Management of Scotland’s inshore fisheries

Policy headlines

The Scottish Wildlife Trust believes that to effectively manage Scotland’s inshore fisheries in a sustainable manner that benefits Scotland’s fishing communities, its environment and economy, we need to give priority to:

- Increasing monitoring effort, ensuring compliance and improving enforcement;
- Taking decisions on the management of fishing activities on the basis of robust evidence;
- Avoiding irreversible changes to our marine resources by identifying and operating within environmental limits;
- Taking account of the ecological impacts of fishing activities on the marine environment (an ‘ecosystem-based’ approach);
- Taking a spatial approach to managing fishing activities through regional marine planning partnerships.

Scope

1. The Scottish Wildlife Trust’s views on the management of Scotland’s inshore fisheries supports the Trust’s vision of “a network of healthy, resilient ecosystems supporting expanding communities of native species across large areas of Scotland’s land, water and seas”.

Overview

2. Fishing is the most widespread human activity throughout Scotland’s marine environment and much of this, defined as inshore fisheries, takes place within the 12 nautical mile (nm) limit of territorial waters off the coast of Scotland. Scotland’s territorial waters are some of the most productive in Europe, containing a diverse range of marine life and habitats that support a culturally and economically important inshore fishing industry.

3. About two thirds of Scotland’s fishing fleet – over 1,400 vessels – fish in territorial waters. The inshore fishing fleet mostly consists of vessels under 10 m in length and predominantly uses static gear (e.g. creels), although mobile gear (e.g. trawling and dredging) is also used. The larger, more powerful vessels (e.g. 15-24 m) capable of operating in both inshore and offshore waters use more mobile and less static gear.

4. Inshore fisheries contain a range of mixed-fisheries, where multiple species are caught at the same time. The majority of landed catch is shellfish, with nephrops (commonly known as langoustine) being

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*In 2015, Scotland’s fishing fleet contained 2015 vessels, employed 4823 people, and landed £437m of fish and shellfish

*Marine Scotland Inshore Fisheries Topic Sheet (No. 138)

*In 2015, the inshore fleet contained 1449 vessels, 88% creel fishermen and 5% nephrops trawlers

*Scottish Sea Fisheries Statistics 2016 – Tables 2.5 & 2.6

*Total landed value of £134m (Sea Fisheries Statistics 2016)
the most profitable shellfish species.\textsuperscript{f} Profits from other landed species vary depending on vessel size. For example, in 2015 profits for vessels less than 10m in length came from nephrops (36%), lobsters (27%) and edible crab (14%), whereas for larger vessels, nephrops (59%), scallops (21%) and edible crab (9%) were the most profitable.\textsuperscript{g}

5. The majority of Scotland’s inshore fishermen live in coastal communities. Inshore fisheries provide an important economic and social mainstay for some of Scotland’s most fragile and remote coastal communities, providing employment, income and transferable maritime skills.

6. Effective and sustainable management is required to ensure both the long-term profitability and stability of the inshore fishing industry for coastal communities. Integral to this is the appropriate management, enhancement and restoration of Scotland’s inshore marine habitats and species that support the fishing industry. Without a healthy and productive marine environment, the ecological foundations that underpin Scotland’s inshore fisheries would collapse along with the industry.

**Environmental context**

7. The inshore fishing industry can damage the health of the marine environment in different ways, the most significant of which are:

- **overfishing** that depletes fish stock levels;
- **bycatch** which is the unintentional capture and death of non-target species;
- **physical damage** to marine habitats by certain fishing methods, such as bottom trawling;
- **entanglement** and potential death of animals in fishing gear;
- ‘**ghost fishing**’ which is the entanglement or death of animals by lost, discarded or abandoned fishing gear; and
- **marine litter** that can impact animals through entanglement or ingestion.

8. Scotland’s inshore waters contain diverse marine habitats and wildlife that support the inshore fishing industry. Marine habitats, such as seagrass meadows, maerl beds, kelp forests, coral reefs and burrowed mud are essential for maintaining Scotland’s diverse inshore marine life, as they provide food, refuge and protection for both the juveniles and adults of many animals.

