

Determination of Waters of National Tourism Significance and Associated Water Quality Status



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1.0 Introduction and Objectives

1.1 Introduction:

- 1.1.1 This report was prepared by Scott Wilson and Judith A Annett, Countryside Consultancy, on behalf of Fáilte Ireland.
- 1.1.2 Fáilte Ireland was established by the Irish Government in May 2003 to guide and promote the development of tourism as a leading indigenous component of the Irish economy. To this end, Fáilte Ireland, working in partnership with the tourism industry, provides a range of support services and business solutions to develop and sustain Ireland as a high-quality and competitive tourism destination.
- 1.1.3 Ireland's coastal and inland waters constitute a significant part of what makes Ireland attractive as a holiday destination for both domestic and overseas visitors. Securing the protection and integrated management of these natural resources is, therefore, critical to the future sustainability of Ireland's tourism industry. Water based activities feature strongly in Fáilte Ireland's *Tourism Product Development Strategy 2007-2013*, which provides the blueprint for capital expenditure on water-based tourism infrastructure under Ireland's National Development Plan. This investment includes moorings, jetties and water sports centres, as well as the development of walking and cycling routes adjacent to water bodies.
- 1.1.4 The Visitor Attitudes Survey undertaken by Fáilte Ireland in 2007 included a number of questions specifically relating to water quality in Ireland. Overall results indicated that 72% of visitors perceive Ireland as a clean and environmentally green destination. This was a drop of 7% on 2006. A potential threat to the credibility of Ireland's image was signalled by the fact that 19% of holidaymakers surveyed stated that they had found evidence of either pollution in the sea (and or coastal waters) or on the beach with 17% stating that they had evidenced pollution in a river or lake. According to the Environmental Protection Agency (EPA), Ireland's waters are coming under increasing environmental and development pressures, which may be exacerbated by predicted climate change.
- 1.1.5 Taking these issues into account, it is important that the quality of water based tourism assets in Ireland is protected. However in order to do this, the water bodies of greatest tourism significance need to be determined and their vulnerability to water quality pressures in particular identified.
- 1.1.6 This report documents the process of determination of these waters and associated water quality status.

1.2 Objectives

- 1.2.1 The main objective of this project was to identify waters with a significant tourism value in order to:
- Advocate their protection from harmful and potentially polluting activity, including over development or development of an inappropriate nature;
 - Contribute in an informed way to River Basin Management Plans being prepared under the requirements of the EC Water Framework Directive;
 - Identify characteristics that contribute to the tourism value of a waterbody and enable the development of knowledge of good practice in this respect; and
 - Inform future Fáilte Ireland funding and research in relation to water based attractions and activities.

1.3 Definitions

1.3.1 This report uses definitions as follows:

- “Waters” refers to the following: rivers; lakes (including turloughs); canals; wetlands; coastal waters and transitional waters (estuaries, lagoons and salt marshes).
- “National Tourism Significance” refers to those waters that make a significant contribution to the national (Republic of Ireland only) tourism economy by virtue of one or more of the following:
 - Market visibility and performance
 - Provision of activities
 - Economic and/or community benefits
 - Scenic value and status
 - Strategic tourism status and linkages
 - Development potential
 - Cultural and heritage associations



2.0 Ireland's Waters and their Tourism and Recreational Use

2.1 Ireland's Waters

Ireland is fortunate in the number and variety of inland and coastal waters and the length and quality of its rivers.

The varied topography of the Irish coastline ranges from 600 metre cliffs on the spectacular Atlantic Coast to gentle estuaries with salt marshes. The west coast in particular is studded with islands, and characterised by sheltered coves nestled between dramatic headlands.

Fast flowing rivers fall quickly to the coast from the rocky mountain areas of the west, dark with peat from the many upland and lowland bogs. Elsewhere the basin shape of Ireland collects waters into the River Shannon which runs for just under 400 kilometres from the Shannon Pot near Dowra to the estuary at Limerick.

Ireland has over 400 significant lakes, of which some of the largest are Lough Allen, Lough Ree, Lough Derg (all within the Shannon System); the so called 'Great Western Lakes' of Corrib, Conn and Cullin and the Midland lakes of Ennell, Owel and Derravaragh. Counties such as Cavan, Monaghan and Mayo have very high densities of lakes including lakes of a significant scale such as Lough Gowna and Lough Oughter.

2.2 Water Based Tourism and Recreation

2.2.1 General

Ireland's coastal and inland waters constitute a major part of Ireland's attraction as a holiday destination for both domestic and overseas visitors. A significant part of Ireland's tourism offering comprises water based recreation (including bathing activities), and generates significant benefits to the Irish economy.

The west coast supports some of Ireland's most important activity products such as sea angling, surfing and sailing, whilst the spate rivers provide salmon angling opportunities. Specialist cruisers and both coarse and game anglers make extensive use of the inland waters, with the Shannon and its connected waterways being world renowned. Over 130 sites in Ireland, both coastal and inland are designated as bathing waters and this underpins both a domestic and overseas tourism market interested in swimming, beach holidays and watersports.

Ireland's waters are also well used by Irish people with boat registrations on the Shannon and boat ownership having increased significantly in the years 2004-2008. Holidays by the sea and close to water remain an important and popular part of both domestic and overseas tourism.

2.2.2 Domestic Participation in Water Based Activity

The Economic and Social Research Institute (ESRI) carried out research in 1996 and 2003, for the Marine Institute, to establish participation in water based activity amongst people resident in Ireland. This identified that around half of all adults take part in a water based activity each year. Just over 100,000 of these took part in sailing or boating at sea, with just over one third in their own boats. This is the most up to date data currently available for domestic participation.

Activity	1996 Total participants (000s)	2003 Total participants (000s)	TREND
ANGLING			
Freshwater angling for coarse fish	66.2	66.5	slight increase
Freshwater angling for game fish	76.4	80.5	slight increase
Sea angling from the shore	53.6	74.1	increase
Sea angling from a boat	34.3	53.0	increase
Sailing at sea	49.9	58.8	increase
Boating at sea in row boats, canes etc	*	32.1	
Boating at sea in power boats etc	*	24.6	
Cruising or boating on inland waterways	30.1	42.8	increase
Water skiing, jet skiing	*	19.2	
Surfing, sail boarding	*	17.8	
Scuba diving, Snorkelling	*	9.1	
Other sea sports	*	7.3	
Swimming in the sea	538.8	353.5	decrease
Whale and dolphin watching	15.9	9.6	decrease
bird watching in coastal area	31.2	12.4	decrease
Visiting nature reserves etc in coastal areas	84.6	43.5	decrease
Other trips to the beach or seaside	1047.8	1134.6	increase
Other trips to the islands	*	33.2	
% of adults in population undertaking any kind of water based leisure activity	56%	49%	decrease

*comparable figures not available in the 1996 survey

Source ESRI for Marine Institute 2004

Domestic Holidaymakers

In 2008, 24% of Domestic holidaymakers in Ireland took part in watersports (the second most popular activity along with visiting National Parks and Visiting Houses). 6% took part in angling.

Domestic Holidaymakers (Percentage participating in activities)	2007	2008
National Parks	28	26
Houses/Castles	26	25
Watersports	24	26
Hiking/Walking	21	25
Visits to Spas	20	24
Gardens	19	20
Heritage/Interpretative Centres	17	15
Museums/Art Galleries	16	14
Golf	10	11
Angling	8	6
Cycling	6	6
Equestrian Pursuits	3	4

2.2.3 Overseas Markets

In 2007¹ Fáilte Ireland’s Survey of Overseas Travellers identified that 140,000 overseas visitors took part in watersports² during their stay in Ireland. Other activities engaged in and recorded in the survey included:

Overseas Tourist Activities (numbers participating)	2007	2008
Hill walking	511,000	517,000
Golf	194,000	141,000
Watersports	140,000	n/a
Cycling	102,000	120,000
Equestrian Pursuits	50,000	50,000

The second most visited site in Ireland by overseas visitors in 2007 (the most recent published survey) was the Cliffs of Moher with 940,455 visitors. This illustrates the importance of certain parts of the coastline to tourism in Ireland.



1 Most recent figure available at July 2009

2 Watersports included Fishing, Sailing, Inland Cruising, Waterskiing, Scuba -diving, Surfing, Canoeing and other water based activities (excluding swimming for which there is no question)

3.0 International Best Practice – New Zealand

Waters of national tourism significance have not previously been identified in a systematic way in Ireland. As a first step in this project, therefore, it was important to identify best practice from around the world in order to inform a methodology for the current project.

This initial step found that there are a number of systems for the classification of coastal and inland waters and such approaches are increasingly used across the world. The basis of most classification however is nature conservation importance or national importance for drinking water or irrigation water. Such approaches include the identification and designation of Ramsar sites (Wetlands of International Importance), Marine Protected Areas and European Natura 2000 sites which include marine and inland waters.

An extensive literature review of best practice internationally identified only one other country which had sought to classify waters for recreation and tourism value. This was carried out in New Zealand as part of an integrated approach to managing its inland waters.

In 2004 New Zealand's Department of the Environment undertook a survey based assessment of the importance of some of its waters for recreation. The Department also undertook a separate assessment of tourism as part of its wider Sustainable Water Programme of Action, which is a policy programme aimed at improving freshwater management under the Resource Management Act 1991 (RMA). It seeks to ensure that fresh water is managed in ways that support New Zealand's long-term sustainable development.

The Sustainable Water Programme of Action³ is a cross-government initiative led by the Ministry for the Environment and the Ministry of Agriculture and Forestry. The Programme is comprised of three key work streams, which respectively aim to ensure that:

- Freshwater is allocated and used in a sustainable, efficient and equitable way;
- Freshwater quality is maintained to meet all appropriate needs; and
- Water bodies with nationally significant values are protected (e.g. Industry and domestic uses; Irrigation; Recreation and Tourism).

Currently the Government is in a process of identifying a list of the most important waters taking into account all of the aspects of importance, not just tourism and recreational value. The final comprehensive listing for the country has not yet been produced.⁴

3.1 Recreation and Tourism Importance

3.1.1 Recreation

In order to identify waters of recreational value, the New Zealand Ministry for the Environment completed three strands of research into recreational activities associated with water bodies:

- a national telephone survey to determine how and where freshwater is used for recreation by the general public in New Zealand;
- an internet-based online survey targeted at recreational organisations with an interest in freshwater; and

3 The Sustainable Water Programme of Action discussion document can be accessed at: <http://www.mfe.govt.nz/publications/water/wpoa-hui-report-jul05/>

4 Jason Holland – Senior Advisor – Ministry of the Environment New Zealand – Pers Comm.

- a review of existing information including National Institute of Water and Atmospheric Research angling surveys (2002, 1994), Wetlands of National Importance (1978), Wild and Scenic Rivers of National Importance (1982), Freshwater Recreation in New Zealand (2003), Water Conservation Orders, and anecdotal information about white-baiting (fishing).

A candidate list of water bodies was generated from the three different sources of information. The numbers of responses within each recreation category were ranked for the telephone and internet survey information. The top water bodies for each of the existing information sources were identified, along with the water bodies subject to Water Conservation Orders. The water bodies have not been ranked in the final listing.

Coastal waters were not identified in the report other than river estuaries.

3.1.2 Tourism

The New Zealand Ministry of Tourism led the tourism sub-project to identify a potential list of water bodies nationally important for tourism in New Zealand. Data from the 2002 International Visitor Survey was used to provide information on water-based tourism activities undertaken by visitors to New Zealand. The total number of people who reported undertaking any freshwater activity in each location was determined to identify the top eight destinations of importance for international visitors.

The Domestic Travel Survey 2001 data was used to provide information on water related activities undertaken by domestic tourists. The total number of people who reported doing any freshwater activities in each location was determined to identify the top 10 locations.

A total of 81 water bodies of **national importance for tourism** were derived from those locations. In addition, 16 water bodies were identified as potentially nationally important for tourism due to their significant scenic value. This was in addition to the survey data.

3.2 Limitations of the listings and the data in the New Zealand Survey

The Ministry of Tourism in New Zealand identified the following limitations in the methodology:

- Both the tourism and recreation listings are based on the relative numbers of visits rather than on any assessment of the economic value of the visits – no economic value of tourism to these waters was determined.
- There may be no correlation between the number of people who visit a water body and its value for recreation. This approach inherently undervalues very special and remote places.

4.0 Developing a Methodology for Ireland

4.1 Identifying an Appropriate Methodology with which to determine Waters of National Tourism Significance

To assist in developing an appropriate methodology with which to determine waters of national tourism significance, Fáilte Ireland established a Steering Group comprising Fáilte Ireland, Waterways Ireland, Shannon Development, the Irish Marine Federation and the Irish Boat Rental Association. In addition, Fáilte Ireland's Advisory Group on the Environment was also consulted on the draft report as were a number of other consultees, as listed in Section 7 of this report.

