

# South Eastern River Basin District Management System



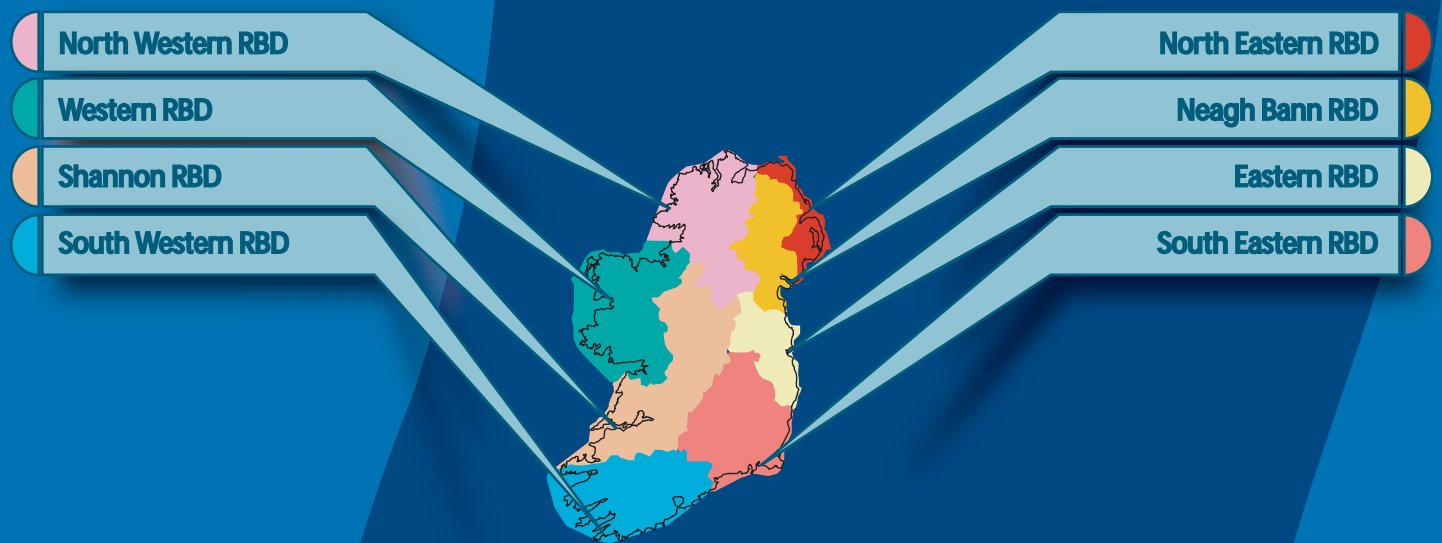
2005 update – Characterisation

## The Water Framework Directive

December 2000 saw the introduction of one of the most significant pieces of water-related legislation in Europe to date: The Water Framework Directive (WFD) 2000/60/EC. In simple terms, the Directive puts in place a system to ensure that we manage our activities properly so that our waters in general are clean and can support healthy aquatic life.

The Directive takes a holistic approach; covering the full water cycle - rivers, lakes, transitional waters (estuaries), coastal waters and groundwater as well as wetlands that are dependant on waters.

The WFD is the first directive to fully embrace the management of waters at the natural river basin scale rather than by artificial, administrative boundaries. These river basins have been grouped into River Basin Districts (RBDs).



The WFD's target is to achieve at least good status in all our waters by 2015. This will mean that the condition of some Irish waters will need to be improved. Also water status is not allowed to deteriorate under the WFD.

Since the Directive may require us to change the way we use our waters it is important that everyone understands the water management issues that Ireland faces today – public participation is a cornerstone of the WFD.



## Progress on Implementing the WFD

Ireland has made good progress in implementing the WFD – all of the Directive's delivery deadlines since 2000 have been met – this has been achieved as a result of many state organisations and interested parties working together.

