

30 Balmedie



30.1 Background Information

Balmedie has a very popular and extensive sandy beach with a section of approximately 3 km in length designated as an EC identified bathing water. Balmedie Country Park is adjacent to the beach and the bathing water is centred around the main access routes to the beach from the country park (Fig. 30A). Kite surfing and other water sports are permitted at the beach. Furthermore 16 km of extensive dunes stretch from Aberdeen to Newburgh. In 2007 Balmedie beach retained its previously awarded Seaside Award 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. It is also a Marine Conservation Society recommended beach (2007).

There are two small burns which feed directly to the bathing water, the Eigie Burn and Potterton Burn. Agricultural diffuse pollution and septic tank discharges are pressures acting on both these watercourses. In 2003, the sampling location for this bathing water was relocated approximately 300 m further north, following work undertaken by the Country Park which altered the course of the Eigie Burn and changed some of the access routes to the beach.

For the fifth successive year, excellent water quality was achieved at this site in 2007.

Balmedie sewage treatment works discharges treated sewage via a long sea outfall approximately 1 km out from the bathing water sampling point. Various improvements to the sewerage infrastructure in the area have taken place in recent years to connect sewage from neighbouring communities of Potterton and Belhelvie to the long sea outfall, which would previously have discharged to burns which in turn feed directly to the bathing water. Furthermore, a new sewage treatment works which

provides full secondary treatment and has increased capacity was commissioned in early 2004. This utilises the existing long sea outfall.

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	Excellent	Good	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent

Table 30A: Record of Compliance for Balmedie, 1997-2007 (results from 2003 onwards are for the current Balmedie Pillbox site, prior to this they are from the former Balmedie site).

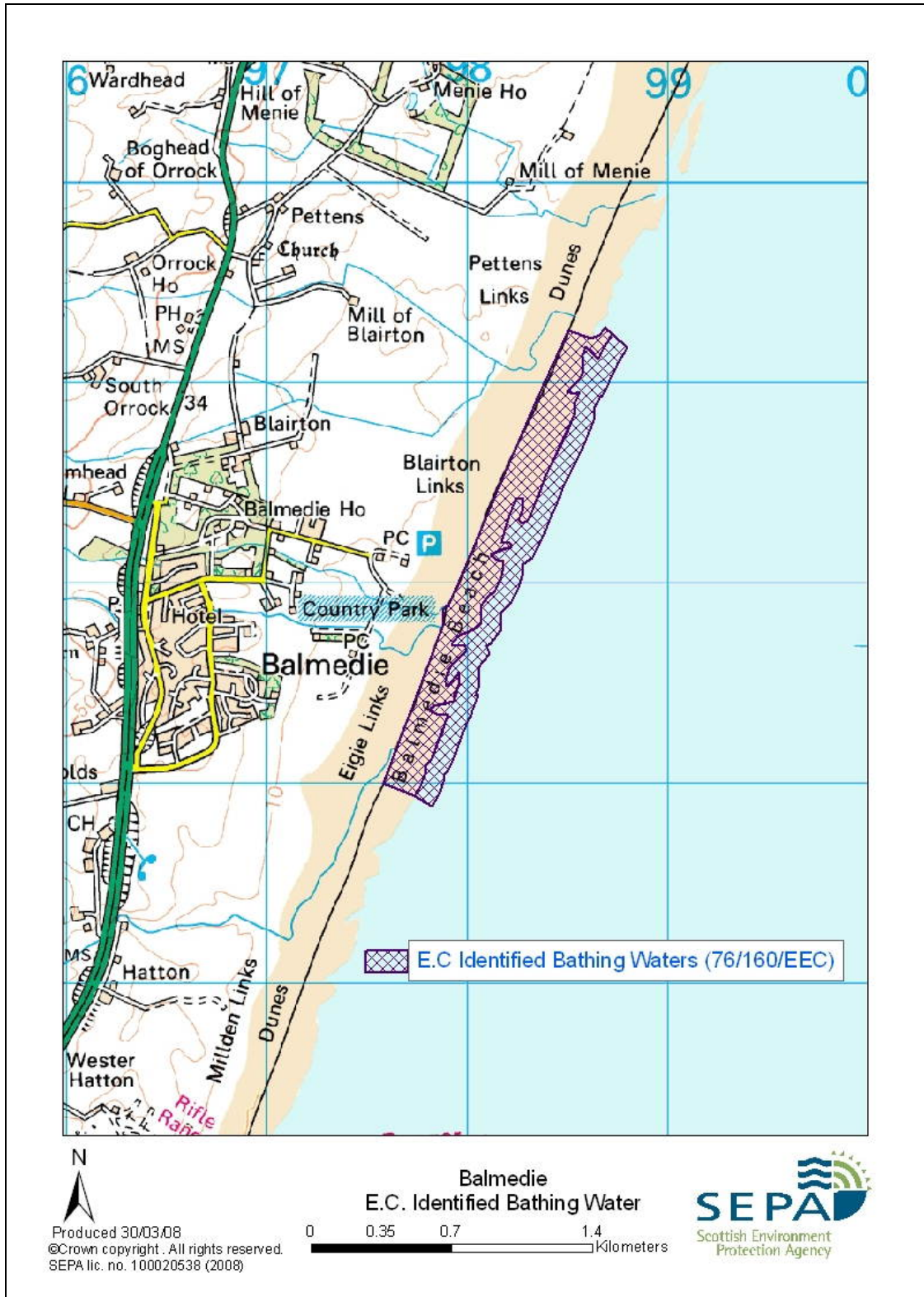


Figure 30A: Map of Balmedie designated bathing beach and surrounding local area.