The first stage in developing a methodology was to generate options for the type of scheme to be provided: Three main types of scheme were identified and the strengths and weaknesses of each scheme were considered.

The three main types of scheme considered at the outset were:

1. A **threshold level scheme** where a numerical standard would be applied and all waters that reached or exceeded this would be considered nationally significant.
2. A **rank ordered** scheme where a ranking would be given to each water based on how well they met a set of agreed criteria
3. A **market-based** scheme where waters would be judged on their capacity to attract and retain visitors from Ireland's main target markets.

Option 2, a rank ordered scheme was selected due to the data limitations for a threshold scheme and the difficulties of achieving a reliable and objective method of scoring a market based scheme. Refer to Appendix I for the full comparative analysis of the three schemes.

4.2 Identifying finalised criteria and scoring charts

The second stage involved determination of the types of data available and the criteria options upon which the ranking scheme was to be based.

Clearly, since New Zealand had based its tourism research on surveys of domestic users and overseas tourists, this approach, based on a single indicator, was an option to be considered at the outset. However, Fáilte Ireland visitor surveys currently provide no information about waters visited. A simple count based on a sample of visitors or domestic holiday makers was not, therefore, considered to be a feasible option. In the same way visitor counts are not currently available for lakes, rivers or coastal waters in Ireland.

The project Steering Group considered a wide range of data options to establish the criteria for tourism significance. These included a number of measures based on visitor numbers or counts of usage. All were ruled out due to the lack of data or only partial data being available.

The criteria used in the assessment of national significance, were finally determined based on what quantitative information was readily available and accessible, and which covered both the participatory (activities based) and non-participatory (scenic and cultural) values of Irish waters. The criteria finally chosen covered seven distinct areas as follows:

- Market visibility and performance – waters which have a high profile both internationally and domestically;
- Activity provision – the number of activities available on/ adjacent to the water;
- Economic and community benefits;
- Scenic value and status;
- Strategic tourism status and linkages – in national and regional plans;
- Potential for sustainable development – (only if contained in a plan/ strategy) and;
- Cultural heritage associations with the water.

A full explanation of each of these criteria, and how each was scored is provided below.

CRITERIA 1 – MARKET VISIBILITY AND PERFORMANCE

Criterion 1a **Visibility and importance within Tourism Ireland (TI) and Fáilte Ireland (FI) promotions** (general market materials e.g. aimed towards sightseers and culture seekers)

The scoring of this aspect – used as a proxy for visitor numbers due to the fact that this information was not available – was based on a trawl through all Tourism Ireland, Fáilte Ireland (national and regional), and other national agency tourism promotional materials towards volume markets, recording all mentions of waters in Ireland and the profile they are awarded. The rationale for this is that these are the waters considered to have most appeal to overseas and home holiday visitors. The scoring guidance below shows how scores were allocated. If the water had a high profile in overseas promotions (i.e. a significant picture and position in the main text) it was awarded a score of 5 whilst if it just received a listing in a national or regional tourism brochure a score of 1 was awarded.

Scoring guidance

- 5 High profile in TI and FI, Waterways Ireland (WI) or Shannon Development overseas promotion
- 4 Mention in TI or FI overseas promotion (main text)
- 3 High profile in FI or regional tourism brochure for home holiday market
- 2 Main text in FI or regional tourism brochure
- 1 Listing in tourism brochure
- 0 No mention

Criterion 1b **Visibility and importance within TI and FI, WI, or Shannon Development specific product promotions**

The scoring of this aspect of market visibility focussed on product promotions such as angling, cruising, surfing, adventure, etc. In a similar way to criteria 1a a higher score was awarded to those waters named within brochures and promotions aimed at the overseas market.

Scoring guidance

- 5 High profile in TI and FI overseas product promotion
- 4 Mention in TI or FI overseas product promotion (main text)
- 3 High profile in FI or regional product brochure for home holiday market.
- 2 Main text in FI or regional product brochure
- 1 Listing in product brochure
- 0 No mentions found

Criterion 1c Reputation outside Ireland for specialist activity

Reputation outside Ireland was based on web searches of independent specialist sites and on use of specialist activity publications. Searches were undertaken for all forms of angling, surfing, sailing, cruising, watersports, sub aqua etc. to establish the best sites from an activity practitioner point of view, and to establish their status when viewed from outside Ireland.

Scoring guidance

- 5 Identified as one of best world or European sites for an activity
- 4 Best site for the activity in Ireland
- 3 One of top 5 sites for an activity in Ireland
- 2 One of top 10 sites for activity in Ireland
- 1 Listed as good for the activity
- 0 No mentions found

CRITERIA 2 – ACTIVITY PROVISION

Criterion 2a Level of provision for water based tourism

This criterion recorded usage of each water for activities and was based on the knowledge of Regional Tourism Development Officers (RTDOs), the local knowledge of the study team, literature searches and web searches. A simple scoring procedure was used reflecting the number of activities known to take place on the water. A checklist was used to guide the searches for activities (see Appendix II). Initially this criterion was designed to provide a qualitative element (i.e. how well the activities were provided for) but the availability of data across all of the waters was poor and a numerical score was used to provide a higher degree of reliability and repeatability.

Scoring guidance

- 5 Known to provide for 5 or more water based activities (see checklist Appendix II)
- 4 4 water based activities
- 3 3 water based activities
- 2 2 water based activities
- 1 1 water based activity
- 0 No known water based activities

Criterion 2 b Level of facility provision for waterside activity

In a similar way to criterion 2 the number of activities taking place at the waterside was recorded. This allowed for both activities such as walking beside the water and for more formal provision of waterside activity such as family fun parks and water parks, maritime heritage centres and aquaria to be included (see Appendix II). Again a numerical count was used to provide as objective a score as possible.

Scoring guidance

- 5 Known to provide for 5 or more water-side activities
- 4 4 water side activities
- 3 3 water side activities
- 2 2 water side activities
- 1 1 water side activity
- 0 No known waterside activities

CRITERIA 3 – ECONOMIC AND COMMUNITY BENEFITS

Criterion 3a Number of activity businesses located by the water

This criterion used a geographical plot of the Fáilte Ireland Tourism Content Scheme database to establish the relationships of activity businesses to waters identified in the long list for the study. A simple numerical count was used reflecting the number of activity businesses included in the TCS. The activity business assessment was checked by RTDOs based on local knowledge because of concerns about the comprehensiveness of the TCS and because of the weight placed on this criterion in the overall score. It could be argued that recording activity businesses only under reports economic impact and that accommodation businesses should also be included. However, the success and occupancy of many accommodation businesses beside water may not always bear a relationship to the appeal of the water or to the activity on it.

Scoring guidance

- 5 5+ activity businesses
- 4 4 activity businesses
- 3 3 activity businesses
- 2 2 activity businesses
- 1 1 activity business
- 0 No known activity businesses

CRITERIA 4 – SCENIC VALUE AND STATUS

Criterion 4a Landscape Status

A planning review was undertaken of the 26 County Development Plans. In some cases this included a review of Local Area Plans and Landscape Character Assessments (LCA) which form an integral part of the Development Plan process. With regard to landscape classification, waters on or beside a National Park, UNESCO World Heritage Site or Geopark received the highest score. Slightly lower were waters associated with a Special Amenity Area Order or a Landscape Conservation Area (Ireland's only national planning designations for landscape protection). A lower score was given to those waters situated within the highest landscape category within a Development Plan or a Landscape Character Assessment. A score of 1 was given to waters within scenic views listed within a Development Plan. No score was given to waters which are not associated with any of the above landscape designations.

Scoring guidance

- 5 Within a National Park or UNESCO WHS or Geopark site
- 4 Within Special Amenity Area Order or Landscape Conservation Area (national designation)
- 3 Highest landscape designation within County Development Plan
- 1 Area with scenic views identified in County Development Plan
- 0 Water not associated with a special landscape

Criterion 4b Status in Scenic Tours

Scenic Route classification was determined by consideration of two key documents ‘*Views from the Wheel – A Collection of Some of Ireland’s Best Drives*’ and ‘*Touring Ireland by Car*’, both published by www.discoverireland.com. A review of scenic routes formally listed within either a County Development Plan or the current AA Touring Map was also undertaken. Only 2 scores were awarded. The higher score was given to those waters in, on or within the environs of touring routes listed on the Discover Ireland website. The lower score was given to waters on or near to scenic routes listed in either County Development Plans or the AA Touring Map.

Scoring guidance

- 4 Located on or close to TI or FI promoted scenic driving route
- 2 Located on or close to AA scenic route or county development plan scenic route
- 0 Water has no association with formal scenic route

CRITERIA 5 – STRATEGIC TOURISM STATUS AND LINKAGES

Criterion 5a Status within national and regional tourism strategies and product development plans

Consideration was given to any waters considered as ‘significant’ for their tourism and recreational potential in both National and Regional Tourism Strategies. A high score (4) was given to waters regarded as significant within Regional Tourism Strategies produced by Fáilte Ireland and Shannon Development. The lower score (2) was given to those waters mentioned in County Development Plans under tourism and/or recreation but not regarded as significant.

Scoring guidance

- 4 Water identified as top priority in national strategies and plans, including Loughs Agency and Waterways Ireland, or identified in Fáilte Ireland or Shannon Development regional plans
- 2 Identified at County Development Plan level

Criterion 5b Physical or product linkages with other waters

This score based on physical or market linkages was designed to recognise the additional or critical mass importance of a cluster of water bodies together, either linked physically such as in the Shannon Lakes or in marketing terms such as the East Clare Lakes or Lakelands and Inland Waterways. Where market approaches based on clusters of waters exist, such as the Centres of Excellence (approach taken by Fáilte Ireland and Central Fisheries Board) this is also recognised.

Scoring guidance

- 5 Physically linked to other water bodies which together generate overseas interest
- 4 Close to other waters that together generate overseas interest
- 3 Strong product marketing links with other waters generating overseas interest
- 2 Product marketing links which generate home holiday market interest
- 1 Some product marketing links to other (distant) waters
- 0 No discoverable physical or market links of interest to tourism

CRITERIA 6 – POTENTIAL

Criterion 6a Established potential for further sustainable development of tourism interest and services

In the case of some waters where there is great potential and plans for their realisation but little current activity (for example waters identified in the Sail West Interreg programme for Donegal, Northern Ireland and West of Scotland), it was felt to be important to provide a way of reflecting this potential in the score. Scoring was based on the existence of plans and documents identifying potential rather than on a subjective assessment.

Scoring guidance

- 5 Well advanced nationally endorsed plans for development aimed at excellence in overseas market
- 4 Well advanced regionally endorsed plans for development aimed at overseas markets
- 3 Well advanced nationally endorsed plans for development appropriate to home holiday market
- 2 Well advanced regionally endorsed plans for development appropriate to home holiday markets
- 1 Known potential but no firm plans
- 0 No identified potential or plans

CRITERIA 7 – CULTURE AND HERITAGE ASSOCIATIONS

Criterion 7a Extent of culture or heritage associated with the water

In some cases the attraction of a particular water owes more to its cultural associations or heritage than to scenic beauty or to the level of activity taking place on the water. This type of significance was also able to contribute to the score. One example is Lough Gur, which is of major historical significance but where no activity takes place on the water. Another is Lough Gill where the Yeats association brings many visits to the shores.

Scoring guidance

- 5 Name of water has a significant cultural/heritage association for general tourists
- 4 Significant cultural or heritage attraction for general tourism located on or beside water
- 3 Cultural attraction or association of interest to a niche market
- 2 Cultural or heritage attraction of regional interest
- 1 Minor heritage feature
- 0 No culture or heritage association found

4.3 Other Criteria Considered

Other criteria such as community gain from tourism, quality of water based and waterside activity provision and the seasonal spread of operation of visitor activities and services were considered as relevant indicators, but also ruled out due to lack of available data.

4.4 Weighting the criteria

Some of the criteria were considered by the Steering Group to be more important than others. It was therefore decided that a weighting should be placed on each according to its importance in the assessment of national importance.

Relative importance was agreed as follows:

Topic area	Combined topic weighting to be used
Market Visibility	120
Activity provision	110
Economic and community benefits	105
Scenic value and status	90
Strategic tourism status and linkages	85
Potential	45
Culture and heritage associations	45

As a number of topics were made up of several criteria the final weighting and scoring method agreed for use was as follows:

Criterion	Measure	Individual Weight	Combined weight
Market Visibility and performance	Visibility and importance in attracting sightseers and culturalists	40	
	Visibility and importance in attracting specialist markets	40	
	Reputation outside Ireland for specialist activity	40	120
Activity provision	Number of activities taking place on water	55	
	Number of waterside activities	55	110
Economic and community benefits	Number of activity businesses associated with the water	105	105
Scenic value and status	Landscape quality and designation	45	
	Role in scenic drives	45	90
Strategic tourism status and linkages	Status in national and regional tourism strategies	45	
	Physical or product links	40	85
Potential	Established potential for further sustainable development of tourism interest and services	45	45
Culture and heritage associations	Extent of heritage associated with the water	45	45
		600	600

In the final score sheet for each water, the individual weight and the score are multiplied to create a total for each measure. The overall total is then calculated – i.e. the sum of the weighted scores for each measure.