Key achievements include:

- The Directive was adopted into Irish Law in 2003.
- Eight RBDs were identified within the island of Ireland and were reported to the European Commission in 2004.
- In 2005 Ireland completed the characterisation of all waters in each RBD.
- Ireland is currently taking part in fieldwork trials to compare the quality of its waters against those of other European Member States.

The work undertaken so far has "set the scene" by identifying the key issues that have to be addressed in the next few years. Ireland is already acting on the next steps of implementing the Directive.

Monitoring programmes are being developed to tell us the status of our waters and allow us to measure future improvements in waters resulting from management actions. Detailed studies, focusing on understanding and managing the key pressures or activities that potentially affect Irish waters, are commencing. Advisory councils are being set up to provide a structure for effective public participation.

The setting-up phase of the WFD culminates in the preparation of the first Management Plan for each RBD which will be implemented during the WFD's initial six-year planning cycle (2009 to 2015).

## The SERBD

The South Eastern RBD (SERBD) covers a land area (over 12,744 km<sup>2</sup>) made up from the neighbouring river basins of the Slaney River and "three sister" rivers which drain to Waterford Harbour (the Barrow, Nore and the Suir Rivers) plus smaller coastal areas that drain directly to the sea.



The physical conditions in the SERBD are such that the area is highly suitable for agricultural activities including tillage and grassland enterprises. The central plains and low lying areas of the district are associated with well drained soils of medium texture. Rainfall is relatively low and temperatures moderate. Traditionally the district has had a relatively high uptake of tillage and grassland farming activities in comparison with national practices. Agriculture accounts for 45% of the overall landuse in the SERBD. Agriculture and related food manufacturing industries are significant sources of employment within the region.

The region is relatively densely populated. The south east has experienced moderately high population growth over the past five years partially due to the widening influence of the Dublin Commuter Belt. Both surface and ground waters in the SERBD stand to benefit from the measures that will be put in place to meet the WFD's requirements. The EPA has reported that the proportion of surveyed river channel length classified as polluted the south eastern district is ranked the third poorest out of eight Irish regions (only the north-west and eastern districts have higher proportions of polluted channel). Existing water quality surveys show that river water quality has slightly deteriorated during the most recent survey programme.



## **What We've Learned so far About the SERBD**

This news sheet summarises an analysis, required by the WFD, of the characteristics of the SERBD. It reviews the impact of human activity on waters in accordance with Article 5 of the Directive.

A National Characterisation Summary Report was submitted to the European Commission in March 2005 (available at [www.wfdireland.ie](http://www.wfdireland.ie)). Ireland was one of the first Member States to deliver the WFD Characterisation Report.

To present the results of the characterisation exercise on a district-only basis, the SERBD Project has produced an RBD Summary Report (available at [www.serbd.com](http://www.serbd.com)). This news sheet is complementary to the SERBD Summary Report.

A National baseline economic analysis has been completed with a preliminary assessment of the value and costs associated with water resources in Ireland.

## What influences the ecology of our waters?

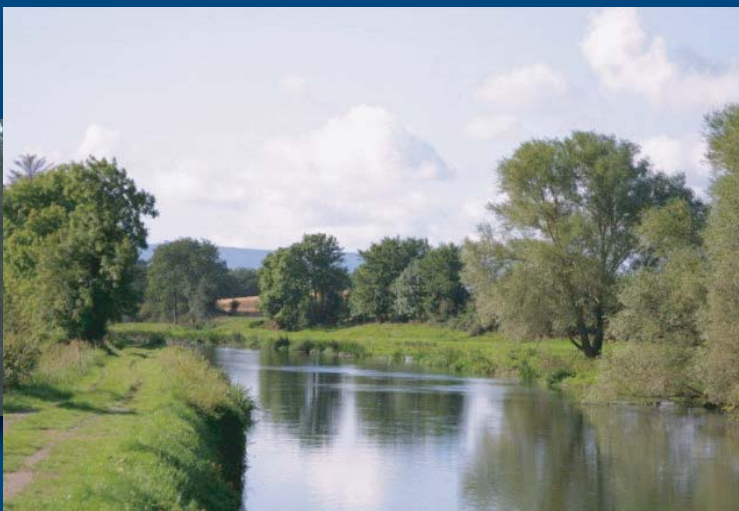
All waters have been divided into “water bodies” which are the future management, reporting and compliance units for the WFD. Water bodies have to be distinct in terms of the pressures they experience and the plants and animals (ecology) they support.

