

# DR TERRY HOLT



*Position*        **Director/Environmental Consultant**  
*Nationality*    **British**

Centre for Marine and Coastal Studies Ltd

## EDUCATION AND PROFESSIONAL QUALIFICATIONS

1984	<b>Ph.D. Marine Biology</b>	<i>University of Liverpool</i>
1980	<b>Bsc. (Hons) Marine Biology</b>	<i>University of Liverpool</i>
2007	<b>UK Marine Mammal Observer Course</b>	<i>JNCC Approved</i>

## SEA CERTIFICATES

<b>Seafarer Medical Certificate (ENG 1)</b>	<i>Expires 2012</i>
<b>BOSIET Certificate (OPITO accredited)</b>	<i>Expires 2016</i>

## PROFESSIONAL HISTORY

<b>2003 – Present</b>	<i>Centre for Marine and Coastal Studies (CMACS) Ltd.</i>	<i>Director</i>
<b>1998 – 2003</b>	<i>Environmental Research &amp; Consultancy, University of Liverpool</i>	<i>Senior Consultant</i>
<b>1991 – 1998</b>	<i>Port Erin Marine Laboratory, Isle of Man</i>	<i>Consultant &amp; Lecturer</i>
<b>1986 - 1996</b>	<i>Kelp Farm Ltd.</i>	<i>Advisor &amp; Director</i>
<b>1985 – 1986</b>	<i>Nature Conservancy Council</i>	<i>Botanical Surveyor</i>
<b>1984 – 1985</b>	<i>Scarborough Borough Council</i>	<i>Botanical Surveyor</i>

## KEY EXPERIENCE

<b>Environmental Impact Assessment</b>	Highly experienced in assessing the impacts of human activities on natural habitats and species. Leading role in marine ecological assessments for a number of major projects (overleaf) and a member of the expert team responsible for delivery of the UK Offshore Energy SEA to Government (BERR, now DECC). Highly experienced in the field of offshore renewable energy (wind, wave and tidal) and other development activities including oil & gas exploratory drilling, major sewage disposal schemes, pipelines and sea cables.
<b>Survey &amp; Monitoring</b>	Particularly on benthic systems, but including other groups, notably fish and mammals with a variety of projects in the Irish Sea and North Sea but also further afield in the south east Mediterranean and Egyptian Red Sea. Considerable experience at sea with a wide variety of survey, sampling and fishing gears especially benthic trawling, grabbing, camera surveys and the collection of sediment, fauna and chemical samples. Experienced in intertidal surveys at a variety of levels, including use of GIS and aerial photography. Experienced at interpretation & mapping of soft and hard seabed communities including to JNNCC biotope level, and including use of sidescan sonar and backscatter data.
<b>Marine Conservation Strategy</b>	Preparation of reports for UK Conservation Agencies on the sensitivities of specific marine communities to human activities, heavily involved in drafting of biodiversity action plans for UK and Isle of Man, and production of summaries of marine biological information for specific geographical areas.
<b>Sustainable Fisheries Assessment</b>	Heavily involved numerous assessments of fisheries to the Marine Stewardship Council standards for sustainable and well managed fisheries. Involved in assessments of mollusc and finfish fisheries in UK, Denmark, Isle of Man, Faeroes, Canada, the sub- Antarctic & Vietnam. Was involved in early drafting of assessment criteria and scoring methods; involved in trials of the Risk based Framework.
<b>Project Management</b>	Leading role in many multi-disciplinary projects such as environmental (FEPA) monitoring. Spent 30 months coordinating and carrying out environmental assessments and surveys for the Isle of Man's all-island sewage treatment programme, covering marine & freshwater ecology and water quality, terrestrial ecology, public health, and cultural heritage, plus input to public enquiry.

## PROJECT EXPERIENCE SUMMARY

I have published scientific papers, presented at international conferences and authored more than 150 consultancy reports.

Current/recent projects are given below (Irish Sea related first). This is only a small selection of my experience.

Previous Irish Sea related experience (not given below) includes several years of designing, managing and interpreting baseline and monitoring surveys for oil and gas developments in the Irish Sea (principally BHP, also Marathon Oil, Elf Enterprise Caledonia, Shell and BP in the 1990s and early 2000's); Large scale intertidal surveys on Manx and Welsh coasts; two years managing EIA for sewages discharges in Manx water; fisheries and seabed related surveys of a number of cable and pipeline projects in the northern Irish Sea; aquaculture studies in the Solway firth; several years teaching and researching in the Northern Irish Sea at Port Erin Marine Lab; ten years seaweed cultivation in the northern Irish Sea; and numerous other works.

