

## 24 Inverboyndie



### 24.1 Background Information

Boyndie Bay is a long sandy beach just to the east of Banff. It was designated as an EC identified bathing water in 1999 although it has been monitored since 1988 and supports a range of activities including surfing, windsurfing, bathing and wildlife walks. Inverboyndie was awarded a Seaside Award for the first time in 2007 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.

During the 2007 season there was a single sample exceedance following intermittent heavy rainfall prior to this sample being taken. Storm tanks at a local sewage pumping station legitimately discharged screened storm sewage into the sea in the vicinity of the bathing water. This may have caused elevated faecal coliform levels although it is possible the local burn could also have been a contributing factor. Also during this season an abnormal event provision was applied on 6<sup>th</sup> August following severe rainfall. Despite this, it achieved good bathing water quality in 2007 overall and has achieved excellent water quality in previous years. Each season Inverboyndie has met mandatory standards indicating consistent compliance.

Inverboyndie has benefited from substantial improvements to the surrounding sewerage system in recent years. A continuous discharge of untreated sewage at one end of the beach has been eliminated, and the sewage is now pumped to a treatment plant at Macduff, where it undergoes full biological treatment followed by UV disinfection. The outfall itself has been retained only as a storm overflow and emergency overflow for the pumping station. Sewage from the nearby town of Banff (Fig 24A) is also treated at the Macduff plant.

The Boyndie Burn meets the sea at the western end of the bathing water. This relatively small burn has a predominately agricultural catchment area, and accepts

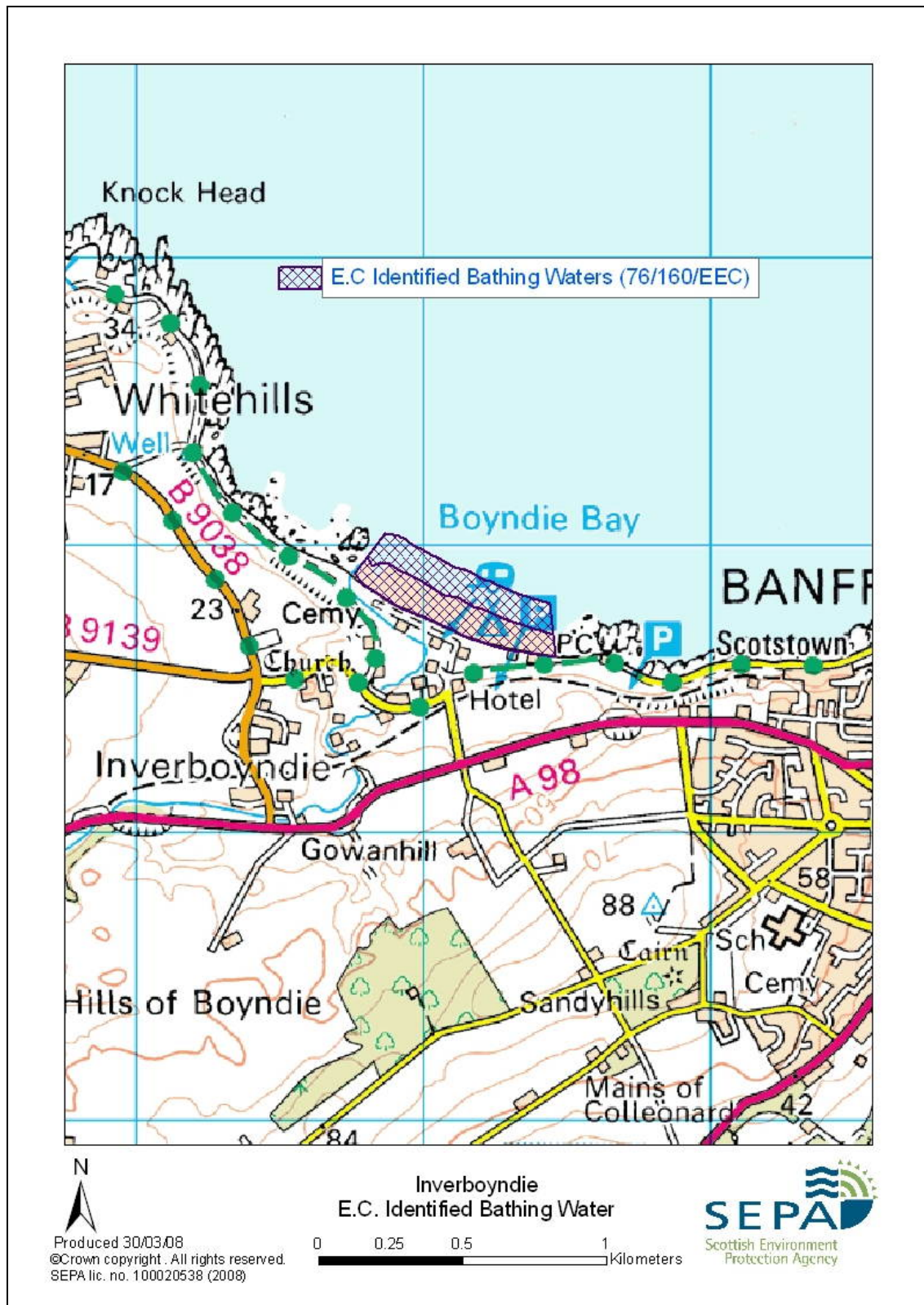
private septic tank discharges. This burn could potentially be another pressure on the bathing water quality, particularly during wet weather.

