

## Marine Policy

# HELCOM Baltic Sea Action Plan

## – its ecological objectives and biodiversity

By **Hermanni Backer**

HELCOM HAS STARTED the process of developing a pragmatic assessment system for Baltic Sea biodiversity, including development of indicators and a method of combining these into higher-level indices. All interested scientists are invited to contribute with comments on the work.

The Baltic's unique conditions limit the diversity of life in the sea and make ecosystems exceptionally sensitive to pollution, the effects of industrial fisheries, offshore activities, and the introduction of non-native species. The naturally low biodiversity of the Baltic Sea adds to the specific importance of the well-being of populations of all native species. As there is very little functional redundancy in the Baltic Sea ecosystem, it can be argued that virtually all Baltic Sea species are "keystone species." Another implication of the unique Baltic Sea biodiversity is that many well-studied elements of the international and European biodiversity discourse are very difficult to apply directly to the Baltic. Novel solutions for biodiversity objectives and indicators for the region must therefore be sought.

The **Helsinki Commission (HELCOM)**, the inter-governmental organisation responsible

for overseeing the protection of the Baltic marine environment, is presently working on an improved assessment system including marine biodiversity. With the revised 1992 Helsinki Convention text, the Commission aims to reach "ecological balance" (or "good ecological status," using Water Framework Directive terminology) in the Baltic Sea ecosystem. According to the approach applied, biological diversity – using the widest definition of the term – is actually the essence of this ecological balance. Consequently, some metrics for assessing Baltic Sea biodiversity must be agreed upon in order to make sound management decisions. Even if scientific publications on marine biodiversity are published continuously and our knowledge in the field is growing, this is not an easy task. Unfortunately, many of the indicators or parameters devised by scientists are very difficult to make operational with standard monitoring.

HELCOM is developing a **Baltic Sea Action Plan** in accordance with the ecosystem approach, also envisaged to be applied in the future European Marine Strategy. The plan will be an integrated approach for the adaptive management of human activities impacting on the Baltic Sea marine environment. It shall distinguish between actions that can be implemented at regional or national levels and measures that can only be implemented at the level of the EU (Common Fisheries Policy, Common Agricultural Policy, marketing and

use of chemicals) or globally (e.g., shipping through the International Maritime Organisation). The Ecological Objectives for the identified main environmental issues (eutrophication, hazardous substances, maritime safety and loss of biodiversity), linked to the HELCOM monitoring and assessment programmes, will be used to measure progress towards the agreed targets.

Currently, HELCOM is developing Ecological Objectives within the Baltic Sea for eutrophication, nature conservation and hazardous substances and will focus in the near future on eutrophication and biodiversity. One of the most important functions of the Ecological Objectives and related Indicators is communication: how to translate science to managers. For that purpose, there is on the one hand a need to simplify the complex ecosystem. On the other hand, it is important to have a solid scientific foundation. Therefore, HELCOM invites the MarBEF network of excellence to provide input into HELCOM's objectives. One opportunity is to give feedback using HELCOM's eMeeting facilities on <http://www.helcom.fi> (Events & Meetings) (eMeetings – Ecological Objectives).

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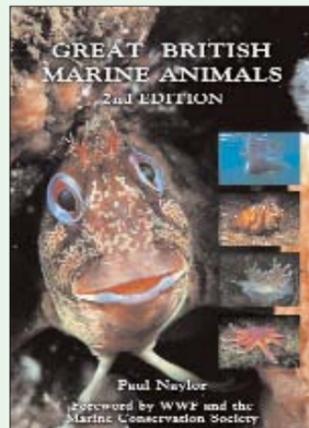
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# The end of an era

## – is small no longer beautiful?

By **Richard Hartnoll**

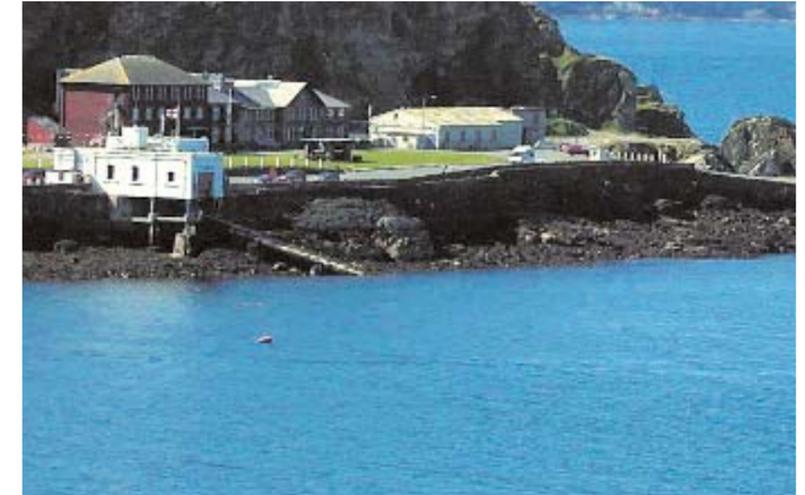
IN SEPTEMBER 2006, LIVERPOOL University will close the Port Erin Marine Laboratory in the Isle of Man, bringing to an end over a century of investigation into the central regions of the Irish Sea.

