

Scottish Bathing Waters

2003



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Foreword

by Campbell Gemmell, Chief Executive Officer,
Scottish Environment Protection Agency
October 2003

I am pleased to present the Scottish Environment Protection Agency's (SEPA's) 2003 Bathing Waters Monitoring Report. The headline news for 2003 is very good. Scottish bathing waters achieved their best ever compliance with environmental quality standards specified in the EC Bathing Waters Directive. Of the 60 identified waters, 57 (95%) met the basic mandatory standards. Even more remarkable was the increase in waters meeting the much more stringent EC guideline quality standards, which are indicative of very good water quality. The previous high of 24 sites in 2001 and 2002 leapt to 39 of the 60 in 2003. Most of these improvements, and the long-term upward trend, are undoubtedly due to continuing investment in new sewage treatment schemes and ongoing work to minimise diffuse, particularly agricultural, sources of bacterial pollution. However, a caveat is required; just as last year the more limited improvement was partly attributed to unusually wet summer weather, this year's drier than average summer weather undoubtedly helped water quality, particularly in respect of guideline quality compliance at some sites.

Although this year's results are good, and easily the best ever for Scotland, significant further improvement is still required. One of SEPA's key objectives is to improve the quality of identified bathing waters to the extent that they all meet current EC mandatory quality standards and progress towards attainment of the demanding guideline standards. While it is encouraging to see positive outcomes from continuing investments, further new infrastructure and reductions in agricultural sources of pollution are needed to ensure complete compliance.

SEPA investigations have again shown that freshwater sources polluted by agricultural pollution and storm overflows are significant factors reducing water quality at numerous sites. The continuing major investment by Scottish Water is gradually reversing the historic legacy of inadequate sewage treatment facilities and sewerage infrastructure in Scotland. SEPA welcomes

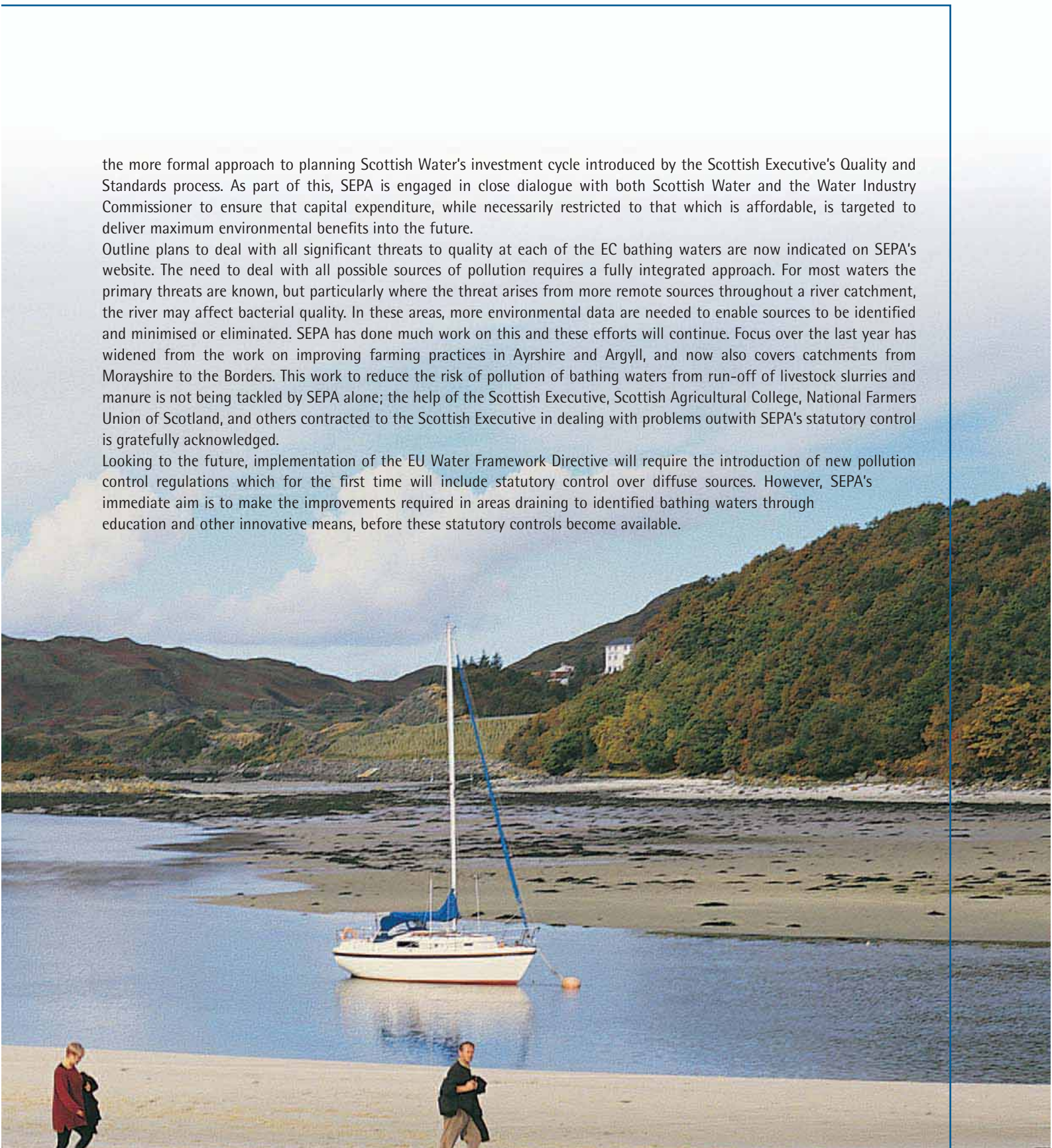


Morar Beach

the more formal approach to planning Scottish Water's investment cycle introduced by the Scottish Executive's Quality and Standards process. As part of this, SEPA is engaged in close dialogue with both Scottish Water and the Water Industry Commissioner to ensure that capital expenditure, while necessarily restricted to that which is affordable, is targeted to deliver maximum environmental benefits into the future.

Outline plans to deal with all significant threats to quality at each of the EC bathing waters are now indicated on SEPA's website. The need to deal with all possible sources of pollution requires a fully integrated approach. For most waters the primary threats are known, but particularly where the threat arises from more remote sources throughout a river catchment, the river may affect bacterial quality. In these areas, more environmental data are needed to enable sources to be identified and minimised or eliminated. SEPA has done much work on this and these efforts will continue. Focus over the last year has widened from the work on improving farming practices in Ayrshire and Argyll, and now also covers catchments from Morayshire to the Borders. This work to reduce the risk of pollution of bathing waters from run-off of livestock slurries and manure is not being tackled by SEPA alone; the help of the Scottish Executive, Scottish Agricultural College, National Farmers Union of Scotland, and others contracted to the Scottish Executive in dealing with problems outwith SEPA's statutory control is gratefully acknowledged.

Looking to the future, implementation of the EU Water Framework Directive will require the introduction of new pollution control regulations which for the first time will include statutory control over diffuse sources. However, SEPA's immediate aim is to make the improvements required in areas draining to identified bathing waters through education and other innovative means, before these statutory controls become available.



Portobello Beach



1. Introduction

1.1 SEPA's Role in Bathing Water Quality

The Scottish Environment Protection Agency (SEPA) was established in 1996 as the national public body responsible for environmental protection and improvement in Scotland. It is accountable to the Scottish Ministers and, through them, to the Scottish Parliament. SEPA's duties include regulating discharges to water, air and land. Additional powers and duties continue to be given to SEPA, particularly through regulations implementing EC Directives. SEPA also provides environmental advice and information and works in partnership with many public, voluntary and private sector organisations to deliver environmental improvements. In addition to publishing this annual report, SEPA places monitoring results from bathing waters on its website throughout the bathing season.

1.2 SEPA's Commitment to Improving Bathing Water Quality

SEPA recognises the immense economic value of Scotland's relatively unspoiled environment. High-quality bathing waters are important for a wide variety of interests and help to promote the tourism industry within Scotland. All possible sources of pollution must be recognised and controlled in order to protect and, where necessary, improve the quality of waters. Since its inception, SEPA has continued the aim of its predecessors to improve bathing water quality as rapidly as possible. It will continue working with all other relevant authorities to achieve the goal of full compliance with European bathing water standards, to which the Scottish Executive is committed. Section 5 of this report provides specific information about the ongoing work towards the attainment of current quality standards, and for the future attainment of anticipated new European standards which are expected to be more stringent.

Identified bathing waters represent only a small part of Scotland's waters. SEPA is committed to protecting and improving all controlled waters and, in recognition of this, it maintains a policy on microbiological standards for relevant discharges. This requires that all new or modified discharges to identified bathing waters must be designed to ensure that the Bathing Water Directive's guideline standards are met. These high standards are also promoted by SEPA to other recreational waters; areas where SEPA recognises that water contact activities are practiced outwith identified bathing waters, and to beaches visited by the public. Further information on this policy can be found on SEPA's website¹.

1.3 Purpose of this Report

This report contributes to SEPA's aim to provide useful information on Scotland's environment. As well as containing the water quality monitoring results, it also describes factors underlying the results and outlines site-specific plans for improvement. The results of SEPA's routine monitoring in 2003 are presented in two parts. Sections 4.1 and 4.2 cover Scotland's 60 identified bathing waters, while 4.3 covers other waters, several of which are actual or potential recreational waters, and are subject to routine bacteriological quality monitoring during the bathing season.

The report also illustrates trends in compliance and provides background information on the identified waters in Scotland. These data are used to identify priorities for investment and to focus effort on delivering environmental improvements. The report also details some site-specific issues and the initiatives necessary to ensure high-quality bathing water at these sites in the future.

As required by the Directive, the water quality results for the 60 identified bathing waters have been reported to the European Commission (EC), which will publish the results as part of their annual report on the overall quality of bathing waters in the European Union.

¹www.sepa.org.uk

2. Background and Legislation

2.1 EC Bathing Water Directive (76/160/EEC)

The EC Bathing Water Directive (referred to in this report as 'the Directive') requires each Member State to identify bathing waters and to take all necessary measures to bring these waters up to the quality standards prescribed. A bathing water is defined as fresh or sea water where bathing is either explicitly authorised or is not prohibited and is traditionally practiced by a large number of bathers. The Bathing Water (Classification) (Scotland) Regulations 1991 implement the Directive in Scotland. The prescribed environmental quality standards are set to protect the environment and public health, and include limits for safe microbiological, physical and chemical parameters. The Directive lays down requirements for the frequency of sampling, methods of analysis and inspection of bathing areas and the interpretation of results. It also requires the exclusion of results obtained in abnormal circumstances.

2.2 Related Legislation

Under the Control of Pollution Act 1974 as amended (COPA), SEPA issues consents for discharges of sewage and trade effluent to controlled waters, which include all coastal and inland waters. The conditions applied to each consent must be complied with and are designed to enable compliance with relevant water quality objectives.

The EC Urban Waste Water Treatment Directive (91/271/EEC) specifies minimum legal standards for the treatment of municipal waste water. These standards are principally determined by the size of the community, or agglomeration, served by a waste water treatment plant (WWTP), and by the nature of the receiving environment. This Directive also requires treatment to ensure compliance with all other relevant EC directives, including the Bathing Water Directive. The Urban Waste Water Treatment (Scotland) Regulations 1994 implement this Directive in Scotland.

The EC Water Framework Directive will be the principal driver for water quality improvements in Scotland over the next decade and beyond. This Directive was approved in December 2000 and defines a planning mechanism for delivering specified environmental objectives. It generally requires Member States to ensure attainment of 'good status' in coastal waters, estuaries, rivers, lochs and groundwater by 2015, through the implementation of River Basin Management Plans. These plans must be finalised by 2009. This new directive will replace seven existing directives and will provide the context within which other continuing directives, including the Bathing Water Directive, will operate. As well as having implications for investment to reduce point source pollution, the Water Framework Directive will also require controls to be put in place to minimise the impact of diffuse pollution sources.

2.3 Working with Others

In 1998, SEPA's Environmental Strategy identified environmental protection priorities for Scotland and committed SEPA to make continual progress towards total compliance with the Bathing Water Directive's mandatory standards. This is not something that SEPA can achieve on its own and SEPA will continue to work with all relevant organisations, the agricultural community and the public to attain its goal. Only by working in partnership can SEPA give the people of Scotland, and visitors, the high quality of bathing water that they are entitled to expect in the 21st century.

Sewage remains a major cause of polluted coastal waters in Scotland. Measures to reduce sewage related problems are, in most cases, the responsibility of Scottish Water. SEPA and the Scottish Executive work with Scottish Water and the Water Industry Commissioner to ensure that planned capital investment programmes, aimed at upgrading sewerage infrastructure throughout the country, are prioritised to maximise environmental benefits and ensure compliance with European Urban Waste Water Treatment Regulations and all relevant quality standards.

Investment is required not only in sewage treatment but also in sewerage infrastructure, particularly in storm water overflows. Combined sewer overflows (CSO), designed to prevent flooding during periods of high rainfall, discharge diluted but minimally treated sewage to watercourses and coastal waters. SEPA imposes conditions on the siting and frequency of operation of CSO to minimise their impact on water quality.

As sewage related problems are gradually overcome, other sources of pollution become more apparent. The Scottish Executive's publication *Strategy for Improving Scotland's Bathing Waters*, published in March 2002, and subsequent development of the *Four Point Plan for reduction of agricultural pollution sources*, published in December 2002, are proving very helpful in enabling these problems to be tackled. This is particularly important as many of these problems are not yet subject to statutory control. In respect of urban areas, the principles embodied in the successful Sustainable Urban Drainage Systems (SUDS) manual are increasingly limiting urban diffuse pollution from new developments, but there remains a large problem of contaminated surface water run-off from existing urban areas. It is extremely encouraging that the Scottish Executive is now funding the first trial to retrofit SUDS to a problematic urban area in Ayrshire.

Local authorities are responsible for keeping beaches identified as Amenity Beaches under the Environmental Protection Act 1990 free from litter. All identified bathing waters are now classed as Amenity Beaches. Local authorities are also obliged to display notice boards at identified bathing waters providing a variety of information including the water quality data supplied by SEPA.

2.4 Identification of Bathing Waters

The first set of identified bathing waters in Scotland, 23 in total, was announced by the Secretary of State for Scotland in February 1987. Initially, these were based on the criteria set by the UK Government for identifying waters coming within the scope of the Directive, based on the number of people using the water for bathing. In 1998, the Scottish Office carried out a review to decide whether additional waters should be identified in Scotland under the Bathing Water Directive. A panel with a wide-ranging membership was set up by the Scottish Office to ensure that all stakeholders were involved in the decision-making process. The result was that in May 1999, an additional 37 bathing waters were identified, bringing the total in Scotland to 60 (see Maps 1 and 2).