4.5 Identifying a Relevant Set of Waters for Screening for Tourism Significance

Options for generating a list of tourism waters to apply scores to were considered at the outset. A list based on the EC Water Framework River Basin Districts was considered but rejected as this would mean each water having to be assessed irrespective of whether it played any current tourism role.

The final list of waters was compiled from two sources:

- Fáilte Ireland provided county lists of potential and known tourism waters and waters known for specialist activities such as watersports, cruising, angling, surfing etc.
- The consultancy team prepared a list of angling waters in Ireland based on the centres of excellence and their associated waters agreed between the Fisheries Boards and Fáilte Ireland for the promotional e-brochures for sea angling, salmon angling, wild brown trout angling and coarse angling.

These lists were then compiled to make a comprehensive county by county listing of waters with any tourism significance.

A total of 328 waters were eventually scored following some reduction of lists through removal of any waters which evidently had only local significance, or through combining waters. An example of the latter was the combination of several locations around the Dingle Peninsula into one named 'Waters around Dingle Peninsula'.

A score sheet was then prepared for each of the waters. Initial scores were provided to the Steering group and to RTDOs for comment and in some cases adjustments were made based on new information provided. The results are set out in section 5.



5.0 Determination of Waters of National Tourism Significance

All of the 328 waters were scored and placed in rank order according to their score.

This allowed the top 100 tourism waters to be identified as follows based on the criteria, weights and scores outlined in the previous section (in fact there are 104 waters in the list as the final 5 had identical scores).

The threshold of 100 waters was considered an adequate representation of waters of national tourism significance, as it constitutes a significant portion of the 328 water bodies assessed (as obviously all water bodies could not be *nationally* significant) and identifies a substantial amount of waters nationally where Fáilte Ireland resources such as advocacy, research, and funding etc, can be focussed most meaningfully to ensure the quality of the water-based tourism assets in Ireland is protected. Furthermore, it is considered that the values associated with these water bodies are of national significance in that they are nationally representative and/or have an attraction value for both international and national tourists.

The following waters, arranged by county, represent the top 104.

Map Ref	Name of Water (** = No of Blue Flag Beaches/Marinas in area)	County	Tourism Activity
1.	Lough Oughter	Cavan	Coarse fishing, watersports, events, walking, kayaking
2.	Cliffs of Moher (waters around) and Liscannor Bay*	Clare	Sea fishing, boat trips, wildlife watching, extreme surfing, jet skiing. Includes lahinch beach.
3.	Mullaghmore Turlough (Burren National Park)	Clare	Nature study, landscape enjoyment.
4.	Loop Head (waters around) and Kilkee Bay*	Clare	Swimming, watersports, wildlife watching, sailing, surfing, diving. Includes kilkee beach
5.	Shannon Estuary***	Clare, Limerick, Kerry	Sea fishing, boat trips, wildlife watching, swimming, sailing, watersports, cruising
6.	Lough Derg**	Clare, Tipperary, Galway	Coarse fishing, game fishing, sailing, watersports, cruising, walking, heritage, bird watching
7.	Glandore Harbour and Union Hall	Cork	Sailing, watersports, festival, summer school, cruising, rowing
8.	Kinsale Harbour	Cork	Sailing, cruising, sea fishing, diving, watersports
9.	River Blackwater (Munster)	Cork	Coarse fishing, game fishing
10.	Youghal Bay and Estuary	Cork	Sea fishing, swimming, maritime heritage, boat trips
11.	Ballycotton Bay*	Cork	Deep sea, shore and coastal fishing, walking. Watersports, swimming
12.	Clonakilty Bay*	Cork	Deep sea, shore and coastal fishing
13.	Courtmacsherry Bay**	Cork	Sea fishing, shore fishing, kayaking, dinghy sailing, adventure activities

Map Ref	Name of Water (** = No of Blue Flag Beaches/Marinas in area)	County	Tourism Activity
14.	Bandon river and estuary	Cork	Sea fishing, shore fishing, game fishing
15.	Barleycove*	Cork	Surfing, sea fishing, swimming
16.	Cork Harbour	Cork	Sea fishing, sailing, watersports, boat trips, events, cruise ships, ferries
17.	Beara Peninsula (waters around)	Cork	Sea fishing, diving, watersports, kayaking
18.	Bantry Bay	Cork	Sea fishing, coastal cruising, watersports, diving, shore fishing
19.	Baltimore Harbour, Clear and Sherkin Island, Schull and Roaringwater Bay	Cork	Deep sea fishing, shore fishing, watersports, cruising, walking, island visits, diving
20.	River Bandon	Cork	Game fishing
21.	Lough Hyne and Tragumna Bay*	Cork	Canoeing/kayaking
22.	Sheephaven Bay**	Donegal	Sea fishing, watersports, swimming, jetskiing, shore angling, kite sports
23.	Arainn Mor (waters around) and Burtonport	Donegal	Sea fishing, island trip, watersports, cruising, sailing, shore fishing
24.	Toraigh (Tory Island) (waters around) inc Magheroarty, Inisbofinne	Donegal	Island ferry, swimming, surfing, diving, walking, bird watching
25.	Lough Swilly**	Donegal	Sea fishing, sailing, shore fishing, watersports, swimming
26.	Culdaff Bay*	Donegal	Sea fishing, shore fishing, swimming, watersports
27.	Lough Beagh (Glenveagh National Park)	Donegal	Game fishing, walking, wildlife watching
28.	Lough Foyle*	Donegal	Walking, sailing. Sea fishing, watersports, kayaking, maritime museum visits, ferry
29.	Donegal Bay*****	Donegal, Sligo	Sea fishing, waterports, diving, surfing, boat trips, beach horse riding, shore fishing
30.	Dublin Bay*	Dublin	Sailing, cruising, diving, watersports
31.	River Liffey (tidal section)	Dublin	Cruise ships, events, sailing, trip boats, ferry
32.	Malahide Estuary	Dublin	Swimming, marina, sailing club, waterside walk, sea fishing
33.	Dun Loaghaire, Scotsmans Bay and Seapoint	Dublin	Sailing, cruising, watersports
34.	Portmarnock, Howth, Carrigeen Bay	Dublin	Swimming, walking, sailing, events, kayak, kitesports
35.	River Liffey	Dublin, Kildare, Wicklow	Game fishing, canoeing, events, walking
36.	Aran Islands and waters around Ceathra Rua**	Galway	Sea fishing, diving, swimming, scenic touring, walking
37.	Lough Corrib	Galway	Game fishing
38.	Costello-Fermoyle (Casla)	Galway	Game fishing
39.	Ballynahinch Fishery inc Derryclare and Inagh Lakes	Galway	Game fishing

Map Ref	Name of Water (** = No of Blue Flag Beaches/Marinas in area)	County	Tourism Activity
40.	Cleggan –Inisbofin	Galway	Sea fishing, island visits, cruising
41.	Clifden Harbour	Galway	Kayaking, sailing, sea fishing, waterside walking, scenic touring
42.	Galway Bay*****	Galway, Clare	Scenic touring, swimming, surfing, watersports, coastal cruising,
43.	Dingle Bay****	Kerry	Sea fishing, coastal cruising, diving, sailing, nature tourism
44.	Lakes Of Killarney	Kerry	Scenic viewing, inland cruising, game fishing, canoeing, kayaking
45.	Dingle Peninsula (waters around) Blasket Sound and the Blasket Islands**	Kerry	Sea fishing, swimming, whale and dolphin watching, sailing, watersports, walking,
46.	Portmagee, Skelligs and Valentia Island (waters around)	Kerry	Boat trips, sea fishing, sea kayaking, sailing, cruising
47.	Kenmare Bay/River and Derrynane Bay*	Kerry	Sea fishing, coastal cruising, sailing, watersports, diving, canoeing/kayaking
48.	Tralee Bay***	Kerry	Sea fishing, swimming, kitesports, shore fishing, riding, walking
49.	Lough Currane	Kerry	Game fishing, waterside walking, waterway heritage visits
50.	Cashen/Feale	Kerry	Game fishing, festivals, walking
51.	Doulus Bay, Valentia Harbour and Valentia River*	Kerry	Deep sea fishing, coastal fishing, sailing, watersports, cruising
52.	Ballinskelligs Bay*	Kerry	Shore fishing
53.	Caragh Lake	Kerry	Game fishing, canoeing, sailing, wind surfing
54.	River Laune and Flesk	Kerry	Game fishing, kayaking
55.	River Barrow and Barrow Navigation	Kildare, Carlow, Kilkenny, Laois	Watersports/boat hire/river cruise/coarse fishing/scenic/heritage
56.	The Grand Canal	Laois, Offaly, Kildare, Dublin	Cruising, boat trips, coarse fishing, cycling, walking, canoeing
57.	Shannon Erne Waterway	Leitrim, Cavan	Coarse fishing, cruising, canoeing, walking
58.	River Drowes	Leitrim, Donegal	Game fishing, canoeing
59.	Lough Allen	Leitrim, Sligo, Roscommon	Cruising, watersports, events, fishing, walking
60.	Lough Melvin	Leitrim/ Cavan	Game fishing, watersports, canoeing, sailing, events, boat hire
61.	River Shannon (Lower -Killaloe to Limerick)	Limerick	Cruising, coarse angling, walking, kayaking
62.	River Shannon (Upper – Carrick on Shannon to Lanesborough)	Longford, Roscommon	Cruising, coarse fishing, scenic, water activities

Map Ref	Name of Water (** = No of Blue Flag Beaches/Marinas in area)	County	Tourism Activity
63.	Lough Gowna	Longford, Cavan	Coarse fishing, kayaking, jet skiing
64.	Lough Ree*	Longford, Roscommon, Westmeath	Coarse fishing, cruising, watersports, sailing, walking, wildlife watching
65.	River Inny	Longford, Westmeath	Coarse fishing, kayaking,
66.	The Royal Canal	Longford, Westmeath, Kildare, Meath, Dublin	Cruising, coarse fishing, water activities, walking, events
67.	Boyne and tributaries	Louth, Meath, Kildare	Watersports/boat hire/river cruise/game fishing/scenic/heritage
68.	Carlingford Lough	Louth/NI	Walking, sea fishing, sailing, watersports, scenic
69.	River Moy	Mayo	Game fishing "salmon capital of Ireland"
70.	Clew Bay****	Mayo	Sea fishing, sea trips, yachting, surfing
71.	Loughs Mask and Carra	Mayo	Game fishing, scenic touring, gaeltacht area
72.	Loughs Conn and Cuillin	Mayo	Game fishing, walking
73.	Achill Island (waters around)*****	Mayo	Sea fishing, sea trips, yachting, surfing
74.	Delphi Fishery	Mayo	Game fishing, scenic route
75.	Blacksod Bay	Mayo	Sea fishing
76.	Broadhaven Bay**	Mayo	Sea fishing
77.	Killary Harbour	Mayo, Galway	Scenic touring, adventure/walking, sea fishing
78.	Roonah, Inishturk, Clare Island (waters around)*	Mayo/ Galway	Sea fishing, sea trips, yachting, surfing
79.	Killala Bay and the Moy Estuary*	Mayo/Sligo	Sea fishing, swimming, watersports, kite sports, shore fishing, game fishing, thalassotherapy
80.	Lough Sheelin	Meath, Westmeath, Cavan	Game fishing
81.	Lough Muckno	Monaghan	Coarse fishing, canoeing, watersports
82.	Lough Boora Lakes	Offaly	Coarse & pike fishing, wildlife watching, nature study, walking
83.	Lough Key	Roscommon	Inland cruising, walking, scenic touring, swimming, kayaking, watersports, coarse fishing
84.	River Suck & Tributaries	Roscommon, Galway	Mixed fishing, inland cruising, walking,
85.	Rosses Point	Sligo	Swimming, sailing, cruising, sea fishing
86.	Lough Gill	Sligo/Leitrim	Game fishing
87.	River Suir	Tipperary	Game fishing, rowing, walking route, canoeing

Map Ref	Name of Water (** = No of Blue Flag Beaches/Marinas in area)	County	Tourism Activity
88.	River Nore	Tipperary, Laois, Kilkenny	Game fishing
89.	Dungarvan Harbour*	Waterford	Sea fishing, sailing, water sports
90.	Tramore Beach	Waterford	Sea fishing, water sports,
91.	Copper Coast (waters off)*	Waterford	Scenic, visitor attraction/heritage
92.	Blackwater River	Waterford	Game fishing, river trips, water sports
93.	Ardmore	Waterford	Sea fishing
94.	Waterford Harbour and the tidal sections of the Suir and Barrow	Waterford, Wexford	Cruise ship visits, water sports, tall ships race
95.	Lough Ennell	Westmeath	Coarse fishing, game fishing, watersports, family fun
96.	Lough Owel	Westmeath	Fishing, scenic and water based activities
97.	River Shannon (Mid)	Westmeath, Offaly	Coarse fishing, cruising, sailing, watersports, bird watching, heritage
98.	Kilmore Quay and Saltee Islands*	Wexford	Deep sea fishing, shore fishing, coastal fishing, water sports, scenic, bird watching, coastal cruising, island visit, boat trips
99.	Courtown Harbour and Beaches*	Wexford	Sailing, sea fishing, water sports
100.	Hook Beaches	Wexford	Sea fishing, water sports,
101.	Wexford Harbour, Wexford Bay and Rosslare Bay**	Wexford	Sailing, sea fishing
102.	Glendalough	Wicklow	Scenic, walking, historic
103.	Blessington Lakes	Wicklow	Fishing, watersports, wildlife watching
104.	Brittas Bay**	Wicklow	Scenic, beach, water activities

The overall list of waters once compiled using the project criteria was then compared to the list of blue flag beaches for 2009, as blue flag beaches are considered especially important to domestic tourism. It was found that only 12 of the 77 beaches (2009) were not included in the list of tourism waters. These 12 were not included as they did not constitute waters of national tourism significance when considered on their own i.e. they were not contained within the boundaries of larger water bodies considered nationally significant and were not on their own considered nationally significant. Appendix III clearly identifies which waters contain blue flag beaches within their boundaries.