30.2 Results for 2007

Balmedie Results				
Date	Total Coliforms (colonies/100ml)	Faecal Coliforms (colonies/100ml)	Faecal Streptococci (colonies/100ml)	Salinity
24-May-2007	10 (G)	10 (G)	2 (G)	33
19-Jun-2007	2 (G)	<2 (G)	1 (G)	31.1
8-Jul-2007	60 (G)	10 (G)	0 (G)	-
27-Jul-2007	2700 (M)	134 (M)	37 (G)	33.4
21-Aug-2007	100 (G)	92 (G)	31 (G)	33.9

Table 30B: Microbiological results for Balmedie bathing beach, May-Sept 2007.

Balmedie bathing water qualified for reduced monitoring in 2007 due to its consistently high water quality results, and was only sampled five times a season.

30.3 Scottish Water Assets

The new sewage treatment works at Balmedie was delivered under Quality & Standards II and was fully operational prior to 2004 bathing season. These works now also treat sewage pumped from the nearby village of Newburgh, with the capacity for doing this incorporated in the original build. Modelling has been carried out to ensure the discharge will not compromise the achievement of guideline standards at the bathing water. The combined sewer overflow from the works also discharges via the long sea outfall, with no emergency overflows or storm overflows from this works to the nearby Eigie Burn.

There are no other consented Scottish Water sewage discharges within the immediate vicinity of the bathing water.

30.4 Other Discharges

There are many consented septic tank discharges from private dwellings to the burns in the catchment area of the bathing water, but no other significant discharges. SEPA are unlikely to grant consents for any further septic tank discharges to the lower reaches of the Eigie Burn, where connection to the public sewer is an option.

30.5 Agriculture

Land use in the catchment area of the Potterton and Eigie Burn is predominately arable farming, with some small holdings with livestock in the upper catchment, and urbanisation in the lower Eigie catchment.

Farm audits of premises located in the Balmedie bathing water catchment area carried out during the 2003 season revealed a number of minor problems which resulted in several follow-up inspections in 2004. Agricultural pollution is not now considered to have a significant effect on bathing water quality at this location.

The catchment of Balmedie beach 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.

30.6 Hydrometric Network

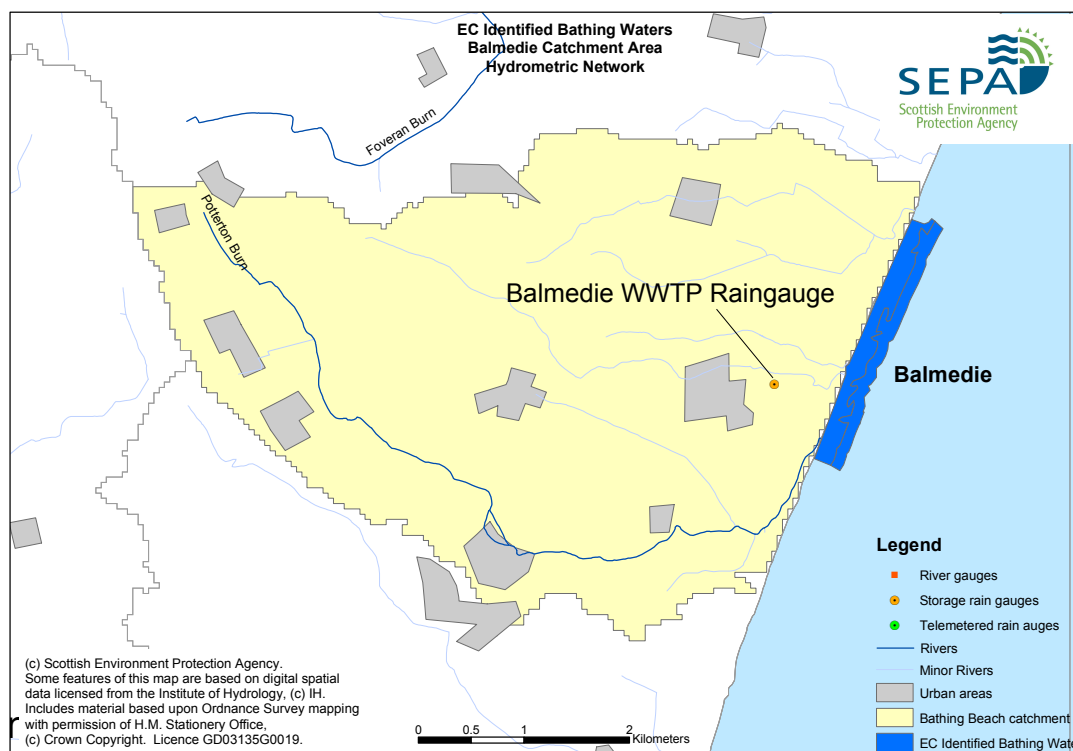


Figure 30B: Hydrometric map of Balmedie and surrounding area.

30.7 Further Investigations

Detailed studies of the bacterial loads from watercourses which feed to the Balmedie bathing water have been undertaken as part of a SEPA action plan in order to

establish their potential impact on the bathing beach. Results showed elevated bacterial concentrations coming from the Eigie Burn and its tributary. It is believed that septic tanks are likely to be the main factor contaminating the burn. The Potterton Burn was also found to have elevated bacterial levels, although not as high as those in the Eigie Burn. However, as the Potterton Burn is a larger watercourse it will provide a greater volumetric loading of bacteria into the sea than the Eigie. Both these burns could therefore potentially have an effect on the bathing water quality.

30.8 Response to Failure

Balmedie beach has been assessed for the 2008 season as at low risk of failing to meet the Directive's standards, due to having achieved guideline standards for the last five years and meeting mandatory standards 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 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 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.