The SERBD includes 151 groundwater, 655 river, 12 lake, 21 transitional and 9 coastal water bodies.

The division of the water bodies was based on physical factors (such as size) that influence the plants and animals naturally occurring within the waters. Geology has been shown to have a strong influence on freshwater ecology in Ireland. The greatest number (29%) of river water bodies in the SERBD were in the lowland limestone types. Exposure and tidal influences were the key factors in Ireland's marine waters.



Two River Water Body Types: upland granite and lowland limestone.



## What are the key pressures on our waters?

This news sheet summarises the outcome of a “risk assessment” exercise that was reported to the European Commission in March 2005. This exercise sought, through nationally agreed approaches, to provide a measure of the pressures on each water body.

A variety of pressures ranging from familiar point and diffuse pollution issues to water abstraction, flow regulation and physical alterations (e.g. drainage, built structures such as ports) were investigated. Water abstraction, flow regulation and physical alteration pressures are known as hydromorphology pressures. Such pressures may impact on the flow or physical aspect of a water body and consequently affect its natural flora and fauna.

Each pressure was quantified using nationally available datasets and assessed against thresholds. These thresholds were used as the cut-off differentiating between water bodies that might be ‘at risk’ or ‘not at risk’.

Impact data were also examined to compare the predictive ‘threshold’ approach against data gathered by the EPA, Local Authority, Marine Institute and other monitoring on water quality.



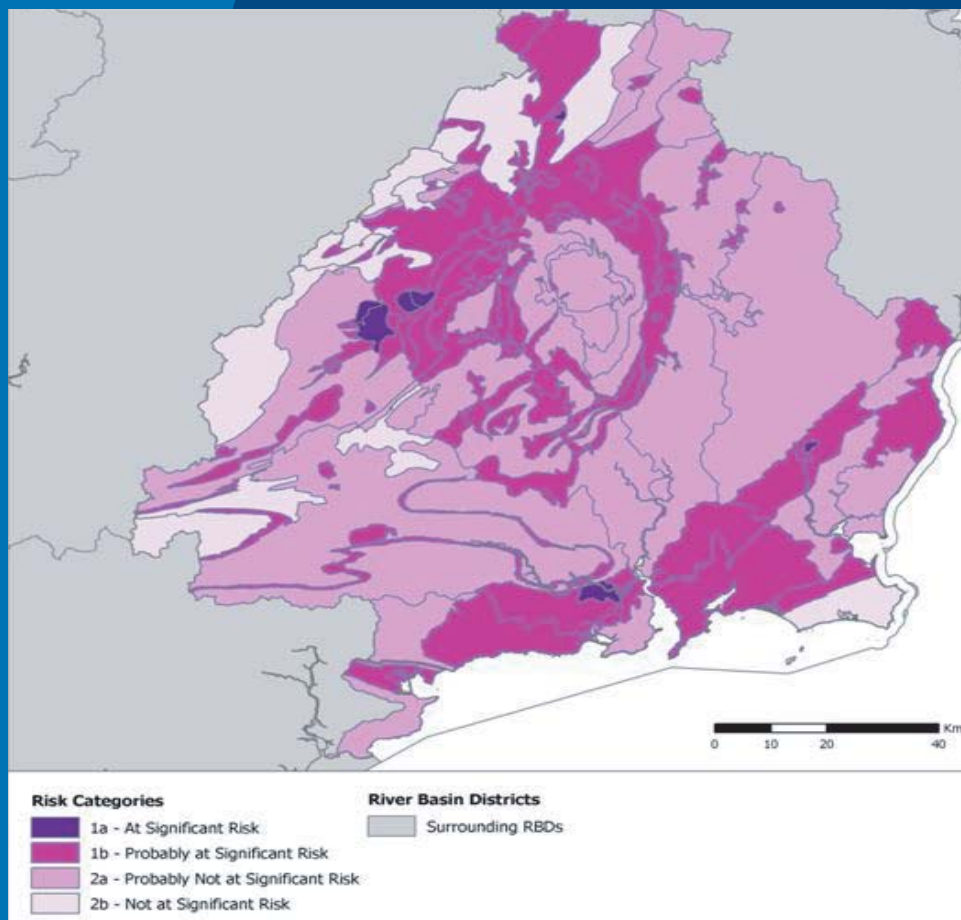
## But what does 'risk' mean?