9. The health of these marine habitats, along with their connected species communities, directly influences the quality of the ecosystem services they provide to society, namely: food (i.e. marine life); water quality; carbon storage (i.e. blue carbon\textsuperscript{h}); and protection of the coast from erosion. Poor maintenance and a failure to protect these habitats from physical damage will not only affect the health of the marine environment and the fishing industry, but also have detrimental knock-on effects throughout society.

10. Maintaining a productive inshore fishing industry has increasingly come at a cost to the quality of Scotland’s environment. A history of overfishing\textsuperscript{i}, exacerbated by technological advancements in vessel size and power, poor fish stock management and physical damage to the seafloor have contributed to

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\textsuperscript{f} In 2015, nephrops made up 45% of total landed shellfish value (£61m) (Sea Fisheries Statistics 2016).

\textsuperscript{g} \url{http://www.gov.scot/Publications/2016/09/5110/34}

\textsuperscript{h} \url{http://scottishwildlifetrust.org.uk/docs/002_433__final_blue_carbon_briefing_march_2016_1469434363.pdf}

\textsuperscript{i} For example, the intensive fishing of demersal species (e.g. cod, haddock and whiting) in the Clyde led to stock collapse in the late 1980’s - \url{www.gov.scot/Publications/2012/06/7562/6}
the current unhealthy and denuded state of Scotland’s inshore waters, as highlighted by Scotland’s Marine Atlas.¹

11. Non-target, over-quota and low or zero economic value species are often caught in trawling fisheries or become entangled in static gear (e.g. creels). These non-target species are known as ‘bycatch’. In many cases, animals caught as bycatch do not survive and die before being returned to the sea or freed from entanglement. The mortality of vulnerable or endangered animals, such as cetaceans, seabirds, sharks and rays, is of particular concern. Any further reduction in their numbers can have significant impacts on population health and, in some circumstances, survival.²

12. Marine animals are also at risk from fishing gear that has been lost, discarded or abandoned in the marine environment. This gear continues to fish and trap animals, entangle marine life and smother marine habitats. This is known as ‘ghost fishing’. It is particularly damaging as the materials used in fishing gear are highly durable, which results in ghost gear damaging indiscriminately for, potentially, hundreds of years.

13. Lost or damaged fishing gear also contributes to the global problem of marine litter, which poses a significant threat to marine organisms. Marine litter can entangle marine organisms or be consumed by animals that either mistake it for prey or passively ingest it while feeding. Filter-feeding animals such as basking sharks, whales and small organisms such as crustaceans that ingest marine litter are particularly at risk. Plastic microfibers from fishing ropes have been found in the stomachs of crustaceans.³

14. The relationship between healthy marine environments and sustainable fisheries is clear. However, commercial fishing continues to be one of the most significant and widespread threats to Scotland’s marine environment.⁴ Protecting important habitats from the most damaging of fishing practices, such as dredging and bottom-trawling⁵, can enhance ecosystem and environmental health, which in turn will bring a wealth of benefits to all marine users and society.⁶

Current legislation and management

15. The appropriate management of Scotland’s marine environment and its natural resources is paramount to achieving healthy seas and sustainability. The UK and Scottish Governments are committed to international obligations to protect our marine environment, most notably through OSPAR⁷ (management of human activities that pose a threat to marine environment), UNCLOS⁸ (conservation and utilisation of living resources), the Bonn Convention⁹ (conservation of migratory

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² For example, mortality as bycatch remains a considerable threat to the survival of the once abundant common skate, now found only in Northwest Scotland, Shetland and Celtic Sea.
⁴ Op cit 10
⁵ The practice of disturbing and capturing seafloor dwelling species with chains, metal beams, and mechanical dredges
⁶ For example, Lamlash Bay no take zone - [www.arrancoast.com/campaigns/lamlash-bay-no-take-zone](http://www.arrancoast.com/campaigns/lamlash-bay-no-take-zone)
⁷ www.ospar.org/about
⁹ [www.cms.int/en](http://www.cms.int/en)
species), the European Union’s Habitats and Birds Directives (Natura 2000 sites\(^1\)) and the Marine Strategy Framework Directive\(^1\) (achieving Good Environmental Status).