Post-devolution, it is Scottish Ministers who are responsible for identifying bathing waters in Scotland. It is not envisaged that there will be any further changes to identified waters before implementation of the revised EC Bathing Waters Directive.

2.5 Revision of the Bathing Water Directive

In the latter part of 2002, the European Commission published proposals for a revised Bathing Waters Directive. If approved by the European Parliament, this revised Directive will eventually require new quality standards to be met. The proposed standards are substantially more stringent than those of the current Directive. The proposed new 'good' quality status is, in general terms, equivalent to the current guideline quality standards. At time of writing in October 2003, the European Parliament is considering possible amendments to the draft revised Directive.



3. How Results are Determined

3.1 Interpretation of Results and Requirements for Monitoring Programmes

The requirements of the current Directive have been implemented in Scotland by the Bathing Waters (Classification) (Scotland) Regulations 1991. The Directive contains two series of water quality standards: mandatory standards which Member States must meet, and more stringent guideline standards which Member States must endeavour to achieve.

Mandatory Standards (Good Quality)

Mandatory standards apply to 10 quality indicators: total coliforms; faecal coliforms; salmonella; enteroviruses; pH; colour; mineral oils; detergents; phenols; and transparency. Of the samples taken during the bathing season, 95% must comply with the mandatory coliform quality standards for the site to achieve a mandatory level pass. Waters which meet this standard are classified as being of good quality, whilst those that do not are classed as poor.

Guideline Values (Excellent Quality)

In addition to the mandatory standards, there are further guideline values for quality indicators including the two coliform groups and faecal streptococci bacteria. These guideline values are more stringent than the mandatory standards and, if achieved, indicate very good bathing water quality, described as 'excellent' in this report.

Abnormal Weather

Under Article 5.2 of the Directive, results must be excluded from consideration if they are the consequence of abnormal weather conditions. If a result is excluded, then a replacement sample is taken immediately after the abnormal effects have ceased.

Exceptional Geographic Conditions

Under Article 8, the requirements of the Directive may be waived because of exceptional geographical conditions in respect of the colour and transparency conditions. For example, Sandyhills on the Solway Firth has a waiver for transparency, because tidal action can lead to high levels of suspended sediment being stirred up. At Nairn (East Beach), a waiver has been granted for both transparency and colour, because the River Nairn, when in spate, discharges peaty coloured water into the sea near the sampling point. Currently, four identified bathing waters in Scotland have waivers for colour and 23 have waivers for transparency.

3.2 Sampling Frequency

The minimum frequency of sampling is prescribed in the Annex to the Directive. Checks must normally be made at least once every two weeks during the bathing season for total and faecal coliforms, transparency, colour, mineral oil, surface-active substances reacting with methylene blue and phenols. For the remaining parameters with mandatory standards (salmonella, enteroviruses and pH), and for other parameters where inspection is prescribed, concentrations should be checked whenever inspections show that the substance may be present or where the quality of the bathing water has deteriorated.

Additional samples must be taken if there are grounds to suspect that the quality of the waters is deteriorating or is likely to deteriorate as the result of any discharge. Given this requirement, and the poor compliance history of Scottish bathing waters, additional samples have been taken from all waters, so that all are sampled 20 times during the bathing season.

The Directive also permits that the sampling frequency may be halved for waters where quality is consistently good. The EC has now for the first time indicated a list of Scottish sites where this provision may be applied. The proposed SEPA reaction to this offer is indicated in Section 5.5.

3.3 Interpretation of Microbiological Values

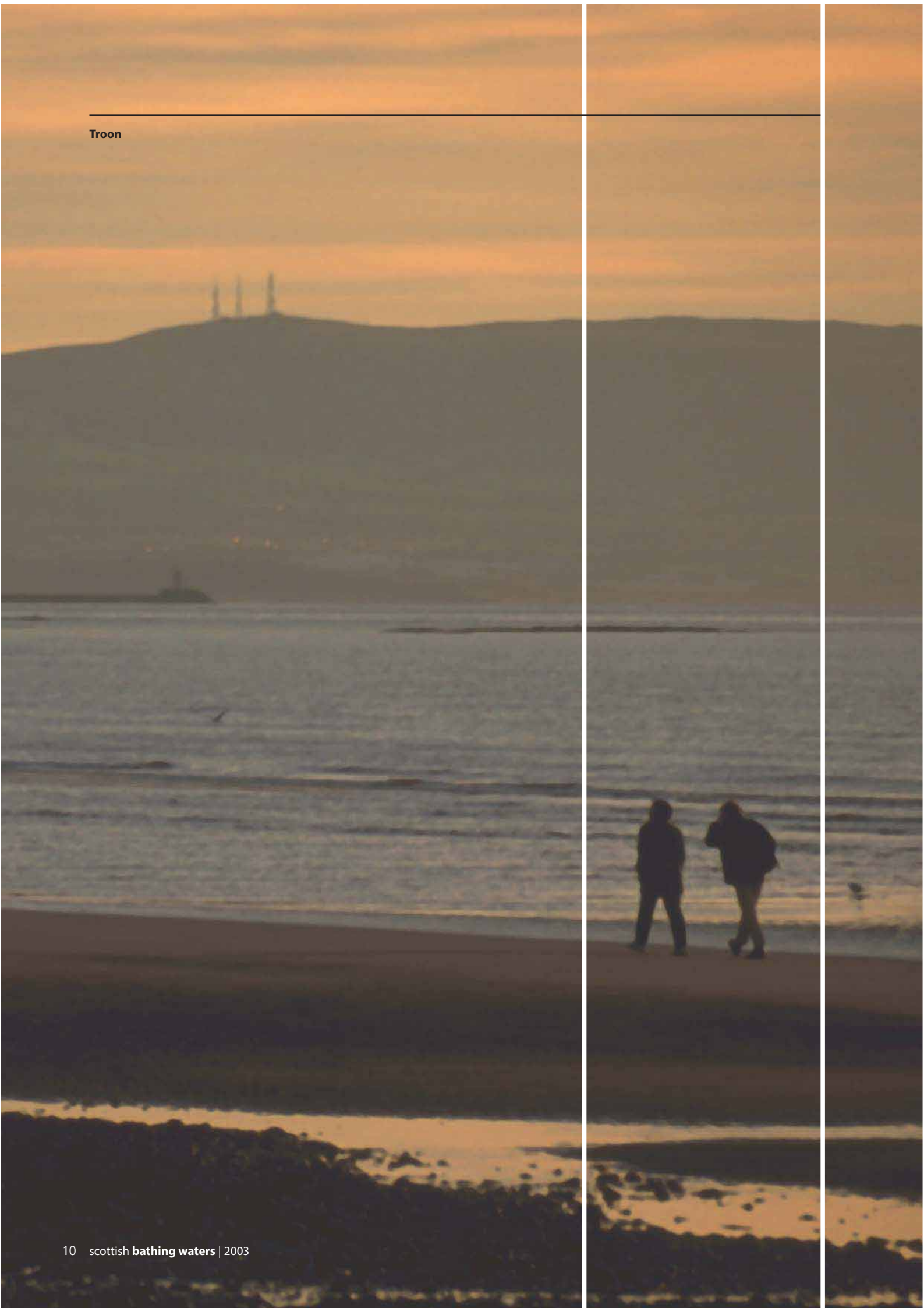
The microbiological quality indicator organisms, for which standards are set by the Directive, are all naturally present in the guts of humans and other warm-blooded animals. The presence of these indicators of faecal contamination in excess of the values in the Directive indicates that waters may have received discharges of sewage which have not been given adequate treatment or dilution. Equally, large concentrations of seabirds or agricultural run-off may also give rise to these microbiological indicators in bathing waters. Livestock slurries and manure, if applied to agricultural land inappropriately, can enter inland watercourses and be transported to coastal areas. The bacteria and viruses present in sewage and animal excreta may cause illness, especially as a result of ingestion or infection through wounds or cuts.

Article 5 of the Directive specifies how the results of faecal coliform, total coliform and faecal streptococci monitoring are to be interpreted. These are summarised in Table 1 (opposite).

Table 1 Interpretation of Microbiological Values for Bathing Waters where 20 Samples have been taken.

Level of pass	Symbols used in this report	Interpretations	Total coliforms	Faecal coliforms	Faecal streptococci
Pass - Guideline	E (Excellent)	Directive states:	80% of samples should not exceed 500 total coliforms per 100 ml.	80% of samples should not exceed 100 faecal coliforms per 100 ml.	90% of samples should not exceed 100 faecal streptococci per 100 ml.
		Based on 20 samples:	Must have at least 16 samples with less than, or equal to, 500 total coliforms per 100 ml.	Must have at least 16 samples with less than, or equal to, 100 faecal coliforms per 100 ml.	Must have at least 18 samples with less than, or equal to, 100 faecal streptococci per 100 ml.
Pass - Mandatory	G (Good)	Directive states:	95% of samples should not exceed 10,000 total coliforms per 100 ml.	95% of samples should not exceed 2,000 faecal coliforms per 100 ml.	The Directive contains no mandatory standard for faecal streptococci.
		Based on 20 samples:	Can only have 1 sample with greater than 10,000 total coliforms per 100 ml.	Can only have 1 sample with greater than 2,000 faecal coliforms per 100 ml.	The Directive contains no mandatory standard for faecal streptococci.

Troon



4. 2003 Bathing Water Quality Results

4.1 Results from Scotland's 60 Identified Bathing Waters

The 2003 results demonstrate another step forward in bathing water quality around Scotland. The proportion of sites meeting European standards has improved to 95%. There is another significant change; 2003 is the first year that diffuse pollution problems, rather than local sewage discharges, have given rise to more site failures. Clearly, the continuing investment in sewage treatment and sewerage infrastructure is yielding results, and the increased effort expended in recent years on tackling diffuse pollution problems has been justified and must continue.

The relatively dry weather of summer 2003, especially during August which was particularly dry and sunny, undoubtedly had some positive influence on the results. However, the summer was not without some substantial downpours in June and July, affecting mainly southwest Scotland. It is such downpours that cause surface flow across fields grazed by sheep and cattle, washing faecal bacteria from them into the local streams. There was in particular one remarkably intense downpour around Brighouse Bay in Galloway overnight on 29–30 July. It was reported in the UK Hydrological Summary as having a 1 in 130 year return period. This extreme downpour was undoubtedly abnormal, and in accordance with Article 5.2 of the Directive the results of the sample taken on 30 July were excluded from consideration, and a resample taken. However, this had no influence on the final quality classification of this bathing water. It is probably relevant that the sample taken on the same day at Machrihanish (Kintyre) was also of poor quality (exceptionally poor for what is generally a very good site), but there is no evidence available to indicate that rainfall in that area was abnormal at the same time so the result from this site was not excluded.

The full set of microbiological monitoring data from Scotland's 60 identified bathing waters can be found in Annex 1 and is summarised below (see also Figure 1, and Maps 1 and 2):

- 39 of the 60 identified bathing waters (65%) met the Directive's guideline quality standards and are of 'excellent' quality;
- 18 of the 60 identified bathing waters (30%) were of 'good' quality and met the Directive's mandatory coliforms standards;
- 3 of the 60 identified waters (5%) were of 'poor' quality as they failed to meet mandatory standards.

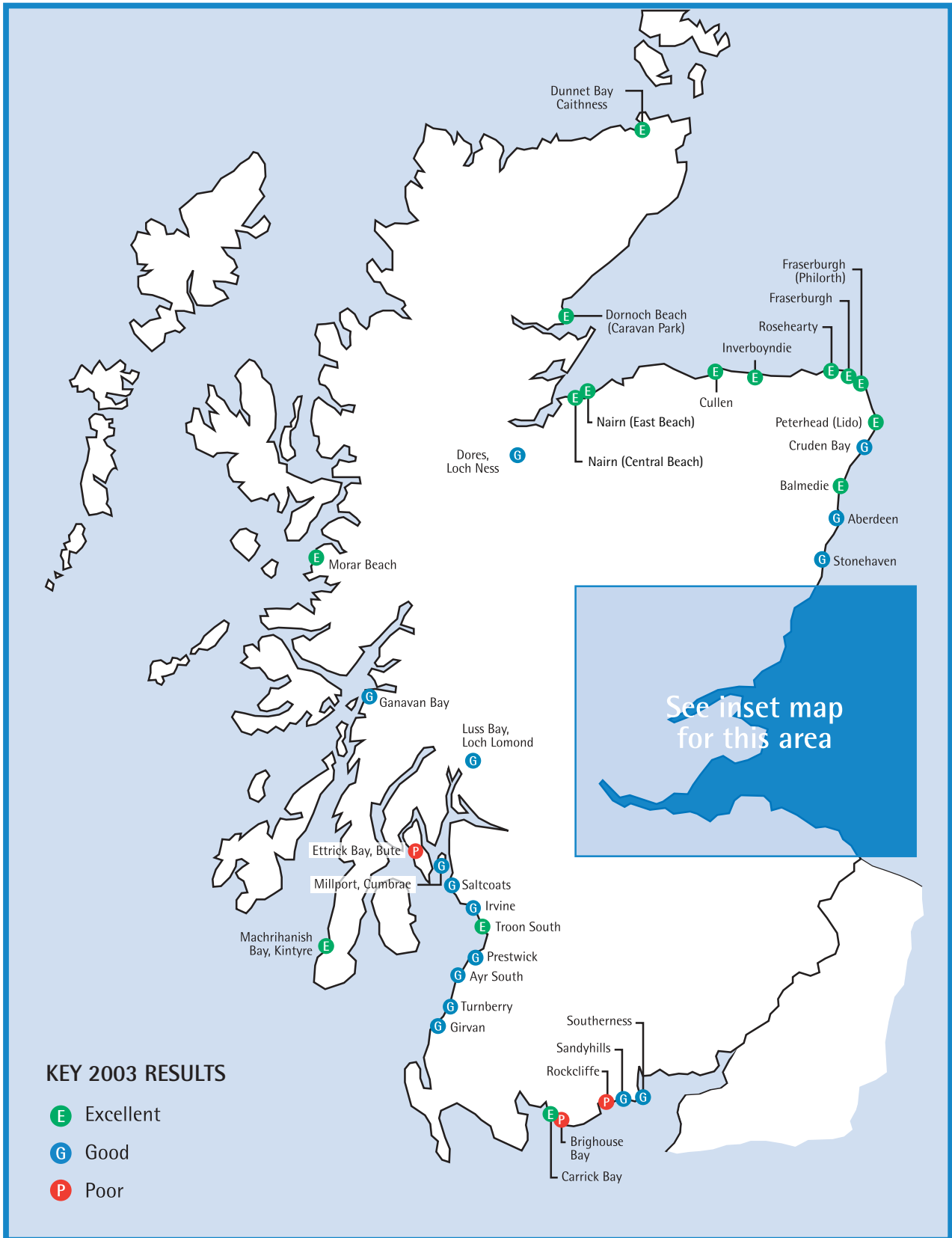
The failures at Brighouse Bay (Solway) and Ettrick Bay (Bute) are ascribed to agricultural problems polluting local freshwater streams that flow across these beaches. The third failure, at Rockcliffe (Solway) is suspected of being primarily due to temporary problems at the local sewage treatment works, whose licence to discharge requires effective effluent disinfection.

