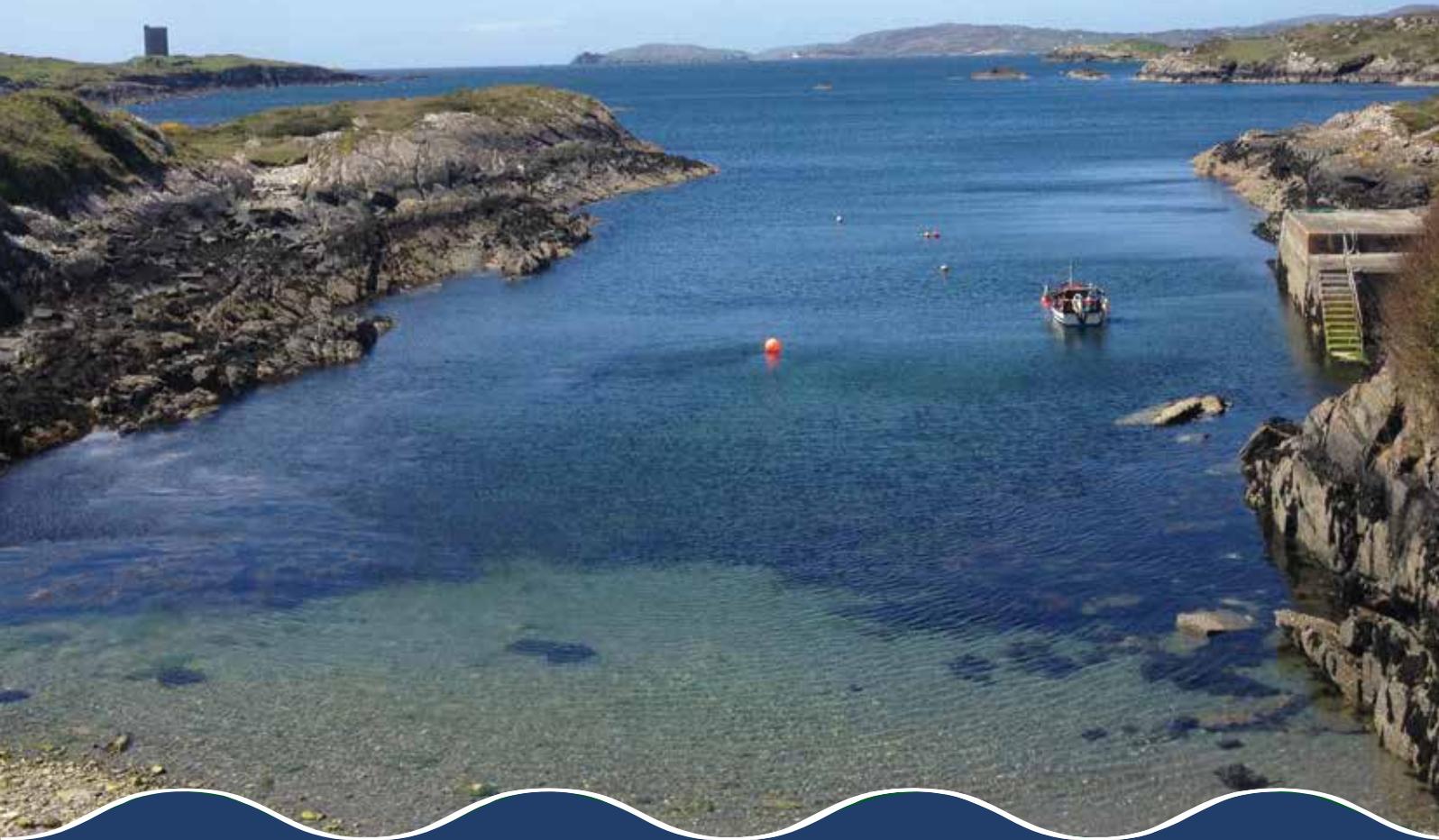


# MANAGING OUR COASTAL WATERS



# Introduction



Ireland's indented coastline is more than 7,400 km long with warm, shallow, nutrient-rich waters which are teeming with life. They contain rich and varied ecosystems that sustain a wealth of biodiversity and attract and support human settlement with its diversity of commercial and leisure activities. There are many



habitats associated with the coastal zone including lagoons, reed beds, salt marshes, sand banks, mud flats and reefs. Roughly half of Ireland's population lives within 10kms of the coast and for most tourists a visit to the seashore is one of the highlights of their holiday. The concentration of development in coastal areas creates environmental pressures that affect the



*Fungi, Bottlenose Dolphin © Deirdre Slevin, IWDG*  
quality and health of our coastal, estuarine and marine waters. Their protection is essential in order to preserve coastal ecosystems and to support the wide range of leisure and economic activities which rely on them. In this Information Sheet the term 'coastal waters' includes coastal wetlands on land, estuaries up to their tidal limits and the sea out to 6 nautical miles.