These top 104 waters were then mapped for their extent and this map (see insert) was used as a basis for extracting data to assess their water quality and the water quality issues associated with them. The results of this assessment are set out in Section 6.

6.0 Water Quality in Ireland's Waters of National Tourism Significance

6.1 Introduction

This Section gives an overview of the aims, methods and results of the water quality review for Ireland's Waters of National Tourism Significance.

The purpose of this exercise was to identify water quality status for each of the waters of national tourism significance, using published and readily available water quality classifications and grades. This information will then be available for use in subsequent discussions to focus attention on water bodies that are impacted or (using the WFD Risk Assessment), those that may be impacted in future by a given pressure.

In addition to this review, more detailed work could be conducted to collate additional information for water bodies of particular interest. For example, in some cases, underlying datasets for specific chemical or biological parameters may be desirable to support a more detailed assessment of water status. In other circumstances, there may be published reports on water quality issues for a given water body. In both cases, it was not appropriate to review such a potentially vast range of information under this project, but some pertinent comments are provided from readily available sources in the full spreadsheet that has been provided to accompany this project. A summary of this spreadsheet is presented in Appendix III of this report.

Water quality monitoring is in a state of transition in EU Member States, as new methods required by the Water Framework Directive (WFD) are introduced. For this reason, the water quality standards reported in this project made use of historical water quality summary data, and data reported under the draft WFD assessment. For each waterbody, the classification of pressures was also collated and provided. For a more detailed overview of the WFD and how it impacts on water quality monitoring in Ireland, the reader should refer to the report – Ireland's Environment 2008. Chapter 5: The Water Framework Directive – A New Management Approach (Kilroy, 2008).

6.1.1 Water Framework Directive (WFD)

The EU Water Framework Directive is the primary legislation governing water management in the EU. This major Directive, which came into force on 22 December 2000, aims to promote common approaches, standards and measures for water management on a systematic and comparable basis throughout Europe. It establishes a new, integrated approach to the protection, improvement and sustainable use of Europe's waters, managed on the basis of natural geographical areas called river basin districts (RBD), of which there are eight in Ireland.

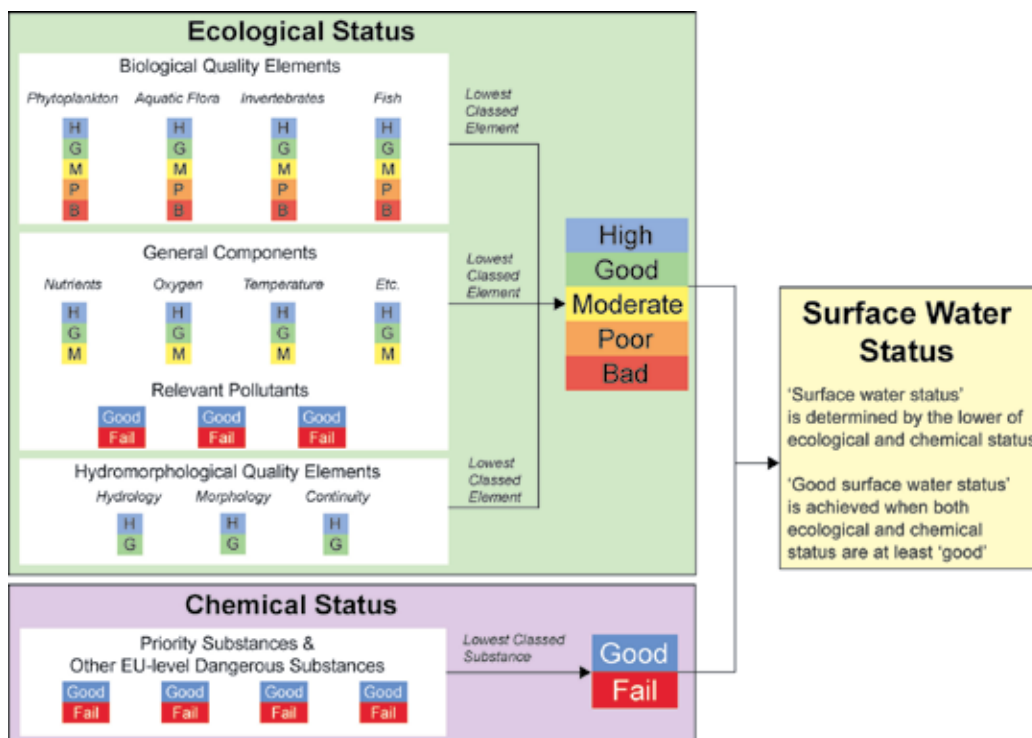
The WFD requires classification of ecological status for all European surface waters. Water bodies based on five quality classes (high, good, moderate, poor, bad). The determination of class for each waterbody is based on the Ecological Quality Ratio (EQR), which is a ratio between reference conditions (defined as those conditions a waterbody of similar characteristics would be expected to achieve if it was not impacted) and measured status of the biological quality elements.

Classification of ecological status is achieved using several quality elements, biological (phytoplankton, macroalgae, benthos and fishes), hydromorphological and physico-chemical, and the status of a site is determined by the lowest value of the respective parameters (Figure 6.1).

The overall requirement of the directive is that all water bodies must achieve "good ecological status" (GES) by 2015 unless there are grounds for derogation. This is the fundamental WFD measurement of water status, and is the main standard reported here when discussing the WFD in relation to water quality in Ireland's tourism waters.

Existing monitoring and classification systems are being used to support the classification, though some may be modified, alongside new methods. In short, water quality monitoring is in a transition phase between historical and WFD methods. For a review of the relationship between recent water quality monitoring and new WFD methods, refer to Kilroy (2008).

Figure 6.1
Overview of how results for different quality elements combine within WFD Ecological Status, Chemical Status and Overall Surface Water Status classifications.(Source: Kilroy, 2008)



Artificial and heavily modified waters (e.g. canals, ports, canalised rivers) may not be able to achieve natural conditions due to their modifications (weirs, locks etc). Instead the target for these waters is 'good ecological potential' (GEP). This is also measured on the scale high, good, moderate, poor and bad. The chemical status of these water bodies is measured in the same way as natural water bodies

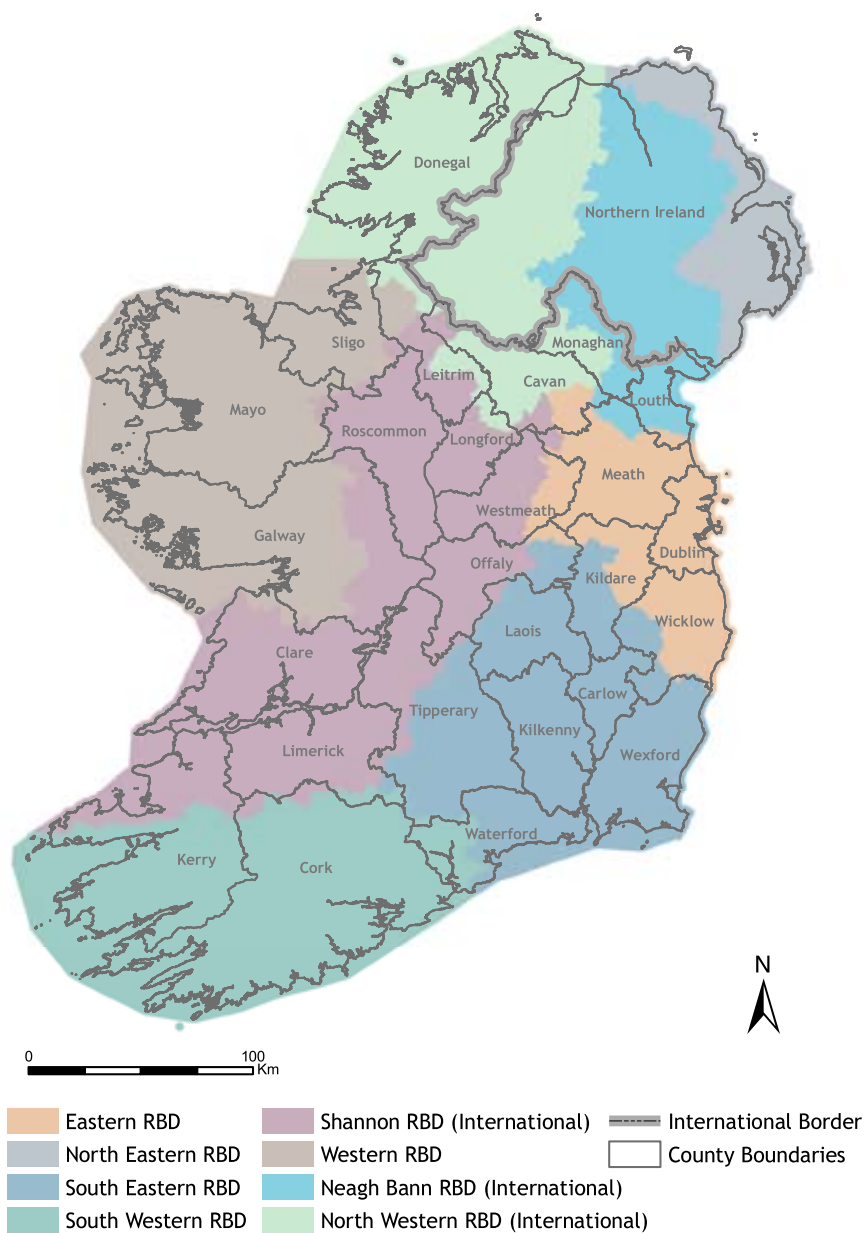
There are eight River Basin Districts in Ireland, as shown in Figure 6.2. As of December 2008, a River Basin Management Plan (RBMP) has been drafted for each RBD to be finalised in 2009. The RBMPs set out the environmental objectives for the district, and the measures that will be required in order to achieve the objectives. The main objectives of each RBD will be to:

- Achieve protected area objectives⁵
- Prevent deterioration of good water quality status
- Restore good status where this does not exist and
- Reduce chemical pollution.

⁵ While all water bodies are important, some require greater protection because they contain sensitive habitats or wildlife, are sources of drinking water, used for bathing, or for harvesting shellfish

These objectives will be reached through a Programme of Measures (POMS) for surface and groundwater within each RBD. The RBMP focuses on achieving the protection, improvement and sustainable use of the water environment including surface freshwaters (lakes, streams and rivers), groundwater, ecosystems such as some wetlands that depend on groundwater, estuaries and coastal waters (out to one nautical mile). The plans will set out the proposed measures to improve water quality to the required standard and achieve the set environmental objectives. The WFD allows Member States, where costs would be disproportionate or where it is not technically feasible to achieve the objectives by 2015, to work on a longer timescale (to 2021 or 2027) or to set lesser objectives, provided certain conditions are met.

Figure 6.2
River Basin Districts of Ireland (Source: Kilroy, 2008)



Note: International River Basin Districts refer to those river basin districts which lie within two or more different countries – in this case the Republic of Ireland and Northern Ireland (UK)

6.2 Study Methodology

The general approach taken in this study can be outlined as follows:

1. Determination of the size and spatial extent (delineation) of the waters of national tourism significance identified, and how these relate to the water quality monitoring system/ units in place under the WFD in Ireland.
2. Sourcing of historical, transitional and current (WFD) water quality data for the 104 waters of national tourism significance.
3. Reviewing historical water quality data to determine trends and how this tied in to the WFD methodology.
4. Assessing the risks and pressures to the waters of national tourism significance; and
5. Presenting, within this report, summary results for each type of water body i.e. rivers, canals, lakes, coastal and transitional.