Results for all the parameters monitored by SEPA are placed on the public register and are available on request. (See Annex 5 for more details).

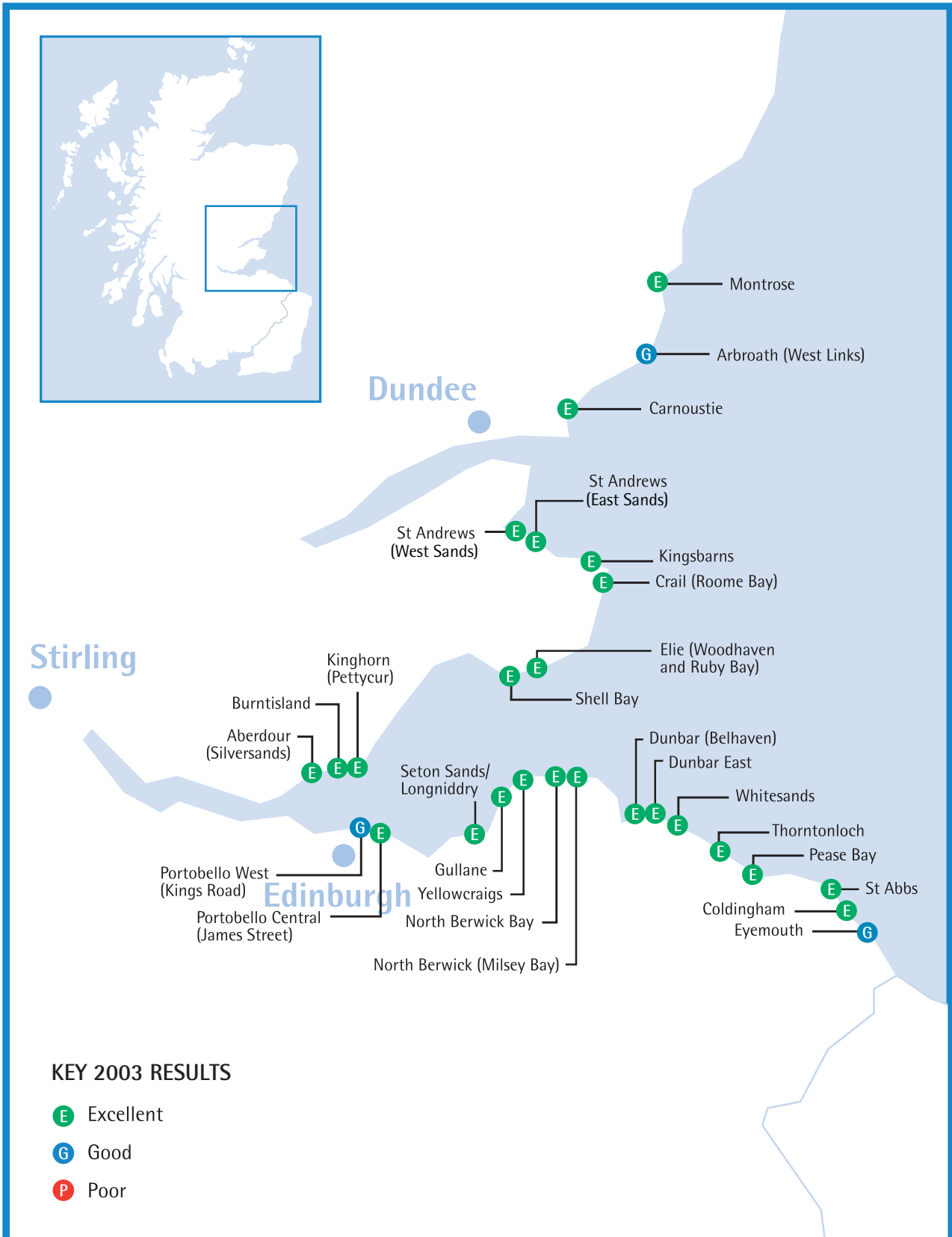
Figure 1: Scotland's Bathing Waters Results 2003



Map 1: Results for Scotland's 60 Identified Bathing Waters 2003



Map 2: Results for Scotland's 60 Identified Bathing Waters 2003 (South East Area)



4.2 2003 Information on Scotland's 60 Identified Bathing Waters

This section contains background information for each of Scotland's identified waters. It also focuses on the underlying factors behind bathing water quality at each site and outlines plans for delivering improvements. Waters are described in clockwise order around Scotland, starting in the southwest.

In the following paragraphs: n/s indicates not sampled, good quality indicates a pass of the Directive's mandatory standards and excellent quality indicates a pass of the Directive's guideline quality standards.

For each identified water, a previous record of compliance is provided. For the 23 waters originally identified, results are given for the last 11 years. For the waters identified for the first time in 1999, the comprehensiveness of the records varies. Records are provided where they exist.

Southernness

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Poor	Good	Good

Southernness was identified as an EC Bathing water in 1999 and achieved good quality in 1999 and 2000. In 2001, there were three exceedances of the 95% faecal coliform (FC) mandatory standard resulting in failure to meet the required overall standard. However, in 2002 and 2003 the bathing water has once again achieved good standard.

The FC loadings in the River Nith, during and after heavy rain, are currently being studied. This is to determine whether the main source of the very high FC loadings previously recorded is agricultural run-off from the catchment upstream of Dumfries, the local sewerage network or a combination of both.

In addition to the sources of sewage at Dumfries (Troqueer, Dalscone and Lincluden WWTPs), there are tidal storage tanks at Airds Point, which until the beginning of this year accepted the drainage from Cargenbridge Village, as well as the drainage from the Du Pont factory at Cargenbridge. The village drainage is now pumped to Troqueer WWTP for full treatment. Other small villages currently served by septic tanks include Glencaple, Kelton and Carsethorn. The only private waste water treatment plant is the settlement tanks at Southernness, which serve the caravan park and village. This discharge is due to be upgraded to full treatment before the end of 2005.

Sandyhills

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Poor	Good	Good	Poor	Poor	Good	Poor	Poor	Good	Good

Sandyhills bathing water has had a varied history of compliance but again achieved good quality in 2003. The main threat to water quality here is from agricultural run-off. However, despite a Scottish Executive funded programme of works on 10 farms in the local catchment, there were again exceedances during the season, both following rain. In one sample the total coliform limit was exceeded, in the other it was faecal coliforms. However, as the overall requirement of 95% compliance with each factor was met, the overall classification was again 'good'.

Rockcliffe

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Poor	Good	Poor	Poor

Since first identification in 1999, the bathing waters at Rockcliffe have not been consistently satisfactory. Following SEPA's addition of a consent limit on faecal coliform numbers in the final effluent, Scottish Water installed ultraviolet (UV) disinfection at their Rockcliffe waste water treatment plant in 2002/3. There have, however, been initial complications with the disinfection and high counts in two bathing water samples meant that EC standards were not met this year.

It is imperative that the UV treatment operates effectively at all times during the bathing season and Scottish Water have been reminded that failure to comply with the bacteriological consent limit will lead to enforcement action by SEPA.

Brighouse Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	Good	Good	Good	Good	Good	Good	Poor

Brighouse Bay is a small sandy beach between rock outcrops and for the first time since monitoring started it has failed to meet the mandatory standards of the Directive in 2003. Two samples exceeded the coliform standards. Both had been immediately preceded by heavy rain following an extended period of dry weather. The results from another sample had to be excluded as it was taken immediately following abnormal weather (Section 3.1).

With no significant sewage discharges into the bay, there is little doubt that high bacterial counts relate to agricultural drainage, both from land and steading areas. All farms in the catchment were inspected and revisited to ensure that remedial work, where requested, had been carried out. Further investigation will take place through a project sponsored by the Scottish Executive that will also evaluate control techniques.

Carrick Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Excellent

This year, for the first time, the bathing waters of Carrick Bay met the guideline quality standards of the Directive, following five years of good quality. Threats to the quality of this bathing water are relatively few. There are no major sewage or freshwater inputs nearby and the small number of holiday chalets in the area are not considered a significant risk as the septic tank effluent from each drains to a soakaway system.

Girvan

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Poor	Poor	Poor	Poor	Poor	Good	Good	Good	Good	Good

Bathing water quality at Girvan has substantially improved since the successive phases of major new sewerage and sewage treatment schemes were completed during the 2001 season. There remain potential impacts during high river flows, but a fifth year of good quality was achieved in 2003.

Turnberry

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Poor	Poor	Good	Poor	Poor	Good	Poor	Good	Good

Bathing water at Turnberry was again of good quality in 2003. The new sewage scheme was brought into use immediately prior to the bathing season. A pumping station that includes a storm overflow with a spill frequency of no more than three times per season has replaced Kirkoswald WWTP. The sewage from Turnberry Hotel is now connected to the new Turnberry Pumping Station, which pumps to Girvan WWTP where it receives secondary treatment along with the sewage from Girvan, Maidens and Kirkoswald. During 2002, all farms in the local Milton Burn catchment were inspected as part of the agricultural pollution prevention action plan and remedial measures have been taken where necessary.

Ayr South

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Good	Good	Good	Poor	Poor	Poor	Poor	Good	Good

Ayr South bathing water was of good quality in 2003. The town's sewage is now pumped to Meadowhead WWTP for full treatment before discharge via a long outfall.

Diffuse pollution remains a concern. Investigations continue regarding potential pollution sources from urban drainage and a number of cross connections into surface water sewers have been identified in the town. Improvement measures have been taken at most farms in the river catchments. A major sewer collapse in the town centre occurred prior to the bathing season but was very promptly repaired by Scottish Water.

Prestwick

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Good	Good	Good	Poor	Good	Good	Good	Good	Good

Prestwick recorded good quality for the 2003 season. The bathing water at Prestwick does not have a direct sewage outfall nearby, although there are storm overflows. Sewage from the town is pumped to Meadowhead WWTP for full treatment. In June the rising main burst, leading to a shutdown of the large Pow Burn pumping station and an overflow to the adjacent burn. Prompt action by Scottish Water brought the situation under control and sampling confirmed that the bathing water quality was not compromised.

Troon South

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Good	Poor	Good	Good	Excellent

For the first time the bathing water at Troon met the excellent quality standard in 2003. This follows the introduction of full treatment at Meadowhead WWTP and the continuing efforts to reduce diffuse pollution, with additional benefit from the better than average weather in 2003.

Irvine

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Good	Good	Poor	Poor	Poor	Good	Good	Good	Good

The bathing water at Irvine again achieved good quality in 2003. The new biological treatment plant at Meadowhead and an extended sea outfall was completed and commissioned in 2002. Scottish Water is continuing investigations into the most effective improvement measures to intermittent discharges into the Irvine catchment. In the meantime, 80% of farms in the River Irvine and River Garnock catchments where potential problems were identified by SEPA have started or completed remedial measures.

Saltcoats

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Poor	Good	Poor	Poor	Good	Poor	Poor	Good	Good

Saltcoats has a poor history of bathing water quality, but the waters achieved good standard again in 2003. The improvement is attributed mainly to the waste water treatment plant at Stevenston Point which was completed in 2002. However, the monitoring results again confirm the vulnerability of this beach to high bacterial levels following rainfall. As elsewhere in Ayrshire, action plan work to reduce pollution from urban drainage and intermittent discharges continues.

Millport, Cumbrae

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Poor	Good	Good

Millport was identified as a bathing water in 1999 and was once again classed as good in 2003. The predominant threat to water quality is the 10 septic tank outfalls discharging into shallow water in the bay. A scheme has been designed to pump the sewage from all of these to a new treatment works discharging away from the bathing water. This was originally scheduled to be commissioned before the 2003 season, however, planning issues delayed the start of engineering works and Scottish Water now intends to complete and implement this scheme in 2004.



Luss Bay, Loch Lomond

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Good

Luss Bay was identified as a bathing water in 1999 and was first sampled by SEPA in that year. It has attained good quality standards every year, but sometimes not by a wide margin.

There is a small treated sewage discharge about 0.5 km to the south of the bathing water. Disinfection of the discharge by the addition of chlorine was carried out in 2003. The chlorination plant is scheduled to be replaced by UV disinfection in 2004. Overall, the results for 2003 were slightly better than those of 2002.

Ettrick Bay, Bute

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Poor	Poor	Poor	Poor	Poor

Ettrick Bay was identified as a bathing water in 1999 but has never met the EC Directive's quality standards.

There are no significant sewage discharges in the vicinity of the beach, and failure to meet required standards is attributed solely to agricultural pollution which flows into the bathing water from local streams. The surrounding area is intensively farmed and high levels of bacteria have been found in these streams, particularly after heavy rainfall. Livestock have direct access to the streams and high bacterial counts have been found even during periods of dry weather.

Farmers in the area are being encouraged to adopt practices that should lead to a reduction in bacterial pollution of the local streams. This catchment is included in the SEPA agricultural pollution prevention action plan described in more detail in Section 5.2.

Machrihanish Bay, Kintyre

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Excellent

Machrihanish Bay was identified as an EC bathing water in 1999. Until 2003, it had achieved the 'good' quality standard, but this year, following diversion by pumping of sewage from the small communities of Machrihanish, Stewarton and Drumlemble to Campbeltown WWTP for full treatment, 'excellent' quality standards have now been met for the first time.

The only potential local source of pollution is the nearby Machrihanish Water. This catchment receives sporadic agricultural pollution, and possible risks and sources have been investigated. Corrective action is required wherever a source is considered a real threat to excellent bathing water quality. This catchment is also included in the SEPA agricultural pollution prevention action plan.

Ganavan Bay (North of Oban)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Good

Ganavan Bay, first identified as a bathing water in 1999, again achieved a mandatory pass in 2003, although results indicated that this was not by a wide margin.

A sewage outfall serving the resident population of Oban (9,000 rising to 20,000 in summer), discharges offshore into deep water approximately 2 km to the south of the bathing water.

A septic tank outfall serving a caravan park continues to discharge into Ganavan Bay, however the discharge from the public toilets has ceased. In view of the fact that under certain conditions of wind, current movement and tides, the microbiological quality of the bathing water may be compromised by the caravan park discharge, the relevant consent has been reviewed to require that the discharge meets the appropriate microbiological standards.