The rationale is not simple, but it emphasises the current vulnerability of small off-campus research centres. They are falling victim to various pressures. One is the current ethos of interdisciplinary studies, where they have geographical problems of close integration. However, more important is the cost-driven evaluation of university facilities: small remote institutions are inevitably expensive in unit costs, and their outgoings cannot easily be buried amidst central funding. The decision has been made. The Isle of Man government may retain some research facility on the site, but nothing has been settled.

The driving force behind the founding of the laboratory was Sir William Herdman, Professor of Natural History at Liverpool from 1881 to 1921. Initially the laboratory was privately funded (at one guinea, = €1.5, per year) by the members of the Liverpool Marine Biological Committee, first on Puffin Island off the north coast of Wales (1887-1892) and then in a small building on the north side of Port Erin Bay in the Isle of Man (1892-1902). The larger building on the present site on the south side of Port Erin Bay was opened in 1902 and was transferred to Liverpool University in 1919.

The work at Port Erin in the early part of the 20th century focused largely on commercial finfish and shellfish, especially on herring, which was a major local fishery. However, there were also basic scientific studies such as those on algae and taxonomy. There were, in addition, routine hydrographic measurements, of which more later. Throughout the period up to the 1940s the laboratory functioned with a small resident staff, with much of the research being driven by visiting scientists based in Liverpool, where the director was located.

This all started to change in the late forties. Additional resident staff were recruited, and in 1950 John Colman was appointed as the first resident director. For the first time, the laboratory had a dedicated research vessel of substance, the *William Herdman*. The research field diversified, with basic research including



A recent photograph of Port Erin Marine Laboratory, Isle of Man.

algology, benthic communities, rocky-shore ecology and zooplankton. The ethos was still essentially research, and by the end of the sixties there were eight scientific staff based in Port Erin. Fundamental research diversified further, but fisheries research was still a major preoccupation. However, there was an increasing emphasis on the scallop fishery as this steadily overtook the herring as the major local resource.

In the early seventies there was another major shift in emphasis as the laboratory took over a substantial teaching role under its new director, Ernest Naylor. Liverpool initiated a marine biology honours degree, and to date almost a thousand students have spent their final undergraduate year in the Isle of Man. They are now scattered throughout the marine biology community, many in positions of power and responsibility. We will welcome the last of their kind in September this year. Marine biology will continue to be taught in Liverpool, but the ambience will perhaps not be the same. Have you ever tried to dive in the Mersey?

Nevertheless, this teaching role was not fulfilled at the expense of research. At the same time as the honours class grew, so did the number of research students, peaking at thirty or more in the eighties. Then slowly the screws began to turn, as university funding in the UK became tighter. Research funding was harder to come by, so research student numbers fell. The staffing levels at Port Erin presented a demographic time-bomb – we were largely an ageing population, and as retirements occurred

replacements did not follow. Whole-animal biology was no longer sexy – employ another molecular biologist instead! In the early nineties the University was warned of the Port Erin predicament – invest now or perish later. The latter option was evidently the one chosen.

There is no point in being morbid at the closure, though we are entitled to be sad. What are the positive achievements of 114 years of marine biological research in Port Erin? Firstly, there is a major body of scientific publication, covering many fields, where it would be invidious to highlight topics. Secondly, there are our many graduate students, from all corners of the world, who have taken the Port Erin experience home with them. No less important, the hundreds of undergraduates who have achieved a Liverpool marine biology degree. There are the ongoing data collections that we hope to hand on for posterity and continuation; the long-term fishery data for herring and scallop; and the hydrographic records, the longest continual records in the UK, some extending over 100 years. For many years seen simply as a background data source for biologists, these are now seen as seminal data in our understanding of global warming and marine eutrophication. We hope that our inheritance will prove worthwhile.

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