The study methodology involved using both existing data from the Environmental Protection Agency (e.g. historical grades), and Water Framework Directive sources (e.g. classification, draft status and reported risks).

6.2.1 Delineation of Waters of National Tourism Significance

The waters of national tourism significance identified in Section 5.0 were divided into the following Water Framework Directive (WFD) categories of:

- River
- Canal
- Lough, Lake and Turlough
- Coast
- Transitional (Estuaries)

As part of the RBD management process, all water bodies within the River Basin Districts have been divided into a number of distinct units for monitoring, reporting and assessment purposes. The 104 waters of national tourism significance identified in this report vary in the number of these units they include, with up to five units in some waters.

Data from 211 assessment units (refer to Appendix III) were required to assess the overall water quality for the 104 waters (Table 6.1).

Table 6.1
Waters of national tourism significance and number of WFD units assessed

Waterbody type	Total Tourism Water Bodies	Total WFD Water Units included in the Tourism Waters
Transitional/Estuary	7	19
Coastal	48	86
Lough/Lake	25	39
River	20	63
Canal	4	4
TOTAL	104	211

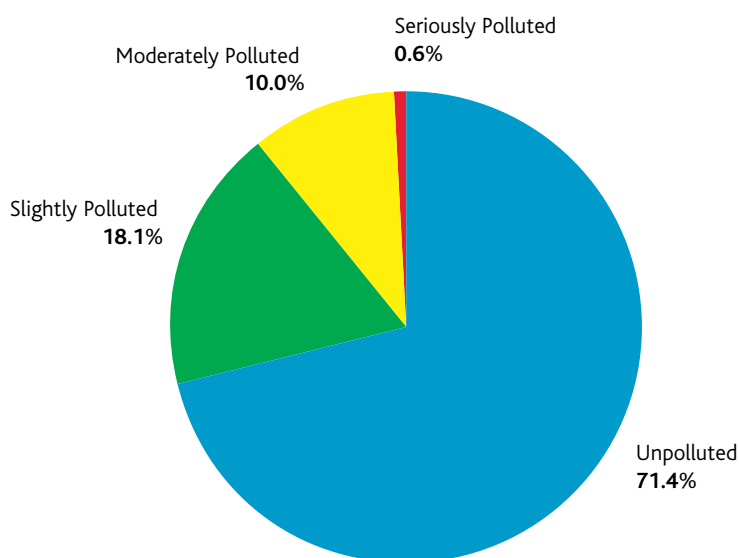
6.2.2 Historic water quality data

Historic (Q Scores) and current (WFD Status) water quality grades were collated for the respective reaches for each waterbody alongside draft WFD Status and Risks. It should be noted that there were sometimes gaps in the reported grades and although there were usually 10-15 years of grades available, there was significant variation in the number of years reported between water bodies. For this reason, a summary has not been provided in this section. The available datasets are however available from Fáilte Ireland upon request.

Historically, water quality in Ireland's rivers has been graded according to a well-documented biological method referred to as a Q Score (see Appendix III).

Until 2006, this was reported as four grades, and these are still used in some recent reports. River quality grades from 2004 to 2006 are shown in Figure 6.3.

Figure 6.3
River Quality 2004-2006 Percentage Channel Length in each Class (all rivers) using historical grades



Source: EPA

From 2006, a five-grade system was used and these are the grades which were available and used in this report to assess water quality in respect of the 104 waters of national tourism significance

6.2.3 Identification of Risks and Pressures to Water Quality Status

Information on draft WFD status of water bodies was sourced primarily from *Water Matters – Help Us Plan* a web-based programme to encourage dissemination of WFD information and to help facilitate consultation (<http://www.wfdireland.ie>). There were some instances where assessment was incomplete, and these are highlighted in the accompanying spreadsheet. For each waterbody unit, a full record of risks was also collated. These are summarised in this report.

In 2005 the EPA published a review of the types of pressures and risks to water bodies, as required under the WFD. The risk categories can be summarised as diffuse or point source pressures, risk from over-abstraction, and morphological risk. The risks identified do not necessary imply that a waterbody will fail to reach Good Ecological Status (GES), but gives a quantitative assessment of the risks to a waterbody from a wide range of factors. The risk categories range from 2b (not at risk) to 1a (at significant risk) as shown in Table 6.2.

Table 6.2
WFD Risk Categories

Risk Category
1a – At Risk
1b – Probably At Risk
2a – Probably Not At Risk
2b – Not At Risk

6.3 Results – Quality Status of Waters of National Tourism Significance

This section sets out the results of the water quality analysis for each of the 104 waters of national tourism significance. The results are presented under the following categories: rivers; canals; lakes & loughs; and coastal & transitional waters. As the 'unit of measurement' for water quality used in this report is the WFD monitoring unit, the analysis of the 104 tourism waters has also been expressed in terms of their 211 constituent monitoring units (see Table 6.1). This has been necessary because a single tourism water body may contain two, three or more WFD monitoring units, all possibly with a different water quality status, thereby rendering it impossible to express an overall water quality status for the entire tourism water body. The three pie charts contained in this section are also presented in terms of WFD monitoring units as opposed to tourism water bodies. A full summary of the water quality of each of the 104 waters of national tourism significance, and their constituent WFD monitoring units, is presented in Appendix III.

6.3.1 Rivers of National Tourism Significance

The 20 rivers of national tourism significance contain 63 WFD monitoring units. Of these monitoring units just 36% meet good or high ecological status (Figure 6.4). The majority of monitoring units in the waters are classified as moderate or poor status and therefore will require measures to restore good ecological status.

Although the analysis of risks under the WFD does not necessarily reflect current status, it can be a useful summary of the likely causes of poor river quality. To this end, 51% of the WFD monitoring units within rivers of national tourism significance are considered to be 'at risk', or 'probably at risk' from point sources (e.g. wastewater or combined sewage overflows etc) while 68% are at similar risk from diffuse sources (e.g. agriculture, roads, forestry etc).

Of those WFD monitoring units currently assessed and classified, 35% were considered to be at risk from morphological pressures (canalisation, impoundment).

6.3.2 Canals of National Tourism Significance

Four canals are included in the list of waters of national tourism significance. Of these, the Shannon-erne Waterway and the Barrow Navigation meet good ecological potential (GEP), while the Royal Canal meets GEP in the Lough Owel feeder and east of Lough Owel, but does not currently meet GEP to the west of Lough Owel due to restoration works.

The Grand Canal does not meet the standard of Good Ecological Potential, however, a number of key measures have been identified to restore GEP, such as the elimination of surface water outfalls (where possible) and controls on diffuse pollution.

6.3.3 Lakes and Loughs of National Tourism Significance

Twenty-five lakes and loughs were identified as waters of national tourism significance. These contained a total of 39 WFD monitoring units. In common with rivers, the majority (56%) of these units were classified as being of moderate ecological status, with 6% as poor or bad status. Approximately 33% met either good or high ecological status (Figure 6.5).

Figure 6.4
Draft WFD Status of WFD monitoring units within Rivers of National Tourism Significance⁶

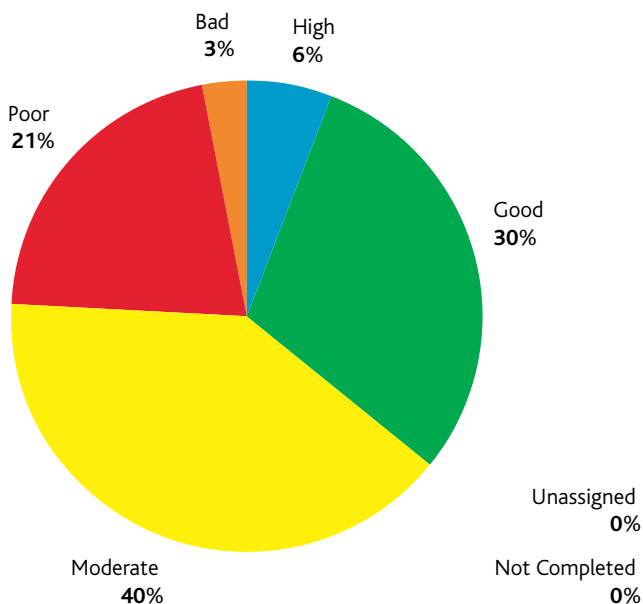
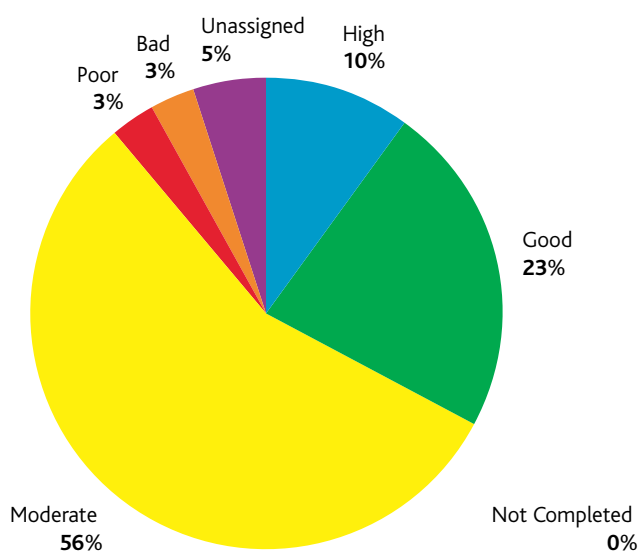


Figure 6.5
Draft WFD Status of WFD monitoring units within Lakes and Loughs of National Tourism Significance



The majority (92%) of WFD monitoring units within the lakes and loughs of national tourism significance were not at risk from point sources, though 28% were considered probably at risk from diffuse sources.

Two of the waters (Lough Ree and Lough Derg) include designated Blue Flag Beaches.

⁶ In some instances, for example where large water bodies exist, it was decided due to the lack of monitoring data within some of these water bodies, it would not be satisfactory to base the status result on one monitoring location and therefore the EPA opted to use an "unassigned" category or "not completed" category. It is understood that attention is being given to these water bodies for the an classification of water bodies in the Final RBMP

6.3.4 Coastal and Transitional Waters of National Tourism Significance

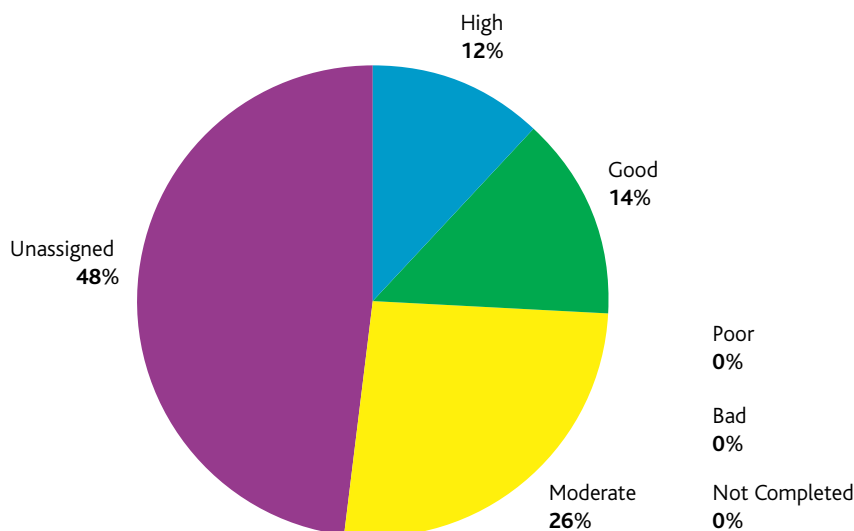
Fifty-five coastal and transitional water bodies were included in the 104 waters of national tourism significance. These contained some 105 WFD monitoring units. Just under half of the monitoring units (48%) have not yet been assigned a status under the Water Framework Directive programme. Twenty-six percent were assessed as 'good' or 'high' status, with a further 26% assigned moderate status (Figure 6.6).

Just over half (52%) of the 105 of WFD monitoring units within the coastal and transitional waters of national tourism significance are considered to be at risk or probably at risk. Point sources were assessed as the main risk type (22% of assessed WFD monitoring units) while 16% were also considered to be at risk from diffuse sources.

In terms of historical monitoring, the majority of coastal waters for which there were data were classed as unpolluted or intermediate⁷, although a large number were not assessed. For estuarine waters, the situation was similar, although two sites deserve attention due to both historical and WFD water quality monitoring classifications. The Lower Bandon Estuary was considered to be eutrophic, and is also assessed as being of 'moderate' water quality status under the WFD, while the Middle Suir Estuary was considered to be potentially eutrophic and is classified as being of 'moderate' status under the WFD.

Thirty-seven coastal and three transitional water bodies contained a total of 63 Blue Flag Beaches. Only one bathing water (Clifden Bay, Galway), failed to meet EU mandatory bathing water standards and the majority met guide values.