Scottish Water has built a new pumping station, which pumps the sewage from the Ganavan public system to Oban for treatment at the new WWTP prior to discharge into the Sound of Kerrera.

Morar Beach (Sound of Sleat at Morar Golf Course)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Excellent	Good	Good	Excellent	Excellent

The 7 km stretch of the Morar coast which was identified as a bathing water in 1999, continued this year to achieve excellent quality.

Improvements have been made to a number of drainage systems serving camping and caravan sites following discussions between operators and SEPA, and the provision of improvement facilities at other sites is being progressed. Further investigations into potential diffuse sources will be undertaken as part of an ongoing action plan to ensure that excellent water quality is maintained.

Dunnet Bay (Caithness)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	Excellent	Excellent	Poor	Excellent	Good	Excellent	Good	Excellent

Dunnet Bay was identified as a bathing water in 1999. Excellent quality was recorded in 2003, for the third time in five years. The input of sewage from Castletown has previously affected the quality of the bathing water in Dunnet Bay. As part of ongoing investment to ensure water quality in the identified area is improved, Scottish Water will connect Castletown to the new Thurso waste water treatment plant, due to be commissioned in 2005. To ensure that bathing water quality is protected until that time, Scottish Water has installed a peracetic acid disinfection unit on the discharge at Castletown as an interim measure.

The adequacy of the septic tanks serving the small village at Dunnet and a caravan park at the Dunnet end of the beach is also under review. Again, as a temporary measure, Scottish Water provided peracetic acid dosing to the Dunnet discharge for the 2003 season. The discharge from the caravan park septic tank is under investigation but does not appear to have a direct impact on the bathing water as the discharge is made to a soakaway.

Monitoring of bacterial levels in the Stanergill Burn is being undertaken to assess whether this contributes to bacterial levels in Dunnet Bay. The impact of surface water run-off to the Stanergill Burn, which discharges into Dunnet Bay, has been examined and improvements, particularly to potentially oily discharges from an industrial site, have been secured. All farms and private dwellings in the catchment have been inspected but very few potential problems were found.

Dornoch Beach (Caravan Park)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	Excellent	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Dornoch Beach was identified as bathing water in 1999. In 2003, for the sixth consecutive year, it again achieved excellent quality. The beach continues to be a popular destination for visitors and locals who value the high standard of the bathing water. To further reduce risks to water quality, 11 farms in the catchment were inspected during the bathing season and reassuringly, no major problems were found.

Dores (Loch Ness)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Good

An area of Loch Ness next to the village of Dores was identified as a bathing water in 1999. This is one of only two identified freshwater bathing waters in Scotland and it again achieved good quality this year.

Scottish Water has extended the public sewerage system in the village to pick up numerous septic tanks which had previously been identified as a potential risk to water quality, and were previously discharging to either the Dores Burn or Loch Ness. This work was completed before the start of the 2003 bathing season. Scottish Water have also constructed a new septic tank and outfall to Loch Ness for the village, which is expected to be fully operational by the end of 2003, well before next year's bathing season.



Dornoch Beach

Nairn (Central Beach)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Poor	Good	Good	Good	Good	Excellent	Excellent	Good	Excellent

Nairn (Central Beach) was identified as a bathing water in 1999. Following last year's problems, Scottish Water carried out temporary remedial work at their Nairn WWTP to ensure adequate disinfection of the final effluent during the 2003 bathing season. Further work is being undertaken by Scottish Water, with a view to finding a more permanent solution for ensuring the disinfection standard required to safeguard the quality of the bathing water. Following the work carried out, the bathing water was of excellent quality in 2003.

Nairn (East Beach)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Poor	Good	Excellent	Good	Good	Excellent

This popular expanse of sandy beach, east of Nairn, achieved excellent quality in 2003. Scottish Water has carried out works at their waste water treatment plant serving Nairn (see comments for Nairn (Central Beach)).

The River Nairn influences this bathing water: consequently, in 2003 a program of inspecting virtually all of the farms in the catchment was carried out. Bacteriological sampling of the various source discharges was continued during this bathing season to determine the major bacterial influences in the catchment with a view to these being adequately regulated to ensure continuing excellent water quality.



Nairn Central Beach

Cullen

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Excellent	Good	Good	Good	Excellent	Excellent	Good	Excellent	Excellent

For the fourth year out of the last five, the waters off the very attractive sandy beach at Cullen achieved the excellent standard. Previously, domestic sewage from Cullen discharged directly to the sea to the east of the village, however, pumping stations were commissioned early in 2003 to transfer sewage from Cullen to the new waste water treatment plant at Buckie. Although there were overflows of screened sewage from the pumping stations due to rainfall events during the bathing season, they did not impact on the overall quality of the bathing waters.

Inverboyndie

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Excellent	Good	Good	Good	Good	Excellent	Good	Good	Excellent

Inverboyndie was identified as a bathing water in 1999. The beach is a popular recreational area and attracts many walkers, swimmers, surfers and windsurfers. It achieved excellent quality in 2003.

Considerable improvements to the sewage treatment facilities in the area were completed in 2002. A previous continuous discharge of untreated sewage at one end of the beach has been eliminated. The sewage is now pumped to the new waste water treatment plant at Macduff where it undergoes full biological treatment followed by ultraviolet disinfection. The outfall itself has been retained only as a storm and emergency overflow for the pumping station. Another potential impact on bathing water quality comes from the Inverboyndie Burn which discharges to the sea at the western end of the beach. All farms draining to this watercourse have now been inspected. Both the inspections and stream monitoring results indicate that agricultural pollution is not contributing significantly towards bacterial levels at the bathing water.

Rosehearty

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Excellent	Excellent	n/s	n/s	Excellent	Good	Good	Good	Excellent

Rosehearty was identified as a bathing water in 1999, although it has been monitored intermittently since 1989. It achieved excellent quality in 2003. Sewage from the town was diverted to the new waste water treatment plant at Fraserburgh in 2001.

The only sewage outfall in the vicinity of the bathing water is now from a pumping station which has a consent to discharge screened sewage only under certain storm and emergency conditions. Several farms draining to watercourses in the vicinity of Rosehearty have recently been audited, but it was concluded that they do not play a significant role in bathing water compliance at this beach.

Fraserburgh

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Poor	Good	Good	Poor	Good	Excellent

This sandy beach next to the town of Fraserburgh is a popular location for many watersports as well as for walking and family outings. The sample point was relocated to the adjacent 'Tigerhill' site prior to the 2003 bathing water season as it was considered, following recent engineering works near the old sample point, that this location was more representative of usage. The beach achieved excellent quality in 2003.

Significant upgrading of the sewerage infrastructure was completed in 2001 with 12 previously untreated sewage outfalls being replaced by a full biological treatment plant with ultraviolet disinfection and a single outfall 3 km to the west of the bathing water. Bacteriological monitoring of the effluent has shown that the treatment provided is extremely effective.

The local Kessock Burn remains a potential source of bacterial contamination and an action plan, in collaboration with Scottish Water, has been undertaken to assess the significance of inputs to the burn from septic tanks and urban drainage, and to determine how these can best be controlled. Farm audits of premises draining to the Kessock Burn have shown that agricultural pollution is unlikely to have a significant effect on bathing water quality.

Fraserburgh (Philorth)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	Excellent	Excellent	Good	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent

Fraserburgh Philorth again achieved excellent quality in 2003, continuing its fine record since it was identified in 1999. The beach is a popular recreational and windsurfing area, located at one end of the sandy bay that links Fraserburgh and Philorth. There are no sewage discharges in the immediate vicinity of the bathing water, although the Water of Philorth discharges at one end of the beach. The catchment of this watercourse is mainly agricultural in nature with little urban development.

Peterhead Lido

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Excellent	Good	Good	Good	Excellent	Excellent	Good	Poor	Excellent

Peterhead Lido is located within the outer harbour (Bay of Refuge) of the town of Peterhead. This bathing water attracts a diverse range of water sports enthusiasts, with dinghy sailing in the sheltered waters of the bay particularly popular.

In 2002 this water was of poor quality for the first time since monitoring began. However, had it not been for the two atypical results which caused the failure, excellent quality would have been achieved, as the other 18 samples all met this high standard. It is suspected that the failure in 2002 was due to overflows from a pumping station where upgrading works were taking place, ironically to reduce spill frequency. These improvements were completed prior to the 2003 season, and include increased storage capacity at the pumping station and a better telemetry system. Discharges from the pumping station are now limited to emergency or storm conditions only, with the consent conditions designed to protect the bathing water. This is reflected in the excellent quality achieved in 2003.

Cruden Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Poor	Good	Good	Poor	Poor	Good	Poor	Good	Poor	Good

Cruden Bay achieved good bathing water quality in 2003.

Sewerage improvement plans came into effect prior to the 2003 season. Until then an unsatisfactory short outfall continuously discharged sewage immediately adjacent to the bathing water. This discharge has now been removed and the main sewage flow is pumped to the new waste water treatment plant at Peterhead, with the former outfall retained only as a storm or emergency overflow.

An action plan has been carried out which investigated the Water of Cruden as a potential source of bacterial pollution. This river flows into the bathing water and, as well as draining an agricultural catchment, receives treated sewage effluent from both a waste water treatment plant serving the village of Hatton and a large septic tank at Bridgend. The option of UV disinfection at Hatton WWTP and the elimination of the septic tank discharge by pumping it to Hatton remain under consideration by Scottish Water.

Over 60 farms in the Water of Cruden catchment have been subject to audit inspection as part of the national plan to check all potential sources of bathing water pollution. It appears that agricultural pollution is not significant here, but it should be emphasised that summer 2003 was an exceptionally dry season in northeast Scotland.

Balmedie

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Good	Good	Good	Excellent	Good	Good	Good	Excellent

Balmedie is a very popular and extensive sandy beach adjacent to the Balmedie Country Park north of Aberdeen. It was identified as a bathing water in 1999 although it has been monitored for many years. Excellent water quality was achieved at this site in 2003.

Prior to the start of the 2002 bathing season, work was undertaken by the Country Park staff which altered the course of the Eigie Burn and changed the access routes to the beach. As a result of the change in distribution of bathers, the water quality monitoring point was relocated for the 2003 season. Work on the new Balmedie waste water treatment plant is near completion and commissioning of the plant is expected to commence in October 2003. This, in addition to the elimination of any preventable sources of pollution to the Eigie Burn, should ensure that water quality at this site will further improve and maintain its excellent quality.

Aberdeen

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Excellent	Good	Good	Excellent	Good	Good	Good	Good

Aberdeen has an extensive sandy beach, which is well used for water sports and sea bathing. The bathing water again achieved good quality in 2003. To protect it, the waste water treatment plant at Persley, which discharges to the River Don, has been upgraded and now includes UV disinfection. Prior to the bathing season, work was undertaken on the Kings Links combined sewage overflows (CSO) to ensure all the overflows met the maximum of three spills per season requirement. Ongoing improvements to the network have seen the installation of two mechanical screens, two static screens and seven rainfall event recorders. Five other CSO have been eliminated. Survey work on the bacterial loading of river systems adjacent to the beach will be separately reported.

Stonehaven

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Excellent	n/s	Poor	Poor	Good	Good	Good	Good

Stonehaven is an increasingly popular coastal resort, which is well used by water sports enthusiasts. The bathing water was identified in 1999 but has been monitored since the 1980s. Stonehaven again achieved good quality in 2003.

Improvement of the local sewerage infrastructure was planned to take place by 2004, by which time sewage effluent from Stonehaven was to be pumped to the main Aberdeen treatment plant and long sea outfall at Nigg Bay. In order to protect the bathing water in the meantime, Scottish Water was to provide facilities to disinfect the sewage effluent at Stonehaven to ensure bathing water compliance in 2003. However, the plans for siting of the pumping station necessary to facilitate the transfer of sewage to Aberdeen have met with local opposition, as has the proposal for interim disinfection. Consequently, neither of these two schemes required to protect water quality have received planning consent.

Montrose

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Good	Good	Excellent	Poor	Excellent	Excellent	Excellent	Excellent	Excellent

The bathing water at Montrose has achieved excellent status since 1999.

The new Montrose waste water treatment plant provides full secondary treatment and was commissioned in January 2002. From that date, all former discharges ceased. Some of the former outfalls at Montrose have been retained as storm and emergency overflows, but have had storm storage and screening facilities added. All of these new works have been designed to be compatible with the attainment of EC guideline quality standards.

Arbroath (West Links)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Good	Good	Excellent	Poor	Good

The identified bathing water at Arbroath (West Links) achieved good quality status in 2003. In 2002, however, it failed the mandatory standards. This was despite meeting the excellent quality standard in 2001 and the commissioning of a new waste water treatment plant at Hatton prior to the bathing season.

SEPA required that the new works were designed to ensure that the Bathing Water Directive's guideline quality standards for excellent quality were met at Arbroath (West Links). In view of this, the overall poor result for 2002 was particularly surprising and disappointing. In 2003, in order that any source of contamination at the bathing water could quickly be identified additional samples were taken from the freshwater inputs close to the bathing water. The water quality of these inputs have been variable and, though none have contained excessive bacterial indicator counts, there have been a few occasions when moderate to high faecal contamination was present; investigations are ongoing.

Carnoustie

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Excellent	Excellent	Excellent	Good	Excellent

Carnoustie returned to the EC excellent quality standard in 2003 after being of only good quality in 2002.

All normal flows from the Carnoustie catchment are now pumped to the Hatton WWTP for full treatment. SEPA required that the upgraded works were designed to ensure excellent water quality at Carnoustie. The drop in bathing water quality in 2002 was possibly due to contamination from local surface water inputs, which were affected by the exceptionally high rainfall. Investigations during 2002 and 2003 have identified a potential problem with a surface water drain in the Lochty Burn, which outflows close to the bathing water sampling site. Prior to the 2003 bathing season, investigative sampling of the Lochty Burn also identified a serious sewage input from a sewer overflow. This was quickly corrected by Scottish Water, however, follow-up sampling during the bathing season has indicated that other unknown sources are affecting this watercourse and investigations are continuing.



St Andrews (West Sands)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent

St Andrews (West Sands) has a good record of compliance with EC standards and has achieved excellent quality in 10 of the last 11 years. This bathing water also holds a "blue flag".

The WWTP at Kinkell Ness, to which all sewage from St Andrews is pumped, was commissioned in 2001. This works has tertiary treatment including disinfection, and the treated effluent is discharged via a long sea outfall. Storm tanks were also constructed in the Kinness Burn sewer catchment to minimise discharges from storm sewer overflows. The works consistently meets its discharge consent conditions, which should ensure continuing excellent bathing water quality.

