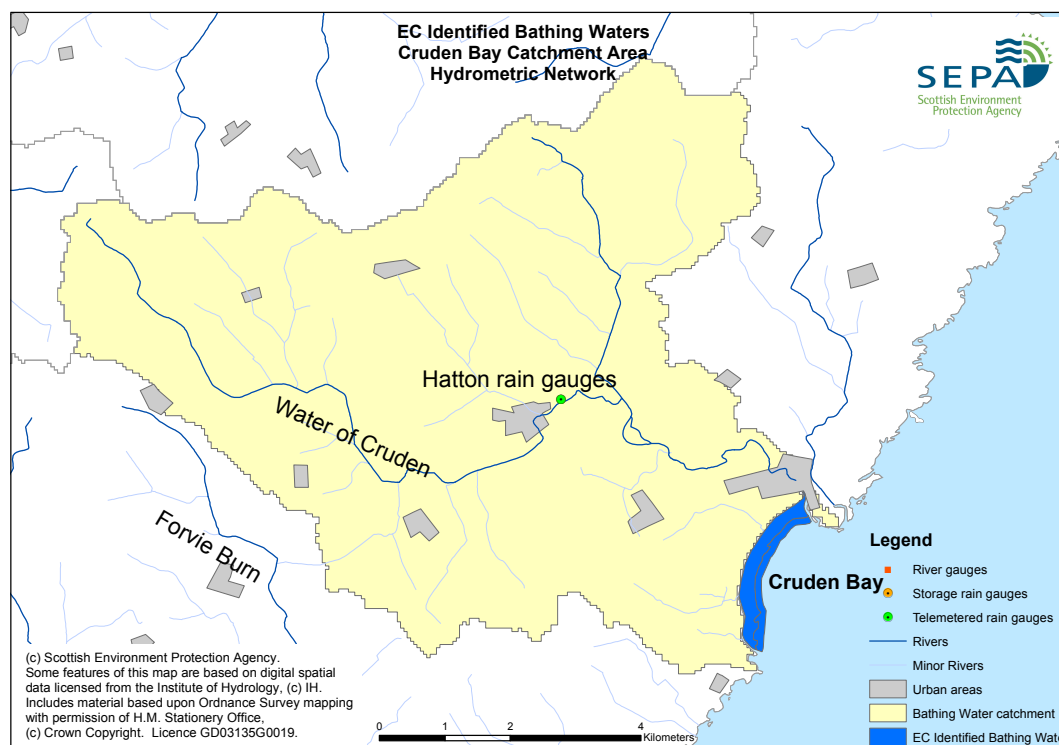


Figure 29B: Hydrometric map of Cruden Bay and surrounding area.

29.7 Further Investigations

Bacteriological surveys to identify any diffuse and/or point-source pollution to the Water of Cruden were undertaken as part of a SEPA action plan in 2002. Eight sites were monitored on the Water of Cruden as part of this study. High levels of bacteria were recorded downstream of Hatton STW, and subsequently SEPA has been liaising with Scottish Water over the Hatton STW discharge into the Water of Cruden with a view to enhancing the level of treatment there (see above).

29.8 Response to Failure

Cruden Bay has been assessed for the 2008 season as at medium risk of failing to meet the Directive's standards. Although good quality has been achieved for the last five seasons, bacteria levels have on occasion approached mandatory standards in previous years. This risk status may be reduced following improvements expected this year from the UV disinfection at Hatton STW.

Should there be a mandatory failure, there will be an immediate response to check all the relevant potential sources and major discharges in the catchment area to confirm the reason, e.g. if there has been a failure of any of the works, pumping stations, CSOs and/or whether the failure was due to high river flows, taking account of SEPA's hydrometric information. In addition, immediate follow-up microbiology sampling will be undertaken of the failed beach, and of nearby river inputs where appropriate.

The regional Environmental Quality Unit will co-ordinate a response in conjunction with the local Environmental Protection and Improvement team and Science functions, and post the result of the investigation and actions arising on the SEPA bathing waters internet site.