Renewables in ICES
by Ian Davies

Offshore renewables will become one of the biggest users of marine space in the ICES area within the next few years. In recognition of this, and following some inspired prompting from OSPAR, ICES has included consideration of the effects of renewables in the work of its Expert Groups. The approach has had two arms. Firstly, items on renewables have been included in the agendas for specialist Working Groups, for example WG on Seabird Ecology, and WG on Marine Mammal Ecology. The other approach has been to create short-term groups with a specific renewables remit – such as the Study Group on Wave and Tidal Energy.

This SG held its third and final meeting in Cork in late March. Attendance in person was disappointing (although we rattled through the business!), but other contributions have been received by email. The main items discussed related to the state of development of the industries, environmental research, and possible ecosystem-based approaches to management of the environmental interactions. The latter made use of a report recently completed for MSS by Fraser MacDonald (son of Gus), who spent a few weeks with us on secondment from NERC. Fraser had compared a Canadian management system with the requirements of the our systems, particularly related to Natura sites and Habitats/Birds Directives. Finlay Bennet reports about Fraser below.

One of the outcomes of the meeting was a proposal that a full WG be created to maintain and develop ICES work in this area, and to integrate actions across the different EGs that have links with renewables.

NERC placement completes project investigating approaches to address risks to ecosystems
by Finlay Bennet

Fraser Macdonald has completed a 3 month placement at MSS, supported by NERC Knowledge Exchange. During this period Fraser worked closely with associates in Canada, gaining insights into the development of a ecosystem based risk analysis procedure. Fraser then compared this with one of the existing approaches used for managing environmental impacts in Europe: the Habitats Regulations Appraisal process. Similarities and differences in approach were identified, and the potential for applying an ecosystem-based risk management framework in Scotland was discussed. A draft report is currently available. MSS plan to undertake peer review and to publish the report in a suitable format.

Contact Finlay Bennet for more details.

Marine Scotland Interactive Update
by Drew Milne

MPA

The MSI Marine Protected Areas theme has seen a significant update with contributions from Joint Nature Conservation Committee (JNCC) and Scottish Natural Heritage (SNH). Both JNCC and SNH are providing guidance and scientific advice on the selection of Nature Conservation MPAs and the development of an ecologically coherent network within Scottish territorial and offshore waters. Marine Scotland is leading the work on Research/Demonstration MPAs. Data from the MPA proposals has been collated into a new summary information layer which aims to not only provide information but to assist in the site selection process for marine development. This new Google Earth Layer provides access to site specific information, in a spatial...
context, for the 37 proposals in development. The sensitive geological and biological features that warrant each site's proposal are highlighted alongside images and status information. As the MPA process develops, this layer will be expanded upon to include more detailed feature descriptions and the potential impacts upon those features.

There is scope to develop similar information layers for the other protected areas around Scotland, such as SACs and to expand on our SPA theme.

**Grey and Harbour Seal usage maps**

Marine Scotland commissioned the Sea Mammal Research Unit from the University of St Andrews to produce maps showing the estimated distribution of grey and harbour seals around the UK. These maps will be particularly useful when examining the potential impact of offshore renewable developments and the placement of these devices. The maps were produced as 5x5km grids covering the whole of the UK and surrounding waters and are grouped according to species. These maps (twelve in total) are now available to download from Marine Scotland Interactive along with the accompanying report that should be read before using the maps. The maps are available in various formats for use with different software.

In addition to the updates above, some smaller changes have been made to the website. The documents made available through the MSI renewables public register can now be accessed from the Licensing Operations Team current projects website.

The Maritime and Coastguard Agency have given us permission to make some of the bathymetric data from the Civil Hydrography programme (CHP) available on MSI with the condition that this data must not be used for navigation purposes. Bathymetry from the west coast of the Outer Hebrides and the west of Orkney are now available to download.

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by Mike Robertson

Mike Robertson attended the first meeting of the ICES Working group on Marine Benthal and Renewable Energy Developments (WGMBRED) which was held at the Université of Caen Bassé Normandie, France. From the 19th to the 21st March 2013. The Working Group, which evolved from a workshop (WKEOMB) held in Bremerhaven in 2012, will lead ICES into issues related to upcoming large-scale ecosystem effects of renewable energy constructions on the marine benthal community. There is also a close working relationship with the Benthos Ecology Working Group (BEWG) and the Study Group on Environmental Impacts of wave and Tidal Energy (SGWTE).