St Andrews (East Sands)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Good	Good	Excellent	Good	Poor	Good	Good	Good	Excellent

This bathing water was identified in 1999, although it had been monitored by SEPA and its predecessors for many years. This year it achieved an excellent standard and since 2000 has been of good standard. The new works described above for St Andrews (West Sands) reduce the risk of bathing water non-compliance at both the St Andrews bathing waters.

Kingsbarns

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Excellent	Good	Poor	Excellent	Excellent

Kingsbarns was identified as a bathing water in 1999, and in 2003 it again met the excellent quality standard.

Kingsbarns has a small WWTP with effluent discharging via a short outfall to the north of the bathing water. The reason for poor quality in 2001 was thought to be an unusual combination of weather and tidal conditions directing the effluent plume onto the bathing water site. To ensure compliance in 2002, Scottish Water added chemical disinfection as an interim measure and increased the length of the outfall. Scottish Water plan to install a new waste water treatment plant by June 2004. The new works will be a submerged aerated media system, followed by sand filtration and UV disinfection of the final effluent.

Crail (Roome Bay)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Newly identified in 1999, Crail (Roome Bay) has achieved excellent quality since that time. All local sewage sources are pumped to a WWTP at Kilminning, which provides adequate protection of these waters.

Elie (Woodhaven and Ruby Bay)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Elie (Woodhaven and Ruby Bay) was formally identified as a bathing water in 1999, although SEPA began monitoring in 1998. In each year, the bathing water has achieved excellent quality. The Elie Harbour beach is managed, and holds a 'blue flag' award.

Shell Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Excellent	Excellent	Good	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent

Shell Bay is a small private beach that is managed by the adjoining holiday caravan park. It was formally identified as a bathing water in 1999, although it has been monitored for many years. Since 1999, Shell Bay has been of excellent quality.

Although water quality has been excellent, the aesthetic appearance of Shell Bay Beach had often been blighted by sewage related debris, thought to be derived from beyond the Shell Bay area. The provision of sewage treatment to fully comply with EC Urban Waste Water Directive standards at Levenmouth has markedly reduced the input of sewage debris to this part of the Forth and will result in improved aesthetic quality of beaches in the area. The waste water treatment works also provides disinfection of sewage effluent during the bathing season.

Kinghorn (Pettycur)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Poor	Good	Excellent	Good	Good	Excellent

In 2003 Kinghorn (Pettycur) achieved excellent quality, following four years of good or excellent quality bathing water results.

Prior to the 1993 bathing season, new treatment facilities and a long sea outfall pipe at Pettycur were commissioned. The work comprised a new interceptor sewer and the treatment of effluent by septic tanks, prior to discharge through a long sea outfall.

Burntisland

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Poor	Poor	Poor	Poor	Poor	Excellent	Excellent	Excellent	Excellent	Excellent

Burntisland has achieved excellent quality for the fifth consecutive year. Burntisland is another of the bathing waters identified in 1999, although bathing water quality monitoring has been undertaken here since the 1970s.

Scottish Water have continued a programme of improvements, started by the former Fife Regional Council, which involved collecting the flows from the old outfalls and diverting these to a new waste water treatment works, before discharge via a long sea outfall. The Lochies Road pumping station scheme was completed prior to the 2003 bathing season. This removed the discharge that immediately threatened the bathing water. The Harbour outfall and a few other small outfalls are expected to be intercepted and connected into the main sewers prior to the 2004 bathing season, which should ensure continuing excellent quality.

Aberdour (Silversands)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

The very popular identified bathing water at Aberdour (Silversands) has achieved excellent quality for the last seven years and holds a 'blue flag'.

The diversion of Dalgety Bay sewage by means of a pumping station and rising main to Dunfermline WWTP was completed in spring 2003, removing this distant potential risk to bathing water quality. Other potential risks still exist from sewage discharges at Burntisland 2.5 km to the east and small private sewer outfalls at Hawkraig Point.

Portobello West (Kings Road)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Poor	Good	Good	Poor	Good	Good	Poor	Good	Good	Good

Portobello West (Kings Road) was identified as a bathing water in 1999, though SEPA and its predecessors have monitored it since the early 1980s. In 2003, Portobello West was again of good quality.

Bathing water quality at this site has gradually improved over many years following progressive improvement of Edinburgh's sewage treatment and sewerage infrastructure. Edinburgh's WWTP now has effluent disinfection. Bathing water quality threats are from the local Figgate Burn, and potentially contaminated surface water run-off.

As part of continuing work by SEPA and Scottish Water on the Figgate Burn, an ongoing programme of CSO upgrading is being carried out to reduce spill frequency. Several other sources of faecal contamination to the burn have been identified and removed. This has already resulted in improved sanitary quality in the Figgate Burn, with a parallel improvement in bathing water quality at Portobello West as measured by the percentage of samples meeting the EC guideline standard for faecal coliforms. Other work to find sources of surface water run-off contamination is continuing.

Portobello Central (James Street)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Excellent	Excellent	Excellent

Portobello Central (James Street) became an EC identified bathing water in 1999. Between 1998 and 2000 it achieved a mandatory pass.

Following work by Scottish Water, to reduce the frequency of storm sewage overflows at Joppa, Portobello Central has met the EC bathing water guideline quality standards since 2001.

Seton Sands/Longniddry

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Good	Excellent

Seton Sands/Longniddry was identified as a bathing water in 1999, having never previously been sampled by SEPA. Between 1999 and 2002 the bathing water achieved good quality and in 2003, Seton Sands has for the first time achieved a guideline pass.

The immediate cause of this improvement is most likely work completed at the end of 2002 to connect over 40 houses in the Seton Mains community to the main sewerage system, which conveys effluent to Edinburgh waste water treatment plant. Part of the cost of this work was borne by the residents. Other work to eliminate overflows from dual manholes in the nearby Canty Burn catchment is continuing.

In 2002 a new interceptor sewer was laid to convey the sewage from Longniddry to Edinburgh WWTP. The existing WWTP at Longniddry has now become a storm treatment works with a design overflow spill frequency of only once per five years.



North Berwick Bay

Gullane

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

The very popular and picturesque bathing water at Gullane has achieved excellent status every year since 1995.

The high quality of the bathing water at Gullane is due to the effective local WWTP, and the fact that storm overflows are located well away from the bathing water area. Work is currently ongoing to build a new long sea outfall and to utilise the existing long outfall for the discharge of storm sewage. These improvements will provide further protection of the bathing waters in this area.

Yellowcraigs

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent

The identified bathing water at Yellowcraigs has achieved excellent quality for the fifth consecutive year.

The improvement in quality in 1999 followed diversion of sewage from Dirleton to the WWTP and long sea outfall to the east of North Berwick. Prior to this it had discharged at the western end of Broad Sands Bay.

North Berwick Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Good	Good	Good	Poor	Good	Good	Good	Excellent	Excellent	Excellent

SEPA and its predecessor have sampled the popular North Berwick Bay since the 1970s, though 1999 was North Berwick Bay's first year as an identified bathing water.

Prior to 1995, when the North Berwick WWTP scheme was completed (see text for North Berwick (Milsey Bay)), North Berwick Bay frequently failed to meet required standards. While bathing water quality improved markedly after this date, there were still occasional local sewage pollution problems which SEPA and Scottish Water have worked to eliminate. Following a few years of just failing to reach the EC guideline standard, North Berwick Bay achieved this excellent bathing water quality for the first time in 2001 and has maintained this standard since then.

North Berwick (Milsey Bay)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Good	Good	Good	Good	Excellent	Excellent	Excellent	Excellent

The identified bathing water at North Berwick (Milsey Bay) has achieved excellent quality since 2000. Bathing water quality greatly improved following the commissioning of the WWTP and long sea outfall in 1995, although SEPA was disappointed that the guideline values had still not been achieved by 1999.

Investigative surveys by SEPA prior to the 2000 bathing season identified two significant sewage sources that could affect water quality at Milsey Bay. These were brought to the attention of Scottish Water for remediation. As a consequence, in 2000, North Berwick (Milsey Bay) achieved a guideline pass for the first time. To further highlight the improvement in bathing water quality, this very high standard has been maintained since then.

Dunbar (Belhaven)

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

The identified bathing water at Dunbar (Belhaven) has achieved excellent status every year since 1993.

Surveys carried in 1988 indicated local pollution of nearshore waters from discharges of untreated sewage to the west and east of Dunbar. Since that time, the outfall pipes responsible for the discharges have been intercepted and diverted to the West Barns WWTP and long sea outfall, which were commissioned in 1993. Following this, the bathing water has achieved excellent quality standards. To address overflow problems and to meet the requirements of the EC Urban Waste Water Treatment and Shellfish Waters Directives, Scottish Water will be replacing the current West Barns WWTP by 2005. It is expected that the new works will be built inland with a discharge to the Biel Water utilising the existing long outfall as a storm overflow. SEPA have already discussed provisional consent limits for this discharge. This will further safeguard achievement of bathing water quality.

Although guideline bathing water standards were again met in 2003, one sample taken in late August was of unsatisfactory quality. SEPA staff reacted rapidly to preliminary analytical results and alerted Scottish Water to the problem. Scottish Water investigations that same day discovered a choke in the screens at the Shore Road overflow and immediate remedial action was carried out to rectify the problem and prevent further pollution.

Dunbar East

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Poor	Good	Poor	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Dunbar East was identified as a bathing water in 1999, although it had been monitored for many years before this.

The sewage treatment facilities and planned improvements for Dunbar are described in the Dunbar (Belhaven) section. In 2003, Dunbar East again achieved excellent bathing water quality as it has done consistently since sewage from the east side of Dunbar was diverted to the West Barns WWTP eight years ago.

Whitesands

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Whitesands has achieved excellent quality since 1988, although it was only prior to the 1999 season that it was formally identified as a bathing water. Whitesands is a shallow enclosed bay, protected from the effects of strong waves and currents by the rocky outcrops at each end. During the 2000 bathing season, a joint study by SEPA, the water authority and East Lothian Council concluded that there were no significant threats to bathing water quality at Whitesands.

Thorntonloch

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Thorntonloch was identified as a bathing water in 1999, and has achieved excellent status each year since 1988. Like Whitesands, this bathing water is of excellent quality, though strong tidal currents are present, particularly at the west side of the bay during certain tide and wind combinations.

Pease Bay

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Excellent	Good	Excellent	Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent

The identified bathing water at Pease Bay has achieved good quality each year since 1988, and excellent quality since 1999.

The effluent from a privately owned waste water treatment plant, (serving a nearby caravan site on The Bents), enters Pease Bay to the south east of the bathing water. Sewage effluent discharge from this plant is controlled by a lunar clock and only occurs over a four hour period either side of the high tide between 2100 hours and 0700 hours. This ensures that maximum initial dilution is available and no effluent is discharged during the day.

Until June 2001, the Cockburnspath Burn received effluent from Cockburnspath Village (1.5 km inland) and discharged in the vicinity of the bathing water. This was a source of sewage contamination, particularly during periods of high rainfall. The effluent from Cockburnspath is now pumped to a new WWTP at Cove for full treatment, prior to discharge about 1.5 km north of the bathing water. The final effluent from the WWTP is disinfected prior to discharge during the bathing season.

In 2003, SEPA undertook a programme of inspections of discharges to bathing water catchments from rural sources. SEPA inspected six farms in the Pease Bay catchment, assessing volumes of waste produced on the farms, examined storage facilities and discussed possible improvements to prevent future problems. Five of the farms were found to comply with the appropriate Regulations and the PEPFAA Code of Good Practice and therefore represented little risk to the bathing water quality. Improvements were required at one farm.

St Abbs

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
n/s	n/s	n/s	n/s	n/s	n/s	Good	Good	Good	Excellent	Excellent

St. Abbs was identified as a bathing water in 1999, having never previously been sampled by SEPA. St. Abbs was identified because of its water sports usage, particularly scuba diving. It should be noted that there is no safe or explicitly permitted bathing area at St. Abbs. For the last two summers, the water has just met excellent quality standards, despite small local pollution sources.

Sewage from St. Abbs is currently treated by a septic tank and a short outfall located north west of the harbour mouth. There are also a few untreated outfalls, although these are small, some serving individual households. Scottish Water has started a programme of work to collect most of the effluent from these discharges and pump it on to the new WWTP at Eyemouth where it will receive full treatment. This work is scheduled for completion prior to the 2004 bathing season.

Coldingham

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent

Coldingham, a very popular bathing and surfing beach, was identified as a bathing water in 1999. Excellent quality has been achieved each year since 1996 except for 2000 when several samples taken during or after heavy rain reduced it to good status.

Sewage from Coldingham, which has been screened and shredded, is discharged south east of the bathing area. There is also a small septic tank discharge at the northern edge of the bathing water. Occasional poorer bacteriological results at Coldingham show that these two discharges pose a threat to water quality. To address this, Scottish Water have started work to pump the effluent from these discharges to Eyemouth WWTP where it will receive secondary treatment. This work is due to be completed prior to the 2004 bathing season.

Eyemouth

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Good	Good	Good	Poor	Good	Poor	Poor	Poor	Good	Good	Good

Eyemouth has been sampled since the 1980's. However, it was only identified as a bathing water in 1999. Eyemouth failed to meet mandatory standards from 1998 to 2000.

By the end of the 2001 bathing season, sewage effluent, previously discharged via the two historic outfalls, was being screened and discharged through a new long sea outfall. A new WWTP providing secondary treatment was completed in October 2002 and became fully operational on 31 December 2002.

Since 2001, Eyemouth has achieved good status for bathing water quality; however, some of the results obtained suggested continuing sources of contamination, possibly storm overflow discharges via the Eye Water and Harbour that operate during wet weather. In addition, a largely culverted watercourse discharging close to the bathing water has been found to be contaminated with sewage. SEPA and Scottish Water have carried out investigations into the sources of this contamination, which can be very high at times. To reduce pollution, Scottish Water has commissioned contractors to remove identified problem sources to the foul sewer system. Work is ongoing to identify and remove other septic tank discharges to the watercourse. This work should be completed by the end of 2003.

In 2003, SEPA undertook a programme of inspections of discharges to bathing water catchments from rural sources. SEPA inspected 46 farms in the Eye Water catchment, to assess volumes of waste produced on the farms, examine storage facilities and discuss possible improvements to prevent future problems. Thirty-seven of the farms were found to comply with the appropriate Regulations and the PEPFAA Code of Good Practice and were of little risk to the bathing water quality. Improvements were required at seven farms.

4.3 Results from other Coastal and Inland Waters

During the 2003 bathing season, SEPA routinely monitored bacterial water quality at an additional 53 coastal, estuarine and inland sites. Maps 3 and 4 on pages 32 and 33 show the location and quality classification of these waters.