The risk based assessment deals with the likelihood that a water body will meet its WFD status objectives. For example the water bodies experiencing the greatest degree of a pressure are least likely to achieve the target of at least good status and likewise any water body already impacted (that is failing existing environmental targets) is unlikely to achieve good status in WFD terms. A four-class risk classification scheme was applied using the following terminology:

2b	2a	1b	1a
Not at risk	Probably not at risk	Probably at risk	At risk

## The pressures:

**Groundwaters:** Diffuse source nutrients derived from agricultural activities are the most significant pressures acting on groundwaters in the SERBD. The areas most affected are located in the Nore and Barrow River Catchments. Risk from point source pressures was identified in a limited number of areas; these are primarily in the urban centres of the SERBD. A small number of areas were also identified as potentially at risk due to contamination from past industrial activities (both authorised and unauthorised).



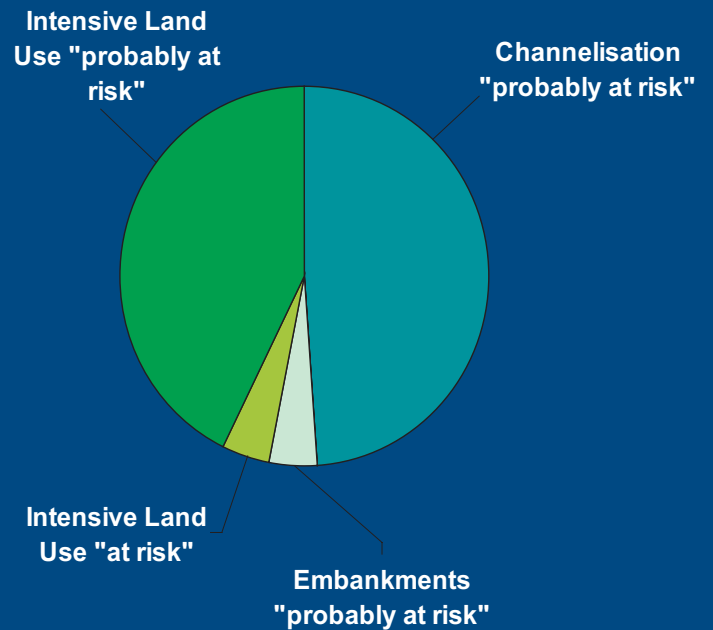
SERBD Groundwater Risk Assessment Results

**Surface Water:** The most significant pressures on surface water bodies (that is rivers, lakes, transitional and coastal waters) in the SERBD are again diffuse pollution sources mainly associated with agricultural lands and localised urban areas. This is verified by impact assessments.

Diffuse source pressures addressed in the Irish river risk assessment were:

- Agriculture and urban drainage;
- Transport road drainage;
- Transport railway drainage;
- Forestry - acidification, suspended solids, eutrophication;
- Un-sewered populations (septic tank) drainage;
- Agricultural & forestry activities using priority substances.

The most significant diffuse pressures in the SERBD are identified in the pie chart."

