



# International, regional and national commitments meet local implementation: A case study of marine conservation in Northern Ireland

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## ABSTRACT

It is increasingly accepted that humanity's unsustainable use of the marine environment is causing the degradation of the very marine ecosystems it relies upon. This awareness had led to the generation of a significant number of international agreements and conventions aimed at improving marine management and conserving marine ecosystems. In the European Union, this has resulted in the evolution of an extensive array of environmental legislation and policy. In addition, the United Kingdom and its devolved regions have been developing their own policies and legislative tools to advance marine conservation and management. Party to all of these tiers of governance, Northern Ireland has made numerous international, regional and national commitments to protecting and restoring marine ecosystems. Here those commitments are explored in terms of the local political, administrative and governance reality in Northern Ireland. A complex governance structure and lack of interdepartmental co-operation is shown to severely hinder Northern Ireland's ability to meet stated commitments. Underfunding and lack of political will also seriously hamper conservation efforts. Findings indicate that the integration of all marine management functions into a single marine management organisation would greatly facilitate Northern Ireland's progress and that the development of an ecologically coherent network of marine protected areas would go a long way towards fulfilling its conservation commitments. This case study demonstrates some of the hurdles small nations face in meeting their responsibilities under regional and international agreements and highlights the gap between a nations conservation commitments and its successful implementation of policy to fulfil them.

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## 1. Introduction

Throughout history, humanity has depended heavily upon the marine environment, the ecosystems within having long provided us with a wealth of resources and often unappreciated ecosystem services. These include essential support services, such as: gas and climate regulation, flood and storm protection, bioremediation of waste and nutrient cycling [1]. In addition to the food they provide for billions of consumers [2], the global oceans play a significant part in a wide range of economic, social and cultural activities, being a major source of employment, recreation and spiritual well-being. Humanity's current and historic connection to the marine environment is illustrated by the heavy and increasing concentration of human populations in the near-coastal zone [3,4].

In recent decades, the size of the human population has increased drastically [5]; as it does so, the anthropogenic pressure

placed upon the marine environment grows and it is becoming increasingly clear how unsustainable use can lead to the degradation of the very ecosystems upon which we rely [6,7]. Examples of this degradation can be found worldwide: from harmful algal blooms in Europe [8], to the collapse of fish stocks in Newfoundland [9], to the functional extinction of many large marine vertebrates from coastal systems [8–10]. This degradation is generally attributed to a number of interacting factors, including pollution, eutrophication, invasive species introductions, over-fishing, habitat modification or destruction and coastal development. Impacts of climate change are also starting to be seen in marine communities [11–14].

One of the main consequences of unsustainable use of the marine environment has been a drastic reduction in marine biodiversity [15]. This loss has often led to reduced productivity and impaired ecosystem resilience, impacting ecosystem services and the human communities that depend upon them [6,15,16].

Worldwide, the appreciation of the need to improve marine management has been growing, with increasing numbers of international agreements that focus on environmental protection. Northern Ireland, as part of the UK, is one of many nations that

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have ratified international agreements and conventions that contain commitments to: halt biodiversity decline, protect migratory species, develop protected area networks, reduce carbon emissions and work towards sustainable development [17–21].

On a regional level, the European marine environment faces some of the highest levels of anthropogenic impacts seen worldwide [22]. Centuries of unsustainable fishing have drastically modified many ecosystems and reduced biodiversity [6,23], intensive agriculture has significantly increased coastal nutrient levels and the coastlines are some of the most developed in the world [8]. As a result, fisheries that historically used to support hundreds of vessels have closed [23], species that were common have become locally or regionally extinct [24] and whole areas have been affected by anoxic dead zones [25,26].

The European Union (EU), of which the UK is a member, has responded to these issues and to the growing appreciation of the importance of the environment by developing targeted legislation and policy to which all member states are committed. Legislation such as the Habitats Directive and the Water framework Directive (WFD) has led to significant progress in marine conservation, and has been a major driver in Northern Ireland for the protection of threatened marine features and the improvement of coastal water quality [27,28]. These initiatives face limitations, however, and the Marine Strategy Framework Directive (MSFD) aims to further improve marine management by both explicitly recognising the vital importance of maintaining and restoring marine ecosystems in their entirety and by legally requiring member states to take definitive action to do so [29].