16. Scotland’s inshore fishing industry is currently governed by three principal pieces of legislation: the Sea Fish (Conservation) Act 1967; the Sea Fish (Shellfish) Act 1967; and the Inshore Fisheries (Scotland) Act 1984. This legislation regulates inshore fishing activity, namely by controlling methods of fishing, equipment use, vessel sizes, imposing landing restrictions for fish and shellfish, and establishing temporary and permanent closed areas to fishing generally or to fishing by certain methods. The body responsible for controlling the activities of all fishing vessels operating within the Scottish zone, as defined by the Fishery Limits Act 1976 and the Scotland Act 1998, is Marine Scotland. Marine Scotland’s responsibilities extend to the North Sea and West of Scotland, out to 200 nm, and all inshore fisheries within the 12 nm territorial water limit.

17. Fisheries legislation in Scotland has been partially successful in managing activities within the fishing industry, such as regulating gear (e.g. minimum mesh sizes) and introducing size and volume limits on target species. Fisheries legislation has failed to consider the broader management of the marine environment as a whole, or the cumulative and in-combination impacts of the fishing industry with other marine activities. Today, marine environmental legislation such as the EU’s Marine Strategy Framework Directive (2008), the UK Marine and Coastal Access Act (2009) and the Marine (Scotland) Act 2010 have all adopted a holistic approach to environmental management that focuses on managing all activities within a given area, rather than in isolation. The holistic approach takes account of the interactions of those activities, and their impact on ecological and environmental health. This approach is known as the ecosystem approach.\(^2\)

18. In Scotland, the Marine (Scotland) Act 2010 (hereafter referred to as the Marine Act) attempts to create a framework for balancing the many demands on Scotland’s seas and improving the health of the marine environment. The Marine Act introduced measures for marine planning, licensing, conservation, seal conservation and enforcement. An important product of the Marine Act was the development of Scotland’s National Marine Plan\(^3\) for waters out to 200 nm, and the subsequent development of 11 Regional Marine Plans\(^4\) for inshore waters out to 12 nm.

19. Open dialogue between all interested stakeholders, including fishermen and the involvement of all sectors in the future management of the respective region, is an essential step in the development of Regional Marine Plans. The management of each region will be overseen by a Marine Planning Partnership\(^5\), which consists of representatives from multiple stakeholders and a core group responsible for delivering the Regional Marine Plan.

20. Within the Marine Planning Partnerships, local fishermen are represented by Regional Inshore Fisheries Groups. In Scotland, there is a network of five Regional Inshore Fisheries Groups\(^6\) that covers all inshore waters out to 6 nm. With the input from local fishermen, each Group is required to develop a Fisheries Management Plan for their respective Group region. These will inform other stakeholders in

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\(^1\) Special Areas of Conservation (SACs) and Special Protection Areas (SPAs)
\(^3\) [www.ospar.org/about/principles/ecosystem-approach](http://www.ospar.org/about/principles/ecosystem-approach)
\(^4\) [www.gov.scot/Publications/2015/03/6517](http://www.gov.scot/Publications/2015/03/6517)
\(^6\) [www.gov.scot/Topics/marine/seamanagement/regional/partnerships](http://www.gov.scot/Topics/marine/seamanagement/regional/partnerships)
\(^7\) Shetland Shellfish Management Organisation, Orkney Management Group, Outer Hebrides RIFG, West Coast RIFG, and North and East Coast RIFG
the marine planning partnership of the socio-economic importance of inshore fisheries to that region and provide a vision for sustaining the industry and the associated natural environment.⁷

21. As well as providing a platform for regional marine planning, the Marine Act led to the identification and designation of Marine Protected Areas (MPAs) in Scotland’s waters. There are three types of MPA that have been designated: nature conservation (protect species, groups of species and habitats), historic (protect historic assets, e.g. shipwrecks) and demonstration and research MPAs (tools for developing marine management measures, original research and assessment possible management approaches).

