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LINK ISSUES INDEPENDENT SCIENTIFIC REPORT AND SAYS - MARINE BILL MUST RETURN OUR SEAS TO HEALTH

Scottish Environment LINK today released an independent scientific report on the historic decline of species in Scotland's seas, and called for the Marine (Scotland) Act to contain strong measures to reverse these declines - not just to protect what is left. The report, entitled "Recovering Scotland's Marine Environment" was prepared for LINK by the Scottish Association for Marine Science at Dunstaffnage Marine Laboratory in Argyll – and highlights case studies of the historic decline of species such as herring, native oyster, fan shell, skates and rays, maerl and cod. It also highlights positive examples of recovery such as those in the Clyde estuary.

Commenting on the report, Calum Duncan, Convener of LINK's Marine Task Force said: **"If we want to see sustainable and growing industries based in the seas around Scotland – and to support the future of the communities around our coasts - we have to improve the quality of the marine environment. This report contains conclusive evidence that we have been going in the opposite direction for too many years and decades. On the basis of this evidence LINK calls for clear assurances, from all political parties, that the central purpose of the Marine Bill before the Scottish Parliament will be to make our seas more healthy and full of life – and therefore more valuable."**

Becky Boyd, Vice-Convener of the Task force added: "The Marine Bill needs, at its core, to contain a serious commitment to a process of reversing the damage we have done to our seas. Planning systems and Marine Protected Areas are very welcome, but the legislative driver must be more than just protecting what remains of our marine life. We must use this opportunity to start the process of restoring the riches of our seas."

LINK has been encouraged by and welcomed the Stage 1 Report in the Scottish Parliament where the Rural Affairs & Environment Committee stated that the Bill must "place a duty on the Scottish

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Ministers and all relevant public bodies, when exercising functions, to have regard to the need to maintain and improve the health of the Scottish marine area”.

Full details of the report can be obtained at www.scotlink.org A summary and the foreword are contained in the notes to this release.

Editors' Notes

1. Scottish Environment LINK is the network for Scotland's voluntary sector environmental organisations. LINK has 34 member organisations spanning interests across the natural environment and associated cultural heritage and supported by around 500,000 people. Further information on LINK is available at www.scotlink.org
2. **Media Contact:** Andy Myles, LINK Parliamentary Officer, 0131 225 4345: mobile 07726 362 727
3. Calum Duncan is Scottish Conservation Manager for the Marine Conservation Society.
Becky Boyd is Marine Policy Officer for the Scottish Wildlife Trust.

Foreword to the Report – by the Scottish Environment LINK Marine Task Force

Recovering Scotland's Marine Environment, summarized below, is an independent report by Dr David Hughes and Dr Thom Nickell from the Scottish Association for Marine Science.

Focusing on features for which there is good evidence of decline, the report makes a strong case that Scotland's marine environment is in a far from pristine state and is in real need of recovery. Many habitats and species have been seriously depleted over a long period as a result of human activities, fragile habitats are particularly vulnerable to some mobile fishing gear, while the discharge of organic waste and water-borne chemical contaminants can also lead to the depletion of certain species. Unsustainable fishing practices have led to the decline of some fish stocks.

There is no doubt that a healthy marine environment is an ecologically and economically productive one. Therefore the case studies presented in the report, including the destruction of seabed habitats like oyster and maerl beds, that once supported entire ecosystems and provided nursery grounds for scallops and fish, have ultimately damaged the engine house of our marine economy including fisheries.

The report highlights some good examples of improved marine management, such as ongoing work to reduce fish farm impacts. A number of Scottish fisheries have also adopted technical conservation measures including selective gear and closed areas, reducing discards and enabling vulnerable species to show signs of recovery, and many fisheries are now MSC accredited, with several more under assessment. Scottish fisheries management has taken a leading role in Europe towards species recovery by adopting Long Term Management Plans (LTMPs) for certain species or through the Conservation Credits Scheme.

Ecosystems can recover, however these first steps need to be supported by a strong national framework of action for recovery across all of Scotland's marine environment. Restoring even a fraction of that lost abundance and prosperity will require co-ordination of effort, planning that takes account of the needs of the environment, use of sustainable fishing methods and the long-term protection of keystone habitats and species.

The Marine (Scotland) Bill is the best chance in our lifetimes to unite all our efforts to restore Scotland's seas to better health, abundance and productivity.

But the Marine Bill as it stands will only manage the *status quo*. It will not bring about any improvement in the wider seas outside marine protected areas.

To support the restoration of healthy and productive Scottish seas the Marine Bill must be strengthened to include:

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- **Recovery** - A duty on Scottish Ministers to improve the health of Scotland's seas, in line with international commitments.
- **Planning** - A duty on Scottish Ministers to prepare and adopt a national marine plan. A duty to ensure that Scottish Marine Regions cover the whole Scottish marine area (0-12nm). Scottish Ministers must ensure that regional plans are produced for all areas where there are conflicting uses and planning and/or management is required. A clear description in law of what plans must deliver.
- **Protection** - A duty on Scottish Ministers to create an ecologically-coherent network of Marine Protected Areas
- **Targets** - A duty on Scottish Ministers to set out the environmental targets marine plans must deliver – marine ecosystem objectives.

Fisheries - in addition, the UK and Scottish Marine Bills must be implemented in a manner that delivers improved joined-up operations between the Marine Bills and fisheries legislation to help deliver restoration.