The purpose of this additional monitoring varies from site to site. In some cases the monitoring was put in place to demonstrate the need for discharge improvement, and in this case, when required works are in place, the monitoring need will be reviewed. Loch Linnhe (Fort William) and St. Combs fall into this category. Others such as Lunan Bay and Tentsmuir are sampled as being typical of a large number of often more remote clean and little used beaches around Scotland. Some, such as Broughty Ferry (Dundee), are monitored because of their level of usage or in specific response to a local authority request.

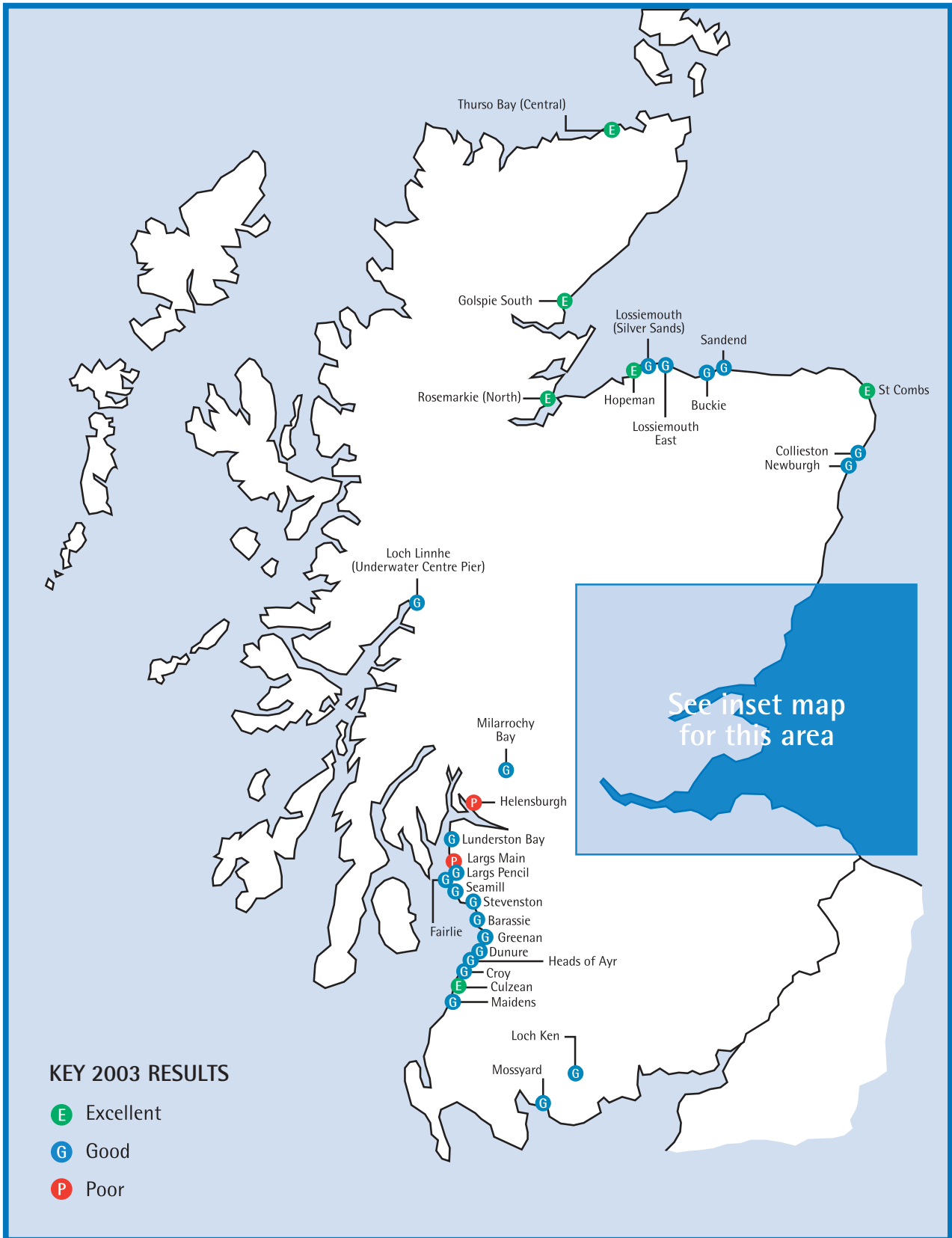
At Kirkcaldy (Fife) this year, additional investigation at last tracked down a rogue sewer overflow responsible for intermittent poor quality south of the town during the last two years, despite the new sewage treatment plant. This source was totally sealed off to prevent recurrence of the problem. Also in Fife, water quality at Dalgety Bay clearly benefited from the newly commissioned scheme to pump sewage from this town to Dunfermline for full treatment, and it attained EC guideline quality standards for the first time.

Although these waters are not identified bathing waters, SEPA assesses the monitoring results from these sites in the same way as for bathing waters, as Directive compliance is also part of SEPA's overall coastal waters quality classification scheme. To be of 'excellent' or 'good' standard, waters must meet the guideline or mandatory standards respectively of the Bathing Waters Directive. Results are given in more detail in Annex 2. In summary, of the 53 other sampling sites, in 2003:

- 17 (32%) are classified as of excellent quality;
- 31 (59%) are classified as of good quality;
- 5 (9%) are classified as poor.

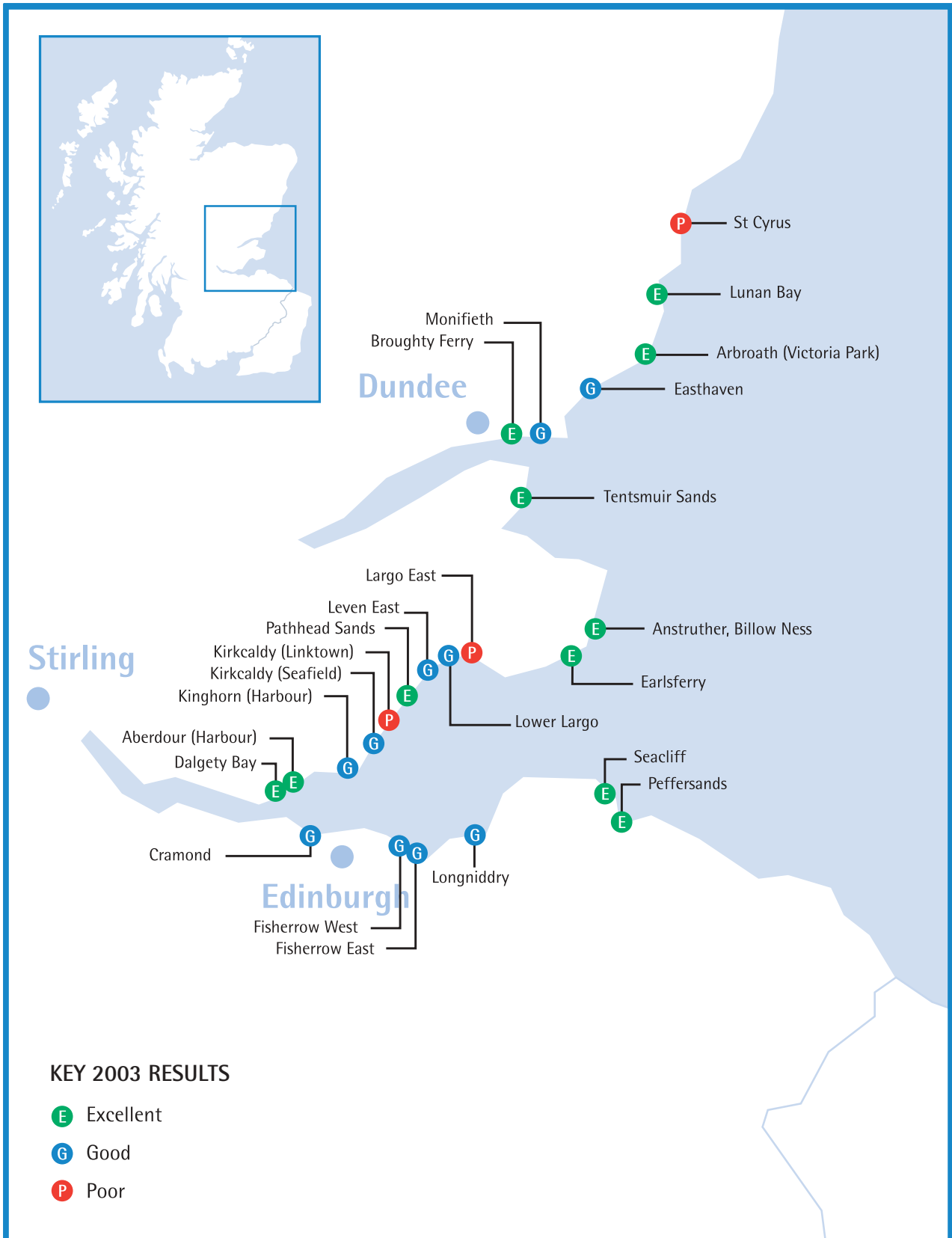


Map 3: Location and Results of Other Waters Monitored by SEPA during 2003



Sites sampled at least 20 times during the bathing season

Map 4: Location and Results of Other Waters Monitored by SEPA during 2003 (South East Area)



Sites sampled at least 20 times during the bathing season

5. Developments

5.1 Scottish Water

Many decades of significant under-investment in the water and sewerage infrastructure of Scotland have resulted in sewage discharges being the major cause of water pollution. By 2000, many bathing waters were still failing or at risk of failing to meet required EC standards due to unsatisfactory discharges. The situation has, however, been substantially improving in recent years, particularly with the introduction of the Quality and Standards (Q&S) process for setting the capital expenditure plans for Scottish Water and its predecessor authorities. Q&S I covered a two-year period from April 2000 to March 2002 and delivered an investment in water and sewerage infrastructure of £740 million, complemented by a further £380 million in Public Private Partnership Schemes. However, these schemes only tackled a few of the most urgent needs. Much more remained to be done to achieve adequate environmental quality protection.

Q&S II covers the four-year period from April 2002 to March 2006 and comprises an unprecedented scale of investment of £1.8 billion to upgrade and enhance drinking water supply and sewerage provision in Scotland. SEPA has worked with Scottish Water to identify all schemes within the programme that are required to improve the quality of bathing waters and has ensured that these are scheduled for completion as early as possible, with interim temporary solutions where appropriate.

In 2001, 27 bathing waters were identified as being still at risk of failure as a result of public sewage discharges and the following works have consequently been included within the Q&S II programme. Not all of the projects scheduled for completion have been commissioned on time, and the current situation is:

Rockcliffe: Temporary disinfection was provided for 2003 Bathing Water season, which will be followed by permanent improvements, including the provision of a new pumping station and storage, in 2004.

Turnberry: All discharges from Maidens, Kirkoswald and Turnberry were transferred to Girvan WWTP in 2003.

Prestwick: Major investigations are currently being undertaken into the sewerage systems to identify solutions to the unsatisfactory combined sewer overflows, with design work commencing where necessary.

Troon South: as Prestwick

Irvine: as Prestwick

Saltcoats: as Prestwick

Millport, Cumbrae: The design work for an interceptor sewer, to collect the numerous discharges, and a new WWTP is complete. Issues regarding the siting of the treatment works and pumping stations have resulted in start date of the work being delayed from 2003 to spring 2004. In the event of further delays, temporary disinfection of the discharges may have to be considered.

Luss Bay, Loch Lomond: Temporary disinfection was provided for the 2003 bathing season, and will be followed by a permanent tertiary treatment WWTP to the north of the bathing water.

Machrihanish Bay, Kintyre: A pumping station to divert the sewage from Machrihanish to Campbeltown WWTP has been constructed, and was commissioned in 2003.

Ganavan Bay: A pumping station has been constructed and diverts the local sewage discharge to Oban. However, further improvements may be required of the separate caravan park once planning permission issues are resolved.

Morar: Consideration is being given to improving the sewage treatment for the village of Morar.

Dunnet Bay (Caithness): Sewage from Castletown is to be pumped for treatment at Thurso WWTP by late 2004, with interim temporary disinfection of the discharge in the 2003 and 2004 bathing seasons.

Dores (Loch Ness): First time sewerage has been provided to connect a number of properties to the public sewerage system and eliminate private discharges which potentially impact on the quality of the Bathing Water.

Cullen: Two untreated sewage discharges were intercepted and pumped to Buckie WWTP prior to the 2003 Bathing Water season.

Inverboyndie: The Inverboyndie discharge was intercepted and transferred to the new Banff/Macduff WWTP in 2002.

Rosehearty: The Rosehearty discharge was transferred to Fraserburgh in 2002.

Peterhead Lido: Improvements to the sewerage system, to provide additional storage for storm flows, were completed during the 2003 bathing season.

Cruden Bay: the discharge was diverted to Peterhead late in 2002.

Aberdeen: Disinfection was provided to the Persley WWTP discharge and the secondary treatment works for the main Nigg discharge was commissioned in 2001. Improvements to the Aberdeen sewerage system are ongoing.

Stonehaven: Works to pump sewage from Stonehaven to Aberdeen should be complete by late 2004. Temporary disinfection was to have been provided for the 2003 and 2004 bathing seasons, but implementation was prevented in 2003 by a planning decision of the local authority.

Kingsbarns: A new WWTP scheduled to be in place for the 2003 bathing season was not delivered on time, so the temporary disinfection provided in 2002 was maintained for 2003. Completion of the new scheme is now expected in 2004.

Portobello West: Improvements to the sewerage system to deal with unsatisfactory combined sewer overflows on the Figgate Burn and Pow Burn were largely completed in 2003.

**Seton Sands/
Longniddry:** First time sewerage for Seton Mains was provided in 2002 and the sewage from Longniddry was diverted to Edinburgh WWTP early in 2003.

Dunbar (Belhaven): Sewerage improvements and provision of a new WWTP are scheduled for completion in late 2004.

**St. Abbs and
Coldingham:** These local sewage discharges were to have been diverted to Eyemouth WWTP by the start of 2003 Bathing Water season, but this work is now due for completion in 2004.

Eymouth: A new WWTP was commissioned in December 2002 and other sewerage improvements and connections are due to be completed in 2004.



5.2 SEPA Action Plans to Reduce Sources of Agricultural Pollution

Although this year's bathing water results are good, further improvement in quality is still required so that all designated bathing waters meet current EC mandatory quality standards, and progress towards attainment of the guideline standards.

Previous work within SEPA has shown that a variety of factors can be responsible for poor quality bathing waters. During dry weather the primary risk to the quality of bathing waters is from sewage discharges. Following heavy rain, water quality is at greater risk from bacterial loading from sources within the catchment entering the bathing water via run-off to rivers. The south west area beaches, and in particular those in Ayrshire, have historically had problems with poor bathing water quality and, therefore, action plans have been in place in these areas over the past two years in an attempt to reduce the bacterial load entering watercourses.