22. Areas of inshore and offshore waters have also been designated under EU legislation: Special Areas of Conservation⁸ (SAC) under the Habitats Directive and Special Protection Areas⁹ (SPA) under the Birds Directive. Coastal sites such as seabird colonies, and intertidal habitats have also been designated under national legislation as Sites of Special Scientific Interest¹⁰ (SSSIs).

23. In Scottish waters, the combination of Scotland’s protected areas make up the MPA network¹¹. This network provides the foundation for spatial management and protection of ecologically important areas, which can involve restricting fishing activity (e.g. spatial management of gear use and no-take zones) in particularly sensitive or depleted areas.

24. In an attempt to introduce a more holistic approach to managing marine activities and the implementation of Scotland’s MPA network, the Scottish Government produced an Inshore Fisheries Strategy in 2015¹². This Strategy incorporated key components of the ecosystem approach and made significant steps towards modernising the management of inshore fisheries, specifically by:

- “improving the evidence base on which fisheries management decisions are made;
- streamlining fisheries governance and promoting stakeholder participation, and
- embedding inshore fisheries management into wider marine planning”

25. The Scottish Government’s approach to managing marine activities is changing and the broader, all-encompassing vision of the ecosystem approach is a welcome step, highlighting the interconnectedness of all marine activities and the need to manage them holistically. However, for the ecosystem approach to be a success, the inshore fishing industry, along with all other marine sectors, must develop a management strategy that works towards a common set of objectives that will ensure environmental sustainability and prove beneficial to all marine users and members of society.

Policy Statement

26. Scotland’s marine environment is a fragile and precious resource and the public has a right to see it protected, enhanced and sustainably managed for future generations to enjoy and benefit. The Scottish Wildlife Trust considers the following components as essential for achieving an effective and sustainable inshore fisheries management strategy.

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⁷ Marine Scotland Report – Scottish Regional Inshore Fisheries Groups – Outline structure and functions
⁸ www.snh.gov.uk/protecting-scottlands-nature/protected-areas/international-designations/sac/
⁹ www.snh.gov.uk/protecting-scottlands-nature/protected-areas/international-designations/spa/
¹⁰ www.snh.gov.uk/protecting-scottlands-nature/protected-areas/national-designations/sssis/
¹¹ www.snh.gov.uk/protecting-scottlands-nature/protected-areas/national-designations/marine-protected-areas-(mpa)/
1) Monitoring, compliance and enforcement

27. The Trust believes that the effort of Marine Scotland compliance officers and monitoring vessels at sea and in ports needs to be targeted effectively. New technologies that ensure fisheries management measures are being implemented and adhered to should be supported. Where possible, efforts should be made to increase monitoring effort and compliance officer presence to further improve data collection on fishing equipment being used, landing volumes, and discard volume and composition.

28. To complement the manned monitoring effort, further investment should be made into remote monitoring tools, such as on-board video cameras, vessel monitoring systems and the tagging of equipment (in particular for static gear such as creels). Monitoring the movement of fishing vessels and the distribution of fishing effort will be essential for ensuring adherence to spatial management objectives. The presence of on-board cameras will assist with monitoring catch compositions and policing discards.

29. In addition to enforcement and monitoring by Marine Scotland, efforts should also be made to develop a system that allows fishermen and other stakeholders to report infringements to the appropriate authorities.

30. Regional inshore fisheries groups could contribute to monitoring and regulating inshore fishing activity if given the appropriate authority to manage and issue permits and licences and, when required, determine upon infringements and implement robust sanctions. The devolution of authority from a national to a regional level, one of the guiding principles of the ecosystem approach, would allow for a more streamlined and efficient system for policing fishing activity and monitoring environmental health (similar to the establishment of Inshore Fisheries Conservation Authorities in England).