The meeting, which was co-chaired by Jennifer Dannheim of the Alfred Weneger Institute, Germany and by Andrew Gill of Cranfield University, UK was attended by 23 scientists representing eight countries (Belgium, Estonia, France, Germany, Ireland, Poland, Sweden and the United Kingdom).

After a round of participant introductions, the co-chairs led a plenary discussion outlining the aims of the workshop, introduced the Terms of Reference (ToR) and also outlined the proposed cross-cutting themes and intersessional topics to be addressed. As a background to the week's work it was noted that benthic organisms occupy a fundamental place in marine ecosystems and deliver numerous ecosystem goods and services. Renewable energy developments affect benthic communities over various spatial and temporal scales. The identification of the processes behind these impacts is the prerequisite for an efficient, hypothesis-driven approach towards disentangling the various effects of marine energy developments on the marine benthos as well as on the whole ecosystem. The outcomes will assist to improve monitoring concepts in the context of offshore renewable energy constructions and will be also set within the context of marine spatial planning strategies and future ecosystem-based management approaches.

Following this, each attendee presented overviews of their country's research projects and monitoring activities associated with wet renewables developments. Read here a total of 6 ToR's that were addressed by subgroups during the meeting.

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### Helicopters to aid recovery of Data Storage Tags in Salmon

by Jason Godfrey

Marine Scotland Science Freshwater Laboratory will shortly be embarking on a satellite tagging programme for returning Atlantic salmon on the north coast, in an effort to determine their depth use and migration routes, and to assess the potential for interaction of salmon and marine renewable energy devices. The advantage of satellite tags is that they do not need to be recovered, because they communicate their data via satellite. However, satellite tags are very expensive, rather large, and a relatively untested technology, so we have been exploring alternative means of obtaining the necessary data. Data Storage Tags (DSTs), for example, can record

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swimming depth and approximate location over a period of months. They have the advantage of being smaller and cheaper but, crucially, they must be physically recovered to obtain the data they hold.

Retrieval of DSTs is no simple task. Some will be recovered by anglers and commercial nets, but netting effort has declined in recent years. One option would be to guide recovery by pairing the DST with a radio-tag (which can be detected remotely over a certain range). To assess our ability to recover fish fitted with such a tag, we radio-tagged some salmon at sea in the spring of 2012, using a variety of means (walking river banks, drive-by searches, helicopter flights and listening stations at river mouths). Helicopter flights, though expensive, proved to be the most effective, and cost-effective, search and recovery method, locating 30 tags at a cost of about £900 per tag (including staff costs and overheads), while drive-by searches located just one tag, costing almost £3000 per tag. Walk-by methods detected zero tags.

After locating a tag there remains the not inconsiderable problem of retrieving it. Tagged fish in large lower sections of rivers were not recoverable, but overall we retrieved 30% of the tags we located. Of these, 40% were caught by electrofishing and nets (photo: Recovery of a radio-tagged salmon in the headwaters of the river Don by MSS staff. This salmon was tagged off Montrose seven months previously, and initially located by helicopter), while 60% were no longer attached to the fish, having either been shed, or the fish predated. We conclude that guided retrieval of DSTs could make an important contribution to the acquisition of important data.

MS-LOT Update
by Jim McKie

Others have very ably contributed, as earlier additions will testify. So I thought it is time for me to provide some words.

April, as planned, is a very busy and in some ways defining month for licensing. Post the announcement on the Aberdeen Bay windfarm we are planning to make recommendations on the West of Lewis wave proposal and the Samsung Methil single turbine to the Ministers in April. This means that staff are placing additional emphasis on the “due diligence procedures” as the recommendation process must be very carefully minded to a conclusion. We need to provide others with an insight into that process and once we hit a “quietish” spell we will attempt to deliver on that obligation.