*Cover photo: Castlepoint Harbour, © Matt Mills, idesigns*

# Pressures on coastal waters

The pressures on Ireland's coastal waters can be divided into those that originate on land e.g. from industry and agriculture, etc.,

and those that come directly from shoreline and sea-based activities e.g. shipping and aquaculture, etc.



## Water pollution from land

The main sources of water pollution from land are:

- Industrial and commercial discharges – both directly and via rivers
- Sewage treatment plants and domestic sewage from holiday homes
- Landfill sites, including closed dumps
- Agriculture (including forestry) & horticulture
- Golf courses.

These sources range from those which are licenced, well-monitored and controlled, to others, such as old landfill sites, which may be poorly monitored and difficult to regulate. Diffuse pollution from agriculture is also particularly difficult to control. Pollution from land is mainly in the form of nutrients, sediments, heavy metals, hormones, pesticides, pathogens and other chemical compounds. Residues from pesticides, fertilisers and sewage discharges

can be trapped in sheltered muddy bays and enter the food chain through organisms feeding and concentrating the pollutants in their bodies. The population of seaside resorts may treble overnight on a summer weekend; however the biota breaking down sewage in the treatment systems do not increase as fast. The raised levels of bacteria and viruses from treatment plants can impact on receiving environments and human health.



*Waste outlet pipe at shore close to Wexford town © Bojana Ferjan*

## Water pollution from the shore and at sea



The main sources of water pollution from the shore and at sea are from harbours, ships and large vessels, recreational craft, aquaculture, dredging and spoil disposal and oil and gas platforms. The pollution is mainly in the form of oils, sewage, port-associated industrial discharges, pesticides, silts and contaminants such as polychlorinated biphenyls (PCBs). Fine silt, faeces, nutrients and fish treatment residues also tend to accumulate under and around aquaculture cages. There is little data or monitoring for many of these sources and substances.

### Physical alterations



© Coastwatch

Harbour developments, land reclamation projects, aquaculture, fishing and green energy structures cause physical changes on the shore and in the coastal zone through associated works including dredging, sediment mining, wetland infill, erosion/flood control measures, bottom trawling, installation of aquaculture

structures and other activities. Impacts of these include habitat loss and damage, water turbidity and altered currents and estuary shape, all of which impact upon the ecosystems services an area has to offer. Infilling of natural coastal reed beds and salt marshes also results in loss of biodiversity, in addition to loss of their function as carbon sinks and buffers to water pollution and wave erosion.

### Litter and waste

The main sources of solid macro- and micro-litter and waste are landfill sites, harbours, sewage plants, metal recycling yards, aquaculture, fisheries and diffuse background litter. Landfill sites and sewage treatment are now better controlled



Metal recyclers next to estuary © Coastwatch

but micro-plastics from these and other sources have yet to be addressed. Waste management in harbours ranges from very good to non-existent and there is little information available on ship waste management. Litter control in official bathing areas is now a focus of significant



Grey seal entangled, Hook Head Lighthouse, Co.Wexford © Deirdre Slevin, IWDG

effort on the part of local authorities and bins are adequate in most of these locations. The plastic bag tax has also made a significant contribution towards reducing litter. However, litter in non-designated bathing areas is still a significant problem and the occurrence of drinks containers, fishing gear and 'pretty litter' such as balloons, remains high.



Grey seal, Howth Harbour © Bojana Ferjan

## Other pressures

Over-fishing and catch of non-target species are of significant concern. In addition, some fishing gear can cause serious damage to marine habitats. Escapees from salmon farms can compete and cross-breed with native wild Atlantic salmon populations and aquaculture can introduce or increase pathogens (e.g. sea lice from finfish farms). Invasive alien species e.g., the Pacific oyster (*Crassostrea gigas*) are now recognised as a significant threat, as they can disrupt habitats, displace native species and introduce disease (e.g., the oyster parasite *Bonamia ostreae*). Shipping is also a significant conduit for their inadvertent spread, especially in ballast water. Finally, recreational activities which disturb wildlife and trample fragile habitats can be locally significant, for example in nesting areas.