2) A strong evidence base

31. All future decision-making regarding the management of fishing activities must be well-informed, evidence-based and supported by strong, peer reviewed datasets. Where there are data deficiencies and a decision cannot be supported by robust data, the precautionary principle must be applied. Opportunities for piloting, evaluating and adapting new fisheries management approaches should be encouraged.

32. To improve decision-making, the collection of environmental data needs to increase. Any significant gaps regarding our understanding of habitat and species in terms of their distribution, abundance and health should be addressed. This will be achieved by close collaboration between industry, academic institutes, and government through dedicated research and development groups. The designation of additional demonstration and research MPAs also offers the opportunity to improve understanding on sustainable marine management measures.

33. Regional Inshore Fisheries Groups should play an increasing role in bringing together fishermen with other stakeholders and facilitate the sharing and communication of data. Data collected by fishermen on landings, bycatch composition, discarded species, fishing effort and other anecdotal evidence will play an important role in informing decision-makers on how catch data varies from region to region.

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66 Convention on Biological Diversity’s Malawi principles - www.cbd.int/ecosystem/principles.shtml
34. Transparency in the data collection and analysis process is essential for creating trust between all stakeholders and decision-makers. These, and the application of data, will be essential for establishing and guiding sustainable fisheries management. The Trust believes Marine Scotland should play a central role in ensuring the required supporting evidence is made available and incorporated into the decision-making process.

3) Operate within environmental limits

35. To achieve sustainable inshore fisheries, the Trust believes that all management actions must take account of the most reliable and up-to-date evidence available and demonstrate clear and measurable fisheries conservation objectives.

36. To ensure the most appropriate management measures are in place, regular stock assessments of commercially-important species need to be undertaken at a smaller regional level, rather than at the larger management blocks used by the International Council for Exploration of the Seas (ICES). Regular assessments of commercial fish and shellfish stocks at a regional level will allow for more accurate and rapid adjustments in fisheries management, and highlight the variability of stock health between (and within) regions.

37. Likewise, stock assessments and management of less mobile species, such as scallops and razor clams, should be performed at scales relevant to the species ecology, e.g. functional units. For example, ICES provides functional unit data for nephrops fisheries, based on the distribution of burrowed mud habitats. The functional unit approach would provide useful information on the health of local stocks to inshore fishermen that operate over smaller areas and assist with directing fishing effort away from depleted or vulnerable stocks.

38. For non-target species, efforts to reduce bycatch must be prioritised and indiscriminate fishing practices, such as bottom-trawling, should be tightly controlled, minimised wherever possible, and banned in fragile habitats.

39. Where bycatch is unavoidable, the Trust would like to see an increase in the collection and sharing of bycatch composition data (for both commercial and non-commercial species) to inform assessments of ecosystem health and quota allocations, and to identify particularly vulnerable species. There should be a significant reduction in, if not a total ban on, discarding bycatch species.

40. When a new method of fishing is proposed for commercial use, a detailed assessment of the target species stock health and distribution must be undertaken prior to licensing for widespread uptake by the industry. Likewise, a detailed assessment of the environmental and ecological impacts of the proposed method must be completed in a Strategic Environmental Assessment.

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hh Quotas for species such as cod, haddock, and nephrops are estimated for large areas of sea, for example ICES Area VIa includes the entire west coast of Scotland and the Outer Hebrides.

ii A relatively discrete habitat unit used by a species during its life-cycle.

iii ICES 2017 Advice - www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx

4) **Ecosystem-based management**

41. To improve the long-term stability and sustainability of inshore fishing, an ecosystem-based management plan, which considers the broader ecological impacts of fishing activities on the wider marine environment, must be applied and enforced.