Now back to the busy and challenging April. We contacted the developments who are in the application process to ask them to provide their issues list (called a gap analysis), consultation analysis and perhaps most importantly their timelines. This information has been largely assimilated and slotted into the overall licensing process map and indeed matched against our projected timelines for each project. Why? Because we must retain control of the entire licensing process so we are able to manage all the elements in a manner that provides confidence and clarity and allows us all to appreciate the challenges and when we are predicting that decisions will be made. The outputs from the process assimilation work will be made available to Ministers, MSS, SNH, JNCC and the developers by the end of April and then the major challenge will be delivering to what I hope will be agreed timelines. This means that MS-LOT will be generally assisting in the prioritisation of workloads and specific elements of the process to deliver on those timelines. Looking at the current timelines, may I just say expect a very hectic and challenging June and July (hard man!) because these months are predicted to be critical for the projects and licensing. Particularly if we are to meet our objectives on submitting recommendations to the Ministers.

Currently myself and others are reviewing how we deliver the licensing business and it is clear that we will want to make changes that we clearly hope will ease some of the pain that we (MSLOT, MSS, JNCC, SNH ) currently experience. MS-LOT recognise that we have to reduce the burden where ever possible but we must also ensure we maintain a fit for purpose process that can survive scrutiny. Any changes, amendments etc will be fully articulated to those involved in advance of implementation, however, any changes will take time to develop so it will not be this month! Meanwhile, it is imperative that we continue to communicate and through discussion we should effectively identify areas for improvement, perhaps we should set up a lessons learnt session sometime. What do you think?

British Ornithologists’ Union (BOU) Avian Demography Conference
by Jared Wilson
Jared Wilson attended the British Ornithologists’ Union (BOU) Avian Demography Conference in Leicester on March 26-27. A wide range of population modelling methods were discussed alongside the their use to better understand the drivers of population change. More information on the conference alongside a link to talk abstracts can be found at

http://www.bou.org.uk/bou-avian-demography-conference/

Moray Offshore Renewables Ltd Cod Survey
by Gareth Jones

Moray Offshore Renewables Ltd have recently completed a set of two, week long surveys with the aim of providing some baseline information as to the distribution of spawning areas for Cod in and around the MORL Wind farm. This was carried out on the MFV Seagull BF74. Both surveys were successfully carried out along with the addition of several extra tows. Peter Wright from MSS is currently reviewing the data for the developers.

Gareth Jones (MSS) provided support and advice on the best methodology to use and helped in finding a suitable vessel along with preparing the scientific equipment required for the survey. To save the developer having to invest in a new net for these surveys, MSS loaned the developer a net blinder, allowing the use of the vessels own net while retaining the sample range required.

Additional to the requirements of the survey. The developers also agreed to collect some biological data from spawning cod to aid a PhD project being carried out by Alice Doyle from the University of Strathclyde.

Many thanks go to Phil Copeland from MSS and Seatronics for their much appreciated help in setting up the vessels’ SCANMAR equipment.

Scottish Renewables conference, Edinburgh EICC, March 18th and 19th, 2013
by Robert Watret

Colleagues from MPP and MSS represented Marine Scotland at the annual Scottish Renewables conference held in Edinburgh at the Edinburgh International Conference Centre on the 18th and 19th of March. This was a busy event with 60 exhibiting organisations and a record 1250+ attendees.

Plenary sessions for the first day included presentations on topics ranging from market reform to investments in renewable developments. For the second day the conference was divided into four separate sub-conferences each dealing with distinct topics: - EMR (Electricity Market Reform) - Grid - Planning - Skills. David Pratt, the project lead on Sectoral Marine Planning for Offshore Renewable Energy, took part in the plenary session entitled “Maximising our Potential” and presented his findings on the topic of: “Planning for Offshore Renewable Energy in Scottish Waters”. After the presentations the panel, which included John McNaimey, chief planner for SG, answered various questions on planning issues from the audience.

As usual the MS graphics team, Keith Mutch and Neil McCombie created a visually arresting stand and provided ample take-away information both for the interested and for the passer-by. In the MS stand MSI was on display with the latest additions by Drew Milne and Peter Hayes on show to the general public. The images provided in MSI together with the useful information that they can be linked to grabbed the attention of graduates and captains of industry alike. Also, some Scottish universities and colleges invited some of their students to go along. These were mostly from engineering degrees and a few asked for the possibility of an apprenticeship once they had seen what interesting and varied work we take on at MSS. Footfall on our stand was never excessive but in the coffee and lunch breaks some inquisitive people did come along to see what we had on offer and, occasionally, to find out who we were!

The presentations given at this conference can be seen here:
http://www.scottishrenewables.com/events/annual-conference-exhibition-2013/ac13-presentations/