Atlantic salmon infected with sea lice  
© Inland Fisheries Ireland



Invasive Pacific oysters, Lough Swilly © Coastwatch



Jet skiing, Co. Donegal



# What is in place & effective ?

INTERNATIONAL	EUROPEAN	NATIONAL	RESPONSIBLE DEPARTMENTS / AUTHORITIS
<ul style="list-style-type: none"> <li>OSPAR Convention</li> <li>Ramsar Convention</li> </ul>	<ul style="list-style-type: none"> <li>Water Framework Directive (WFD)</li> <li>Marine Strategy Framework Directive (MSFD)</li> <li>Birds Directive</li> <li>Habitats Directive</li> <li>EIA Directive</li> <li>Integrated Coastal Zone Management (ICZM)</li> <li>Recommendations</li> <li>Common Fisheries Policy</li> <li>SEA Directive</li> </ul>	<ul style="list-style-type: none"> <li>Shellfish Regulations</li> <li>Foreshore Act</li> <li>Bathing Water Regulations</li> <li>Planning &amp; Development Act</li> <li>Water Policy Regulations</li> <li>Surface Water Regulations</li> <li>Groundwater Regulations</li> <li>Urban Waste Water Regulations</li> <li>Water Pollution Act</li> <li>Sea Fisheries Regulations</li> <li>Litter Pollution Act</li> <li>Bye-laws: Local Government Act 2001 (incl. River Basin Management Plans)</li> <li>Dumping at Sea Act</li> </ul>	<ul style="list-style-type: none"> <li>Department of Agriculture, Food and the Marine (DAFM)</li> <li>Department of Environment Community &amp; Local Government (DECLG)</li> <li>Department of Communications, Energy &amp; Natural Resources (DCENR)</li> <li>Department of Arts, Heritage &amp; the Gaeltacht (DAHG)</li> <li>Department of Transport, Tourism &amp; Sport (DTTS)</li> <li>National Parks &amp; Wildlife Service (NPWS)</li> <li>Local Authorities</li> <li>Environment Protection Agency (EA)</li> <li>Marine Institute</li> <li>Coastguard</li> <li>Bord Iascaigh Mhara (BIM)</li> <li>An Bord Pleanála</li> <li>Heritage Council</li> <li>Sea Fisheries Protection Agency</li> </ul>

Overview of some of the international, European and Irish legislation and policy relevant to coastal zone management in Ireland, with some of the many government departments and responsible state agencies involved.

## Extensive and fragmented legislation

Ironically, part of the challenge in achieving high status water quality in the coastal zone (as specified by the Water Framework Directive) is the large body of legislation which relates to its use and protection. These include: The Shellfish Regulations; Bathing Water Regulations; Foreshore Licensing and Leases; Urban Waste Water Regulations; Surface Water Regulations and the Fisheries Acts. There is furthermore a range of special conditions and exceptions under which a given agency may be (co-) responsible for law enforcement. Even for state authorities, it can be almost impossible to obtain a quick and accessible overview of which agencies are managing certain activities or combinations of activities in different areas of the coastal zone and under whose jurisdiction they fall. While some regulations are effective and well publicised and implemented, like sea bass fishing controls, too often laws are ineffective due to lack of enforcement, in addition to a lack of integrated management, with no one overarching body with ultimate responsibility for the coastal zone.

The combination of this absence of an integrated approach, with the lack of an adequate overview of coastal quality, lends

itself to uninformed decision making. There is a lack of easily accessible information and a low level of public awareness on many coastal issues. Although our coastal waters are largely in public ownership, public information and participation is much weaker than on land. Many local authority field staff and citizens alike are not familiar with the implications of Special Areas of Conservation or Special Protection Areas, nor even where they are located. In contrast with the Bathing and Shellfish waters, which often have information signage by the shore, coastal Nature designation is rarely sign-posted or explained.



In that context, the 2012 Department of Agriculture, Fisheries, and Marine (DAFM) document 'Our Ocean Wealth-Towards an Integrated Marine Plan for Ireland,' which focuses on the marine environment as an economic resource to be exploited, compounds these problems as it envisages a range of further economic developments

without putting forward any mechanisms or strategies to improve implementation of current environmental legislation and compliance.