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
Good	Good	Good	Excellent	Good	Good	Excellent	Excellent	Good	Excellent	Good

**Table 24A:** Record of Compliance for Inverboyndie, 1997-2007.



**Figure 24A:** Map of Inverboynie designated bathing beach and surrounding local area.

## 24.2 Results for 2007

Inverboyndie Results				
Date	Total Coliforms (colonies/100ml)	Faecal Coliforms (colonies/100ml)	Faecal Streptococci (colonies/100ml)	Salinity
25-May-2007	6 (G)	<2 (G)	0 (G)	33
5-Jun-2007	174 (G)	28 (G)	4 (G)	41.9
11-Jun-2007	54 (G)	4 (G)	4 (G)	35
18-Jun-2007	20 (G)	6 (G)	6 (G)	34.7
26-Jun-2007	700 (M)	300 (M)	42 (G)	34.1
2-Jul-2007	24 (G)	4 (G)	0 (G)	33.4
6-Jul-2007	6800 (M)	5400 (X)	10 (G)	25.5
8-Jul-2007	6700 (M)	500 (M)	190	-
9-Jul-2007	30 (G)	22 (G)	4 (G)	-
17-Jul-2007	800 (M)	500 (M)	2 (G)	35.8
23-Jul-2007	1500 (M)	200 (M)	122	31.6
26-Jul-2007	38 (G)	38 (G)	6 (G)	33.8
30-Jul-2007	400 (G)	62 (G)	13 (G)	31.3
2-Aug-2007	1000 (M)	84 (G)	7 (G)	35.1
6-Aug-2007	Abnormal Event Provision Applied			30.1
8-Aug-2007	400 (G)	90 (G)	29 (G)	32
14-Aug-2007	92 (G)	82 (G)	7 (G)	32.9
20-Aug-2007	3100 (M)	700 (M)	140	30.4
27-Aug-2007	700 (M)	92 (G)	78 (G)	32.4
29-Aug-2007	900 (M)	900 (M)	80 (G)	33.5
3-Sep-2007	600 (M)	118 (M)	64 (G)	32

**Table 24B:** Microbiological results for Inverboyndie bathing beach, May-Sept 2007.

## 24.3 Scottish Water Assets

The only remaining sewage discharge within the vicinity of the bathing water is any intermittent discharge from Inverboyndie pumping station via its storm or emergency overflow.

## 24.4 Other Discharges

An abnormal event provision was applied on 6 August 2007 due to severe rainfall causing widespread flooding across Banff & Buchan area. It is believed that private septic tanks at the bottom of the catchment, rather than agricultural inputs may be responsible for high bacterial levels in the Boyndie Burn. Several of these septic tanks serve the adjacent caravan site. Aberdeenshire Council, which owns the site, commissioned a connection to the public sewer which was completed prior to the 2008 bathing season.

## 24.5 Agriculture

All farms draining to the Boyndie burn were inspected in 2003 in order to determine potential sources of bacterial contamination which could pollute the bathing water. A

number of these farms have since been revisited, and the response from the farming community has been encouraging. The majority of farms had carried out the measures previously identified as required to minimise agricultural pollution from this catchment.

Although diffuse pollution from agriculture is not believed to be significant in this catchment, there is some risk to the bathing water quality from run-off from the land particularly during periods of wet weather. 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.