In addition to European requirements, the UK has also been taking measures to improve marine management and to achieve its vision of “clean, healthy, safe, productive and biologically diverse oceans and seas” [30]. In 2009, the UK Marine and Coastal Access Bill was passed, creating the first statutory Act focused purely on the UK's marine and coastal environment [31]. This legislation enables significant changes to the way the UK's marine environment is protected and managed, including: the creation of a Marine Management Organisation (MMO), the development of marine spatial plans and the designation of a new type of marine protected areas (MPAs) called marine conservation zones (MCZs).

The first MCZ project, Finding Sanctuary, began in South West England in 2007. Three subsequent projects covered the rest of England and the UK off shore waters, with a similar initiative in Wales. These projects delivered their final recommendations in 2011, proposing MCZ sites integrated into an ecologically coherent network. The MMO, a non-departmental government body, was established in 2009 to improve marine management by bringing together all aspects of marine policy implementation and regulation, including: licensing, enforcement, environmental protection, fisheries management, and marine spatial planning.

As a result of the devolution process in the UK, much of the legislation in UK Marine and Coastal Act is specific to England and Wales, with Northern Ireland and Scotland having chosen to develop and enact their own versions. The Scottish Assembly adopted the Marine (Scotland) Act in 2010. Part of the Act included the creation of Marine Scotland, a new government department that, in a similar way to the MMO, brings together all aspects of marine management and policy implementation. Marine Scotland began the process of designating marine nature MPAs, roughly equivalent to MCZs, in 2010 and is currently developing marine spatial plans.

Equivalent progress had not been made in Northern Ireland. Whilst it shares the same international commitments and regional legislation as the rest of the UK, as well as much UK-wide policy and legislation, implementation in Northern Ireland can be viewed as tardy at best. A Northern Ireland Marine Act is still not in place, with the only recently submitted draft Bill making

halting progress through the Assembly. The Implementation of policy, such as the delivery of an ecologically coherent network of marine protected areas (MPAs), is also well behind other parts of the UK. As such, Northern Ireland faces a high risk of failing to meet certain targets set for 2012.

Northern Ireland offers an ideal opportunity to assess the practical realities of a small country's adherence to the plethora of agreements and legislation to which it is party. Here, the gap between Northern Ireland's commitments to marine conservation and the successful implementation of policy and legislation in support of those commitments is discussed. The most significant conventions, legislation and policies will be summarised, current marine conservation efforts reviewed and the challenges facing successful fulfilment of those commitments considered.

### 1.1. The importance of the marine environment to Northern Ireland

Whilst it could be argued that the marine environment is very important to all societies, in Northern Ireland it is particularly so: all of the cities are coastal, the entire population lives within 60 km of the coast and a high percentage of leisure activities focus around it [32]. Northern Ireland's marine environment is rich and diverse, containing more than 50% of the country's biodiversity, including over 100 species of fish and 17 cetaceans [33]. Areas such as Strangford Lough and Rathlin Island contain an exceptional variety of species and habitats and are considered UK Biodiversity hotspots [34,35].

The 650 km of Northern Ireland's coastline is also considered to be one of the region's greatest environmental, tourist and recreational assets, and is home to much of the country's tourist infrastructure [33,36]. Tourism brings vital income into coastal communities and its importance economically looks set to increase [36]. Indeed, more than 1 million people visited Northern Ireland's National Trust coastal properties in 2009 alone [33]. Fisheries is another valuable coastal industry; in 2010 it employed 1049 people full time, 275 part-time and had an overall estimated total value in excess of £20 million (DARD, Pers. Comms). The capital city, Belfast, is a major port, which employs 130 people and receives the vast majority of the imported goods on which Northern Ireland relies [37].

### 1.2. Governance in Northern Ireland

As part of the European Union, Northern Ireland is subject to EU legislation and policy. As part of the UK, Westminster is the overall centre of governance and legislation. However Northern Ireland also has its own Assembly and Executive as a result of the UK devolution process. Under the Northern Ireland Act (1998), this Assembly can legislate in respect of transferred matters and on these is able to pass both primary and secondary legislation. The environment is one of the areas transferred.

Devolution in Northern Ireland is inextricably linked to the peace process, and as a result the executive is a power-sharing one. Different political parties within the Northern Ireland Assembly choose ministerial portfolios under the D'Hondt system [38] and related ministries are potentially under the control of Ministers with very different political ideals. Currently, seven of the eleven government departments are involved in marine policy generation and delivery (eight, if the Department of Justice is included by virtue of its roles in policing and legal processes), as well as at least six different government agencies. These are listed, with their marine-related functions, in Table 1.

The result is that management of the marine environment in Northern Ireland is inherently complicated: policy is developed and implemented by numerous different government departments and agencies, which are headed by politicians in different political parties within a power-sharing Executive and who are

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