Figure 6.6
Draft WFD Status of WFD monitoring units within Coastal and Transitional Waters of National Tourism Significance



⁷ Intermediate water bodies are those that breach just one criteria out of the three that are required for eutrophic conditions.

6.4 Water Quality Issues for Tourism

The process of identifying water quality and water quality risks in relation to the waters of national tourism significance has identified the challenges to rivers, lakes and canals in particular. In general terms, where there is a significant tourism use and economic impact, measures need to be taken to restore and protect the water quality status of these water bodies.

The trophic status of waters (their nutrient levels) has a strong influence on the capacity of a water body to support game fish including salmon. In general eutrophic lakes and hypertrophic lakes, where this is not their natural state, are unlikely to continue to support any game fishing activity in the medium and long terms. Algal blooms can occur and can lead to closure of the waters for recreational purposes.

The solutions lie in reducing nutrient inputs (mainly phosphates in inland waters and nitrates in coastal waters) from settlements (sewage outfalls) and from surrounding farms (fertilising fields that already have high nutrient levels).

Water contact sports such as surfing, canoeing, dinghy sailing, windsurfing and swimming are particularly sensitive to water quality and water appearance in both inland and coastal waters. Such sports cannot responsibly be promoted where water quality is challenged, with consequent impacts on both domestic holidays and overseas tourism. This is principally a human health issue related to bacteria and viruses in waters due to sewage contamination. Testing and monitoring of designated bathing waters in coastal and inland waters and in particular at Blue Flag Beaches addresses this issue, but a wider range of sites that support specialist water activities with appeal to visitors remain untested.

Heavily modified water bodies such as canals cannot easily flush out nutrient or pollution loads, so where these are important for tourism, such as the Shannon Erne, Royal and Grand Canals, and the Barrow line, particularly stringent controls are required to ensure that pollutants and excessive nutrients do not enter the water. The tourism industry may in some places be a contributor itself to water quality issues and needs to ensure that it adopts stringent measures not to pollute the waters that form a critical part of the attraction.

Whilst this study has identified that many of Ireland's waters of national tourism significance have good ecological status or potential there are many that fall below this standard. If Ireland is to retain its reputation as a destination with quality countryside suitable for activities this aspect of the product needs to be addressed.

7.0 List of Consultees

The study team would like to thank the following people who contributed significantly to the study:

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8.0 References

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Appendix I

Methodology Options Paper

Appendix I – Initial options for a scheme to identify Irish waters of national tourism significance.

Options	Type of scheme	Examples of such a scheme	Potential measures suggested	Potential Positive aspects	Potential Negative aspects
1	Threshold level Scheme	e.g. Nature conservation designations e.g. NHA, SPA, SAC – based on % of population of national species/habitat % of European population of a species	% of all Irish tourism businesses located around the shores % of all visitors to Ireland attracted to shores Threshold number of visits Extent (in inland waters)	Relative objectivity and clarity – easy to communicate criteria	Data issues Relationship between the visit and the water as a reason for the visit not always clear. Based on current performance with no method of registering potential or planned development.
2.	Rank Ordered Scheme	e.g. New Zealand scheme	Listing of waters in order of importance (no of tourism visits or number of businesses supported) with top waters (say top 10%) identified as nationally important for tourism	Clear and objective scheme. Allows waters to aspire to move higher in the ranking and provides objective criterion. (This scheme was finally decided upon as the most appropriate for this project)	Data issues Relationship between the visit and the water as a reason for the visit not always clear. Based on current performance with no method of registering potential or planned development.
3.	Market value or priority based scheme. Possible subdivision by market and activity	n/k	Based on extent to which the water attracts and satisfies Fáilte Ireland and TIL priority markets and underpins the product E.g. Nationally important for Sightseers and Culture Seekers or key niche markets: Watersports, Cruising Game angling, Coarse fishing Sports tourism etc	Sends strong market signals as well as highlighting need for protection. Communicates specific importance for specific markets. Clear and targeted method. Integrated with strategic planning for markets and product development.	Complex Difficulty in comparing waters Less objective and more judgement based than other methods

Appendix II

Checklist of Activity Types Contributing to Scoring

Appendix II Checklist of activity types contributing to scoring

Checklist water activities	Checklist waterside activities
Inland Cruising	Waterside or marine attraction (e.g. thalassotherapy, maritime museum, aquarium)
Coastal cruising (yacht or motorboat/RIB)	Family fun facility (e.g. indoor or outdoor waterpark, amusements, play areas, children's activity, summer camp)
Game angling	Beach horse riding/pony trekking
Sea Angling	Kiteboarding
Shore Angling	Walking
Coarse fishing	Beach activities
Surfing	Waterside events and festivals
Sub aqua	Wildlife watching/nature study
Swimming	Beach horse racing (formal event)
Kayaking and Canoeing	
Jet skiing	
Water skiing/wakeboard	
Boat trips and island visits	
Kitesurfing	
Windsurfing	
Keelboat sailing	
Dinghy sailing	
Waterbased and waterside events	
Sports tourism events	
Wildlife Watching (on water)	
Rowing and gig racing	

Appendix III

Summary Water Quality Table

Summary Water Quality Information for Top 100 Ranked Irish Waters for Tourism

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
1	Lough	Lough Oughter	Oughter (Lough) Oughter (Lough)	Cavan	North Western	Hypertrophic Hypertrophic	Moderate Moderate		
2	Coastal	Cliffs of Moher (waters around) and Liscannor Bay	Shannon Plume (HAs 27;28)	Clare	Shannon	N/A	Unassigned	N/A	
			Liscannor Bay			N/A	Unassigned	Compliant with EU Guide Values	Lahinch
3	Lough	Mullaghmore Turilough (Burren National Park)		Clare	Shannon	N/A	Unassigned		
4	Coastal	Loop Head (waters around) and Kilkee Bay	Shannon Plume (HAs 27;28)	Clare	Shannon	N/A	Unassigned	Compliant with EU Guide Values	Kilkee
			Southwestern Atlantic Seaboard (HA 23)			N/A	Unassigned	N/A	
			Mouth of the Shannon (HAs 23;27)			N/A	High	N/A	
5	Coastal	Shannon Estuary	Upper Shannon Estuary	Clare, Limerick, Kerry	Shannon	Unpolluted	Good	N/A	
			Lower Shannon Estuary			Unpolluted	Moderate	N/A	
			Mouth of the Shannon (HAs 23;27)			N/A	High	Compliant with EU Guide Values	Kilrush, Ballybunion North, Ballybunion South
6	Lough	Lough Derg	Derg (Lough)	Clare, Tipperary, Galway	Shannon	Oligotrophic/ Mesotrophic	Moderate		Ballycuggeran, Mountshannon
			Derg (Lough) pHMWB			N/A	Moderate		
7	Transitional	Glandore Harbour and Union Hall	Glandore Harbour	Cork	South Western	N/A	Moderate	N/A	
8	Coastal	Kinsale Harbour	Kinsale Harbour	Cork	South Western	Intermediate	Good	N/A	
9	River	River Blackwater (Munster)	SW_Blackwater190MunsterMain_Blackwater_4Upper	Cork	South Western	N/A	Moderate		
			SW_Blackwater190MunsterMain_Blackwater_3Mid			N/A	Moderate		
			SW_Blackwater190MunsterMain_Blackwater_2Mid			N/A	Poor		
			SW_Blackwater190MunsterMain_Blackwater_1Lower			N/A	Moderate		

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
10	Coastal	Youghal Bay and Estuary	Youghal Bay	Cork	South Western	Unpolluted	Good	Compliant with EU Guide Values	
			Lower Blackwater M Estuary/ Youghal Harbour			Eutrophic	Moderate	N/A	
11	Coastal	Ballycotton Bay	Ballycotton Bay	Cork	South Western	N/A	Good	Compliant with EU Guide Values	Garrywoe
12	Coastal	Clonakilty Bay	Clonakilty Harbour	Cork	South Western	N/A	Moderate	N/A	
13	Coastal	Courtmacsherry Bay	Courtmacsherry Bay	Cork	South Western	N/A	Unassigned	Compliant with EU Guide Values	Garretstown, Garrylucas
14	Transitional	Bandon River and Estuary	Lower Bandon Estuary	Cork	South Western	Eutrophic	Moderate	N/A	
15	Coastal	Barleycove	Southwestern Atlantic Seaboard (HAs 21;22)	Cork	South Western	N/A	Unassigned	Compliant with EU Guide Values	Barleycove
16	Coastal	Cork Harbour	Cork Harbour	Cork	South Western	Intermediate	Moderate	N/A	
			Outer Cork Harbour			N/A	Good	Compliant with EU Mandatory Values	
			Lough Mahon			Potentially Eutrophic	Good	Not Completed	
17	Coastal	Beara Peninsula (waters around)	Outer Kenmare River	Cork	South Western	N/A	High	N/A	
			South Western Atlantic Seaboard (HAs 21;22)			N/A	Unassigned	N/A	
			Outer Bantry Bay			N/A	Unassigned	N/A	
			Berehaven			N/A	High	N/A	
18	Coastal	Bantry Bay	Inner Bantry Bay	Cork	South Western	N/A	High	N/A	
			Outer Bantry Bay			N/A	Unassigned	N/A	
19	Transitional	Baltimore Harbour, Clear and Sherkin Island, Schull and Roaringwater Bay	Illen Estuary	Cork	South Western	N/A	Good	N/A	
			Roaring Water Bay			N/A	Unassigned	N/A	
20	River	River Bandon	SW_Bandon229_Bandon_4Upper	Cork	South Western	N/A	Moderate	N/A	
			SW_Bandon229_Bandon_3Mid			N/A	Moderate		
			SW_Bandon229_Bandon_2Mid			N/A	Moderate		
			SW_Bandon229_Bandon_1Lower			N/A	Moderate		

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
21	Coastal	Lough Hyne and Tragumna Bay	Western Celtic Sea (HAs 18;19;20)	Cork	South Western	N/A	Unassigned	Compliant with EU Guide Values	Tragumna
22	Coastal	Sheephaven Bay	Sheephaven Bay	Donegal	North Western	N/A	High	Compliant with EU Guide Values	Marble Hill, Killahooley
23	Coastal	Arainn Mor (waters around) and Burtonport	Northwestern Atlantic Seaboard	Donegal	North Western	N/A	Unassigned	N/A	
24	Coastal	Toraigh (Tory Island) (waters around) inc Magheroarty, Inisbofinne	Rutland Sound Tory Island Waters	Donegal	North Western	N/A	Unassigned	N/A	
25	Coastal	Lough Swilly	Northwestern Atlantic Seaboard Lough Swilly	Donegal	North Western	N/A	Unassigned	N/A	
26	Coastal	Culdaff Bay	Northern Atlantic Seaboard (HAs 40;02)	Donegal	North Western	N/A	Unassigned	Compliant with EU Guide Values	Culdaff
27	Lough	Lough Beagh (Glenveagh National Park)	Veagh Upper (Lough) Veagh Lower (Lough)	Donegal	North Western	Oligotrophic/ Mesotrophic	High	Compliant with EU Guide Values	Portsalon, Lisfannon
28	Coastal	Lough Foyle	Lough Foyle Foyle and Faughan Estuaries	Donegal	North Western	N/A	Moderate	N/A	Stroove
29	Coastal	Donegal Bay	Donegal Bay Northern Donegal Bay Southern Donegal Bay (Erne)	Donegal, Sligo	North Western	N/A	Unassigned	Compliant with EU Guide Values	Fintra, Bundoran, Mullaghmore
30	Coastal	Dublin Bay	Inner Donegal Bay Dublin Bay	Dublin	Eastern	N/A	Moderate	Compliant with EU Guide Values	Murvagh, Rossnowlagh
31	River	River Liffey (tidal section)	Liffey Estuary Upper EA_Liffey168_Liffey1_Lower	Dublin	Eastern	Q2-3, Q3 - Poor Status	Poor		Dollymount Strand
31	Transitional	River Liffey (tidal section)	Liffey Estuary Lower Liffey Estuary Upper	Dublin	Eastern	Intermediate	Moderate	N/A	
						Intermediate	Moderate	N/A	