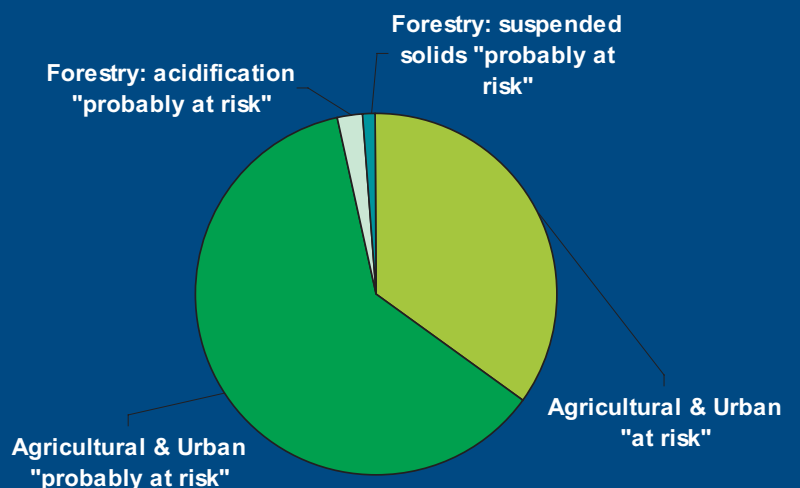


Morphological pressures and point source pollution are also significant. The main morphological activities are channel drainage and land use change for rivers, impoundments on lakes and activities associated with ports in transitional and coastal waters

The morphological assessment for rivers included the following pressures:

- channelisation and dredging,
- river straightening,
- flood protection and embankments,
- impounding,
- water regulation and
- intensive land use.

The most significant morphological pressures on rivers in the SERBD are identified in the pie chart



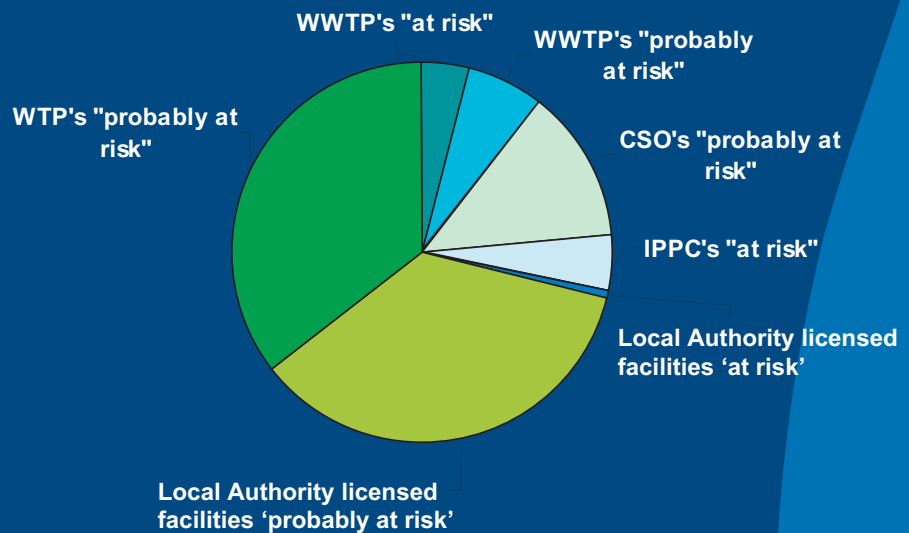


Some pressures with the potential for risk:  
Channelisation, Ports, Point Discharges.

Municipal and industrial discharges are the key point source pressures within the SERBD.

- Urban Waste Water Treatment & sludge treatment plants
- Storm overflows
- IPPC industries (licensed by the EPA);
- non IPPC industries (licensed by Local Authorities);
- other point sources judged significant at RBD level (e.g. Water Treatment Plant discharges).