42. An inshore fisheries ecosystem-based management plan must include a systematic monitoring approach that assesses the broad and long-term impact fishing activity has on Scotland’s marine environment at the ecosystem level. This monitoring approach should include the ecosystem health indicators set out in the EU Marine Strategy Framework Directive (i.e. measures of Good Environmental Status\(^{11}\)), which have been adopted in Scotland’s Biodiversity Strategy.\(^{mm}\)

43. Hitherto, fisheries management has focused on managing the stocks of single species (e.g. setting Total Allowable Catch and Maximum Sustainable Yield) rather than the marine environment they exist within. Fisheries management that focuses on species in isolation has been effective for reducing overfishing and improving the health of some heavily depleted stocks (e.g. Cod in the North Sea), but fails to acknowledge the broader environmental impacts and the consequential socio-economic effects on other marine users and rural communities. For example, the unintentional entanglement, and potential death, of large mobile species such as whales and basking sharks in static fishing gear, can influence ecosystem functioning and negatively impact marine tourism, conservation and research projects.

44. Ecosystem-based management actions could include:

- diversifying the inshore fishing fleet to relieve pressure on individual target species;
- diversifying fishing practices and increasing the use of (and investment in) least-damaging and discriminate methods;
- regular stock assessment and subsequent adaptation of fishing effort for target species (both for fishing intensity and distribution of fishing effort);
- conservation measures (e.g. no take zones, seasonal and spatial restrictions on certain gear types) to allow stock and environmental recovery and protection\(^{nm}\); and
- industry-led initiatives, such as the successful Fishing for Litter\(^{oo}\) campaign.

5) **Spatial management**

45. To ensure Scotland’s inshore fishing supports the ecosystem approach, it is essential for future fisheries legislation to be compatible with the planning framework set out in the Marine Act, notably Scotland’s National and Regional Marine Plans.

46. Effective integration of fishing activity into Regional Marine Plans requires inshore fisheries to be managed spatially, by setting geographical objectives and management measures that strive to improve the health of the marine environment and create harmony between fishing activities and

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\(^{11}\) Descriptors of Good Environmental Status - [http://ec.europa.eu/environment/marine/good-environmental-status/index_en.htm](http://ec.europa.eu/environment/marine/good-environmental-status/index_en.htm)


\(^{nm}\) For example, the St Abbs and Eyemouth Voluntary Marine Reserve, established in 1984, aims to conserve local biodiversity through promoting sensible recreational activities (code of practice) alongside a sustainable fishery for the mutual benefit of all.

\(^{oo}\) Project that encourages fishing vessels to land marine litter caught in their nets during normal fishing activities, [www.fishingforlitter.org.uk/](http://www.fishingforlitter.org.uk/)
other marine users, such as finfish aquaculture. To assist with balancing the many demands on the marine environment, the inshore fishing industry can contribute greatly to future marine planning and management by:

- locating and mapping the most sensitive and vulnerable habitats and species at risk from damaging fishing practices;
- mapping the distribution of effort for different fishing activities and identifying potential areas of conflict; and
- mapping the distribution of all marine activity and identifying potential conflicts between fishermen and other marine sectors.

47. Achieving a successful and useful spatial management plan for inshore fisheries will require collaboration amongst multiple stakeholders and the sharing of information. Close collaboration with Marine Planning Partnerships will be essential for ensuring the success of Regional Marine Plans and the integration of the fishing industry into marine planning.

Conclusion

48. The five components presented in this policy complement one another and successful implementation will be essential for establishing an effective, multifaceted inshore fisheries management plan. It is essential for the long-term success of the inshore fishing industry, as well as the future health of the marine environment, that fishing activities are managed sustainably, with a focus on long-term productivity and stability rather than short-term gain.

How the Scottish Wildlife Trust will use this policy

49. The Trust will use this policy to advocate for the protection, enhancement and sustainable use of Scotland’s inshore waters and promote ecosystem-based principles for the future management of Scotland’s inshore fisheries industry.

Cross-reference to other related Scottish Wildlife Trust policies

Finfish aquaculture (2012)
Marine planning (2013)

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