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
32	Coastal	Malahide Estuary	Malahide Bay	Dublin	Eastern	Intermediate	Moderate	Compliant with EU Mandatory Values	
33	Coastal	Dun Loaghaire, Scotsmans Bay and Seapoint	Broadmeadow Water Dublin Bay	Dublin	Eastern	Eutrophic Unpolluted	Moderate Moderate	N/A N/A	
34	Coastal	Portmarnock, Howth, Carrigeen Bay	Irish Dublin Sea	Dublin	Eastern	N/A	Moderate	Compliant with EU Mandatory Values	
35	River	River Liffey	Mayne Estuary EA_Liffey168_Liffey5_Upper	Dublin, Kildare, Wicklow	Eastern	N/A Q4-5, Q5 - High Status	Moderate High	N/A	
			EA_Liffey168_Liffey4			No Monitoring Site	Good		
			EA_Liffey168_Liffey3			Q4 - Good Status	Moderate		
			EA_Liffey168_Liffey2			No Monitoring Site	Good		
			EA_Liffey168_Liffey1_Lower			Q2-3, Q3 - Poor Status	Poor		
36	Coastal	Aran Islands and waters around Ceathra Rua	Aran Islands, Galway Bay, Connemara (HAS 29:31)	Galway	Western	N/A	Unassigned	Compliant with EU Guide Values	Tra an Doilin (Coral Beach), Cill Muirbhithe
37	Lough	Lough Corrib	Corrib Upper (Lough) Corrib Lower (Lough)	Galway	Western	Oligotrophic/ Mesotrophic	Moderate		
38	River	Costello-Fermoyle (Casla)	Derrykyle, Trib of Cashla	Galway	Western	Oligotrophic/ Mesotrophic	Moderate		
39	Lough	Ballynahinch Fishery inc Derryclare and Inagh Lakes	Derrykyle, Trib of Cashla Knockadoagh, Trib of Cashla Ballynahinch Lake	Galway	Western	N/A Oligotrophic/ Mesotrophic	High High		
			Derryclare Lough			Oligotrophic/ Mesotrophic	Good		
			Inagh (Lough)			Oligotrophic/ Mesotrophic	Good		
40	Coastal	Cleggan-Inisbofin	Western Atlantic Seaboard	Galway	Western	N/A	Unassigned	N/A	
41	Coastal	Clifden Harbour	Clifden Bay	Galway	Western	N/A	Moderate	Non-Compliant with EU Guide and Mandatory Values	

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
42	Coastal	Galway Bay	Inner Galway Bay North Inner Galway Bay South Outer Galway Bay	Galway, Clare	Western	Unpolluted N/A N/A	Good Good Unassigned	Compliant with EU Guide Values Compliant with EU Guide Values Compliant with EU Guide Values	Salthill, Silverstrand Traught
			Aran Islands, Galway Bay, Connemara (HAs 29;31) Shannon Plume (HAs 27;28)			N/A N/A	Unassigned Unassigned	Compliant with EU Guide Values Compliant with EU Guide Values	Ceibh an Speideal, Tra Mor Coill Rua Fanore
43	Coastal	Dingle Bay	Outer Dingle Bay	Kerry	South Western	N/A	Unassigned	Compliant with EU Guide Values	Ceann Tra (Ventry), Inch, Kells, Rossbeigh
44	Lough	Lakes of Killarney	Upper Lough Muckross Lake Lough Leane	Kerry	South Western	Oligotrophic/ Mesotrophic Oligotrophic/ Mesotrophic Moderately Eutrophic	High Moderate Moderate		
45	Coastal	Dingle Peninsula (waters around) Blasket Sound and the Blaskets	South Western Atlantic Seaboard (HAs 21;22) Outer Dingle Bay	Kerry	South Western	N/A N/A	Unassigned Unassigned	N/A Compliant with EU Guide Values	Ceann Tra (Ventry), Inch
46	Coastal	Portmagee, Skelligs and Valentia Island (Waters Around)	Valencia Harbour Portmagee Channel South Western Atlantic Seaboard (HAs 21;22)	Kerry	South Western	N/A N/A N/A	Unassigned Unassigned Unassigned	N/A N/A N/A	
47	Coastal	Kenmare Bay/River and Derrynane Bay	Inner Kenmare River Outer Kenmare River South Western Atlantic Seaboard (HAs 21;22)	Kerry	South Western	N/A N/A N/A	High Unassigned Unassigned	N/A N/A Compliant with EU Guide Values	Derrynane
48	Coastal	Tralee Bay	Inner Tralee Bay Outer Tralee Bay	Kerry	Shannon	Unpolluted N/A	Good Unassigned	Compliant with EU Guide Values Compliant with EU Guide Values	Fenit Banna, Ballyheigue

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
49	Lough	Lough Currane	Currane (Lough)	Kerry	South Western	Oligotrophic/Mesotrophic	Moderate		
50	River	Cashen/Feale	SH_Feale_FealeMAIN_4Upper SH_Feale_FealeMAIN_3Upper SH_Feale_FealeMAIN_2Mid SH_Feale_FealeMAIN_1Lower	Kerry	Shannon	Q4 - Good Status Q4 - Good Status Q4 - Good Status Q4 - Good Status	Good Good Good Good		
50	Transitional	Cashen/Feale	Cashen Upper Feale Estuary	Kerry	Shannon	Intermediate Intermediate	Moderate Moderate	N/A N/A	
51	Coastal	Doulus Bay, Valentia Harbour and Valentia River	Valentia Harbour	Kerry	South Western	N/A	Unassigned	Compliant with EU Guide Values	White Strand Cahersiveen
			South Western Atlantic Seaboard (HAS 21;22)			N/A	Unassigned	Compliant with EU Guide Values	
52	Coastal	Ballinskelligs Bay	Ballinskelligs Bay	Kerry	South Western	N/A	Unassigned	Compliant with EU Guide Values	Ballinskelligs
53	Lough	Caragh Lake	Caragh (Lough)	Kerry	South Western	Oligotrophic/Mesotrophic	Moderate		
54	River	River Laune and Flesk	SW_Laune207Flesk_Flesk_2Upper SW_Laune207Flesk_Flesk_1Lower SW_Laune207Main_1Laune	Kerry	South Western	Q4 - Good Status Q4 - Good Status Q4-5, Q5 - High Status	High Poor Moderate		
55	River	River Barrow and Barrow Navigation	SE_BarrowMain_Barrow_5 SE_BarrowMain_Barrow_4 SE_BarrowMain_Barrow_3 SE_BarrowMain_Barrow_2 SE_BarrowMain_Barrow_1	Kildare, Carlow, Kilkenny, Laois	South Eastern	N/A N/A N/A N/A Q3-4 - Moderate Status	Moderate Poor Good Poor Good		
55	Canal	River Barrow and Barrow Navigation	River Barrow and Barrow Navigation	Kildare, Carlow, Kilkenny, Laois	South Eastern	N/A	Good Ecological Potential		
56	Canal	Grand Canal	Grand Canal	Laois, Offaly, Kildare, Dublin	Eastern, Shannon	N/A	Poor Ecological Potential		
57	Canal	Shannon Erne Waterway	Shannon Erne Waterway	Leitrim, Cavan	North Western	N/A	Good Ecological Potential		
58	River	River Drowes	NW_Drowes121_DrowesTRIB_Tullaghan	Leitrim, Donegal	North Western	N/A	Good		

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
59	Lough	Lough Allen	Allen (Lough)	Leitrim, Sligo, Roscommon	Shannon	Oligotrophic/Mesotrophic	Moderate		
60	Lough	Lough Melvin	Melvin (Lough)	Leitrim, Cavan	North Western	Oligotrophic/Mesotrophic	Moderate		
61	River	River Shannon (Lower-Killaloe to Limerick)	SH_ShannonLower_ShannonMAIN_2Lower	Limerick	Shannon	N/A	Good		
62	River	River Shannon (Upper-Carrick on Shannon to Lanesborough)	SH_ShannonUpper_ShannonMAIN_9Upper	Longford, Roscommon	Shannon	No Monitoring Site	Good		
			SH_ShannonUpper_ShannonMAIN_8Upper			Q4 - Good Status	Good		
			SH_ShannonUpper_ShannonMAIN_7Upper			Q3-4 - Moderate Status	Moderate		
			SH_ShannonUpper_ShannonMAIN_6Upper			Q2-3, Q3 - Poor Status	Poor		
63	Lough	Lough Gowna	Gowna (Lough)	Longford, Cavan	North Western	Hypertrophic	Poor		
64	Lough	Lough Ree	Lough Ree	Longford, Roscommon, Westmeath	Shannon	Oligotrophic/Mesotrophic	Moderate		Quigley's Marina Killnure Point
65	River	River Inny	SH_Inny_InnyMAIN_3Upper	Longford, Westmeath	Shannon	N/A	Moderate		
			SH_Inny_InnyMAIN_2Mid			N/A	Moderate		
			SH_Inny_InnyMAIN_1Lower			N/A	Moderate		
66	Canal	The Royal Canal		Longford, Westmeath, Kildare, Meath, Dublin	Eastern, Shannon	N/A	Good Ecological Potential		
67	River	Boyne and tributaries	EA_Boyne159Main_Boyne4_Upper	Louth, Meath, Kildare	Eastern	N/A	Bad		
			EA_Boyne159Main_Boyne3			N/A	Moderate		
			EA_Boyne159Main_Boyne2			N/A	Moderate		
			EA_Boyne159Main_Boyne1_Lower			N/A	Moderate		
68	Coastal	Carlingford Lough	Carlingford Lough	Louth, Northern Ireland	Neagh Bann	N/A	Moderate	N/A	
69	River	River Moy	WE_Moy_Moy_Mullaun	Mayo	Western	N/A	Good		
			WE_Moy_Moy_Dromada(Duke)			N/A	Good		
			WE_Moy_Moy_TawnaghBeg			N/A	Good		
			WE_Moy_Moy_Rathbaunl (EDMountFalcon)			N/A	Moderate		
70	Coastal	Clew Bay	Clew Bay	Mayo	Western	N/A	Unassigned	Compliant with EU Guide Values	Bertra, Old Head, Carrowmore, Multranny

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
71	Lough	Loughs Mask and Carra	Mask (Lough)	Mayo	Western	Oligotrophic/Mesotrophic	Good		
			Carra (Lough)			Oligotrophic/Mesotrophic	Moderate		
72	Lough	Loughs Conn and Cullin	Conn (Lough)	Mayo	Western	Oligotrophic/Mesotrophic	Moderate		
			Cullin (Lough)			Oligotrophic/Mesotrophic	Moderate		
73	Coastal	Achill Island (waters around)	South Western Atlantic Seaboard (HAs 21;22)	Mayo	Western	N/A	Unassigned	Compliant with EU Guide Values	Doega, Keel, Keem
			Blacksod Bay			N/A	Unassigned	Compliant with EU Guide Values	Doogort, Golden Strand
			Blacksod Bay SW/Achill Sound			N/A	Good	N/A	
74	River	Delphi Fishery	WE_Bundorragha_Glencullin_Glencullin	Mayo	Western	No Monitoring Site	Moderate		
			WE_Bundorragha_Bundorragha			N/A	Moderate		
74	Lough	Delphi Fishery	Fin Lough	Mayo	Western	Oligotrophic/Mesotrophic	Good		
			Doo Lough			Oligotrophic/Mesotrophic	Good		
			Glencullin Lough			Oligotrophic/Mesotrophic	High		
			Townyard Lough			N/A	Good		
75	Coastal	Blacksod Bay	Blacksod Bay	Mayo	Western	N/A	Unassigned	Compliant with EU Guide Values	
76	Coastal	Broadhaven Bay	Broadhaven	Mayo	Western	N/A	High	Compliant with EU Guide Values	Ella Bay, Mullaghroe
			Belmullet Bay			N/A	High	N/A	
77	Transitional	Killary Harbour	Killary Harbour	Mayo, Galway	Western	N/A	High	N/A	
78	Coastal	Roonagh, Inishturk, Clare Island	Clew Bay	Mayo, Galway	Western	N/A	Unassigned	Compliant with EU Guide Values	Clare Island
			Western Atlantic Seaboard (Has 32;33;34)			N/A	Unassigned	Compliant with EU Guide Values	
79	Coastal	Killala Bay, Enniscrone and the Moy Estuary	Killala Bay	Mayo, Sligo	Western	Unpolluted	High	Compliant with EU Guide Values	Ross Strand, Enniscrone
			Moy Estuary			Unpolluted	Moderate	Compliant with EU Guide Values	
80	Lough	Lough Sheelin	Sheelin (Lough)	Meath, Westmeath, Cavan	Shannon	Moderately Eutrophic	Moderate		