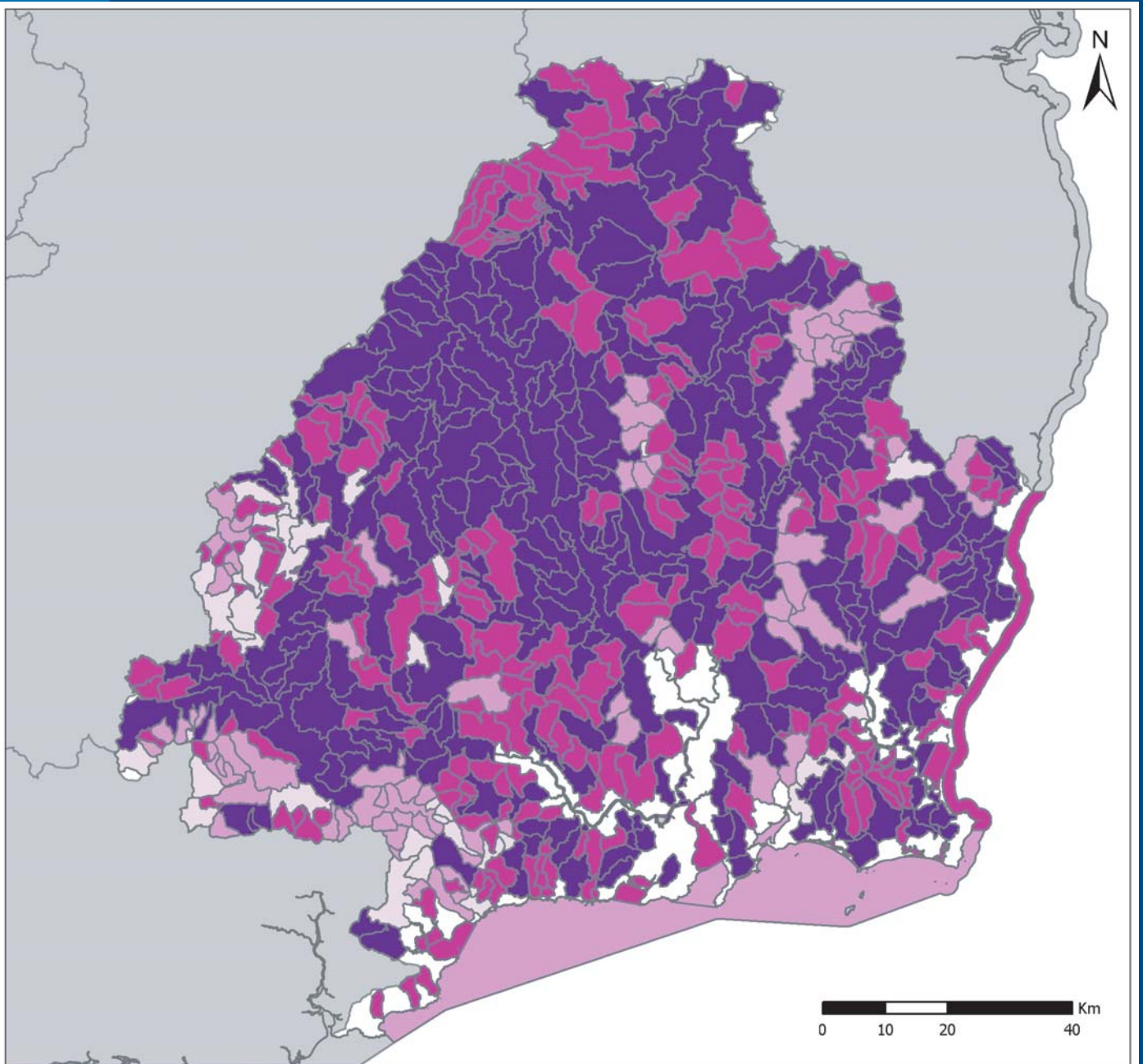
The most significant of these pressures in the SERBD are identified in the pie chart.



In some localised areas within the SERBD the amount of water abstracted for consumption and/or for industrial use may present a risk to the aquatic life in the water bodies concerned.

Other assessments examined the potential risk posed by "Alien Species" (non-native) pressures, fishing and aquaculture pressures. Risks to bathing waters compliance were also assessed.

In the SERBD: seven aquatic invasive alien plant and animal species (Water fern, Parrot's feather, New Zealand pigmyweed, Nuttall's waterweed, Japanese weed, Zebra mussel and Dace) have been detected. Several significant commercial fisheries activities (including the use of various fishing gear types and aquaculture) have been identified. Breaches of bathing water compliances occurred at two designated beaches. All of these will require further investigation.