It is hoped that the introduction of the new Marine Strategy Framework Directive should foster coordinated planning and adaptive management for coastal and marine waters. However, in Ireland, delayed implementation, inadequate public information and lack of opportunity for the public to participate is raising concern.

## River Basin Management (RBM) Plans

The RBM Plans, required under the WFD, were to provide the key legislative tool for integrated spatial action plans that would ensure good status for all estuaries and coastal waters by 2015 (with some limited exceptions). Unfortunately, the current Plans (2009-2015) are inadequate. Apart from an unfulfilled commitment to introduce regulations to control physical alterations having an adverse impact on the water environment (e.g. dredging) by the end of 2012, the RBM Plans as they apply to transitional and coastal waters are ineffective and will not achieve the 2015 targets. This represents a further shortfall in Ireland's commitments to achieve WFD objectives and could be the source of further (and costly) European Union disciplinary action.

# Recommendations

SWAN members recommend the following to improve and protect coastal water quality and foster wise and fair use of coastal resources:

## Access to coastal information and public participation



A publicly accessible and fully integrated source of all relevant information pertaining to the coastal zone is needed and would assist stakeholders in both participation and compliance. This should include a 'State of the Seas' Report, published every four years with a parallel, current (constantly up-dated) and user-friendly coastal information database which the public can consult easily to access all relevant legislation, water quality data, plans and other information (including various Agencies' responsibilities) for a given local area. It should also be accompanied by a public awareness campaign including information signage by the shore, especially in nature conservation designated areas (similar to that for bathing waters).

Direct public participation initiatives, such as Green Coasts, Blue Flag, and Coast-watch citizen surveys, should be facilitated, promoted and integrated, where possible, into national monitoring programmes.



Carlingford Lough

## Monitoring and management

To inform and rationalise relevant actions, we must be able to comprehensively define the existing status of Ireland's coastal waters. Hence SWAN recommends that a full baseline assessment of the state of Irish estuarine and coastal waters should be carried out. This monitoring programme must be sufficiently comprehensive to enable Ireland to meet all of the requirements of both the Water Framework Directive and the Marine



Research Vessel Celtic Voyager ©Marine Institute

Strategy Framework Directive. Only upon achieving these are we in a position to definitively assign classification of waters and develop appropriate programmes of measures to bring all of our coastal waters up to the standards required by both these directives.

## Integrated coastal zone management (ICZM)

To underpin all of these objectives, an ICZM Act and a CZM unit are urgently needed to provide an effective, collaborative working approach between government departments, state agencies and stakeholders in the coastal zone (both were proposed after extensive public consultation as far back as 1994). Successful management models in other jurisdictions (and reinforced by international research) are available to support this.

A comprehensive programme of public participation should take place in the development of ICZM so that an effective, integrated and publicly acceptable system of coastal zone management is developed.

Finally, it is vital that cross border sites like Lough Foyle and Carlingford Lough are treated as whole water units and managed in an integrated way, with political impediments regarding administrative boundaries being addressed to achieve this. Designation of these large estuaries as Ramsar sites is recommended to assist in overcoming current barriers in this regard (Ramsar is an international wetland conservation treaty: [www.ramsar.org](http://www.ramsar.org)).

## River Basin Management Plans

The next round of River Basin Management Plans (2016-2021) must represent the integrated spatial action plans necessary to ensure good status for all estuaries and coastal waters. They must have specific sections dealing with coastal management, including integration with the Marine Strategy Framework Directive and proposed actions in relation to ICZM. In particular, they should contain measures to address specific pressures on the coastal zone.

## Addressing specific pressures



### Agriculture

CAP reform must ensure that our coastal waters are protected through robust cross compliance and support for environmentally friendly farming, with especial attention given to vulnerable catchments and coastal areas. The Food Harvest 2020 policy must be subject to appropriate environmental assessment and accompanied by adequate information, training, monitoring and law enforcement to ensure that the proposed intensification does not cause damage to coastal wetlands and water.

### Inshore fisheries

Regulations for sustainable fisheries practices in inshore waters should be drafted with full public participation. The regulations should bring inshore fisheries management within the scope of the proposed CZM unit or in the absence of this unit, under the auspices of one agency. The authority should be responsible for managing licenses and size, space and time limits for catches as well as publishing information. This agency needs to be well resourced and to

have representatives from all stakeholder sectors, including environmental NGOs on its board.