In a number of SEPA team areas, sewage treatment facilities, surface water outfalls, combined sewer overflows and key points on local watercourses have been inspected regularly, particularly during the bathing season with a view to reducing the pollution load entering watercourses draining into designated bathing beaches. This continuous monitoring programme has allowed a rapid response to problems throughout the various catchments, ensuring that preventative action is taken immediately a problem is identified.

Monthly liaison meetings with Scottish Water have ensured that persistent problems can be highlighted and that resources can be allocated effectively. One widespread problem that has been identified is that of wrong connections of foul drainage into surface water systems in urban areas. Local Scottish Water teams are putting increased effort into rectifying these problems. Outside the control of Scottish Water, there are still some issues with a number of private properties showing reluctance to correct deficiencies in drainage systems. These issues are being dealt with on an individual basis and may eventually result in enforcement action.

Designated bathing beaches throughout Scotland are potentially impacted by bacteria originating from point and diffuse sources on farms. To tackle point source discharges, SEPA put together an agricultural action plan aimed at ensuring that pollution from farms is minimised by adherence to the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 2001 and the Code of Good Practice for the Prevention of Environmental Pollution from Agricultural Activity (PEPFAA Code). This action plan has now been active for 18 months, based at the SEPA Ayr Office, and initially concentrated on the catchment areas of the beaches at greatest risk in the south west area. The highest priority catchments were investigated during 2002 and this year the action plan was extended to cover various different catchments draining to 'at risk' beaches throughout Scotland. Staff from the Highlands, Islands and Grampian area spent time in south west area and out in the field with experienced farm officers.

Some 1,700 farms have been visited since the plan was implemented and on initial visits 54% were found to have a compliance issue. The main problems were found to be: no provision for the containment of midden drainage (29%); contaminated run-off from yard areas (20%); silage effluent or sub-standard silage pits (18%); and byre drainage (15%). A significant percentage of farms (18%) were also found to possess fuel oil tanks that did not comply with Regulations and hence, whilst the majority were not causing pollution at the time of inspection, had the potential to have a severe impact on nearby watercourses. Improvements to these tanks generally involved relatively minor upgrades, such as installing the correct type of valve, or ensuring that the tank was correctly banded. Surface water separation was another area where modest expenditure could significantly reduce the potential for pollution. By diverting clean roof water away from contaminated areas and by roofing middens, the volume of slurry produced can be greatly decreased. This reduces the likelihood of accidental spillages, and in the long-term, is of economic benefit to the farmer through the decreased requirement for the spreading of slurry on fields. The farms audited each had, on average, 4.5 months slurry storage capacity and in many cases this could be increased by improving surface water separation.

Overall, cooperation from the agricultural community has been good, with 78% of farmers who had potential problems taking action before the second visit by SEPA Officers. After a third visit the majority of farmers had carried out the requested improvements with only 5% of farms so far requiring a fourth visit. At the request of the National Farmers Union Scotland, SEPA staff have provided presentations in catchments prior to the farm audit visits in order to publicise the purpose of the auditing programme.

In total, the SEPA farm officers have carried out approximately 3,060 visits in 29 different catchment areas throughout Scotland. The programme is expanding into different areas whilst still continuing with follow-up inspections where required.



Variable message sign

5.3 Bathing Waters Signage Project

Providing local information on predicted bathing water quality

For summer 2003, six identified EC bathing water sites in south west Scotland were selected to trial the use of online variable message signs aimed at informing potential bathers of predicted water quality conditions.

The sites chosen were: Ayr (south), Prestwick, Troon, Irvine, Saltcoats and Ettrick Bay.

The Scottish Executive funded this pilot project and SEPA provided scientific advice, technical input and managed the daily operation of the sign network. Other participants included Clean Coast Scotland and the local authorities who were consulted and assisted in advising the project.

These bathing waters, although generally of a high quality, have been shown previously to be at risk of occasionally not meeting European standards, during or after wet weather. The electronic message signs allow predictive water quality forecast messages, indicating either good quality, or risk of failure against EU standards, to be shown daily to the public.

All the main coastal sewage discharges in southwest Scotland, in accordance with European standards, now have full biological treatment provided to protect the environment and bathing water quality. Much work has also been done to reduce run-off from farms in the catchment areas into rivers and streams flowing to the sea near bathing waters. Despite these extensive improvements, the risk of short-lived pollution during or following substantial rainfall events remains. The purpose of the signage project is to warn the public when these conditions may exist.

The signs are not intended as an alternative to environmental improvements or action to reduce pollution, but to provide additional public information. Efforts to reduce or eliminate potential sources of pollution are continuing, and are expected to reduce the frequency with which potential poor quality warnings have to be issued.

From June to the end of September, SEPA successfully issued daily risk assessments, using SEPA's extensive rainfall and hydrological information network to take a sign message management decision. The sign status was then recorded via a computer control station, which enabled switching to the relevant version of text message.

Predicted water quality conditions were posted daily on the SEPA website from early July and at operating signs, as they went online, at five of the beach locations following the installation of sign units later in August. Due to logistical problems, the planned sign was not installed at Ettrick Bay.

The text message displays alternated between a good, or poor water quality forecast, with the messages:

'Good Water Quality is Predicted Today' - meaning that the water was likely to be safe for bathing.

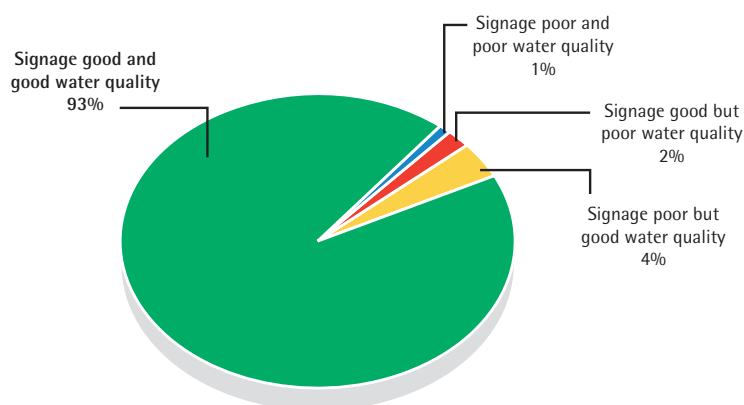
'Bathing Not Advised Today - Risk of Poor Water Quality' - indicating a prediction that the quality of the bathing water at that time may be poor.

Results

Of the 122 days assessed in total during the period 1 June to 30 September, on average 91% of these were predicted as good status. Of the 390 samplings taken for microbiological analysis, the signage project correctly predicted measured water quality on 94% of occasions.

Overall, the signage project indicated correct, or protective precautionary conditions to the public for 98% of the time.

Figure 2: Bathing Waters Signage Performance



Ongoing work

Further refinements of beach status decision protocols will be made once all the information gained during the pilot project has been evaluated, with the objective of further improving predictions for future bathing seasons and introducing other site specific risk factors such as wind direction, tidal conditions, or river flow input decision levels.


5.4 Beach Use Survey

The Scottish Executive undertook a survey during the 2003 bathing season to establish the number of people who use the beaches and coastal waters around Scotland, focusing on the designated coastal bathing waters and other recreational coastal waters that are monitored by SEPA. Six aerial surveys were undertaken and information about visits to beaches was assessed through a series of phone (1,007 people) and face-to-face questionnaires (300 people). SEPA contributed to the survey by providing information on the number of people on the beach and in the water at the time of each water sampling visit. The Executive is currently assessing the outcome of the studies, which will help inform bathing waters designation policy.

5.5 SEPA Monitoring Strategy

In Spring 2003, for the first time and perhaps as a measure of the improvements in bathing water quality which are being achieved, the EC offered to the UK the opportunity to adopt the Directive's 'reduced sampling frequency' option (see Section 3.2), for a given list of waters. It was considered by both SEPA and the Environment Agency in England and Wales that the offer was received too close to the start of the bathing season for it to be adequately publicised and implemented in 2003. However it is intended that it should be appropriately implemented in Scotland in 2004.

One of the problems with the list of sites given by the EC is that the criteria for selection are not given. SEPA intends that monitoring frequency will only be reduced at those few sites where there is a specific, high statistical probability, based on the last three years' data, that the site is of at least the EC's guideline quality standard. The same principle and statistical test will also be applied to other monitored waters. It is also intended to review the list of other monitored waters for 2004, as some of these sites, such as where required discharge improvements have been put in place, are no longer required. Microbiological monitoring resource saved by the reduced routine monitoring will be applied to investigative work in respect of waters where there are continuing pollution problems. The waters to be subject to reduced frequency monitoring in 2004 will be indicated on SEPA's website by the start of that bathing season.



Loch Linnhe

6. Conclusions

The 2003 Scottish bathing waters quality monitoring results are easily the best ever, and indicate that Scotland has many very high-quality bathing waters. However, the quality of a few waters remains unsatisfactory and significant further improvement is still required in several catchments, particularly in respect of agricultural pollution sources and storm sewer overflows. There was failure to meet EC standards at three sites. At two of these, agricultural pollution sources caused the failures. At the third, it is suspected that failure is linked with a temporary sewage effluent disinfection process, pending permanent works. Of the 18 other identified bathing waters which did not attain European 'guideline' quality standards, and even at some which this year achieved this high standard, improvements to both continuous and intermittent (storm overflow) sewage discharges, and agricultural pollution sources, have been identified as requiring elimination or mitigating actions. SEPA is working with and through others to achieve the improvements required.

The overall water quality recorded in 2003 was undoubtedly helped by the drier than average summer weather, which contrasted with the wet summer of 2002. It is during periods of heavy rain that storm sewer overflows occur to prevent flooding, and run-off from grazed pastures is most contaminated by faecal bacteria. Fewer people bathe in the sea during such conditions, but the polluting effects of major downpours can persist for a few days, by which time the weather may again be suitable for bathing. For these reasons, SEPA has worked with the Scottish Executive, local authorities and Clean Coast Scotland to trial a signage system which can be used to inform bathers at the most susceptible beaches when water quality may be of poorer quality.

SEPA will continue to work with Scottish Water to ensure that their planned capital investment programmes are prioritised to maximise environmental benefits, and that any new schemes and modified discharges are designed to achieve the Directive's guideline quality standards. The welcome capital investments arising from Scottish Water's Quality and Standards I & II programmes are delivering real environmental improvements, and further required improvements will be planned and delivered through their successor, Q&S III. SEPA will also continue to carry out audit monitoring of potential pollution sources as a check that all assets are adequately maintained and operated. If necessary, enforcement action will be taken to enforce conditions, which are set to ensure that the requirements of the bathing water Directive and other EC environmental legislation are met.

Completion of all desired schemes and actions is clearly liable to be very expensive. Expenditure is, therefore, necessarily phased over many years, but many significant schemes have been completed in the last few years, and further smaller new works serving Rockcliffe (Solway), Millport (Cumbrae) and Kingsbarns (Fife) are due to be in place before the 2004 bathing season.

Even with full sewage treatment, there is still a risk of some identified bathing waters failing to comply with the Directive's mandatory standards because of the operation of storm overflows and the run-off of livestock slurries and manure from agricultural land. SEPA will continue to work closely with agricultural organisations and the farming community to promote best practice and to minimise the risks of both point source and diffuse agricultural pollution. These requirements are being taken forward by SEPA working in conjunction with others, in accordance with the Scottish Executive's overall strategy for improving bathing waters and their four-point plan for dealing with agricultural pollution.

Litter is also recognised as a problem on many beaches. Beach cleaning is an expensive task, carried out by local authorities. It is of particular concern to some of the partner organisations working with SEPA, including Clean Coast Scotland and local authorities, which are taking forward initiatives to seek and implement long-term sustainable improvements.

Other developments are in prospect. A revision of the Bathing Waters Directive is anticipated, which is likely to introduce even higher bathing water standards. While all new treatment schemes have for some years been designed to meet these anticipated higher standards, this alone will not be enough to ensure compliance. Future legislation brought in to implement the EC Water Framework Directive should bring in new legislative powers to enable control of diffuse sources of pollution where these are required. However, even with such controls, further use of management measures, such as the warning signage scheme piloted this year, are likely to be required to ensure that bathing waters influenced by river run-off sources comply with quality standards.

Both the Scottish Executive and SEPA are fully committed to the goal of full compliance with European bathing water standards. This will be achieved through a combination of extensive investment in sewage treatment, sewerage system upgrades, increased adoption of best practices by the agricultural community, and other management measures as may be required. Presently, as the main problems are being overcome, previously masked pollution sources are becoming apparent, and proactive research work is underway to identify and enable cost effective methods to be developed for the correction of these problems. Many organisations working with the Scottish Executive and SEPA are involved in these projects with the common aim of achieving long-term and affordable improvements in environmental quality, and full compliance with European quality standards.