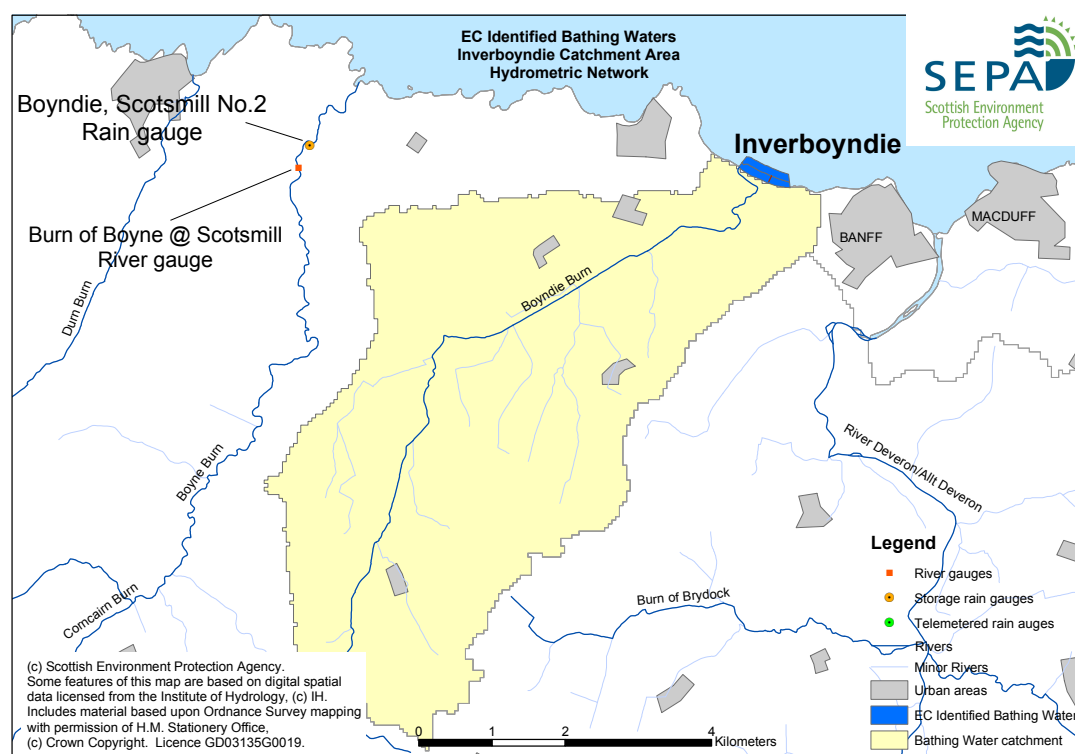
The Boyndie Burn catchment lies within a designated Groundwater Nitrate Vulnerable Zone (NVZ) under the terms of the European Nitrates Directive 91/676/EEC, which aims to reduce water pollution from agricultural sources. As a result of the Directive, The Action Programme For Nitrate Vulnerable Zones (Scotland) Regulations 2003 came into force in February 2003 and introduced 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.

## 24.6 Hydrometric Network



**Figure 24B:** Hydrometric map of Inverboyndie and surrounding area.

## 24.7 Further Investigations

Additional monitoring of the Boyndie Burn carried out during the 2003 season found high bacteria levels in the burn on the two dates it was surveyed. No specific causal inputs to the burn were pinpointed at that time, although muck spreading on fields adjacent to the burn was being carried out on one of the survey dates and may have accounted for the elevated bacteria levels that day. Following the farm inspection work and promotion of good practices within the farming community carried out over the last few years, improvement to the burn's quality can be expected to follow.

More recent investigations have revealed that the high bacterial levels seem to be confined now to the lower stretch of the burn around the mouth and it is believed that private septic tanks rather than agricultural inputs may be responsible (see Other Discharges above). Although bacteria levels in the burn were recorded as high, it does not appear to be significantly influencing the bathing water quality, probably due to the relatively small size of this burn. However, under certain conditions, such as particularly wet weather or high river levels combined with high tides and on-shore winds, it may have a greater influence on the bacteria levels at the bathing water.

## 24.8 Response to Failure

Inverboyndie beach has been assessed for the 2008 season as at low risk of failing to meet the Directive's standards due to its consistent record of compliance since its designation as a bathing water.

Should there be a mandatory failure, there will be an immediate response to check all the relevant potential sources in the catchment area to confirm the reason, e.g. if there has been a failure of the pumping stations 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.