### Aquaculture

The DAFM should review and make aquaculture licensing decisions based on current international best practice, with due regard to new modelling of assimilative capacities for aquaculture in water bodies. This should take into consideration new developments in aquaculture techniques that reduce or eliminate adverse environmental impacts (e.g. the CIMTAN initiative in Canada ([www.cimtan.ca](http://www.cimtan.ca))). Furthermore, there should be a prohibition on the location of salmon farms in the bays and estuaries of wild salmon rivers.

Article 19A of the Fisheries Act, which permits aquaculture operators to continue aquaculture operations for many years after their licence has lapsed and in the absence of assessment, including in Natura 2000 sites, must be urgently revoked.

The Pacific oyster should be listed as an invasive aquatic species and subjected to strictest controls when used in aquaculture. An immediate halt to their use in sites where they have begun to spread into the surrounding ecosystem (Loughs Foyle and Swilly) should be accompanied by a removal plan in consultation with local stakeholders.

SWAN strongly advises against the Bord lascaigh Mhara plan for the development of large-scale salmon farms in Galway Bay, and subsequent leasing to operators, for a number of reasons, including the potential impacts on water quality and that of sea lice on wild populations of salmonids. SWAN welcomes the development of state funded research to investigate and support environmentally sustainable aquaculture practices.



### Harbours

Harbours and ports can have a significant impact on coastal waters and can also influence the impacts that ships and boats have upon coastal environments. SWAN is seeking a greening of ports in line with that seen across Europe. In each harbour and port:

- Suitably qualified environment officers should be appointed
- The composition of each Harbour Board should be reviewed to include adequate environmental expertise and interests
- A dedicated harbour area monitoring programme, based on the Blue Flag scheme, should be introduced which ranks harbours by water quality and ecology, and gives recognition for excellence.

### Large and small scale coastal development and physical alterations including flood controls, dredging and extraction of marine aggregates

The system of management and controls on activities or works that physically alter or modify the coastal aquatic environment should be introduced as soon as possible, as required by the WFD. Decision-making in relation to these activities must be evidence-based and involve better public access to information and participation.

The delivery of WFD and MSFD targets for the environmental status of our marine, coastal and estuarine waters must share equal prioritisation with economic interests in order to achieve long-term sustainability, taking into account the environmental and resource costs of any activity. Coastal development, the exploitation of marine aggregates, dredging, and dumping at sea should all be controlled by these regulations and only permitted if it will not compromise the achievement of WFD targets. The appeals process should be transparent, accessible and fair.



Photo: Castlepoint © Matt Mills, idesigns

### **Direct and indirect discharges**

All discharge licences must be reviewed as required by the Surface Water Regulations (2009) to ensure that the licenced discharge does not compromise the receiving waters meeting WFD targets, and assign proper weighting to the cumulative effects of multiple discharges. Where it is shown that the discharge is likely to cause environmental damage, the review must be followed swiftly with restriction or revocation of licenses.

### **Marine-related wastes and litter**

Sufficient facilities for the proper disposal or recycling of public litter in coastal areas, accompanied by an awareness campaign, are strongly recommended. Financial

incentives for the reduction of litter should also be expanded, building on the success of the plastic bag tax. A 'deposit-on-return' system for drinks containers should be introduced, which has been shown internationally to control drinks container litter. Citizen litter clean ups and monitoring systems should continue to be supported.

Onshore waste facilities for vessels must be supplied at reasonable cost at all harbours and marinas to avoid illegal dumping, to bring Ireland into full compliance with the EU Directive on port reception facilities for ship-generated waste and cargo residues. A binding protocol for the removal of defunct aquaculture infrastructure like oyster trestles should also be introduced.

### **Invasive alien species**

The hazard of both the introduction and the inadvertent spread of non-indigenous, potentially invasive species must be addressed urgently through new legislation.

#### Further reading

*The quality of bathing water in Ireland, EPA, 2013*

*The Marine Strategy Framework Directive in Ireland, Sustainable Water Network (SWAN), 2013*

*Coastwatch autumn survey 2012, Coastwatch, 2012*

*Quality of estuarine and coastal waters, EPA, 2010*

*Ireland's coastline-exploring our nature and heritage, Richard Nairn, 2005.*