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
81	Lough	Lough Muckno	Muckno (Lough) or Blayney Castle Lake	Monaghan	Neagh Bann	Hypertrophic	Bad		
82	Lough	Lough Boora Lakes	Key (Lough)	Offaly	Shannon	N/A	Unassigned		
83	Lough	Lough Key		Roscommon	Shannon	Oligotrophic/Mesotrophic	Moderate		
84	River	River Suck & Tributaries	SH_Suck_SuckMAIN_3Upper	Roscommon, Galway	Shannon	Q4-5, Q5 - High Status	Good		
			SH_Suck_SuckMAIN_2Upper			Q3-4 - Moderate Status	Good		
			SH_Suck_SuckMAIN_1LowerUpper			Q2-3, Q3 - Poor Status	Poor		
85	Coastal	Rosces Point	Sligo Bay	Sligo	Western	Unpolluted	High	Compliant with EU Mandatory Values	
86	Lough	Lough Gill	Gill (Lough)	Sligo, Leitrim	Western	Oligotrophic/Mesotrophic	Moderate		
87	River	River Suir	SE_SuirMain_Suir_4 SE_SuirMain_Suir_3	Tipperary	South Eastern	Q4 - Good Status	Good		
			SE_SuirMain_Suir_2			Q2-3, Q3 - Poor Status	Poor		
			SE_SuirMain_Suir_1			Q3-4 - Moderate Status	Poor		
88	River	River Nore	SE_NoreMain_Nore_4 SE_NoreMain_Nore_3 SE_NoreMain_Nore_2 SE_NoreMain_Nore_1	Tipperary, Laois, Kilkenny	South Eastern	N/A	Moderate		
			Dungarvan Harbour	Waterford	South Eastern	Unpolluted	Moderate	Compliant with EU Guide Values	Clonea Bay
89	Transitional	Dungarvan Harbour		Waterford	South Eastern	Unpolluted	Moderate	Compliant with EU Guide Values	
90	Coastal	Tramore Beach	Tramore Bay	Waterford	South Eastern	N/A	Unassigned	Compliant with EU Guide Values	
91	Coastal	Copper Coast (waters off)	Eastern Celtic Sea (HAS 13;17)	Waterford	South Eastern	N/A	Unassigned	Compliant with EU Guide Values	Bunmahon
92	River	Blackwater River	SE_SuirBlackwater_Blackwater_Upper SE_SuirBlackwater_Blackwater_Lower	Waterford	South Eastern	Q3-4 - Moderate Status	Moderate		
			Eastern Celtic Sea	Waterford	South Eastern	Q3-4 - Moderate Status	Moderate		
93	Coastal	Ardmore	Eastern Celtic Sea	Waterford	South Eastern	N/A	Unassigned	Compliant with EU Mandatory Values	

Map Ref	Type	Name of Water	Waterbody	County	WFD RBD	Water Quality 2005 (Q score)	WFD Status	Bathing Water Quality (2001 - 2005)	Blue Flag Beach Name
94	Transitional	Waterford Harbour and the tidal sections of the Suir and Barrow	Middle Suir Estuary	Waterford, Wexford	South Eastern	Potentially Eutrophic	Moderate	N/A	
			Lower Suir Estuary (Little Island - Cheekpoint)			Intermediate	Good	N/A	
			Barrow Suir Nore Estuary			Intermediate	Moderate	Compliant with EU Mandatory Values	
			Waterford Harbour			Unpolluted	Good	Compliant with EU Guide Values	
95	Lough	Lough Ennell	Ennell (Lough)	Westmeath	Shannon	Oligotrophic/Mesotrophic	Good		
96	Lough	Lough Owel	Owel (Lough)	Westmeath	Shannon	Oligotrophic/Mesotrophic	Moderate		
97	River	River Shannon (Mid - Athlone to Portumna)	SH_ShannonLower_ShannonMAIN_5Upper	Westmeath, Offaly	Shannon	N/A	Poor		
			SH_ShannonLower_ShannonMAIN_4Lower			No Monitoring Site	Poor		
			SH_ShannonLower_ShannonMAIN_3Lower			No Monitoring Site	Good		
98	Coastal	Kilmore Quay and Saltee Islands	Eastern Celtic Sea (HAs 13;17)	Wexford	South Eastern	N/A	Unassigned	N/A	Marina Kilmore Quay
99	Coastal	Courtown Harbour and Beaches	Southwestern Irish Sea (HAs 11;12)	Wexford	South Eastern	N/A	Unassigned	Compliant with EU Guide Values	Courtown
100	Coastal	Hook Beaches	Waterford Harbour	Wexford	South Eastern	Unpolluted	Good	Compliant with EU Guide Values	
			Eastern Celtic Sea			N/A	Unassigned	N/A	
101	Transitional	Wexford Harbour, Wexford Bay and Rosslare Bay	Wexford Harbour	Wexford	South Eastern	Unpolluted	Moderate	N/A	
			Southwestern Irish Sea (HAs 11;12)			N/A	Unassigned	Compliant with EU Guide Values	Curraclaoe, Rosslare Strand
102	Lough	Glendalough	Glendalough Upper Lake	Wicklow	Eastern	Oligotrophic/Mesotrophic	High		
			Glendalough Lower Lake			Oligotrophic/Mesotrophic	Good		
103	Lough	Blessington Lakes	Pollaphuca Reservoir	Wicklow	Eastern	N/A	Moderate		
104	Coastal	Brittas Bay	Southwestern Irish Sea - Brittas Bay (HA 10)	Wicklow	South Eastern	N/A	Unassigned	Compliant with EU Guide Values	Brittas Bay North, Brittas Bay South

Appendix IV

Background to water quality assessment in Ireland

1.1 Rivers

Historical water quality data was obtained from the EPA Quality Rating System (referred to as the Q-value system). This system has been used to assess river quality nationally since 1971. Long-term trends can be determined and comparisons made between different parts of the country. The results of the individual ecological assessments are condensed into a biotic index–EPA Quality Rating System for ease of understanding. Up to 2006, a four-class system was used in reporting the results nationally, but from 2007 onwards a five-class system replaced the four-class system. A new class was created by dividing the existing Class A (unpolluted) category into two new classes – High Status and Good Status waters – in compliance with the Water Framework Directive (WFD) classification requirements. These have already been inter-calibrated at European level for a range of biological quality elements to ensure comparability between Irish river status assessments and those of other countries (McGarrigle *et al.*, 2008).

1.1.1 Delineation of waters and Use of Historical Data

Firstly, WFD river monitoring units for each river of national tourism significance were identified using the map viewer available on www.wfdireland.ie. Secondly, all available historical water quality information from each site was extracted from the EPA Envision Map Viewer. Q Scores were obtained from the furthest downstream site on each WFD monitoring unit for the water being assessed. Sometimes, however, sites were located in the mid, or upper locations for the reach/ unit in question. Where there were multiple monitoring sites in each reach/ unit, the furthest downstream site was reported, and the full range of Q Scores from the mid and upper sections of the reach/ unit were entered in the comments section of the reporting spreadsheet. Where available, several years data were entered (1995-2005), although only the most recent reporting results (2005) are presented in the summary sheet (Appendix III).

1.1.2 Water Framework Directive Status

The overall WFD status and key supporting elements were collated and reported as colour coded Status (High, Good, Moderate, Poor, Bad). For highly modified water bodies (HMWB's) or artificial water bodies such as canals, the WFD convention of Good or Poor Ecological Potential was followed.

It is important to document the main risks to a water which might mean this water fails to meet Good Ecological Status (GES) or, in the case of HMWB's and artificial water bodies Good Ecological Potential (GEP). All risk types are classified from 1a (at risk) to 2b (not at risk) and these were also collated and entered into the spreadsheet from the WFD Ireland Web Viewer (www.wfdireland.ie). Twenty-eight risk classes were reported under the overarching headings of point risk sources (e.g. Wastewater or Combined Sewage Overflows); diffuse risk sources (e.g. agriculture, roads or forestry); and morphological risk (e.g. canalisation or impoundments).

Although these risks do not necessarily represent a current pressure on the water in question, it can usually be assumed that the water is impacted if a given risk is 'high'. This is likely to be useful to guide discussions on where to target resources to improve water and/or morphological quality and achieve GES in a given water.

The WFD Objective for each water refers to both its current condition and whether it is a designated protected area. Waters which do not currently meet GES must be improved to reach this standard by 2015 unless there are significant reasons for derogation, such as excessive cost.

Usually the objective will be to restore by 2015 using the Programme of Measures (POMS) contained in the draft River Basin Management Plans which were published for consultation on 22 December 2008. Alternative objectives can be claimed under specific conditions, such as meeting GES in future WFD planning rounds (2021 or 2027). Where a water is at GES or is a designated protected area, then the default objective will be protection using the POMS where appropriate.

There are multiple drivers for water management planning. Some of these are driven or enacted by specific legislation. It is useful to understand which Directives or measures are applicable for a specific water. These were also collated and entered into the main project spreadsheet, as was additional information obtained from published sources.

1.2 Canals

As a generalisation, monitoring and WFD Risks to Highly Modified Waters (HMWBs) are not as complete as other waters and the reporting reflects this. For waters of national tourism significance, this relates exclusively to four canals (Grand Canal, Barrow Line, Shannon-Erne and the Royal Canals); for these waters the WFD Status has actually been completed, and supporting information has been collated as notes in the final entry of the worksheet.

1.3 Loughs and Lakes

The overall methodology for assessing water quality of standing waters was similar to that for rivers. The main difference is in reporting parameters.

The main pressure impacting on lakes in Ireland is excessive inputs of phosphorus and nitrogen. Inputs of phosphorus and nitrogen arising from human activity, either directly to the lake or more commonly through its inflowing streams, can give rise to over-enrichment or eutrophication. This form of pollution is characterised in lakes by increased phytoplankton growth and more intensive algal blooms, increased rooted plant growth, declining transparency, deoxygenation of the deeper layers and an overall reduced amenity value. The principal sources of these nutrients are losses from agricultural activities (mainly diffuse sources) and municipal and industrial waste discharges (mainly point sources) (Tierney, 2008b).

1.3.1 Historical Status

Tierney, (2008b) also offers a good summary of monitoring of Irish lakes, which is abridged here. The degree of enrichment in lakes is assessed by reference to a scheme proposed by the OECD (1982), which sets boundaries defining the different trophic (nutrient enrichment) categories. This scheme is based on consideration of three key parameters: total phosphorus as a measure of the availability of the essential 'growth-limiting' nutrients, chlorophyll as a measure of the biomass of the resulting planktonic algae and cyanobacterial growth in the water, and water transparency as a measure of the impact of the planktonic growths.

The frequency of sampling of lakes in Ireland usually does not generate sufficient data to permit the calculation of the annual mean values as specified in the OECD scheme. To allow classification of these lakes, a modified version of the OECD scheme is used in Ireland, based on the annual maximum chlorophyll concentration.

Because of the wide limits set for the eutrophic category in the original OECD scheme, this category was subdivided. The lakes are classified, therefore, into four water quality (or trophic) categories based on maximum levels of planktonic algae, i.e. chlorophyll measured during the period ranging from oligotrophic to hypertrophic. It is this assessment which is reported as the most recent assessment of lake water quality outside the WFD classification system.

1.3.2 Water Framework Directive Status

The WFD assessment of current Status, Risk Assessment, Objectives, Drivers and relevant comments were collated and reported in a similar manner to rivers.

1.4 Beaches, Bathing, Transitional and Estuarine Waters

There is a wide range of water quality data potentially available for coasts and estuaries, but this is generally of variable temporal and spatial coverage. In relation to tourism, the two most useful measurements are for eutrophication and for status of beaches and bathing waters.

1.4.1 Historical Status

To assess the trophic status of estuarine and coastal waters, the EPA monitors the water quality of 69 water bodies from 25 estuarine and coastal areas around Ireland. The surveys are carried out mainly in the summer months, the period when low water exchange and higher temperatures increase the likelihood of marked variations in oxygen levels and excessive levels of plant growth. Winter surveys are carried out in nearshore waters as well as in offshore waters in the western Irish Sea and eastern Celtic Sea to monitor levels of nutrients in the absence of significant biological activity.

A Trophic Status Assessment Scheme (TSAS) is used to classify these waters and TSAS was used to assess the trophic status of 69 water bodies based on water quality data collected over the period 2002–2006 (Clabby *et al.*, 2008). Where possible (i.e. monitoring locations and tourism waters overlap), this classification scheme has been reported. The detailed worksheet contains entries for the reporting rounds 1995–2005 and the summary data uses the current reporting results (2001–2005).

Monitoring of water quality at designated bathing areas is undertaken annually by local authorities in accordance with the requirements of the EU Directive concerning the quality of bathing waters (CEC, 1976). The purpose of the directive is to ensure that bathing water quality is maintained and, if necessary, improved, so that it complies with specified standards designed to protect public health and the environment. Since 1996, the EPA has been collating the water quality results from the local authorities and reporting these in summarised form. The most recent bathing water reporting results (2007) were used in this assessment.

It should be noted that a revised directive concerning the management of bathing water quality will repeal the existing 1976 directive with effect from 31 December 2014. Amongst other changes, the new directive establishes stricter microbiological standards. The classification of bathing waters will be determined, in general, on the basis of a four-year period instead of a single bathing season result. This means that the classification will be less susceptible to bad weather, or one-off incidents which can cause failures as a result of combined sewers or diffuse pollution from agriculture (livestock).

Analysis of bathing water quality in the context of the directive and the associated national regulations is separate from, though complementary to, the European Blue Flag Scheme. To receive a blue flag, a bathing site must, in addition to maintaining a high standard of water quality, meet specified objectives with regard to the provision of safety services and facilities, environmental management of the beach area and environmental education. The award is based on the performance and standards achieved during the previous bathing season. The spreadsheet records if a bathing water reached Blue Flag standard.

1.4.2 Water Framework Directive Status

WFD Status, risks, objectives and drivers were reported in a similar format to rivers and lakes.