**Risk Categories**

- 1a - At Significant Risk
- 1b - Probably at Significant Risk
- 2a - Probably Not at Significant Risk
- 2b - Not at Significant Risk

**River Basin Districts**

- Surrounding RBDs

**SERBD Surface Water Risk Assessment Results**

## How do our waters compare with other Irish RBDs?

In comparison with other RBDs in Ireland, the SERBD has the third highest proportion of water bodies across all water categories at risk from pressures.

The water bodies identified by this initial characterisation as being at risk include (by number):

- 5% of groundwater bodies
- 45% of river water bodies
- 25% of lake water bodies
- 48% of transitional water bodies
- 11% of coastal water bodies

Water bodies identified as being probably at risk include:

- 67% of groundwater bodies
- 38% of river water bodies
- 33% of lake water bodies,
- 38% of transitional water bodies
- 56% of coastal water bodies

Now that the key pressures have been identified in a systematic way, studies will be undertaken to focus on these key issues and to develop appropriate management strategies

## Management Priorities – Special Considerations

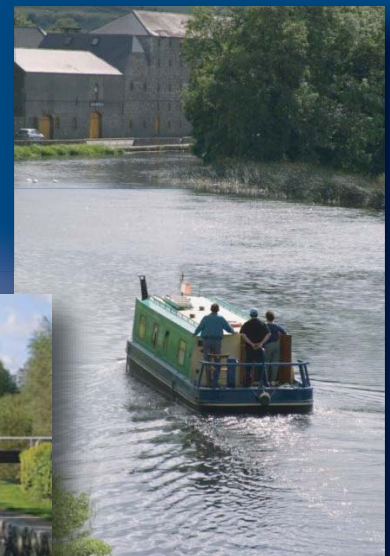
Areas designated as requiring special protection under existing community legislation, (either for the protection of their surface water or groundwater or for the conservation of habitats and species directly depending on those waters) have been collated into a register of protected areas within the SERBD. The objectives of these most sensitive areas must be taken into account when preparing the river basin management plan.



Water-dependent habitat and species. (Wetland, Marsh Saxifrage and Freshwater Pearl Mussel)

The creation of new water bodies and the physical alteration of existing water bodies (e.g. construction of canals, ports, flood protection structures, navigation channels) have resulted in the preliminary identification of seven Artificial Water Bodies and four Heavily Modified Water Bodies within the SERBD. Further investigation will be required to test whether these provisional designations are justified within the rules of the Directive. Where this is the case, appropriate environmental quality objectives will be developed for these water bodies in keeping with their current physical nature.

Certain groundwater bodies have been identified as possibly requiring less stringent environmental objectives. This is on the basis that they may be so impacted by human activity that their achievement of good status might not be technically feasible or might be disproportionately expensive. Within the SERBD these include four groundwater bodies associated with two mines, three groundwater bodies affected by contaminated lands and groundwater bodies underlying the major urban area of Waterford City. These groundwater bodies will be further investigated to determine the appropriateness of this provisional designation.



## What comes next?

A baseline risk assessment of human pressures and impacts on all water bodies is presented. This is not a one-off task. It is iterative in nature and will be subject to ongoing review as new information becomes available.

A precautionary approach has been adopted for the characterisation and it is very probable, when the next phases of the WFD are implemented, that some waterbodies currently deemed at risk will ultimately be classified to be at good status. The next phase of the RBMP cycle will focus on activities to improve the information available and to increase the confidence in the risk assessments. A targeted and efficient monitoring programme will be put in place to address data gaps and uncertainties and studies will be undertaken to develop appropriate management strategies.

Achieving good status for all waters by 2015 will be a considerable challenge. Significant effort and resources will be required to ensure sustainable water management is implemented on schedule as required by the Directive. The completion of this initial characterisation and analysis provides the baseline necessary to begin the next phase of the process of river basin management.