Annex One

2003 Monitoring Data from Scotland's 60 Identified Bathing Waters

Bathing Water	Local Authority	No. of sample results	Good Quality (EC Mandatory Standard) Bathing Water		Excellent Quality (EC Guideline Value) Local			Overall Quality
			No. of TC* 10 000/ 100ml	No. of FC ⁺ 2000/ 100ml	No. of TC 500/ 100ml	No. of FC 100/ 100ml	No. of FS ⁺ 100/ 100ml	
Southernness	D&G	20	20	20	17	9	16	Good
Sandyhills	D&G	20	19	19	11	3	12	Good
Rockcliffe	D&G	20	19	18	13	4	13	Poor
Brighthouse Bay	D&G	20	18	18	16	8	18	Poor
Carrick Bay	D&G	20	20	20	20	18	19	Excellent
Girvan	SA	20	20	19	18	14	13	Good
Turnberry	SA	20	20	19	15	8	16	Good
Ayr South	SA	20	19	19	13	5	14	Good
Prestwick	SA	20	20	20	16	16	16	Good
Troon South	SA	20	20	20	19	18	19	Excellent
Irvine	NA	20	19	19	17	15	19	Good
Saltcoats	NA	20	20	19	16	9	16	Good
Millport, Cumbrae	NA	20	20	20	14	8	12	Good
Luss Bay, Loch Lomond	A&B	20	20	20	16	10	15	Good
Ettrick Bay, Bute	A&B	20	19	17	12	8	15	Poor
Machrihanish Bay, Kintyre	A&B	20	19	19	18	18	18	Excellent
Ganavan Bay	A&B	20	19	19	16	9	15	Good
Morar Beach	H	20	20	20	19	19	20	Excellent
Dunnet Bay (Caithness)	H	20	20	20	20	19	20	Excellent
Dornoch Beach (Caravan Park)	H	20	20	20	20	20	20	Excellent
Dores (Loch Ness)	H	20	20	20	11	12	16	Good
Nairn (Central Beach)	H	20	20	20	20	20	20	Excellent
Nairn (East Beach)	H	20	20	20	20	20	20	Excellent
Cullen	Moray	20	20	20	19	18	18	Excellent
Inverboyndie	Aber	20	20	19	18	17	19	Excellent
Rosehearty	Aber	20	20	20	19	17	19	Excellent
Fraserburgh	Aber	20	20	20	20	19	20	Excellent
Fraserburgh Philorth	Aber	20	20	20	20	20	20	Excellent
Peterhead Lido	Aber	20	20	20	20	20	20	Excellent
Cruden Bay	Aber	20	20	20	17	14	19	Good
Balmedie	Aber	20	20	20	20	19	20	Excellent
Aberdeen	Aber	20	20	20	20	15	15	Good
Stonehaven	Aber	20	20	19	14	10	14	Good
Montrose	Angus	20	20	20	20	20	20	Excellent
Arbroath (West Links)	Angus	20	20	19	18	14	19	Good
Carnoustie	Angus	20	20	19	19	17	19	Excellent
St. Andrews (West Sands)	Fife	20	20	20	20	20	20	Excellent

Bathing Water	Local Authority	No. of sample results	Good Quality (EC Mandatory Standard) Bathing Water		Excellent Quality (EC Guideline Value) Local			Overall
			No. of TC 10 000/ 100ml	No. of FC 2000/ 100ml	No. of TC 500/ 100ml	No. of FC 100/ 100ml	No. of FS 100/ 100ml	
St. Andrews (East Sands)	Fife	20	20	20	20	19	19	Excellent
Kingsbarns	Fife	20	20	20	19	18	19	Excellent
Crail (Roome Bay)	Fife	20	20	20	20	20	20	Excellent
Elie (Woodhaven and Ruby Bay)	Fife	20	20	20	20	20	20	Excellent
Shell Bay	Fife	20	20	20	19	16	18	Excellent
Kinghorn (Pettycur)	Fife	20	20	20	19	19	18	Excellent
Burntisland	Fife	20	20	20	19	17	19	Excellent
Aberdour (Silversands)	Fife	20	20	20	20	19	18	Excellent
Portobello West (Kings Road)	CofE	20	20	20	16	9	15	Good
Portobello Central (James Street)	CofE	20	20	20	18	17	19	Excellent
Seton Sands/Longniddry	EL	20	20	20	18	17	19	Excellent
Gullane	EL	20	20	20	20	19	20	Excellent
Yellowcraigs	EL	20	20	20	20	17	18	Excellent
North Berwick Bay	EL	20	20	20	19	16	18	Excellent
North Berwick (Milsey Bay)	EL	20	20	20	20	17	20	Excellent
Dunbar (Belhaven)	EL	20	19	19	19	17	19	Excellent
Dunbar East	EL	20	20	20	19	16	20	Excellent
Whitesands	EL	20	20	20	20	19	18	Excellent
Thorntonloch	EL	20	20	20	20	20	19	Excellent
Pease Bay	SB	20	20	20	20	20	20	Excellent
St. Abbs	SB	20	20	20	20	19	20	Excellent
Coldingham	SB	20	20	20	20	20	20	Excellent
Eyemouth	SB	20	20	20	17	16	16	Good

*TC: Total coliforms; †FC: Faecal coliforms; ‡FS: Faecal streptococci

Local Authority abbreviation codes:

A&B	Argyll and Bute
Aber	Aberdeenshire
CofE	City of Edinburgh
D&G	Dumfries and Galloway
EL	East Lothian
NA	North Ayrshire
SA	South Ayrshire
SB	Scottish Borders

Annex Two

Monitoring Data from Other Waters Sampled 20 Times During the 2003 Bathing Season

Bathing Water	No. of sample results	Good Quality (EC Mandatory Standard) Bathing Water		Excellent Quality (EC Guideline Value) Local			Overall Quality
		No. of TC* 10 000/ 100ml	No. of FC [†] 2000/ 100ml	No. of TC 500/ 100ml	No. of FC 100/ 100ml	No. of FS [‡] 100/ 100ml	
Loch Ken	20	20	20	14	12	13	Good
Mossyard	20	19	19	16	13	9	Good
Maidens	20	20	19	16	12	11	Good
Culzean	20	20	20	19	19	18	Excellent
Croy	20	20	19	15	11	11	Good
Heads of Ayr	20	20	20	20	19	15	Good
Dunure	20	20	20	17	13	9	Good
Greenan	20	20	20	17	10	10	Good
Barassie	20	20	20	15	7	7	Good
Stevenston	20	20	20	14	11	8	Good
Seamill	20	20	20	17	11	9	Good
Fairlie	20	20	19	16	11	14	Good
Largs Pencil	20	20	19	16	10	11	Good
Largs Main	20	20	14	10	5	4	Poor
Lunderston Bay	20	20	20	18	14	14	Good
Helensburgh	20	19	15	7	3	4	Poor
Milarrochy Bay	20	20	19	13	10	13	Good
Loch Linnhe (Underwater Centre Pier)	20	20	20	17	15	20	Good
Thurso Bay (Central)	20	20	20	19	19	19	Excellent
Golspie South	20	20	20	20	19	20	Excellent
Rosemarkie (North)	20	20	20	20	19	20	Excellent
Hopeman	20	20	20	20	18	20	Excellent
Lossiemouth Silver Sands	20	20	20	20	16	16	Good
Lossiemouth East	20	20	19	11	9	10	Good
Buckie	20	20	20	15	13	13	Good
Sandend	20	20	20	14	8	12	Good
St. Combs	20	20	20	20	19	19	Excellent

Bathing Water	No. of sample results	Good Quality (EC Mandatory Standard) Bathing Water		Excellent Quality (EC Guideline Value) Local			Overall Quality
		No. of TC 10 000/ 100ml	No. of FC 2000/ 100ml	No. of TC 500/ 100ml	No. of FC 100/ 100ml	No. of FS 100/ 100ml	
Collieston	20	20	20	18	14	19	Good
Newburgh	20	20	19	5	1	16	Good
St. Cyrus	20	19	18	13	11	14	Poor
Lunan Bay	20	20	20	19	19	20	Excellent
Arbroath (Victoria Park)	20	20	20	19	18	19	Excellent
Easthaven	20	20	19	18	14	17	Good
Monifieth	20	20	20	19	15	19	Good
Broughty Ferry	20	20	20	20	19	20	Excellent
Tentsmuir Sands	20	20	20	20	20	20	Excellent
Anstruther, Billow Ness	20	20	20	20	19	20	Excellent
Earlsferry	20	20	20	20	20	20	Excellent
Largo East	20	18	18	14	12	17	Poor
Lower Largo	20	20	19	16	12	14	Good
Leven East	20	20	20	18	13	16	Good
Pathhead Sands	20	20	20	18	17	19	Excellent
Kirkcaldy (Linktown)	20	19	18	15	10	13	Poor
Kirkcaldy (Seafield)	20	19	19	17	13	16	Good
Kinghorn (Harbour)	20	20	20	16	12	16	Good
Aberdour (Harbour)	20	20	20	19	19	19	Excellent
Dalgety Bay	20	20	20	19	18	19	Excellent
Cramond	20	20	20	19	8	18	Good
Fisherrow West	20	20	20	18	15	20	Good
Fisherrow East	20	20	19	17	9	17	Good
Longniddry	20	20	20	18	13	19	Good
Seacliff	20	20	20	20	20	20	Excellent
Pefferlands	20	20	20	20	19	20	Excellent

*TC: Total coliforms; †FC: Faecal coliforms; ‡FS: Faecal streptococci

Annex Three

Glossary of Terms and Abbreviations

Aesthetic pollution	In the context of this report, pollution caused by sewage solids, sanitary goods and other items which are visually offensive.
Combined Sewer Overflows (CSO)	An overflow pipe designed to operate during periods of high rainfall to relieve pressure on sewerage systems and so prevent flooding. CSO allow rain water and diluted but minimally treated sewage to bypass sewage treatment works and flow directly into rivers and coastal waters.
COPA	The Control of Pollution Act 1974, as amended by the Environment Act, 1995.
Diffuse pollution	Pollution arising from land-use activities (urban and rural) that are dispersed across a catchment, or sub-catchment, and do not arise as a process effluent, municipal sewage effluent, or an effluent discharge from farm buildings.
EC	European Commission.
Excellent Quality	This indicates that a bathing water met guideline value quality standards in the EC Bathing Water Directive over the season as a whole.
Faecal coliforms and faecal streptococci	Types of bacteria found in sewage and animal excreta whose presence in high numbers indicates poor water quality. Although not necessarily disease causing themselves, high levels of these indicator bacteria at a site indicate that disease causing organisms may be present.
Good quality	This indicates that a bathing water met mandatory value quality standards in the EC Bathing Water Directive over the season as a whole.
Guideline value	A value specified in EC legislation as a recommended standard, more stringent than the minimum mandatory standard.
Identified bathing water	A bathing water identified by the Government under the terms of the EC Bathing Water Directive.
PEPFAA Code	Code of Good Practice for the Prevention of Environmental Pollution from Agricultural Activity.
Point source pollution	Pollution from a discrete source such as a discharge pipe or a slurry storage tank.
Poor quality	This indicates that a bathing water failed to meet mandatory value quality standards in the EC Bathing Water Directive over the season as a whole.
Preliminary treatment	The treatment of waste water by means of such as screens, macerators and grit separators.
Primary sewage treatment	The treatment of waste water to settle out suspended solids in primary sedimentation tanks. It is normal for waste water to receive preliminary treatment prior to sedimentation.
SAC	Scottish Agricultural College.
Secondary sewage treatment	The treatment of sewage by a biological process, for example, percolating filters or activated sludge, resulting in the further reduction of suspended solids, ammonia and biochemical oxygen demand.
Sea outfall pipe	A pipe which conveys and discharges treated waste water into coastal or estuarine waters.

Sewerage	The system of pipes and pumps which conveys sewage effluent from homes to treatment works.
SEPA	Scottish Environment Protection Agency.
Shellfish Waters Directive	EC Directive (79/923/EEC) which aims to protect the quality of coastal and brackish waters designated for protection or improvement in order to support particular shellfish populations.
Tertiary	Further treatment of effluent generally using sand sewage treatment filter beds or very fine screening, or disinfection processes.
Total coliforms	A count of all the coliform type bacteria present in a sample of water.
UV Disinfecton	The ultraviolet irradiation of treated sewage effluent, in order to render the final effluent substantially disinfected.
Water Industry Commissioner	Appointed by the Scottish Executive, the Water Industry Commissioner's remit is to promote the interests of the Water Authorities' customers.
WWTP	Waste Water Treatment Plant, the same as a Sewage Treatment Works (STW).



Annex Four

Sources of Additional Information on Bathing Water Quality

Technical enquires about SEPA's bathing water quality monitoring programme should be directed to your local SEPA office (see Annex 5 for details).

SEPA's website at www.sepa.org.uk contains a wide collection of information on SEPA, as well as the text from previous Scottish Bathing Waters reports. Monitoring results for the identified bathing waters are placed on SEPA's website as they are produced through the bathing season.

A number of other organisations complement SEPA's role in promoting high standards of bathing water quality. The Marine Conservation Society (MCS), the UK charity dedicated to the protection of the marine environment and its wildlife, publishes the Good Beach Guide every year, listing all coastal discharges affecting all identified and many non-identified bathing waters around the entire UK coastline. The recommended beaches can be viewed at www.goodbeachguide.co.uk. In Scotland, the charity Keep Scotland Beautiful administers the Seaside Awards for beaches. These awards recognise beaches which are clean, safe and which comply with the Bathing Water Directive's mandatory standards. As well as the Seaside Awards, Keep Scotland Beautiful administer the European Blue Flag Campaign in Scotland, on behalf of the Foundation for Environmental Education. This is an award presented to beaches across Europe that fulfil strict criteria relating to both water quality and environmental management in the surrounding beach area. The Blue Flag award requires water quality to be guideline standard. In 2003, four beaches in Scotland achieved Blue Flag status: St. Andrews West Sands, Elie Harbour, Burntisland and Aberdour (Silversands). Clean Coast Scotland (CCS) is a partnership that brings together 15 different government and non-government bodies to co-ordinate and raise the profile of Scottish beaches and bathing waters. CCS worked with SEPA in 2003 to produce a poster template for local authorities to display bathing water results at beaches in a consistent manner.

Water Authority
Scottish Water,
Castle House,
6 Castle Drive,
Carnegie Campus,
Dunfermline, KY11 8GG

Tel: 0845 601 8855
www.scottishwater.co.uk

Marine Conservation Society
Gloucester Road,
Ross-on-Wye,
Herefordshire,
HR9 5BU

Tel: 01989 566017
www.mcsuk.org

Keep Scotland Beautiful and Clean Coast Scotland
Islay House,
Livilands Lane,
Stirling,
FK8 2BG

Tel: 01786 471333
www.encams.org

The website address for the Seaside Awards is: www.seasideawards.org.uk

The website address for the Blue Flag Awards is: www.blueflag.org

Information on bathing water quality in England and Wales can be obtained from the Environment Agency, and in Northern Ireland from the Environment and Heritage Service:

Environment Agency
Enquiries@environment-agency.gov.uk

Tel: 0845 9333111
www.environment-agency.gov.uk

Environment and Heritage Service
ep@doeni.gov.uk

Environment Protection
Calvert House
23 Castle Place
Belfast BT1 1FY
Tel: 028 9025 4754
www.ehsni.gov.uk

Annex Five

SEPA Offices

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28 Perimeter Road, Pinefield,
Elgin IV30 6AF
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Galashiels, TD1 1NF
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West of Scotland Science Park
Maryhill Road, Glasgow, G20 0XA
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f: 0141 948 0006

Glenrothes Office
Pentland Court, Saltire Centre,
Glenrothes, KY6 2DA
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f: 01592 775923

Lochgilphead Office
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f: 01546 602337

Newton Stewart Office
Penkiln Bridge Court, Minnigaff,
Newton Stewart, DG8 6AA
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f: 01671 404121

Orkney Office
Norlantic House, Scott's Road,
Hatston Industrial Estate,
Kirkwall, Orkney KW15 1RE
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7 Whitefriars Crescent,
Perth PH2 0PA
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f: 01738 630997

Shetland Office
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Shetland ZE1 0LL
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f: 01595 696946

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Stirling FK9 4TF
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f: 01786 461425

Thurso Office
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Caithness, KW14 7XW
t: 01847 894422
f: 01847 893365

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Stornoway, Isle of Lewis,
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