Executive Summary – What the Report Says

The effects of human exploitation

Human exploitation of Scotland's seas dates back at least 10,000 years. We do not have the data to calculate the full extent of human impacts on the marine environment, but it is unlikely that there are any 'pristine' ecosystems left on the Scottish continental shelf. Natural variability and climate change are known to play a role in the decline of certain species. Nevertheless, research on the relatively few marine features for which data is available provides evidence that human activities have resulted in significant ecological depletion in the seas around Scotland.

Catch records from whaling stations leave no doubt that the abundance of all large whales in the north-east Atlantic was drastically reduced by commercial whaling.

Fishing has caused the significant decline both of certain target species and of species caught as bycatch. There is a large body of data that demonstrates that fishing, particularly bottom trawling and dredging, has profoundly altered ecosystems in heavily-fished coastal seas. Major changes include the replacement of creatures that form 'living crusts' on the seabed, like oyster, fileshell, maerl and fanshell, with smaller mobile worms and fish that inhabit sediments. Offshore, fishing in the deep Rockall Trough is believed to be seriously depleting slow maturing deep water fish species.

Case Studies of how human activities have impacted the marine environment

Herring - During the late 20thC Scottish herring stocks experienced a catastrophic decline, with landings in the North Sea falling from around 650,000 tonnes a year in the 1950s and early 1960s down to almost zero in the 1970s. In the Clyde, once the centre of a major herring fishery, landings peaked at 40,000 tonnes in the early 1930s, but had declined to almost zero by the 1980s. For recovery of herring to take place incidental fishing effort would have to be radically reduced.

Cod - Landings in the North Sea have declined from a peak of around 800,000 tonnes in 1980 to near zero. The inshore cod fishery has declined from a peak of 2300 tonnes in 1998 to around 300 tonnes in 2008. Bycatch of young cod by prawn trawlers remains a concern. Despite the recent EU Cod Recovery Plan, cod spawning stocks west of Scotland remain close to their lowest historical levels, although there is some evidence that plans are beginning to have a positive effect in the North Sea. On the west coast it is believed that natural mortality and environmental variability combined with fishing mortality are likely to be hindering cod recovery.

Skates and rays - Once common, these fish mature and reproduce slowly. Inshore landings have declined from around 465 tonnes in 1997 to less than 150 tonnes in 2008. Both bycatch and target fisheries are found to be at the root of this decline.

Maerl – This very slow-growing (1mm a year) coral-like red algae is an important Scottish species. Maerl beds are reservoirs of biodiversity, important both as nursery grounds for young scallops and young fish. Studies show that organic waste from fish farms significantly reduces live maerl and that scallop dredging has profound and long-lasting impacts. Scallop dredging on a maerl bed has been found to kill over 70% of live maerl, with no discernable recovery over the following four years. Recovery of maerl beds would be expected to require many years without disturbance.

File shell – These can form dense beds which stabilize loose sediment and can support hundreds of other species. They have disappeared from several areas where they were once common. Scallop dredging and use of TBT-based antifoulant on salmon farm nets, are known to kill file shells. A recent study estimated that complete recovery of a 7.5m wide strip cleared

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by the passage of a typical assemblage of Newhaven scallop dredges would take 117 years. In one case recovery from TBT antifoulants took 9 years.

Fan shell – Once common, this is now a scarce Scottish species, a decline attributed to physical damage and smothering by bottom trawling and dredging. It is believed that patches of fan shells act as an 'ecosystem engineer' and can supply up to 80% of the nutrients to plant plankton in the water column. Natural recovery is limited by the scarcity of individuals, but artificial populations in protected areas could be beneficial to ecosystem recovery.

Native oyster – Once widespread in dense beds, these are now rare around Scotland. They are known to be important in filtering water, preventing algal blooms and supporting ecosystem health. The Firth of Forth once supported over 166km² of oyster beds, with beds at Newhaven alone yielding around 60 million oysters a year. Native oysters may now be biologically extinct in the Firth of Forth. There is conclusive evidence that overexploitation is at the root of this collapse. It is believed that restoration will be impossible without effective legislation and enforcement to prevent unlawful gathering.

Demersal (bottom dwelling) fish communities in the northern North Sea – Research using data since 1925 has shown that the more intensive the fishing pressure the fewer fish species and smaller and younger the fish present. Results suggest that the total biomass of today's North Sea fish community is 38% lower than in the absence of exploitation. The biomass of large fish in the 4-16 kg and 16-66 kg size classes is estimated to have been reduced by 97% and 99% respectively compared with the pre-fishery state.

Examples of ecosystem recovery

The Clyde Estuary – This was so polluted that by the 1870s fish were virtually extinct. Since the improvement of sewage treatment in the late 1960s 34 fish species have been recorded, including salmon.

Marine cage farming – Organic waste from salmon farming reduces biodiversity and changes the type of species present in a limited area around the cages. Site rotation and more exposed sites are being used to encourage recovery, although full recovery has been found to take several years.

A strategy for marine ecosystem recovery

A strategy for marine ecosystem recovery would combine the management of fishing and other activities to ensure that they are at sustainable levels and do not cause long-term environmental damage, the use of protected areas both for marine biodiversity and to assist fisheries management, monitoring and effective enforcement. Recovery of all degraded Scottish habitats should be a component of the Marine Bill, with attention paid to the declining species highlighted in the case studies.

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