CLIENT	PROJECT	SUMMARY
Centrica	Irish Sea Round 3 OWF	Was client representative to ensure high quality survey data was obtained during month-long seabed surveys of the Irish Sea round 3 offshore wind farm zone using grabs and camera and interpretation of sidescan and backscatter data; Reviewed report of above survey;  Carried out a ZAP (Zonal Appraisal and Planning) Assessment on fish and benthos for this area.
English Nature	Proposed SACs NE Irish sea	Involved in camera surveys to determine status of possible conservation features in three areas of subtidal reef.
NPower	<i>Gwynt y Môr Offshore Wind Farm</i>	Lead on large program of benthic surveys and assessments for the EIA (including noise issues especially re spawning fish).  Post-consent development of monitoring methods for FEPA Licence compliance (lead on benthic ecology, also involved with fish surveys).  Presently analysing and interpreting pre-development survey samples.
NPower	<i>Rhyl Flats Offshore Wind Farm</i>	Survey design, data analysis and report preparation for fish and benthic ecology monitoring. Ongoing, fifth year of programme.
Seascope Energy (DONG Energy)	<i>Burbo Banks Offshore Wind Farm</i>	Survey planning, management and analysis for benthos and fish monitoring, including lead on preparation of monitoring reports.
NPower	<i>North Hoyle Offshore Wind Farm</i>	Heavily involved for over eight years from scoping studies through EIA, management of five year monitoring programme and post- monitoring review; primarily responsible for infauna, epibenthos and fish.
SSE	<i>Beatrice Offshore Wind farm</i>	Managed and reported on surveys of fish and benthos, authored benthic ecology chapter for the environmental statement.

CLIENT	PROJECT	SUMMARY
Isle of Man Government Department of Agriculture, Fisheries and Forestry / CCW	<i>Modiolus monitoring</i>	Interpretation annually of video recordings of permanent marked quadrats on <i>Modiolus</i> (horse mussel) reefs to North East of Isle of Man as part of wider Irish Sea <i>Modiolus</i> monitoring, in conjunction with CCW. 2007 – ongoing.
TINA Consultants/BHP	<i>Liverpool Bay Oil and Gas Field</i>	Update of a High Level Environmental Summary for the Eastern Irish Sea.
Isle of Man Government Department of Transport	<i>Sewage sludge disposal</i>	Planned and managed modeling of outputs in relation to possible changes to future treatment and disposal regimes for large coastal sewage treatment plant; advice re likely environmental impacts.
Isle of Man Government Department of Transport	<i>Runway extension works</i>	Contributed to Environmental Impact Assessment and baseline surveys for monitoring purposes for intertidal and subtidal benthos in relation to Ronaldsway airport runway extension.
OSIRIS Projects/BHP/EOG	<i>Liverpool Bay Oil and Gas Field</i>	Interpretation of results of benthic surveys (grab and camera) to screen for sensitive habitats; Management of overall report preparation and sample analysis.
Hydrosurveys/Airtricity	Arklow Offshore Wind Farm (Ireland)	Management, survey design, monitoring and report preparation for benthic monitoring off the East coast of Ireland.
Countryside Council for Wales	<i>GIS data presentation - important areas of seabirds around Wales</i>	Preparation of maps outlining general importance of sea areas around Wales for seabirds by analysis of a variety of large, long-term datasets. (A variety of other contracts focusing on use of GIS for data provision have been managed or carried out, this being the largest).
DECC / Hartley Andersen	<i>UK Offshore Energy SEA</i>	Member of expert team responsible for delivering the Strategic Environmental Assessment to the UK Government (Department of Energy and Climate Change).
DONG Energy	Barrow, Walney & Ormonde Offshore Wind Farms	Lead on interpretation and reporting for benthic surveys (post-construction, Barrow; pre-construction Walney and Ormonde). Have also carried out statistical analysis on fish survey data. Ongoing.
BOWL Ltd	Beatrice Offshore windfarm	Carrying out EIA on round 2 Offshore windfarm, including desk studies and grab/trawl/camera surveys.
Centrica	Lincs Offshore Wind Farm	Contribution to EIA in relation to noise, impact assessments for fish and benthos.
Moody Marine and MacAlister Elliot & Partners	<i>Marine Stewardship Council Fishery assessments</i>	Assessment of fisheries against standards of the Marine Stewardship Council (MSC). Having been involved in preliminary workshops and drafting of early versions of scoring systems, I have subsequently been involved as a team member in preparatory work, pre-assessments, and full assessments of a variety of mollusc and finfish fisheries in the UK, Isle of Man, Denmark, the sub-Antarctic and Vietnam.
Poseidon Aquatic Resource Management Ltd	Solway Aquaculture project	Contributed to report assessing possibilities for sustainable integration of aquaculture in the Solway Firth; managed GIS provision for the whole project; summarized marine ecology of the area and assessed likely conflicts.
PowerGen/Shell / E.oN - London Array Limited	<i>London Array OWF</i>	Managed a large programme of Intertidal and Offshore Surveys and Environmental Impact Assessment for what was at the time the world's largest proposed offshore wind farm development (intertidal and offshore benthos and sediments; offshore fish; including additional responsibility for assessment of noise and EMF effects;

<b>CLIENT</b>	<b>PROJECT</b>	<b>SUMMARY</b>
RSK Ltd / Shell	Corrib Gas Field surveys (Ireland)	Survey manager on a ten day baseline survey; managing two survey teams (day and night shifts) on 24 hour ops utilising Day Grabs / SPI cameras / water samplers.
Various	<i>Lab sample analysis</i>	Manage sample analysis (primarily benthic fauna and particle size analysis, but also chemical analyses) under contract to a variety of other organisations, typically 150 – 200 samples per year; all to NMBAQC standards,
Various	<i>Smaller coastal projects</i>	Environmental Impact Assessments for marinas, FEPA Licence applications, coastal discharge studies, rock-dumping etc.
Various	<i>Offshore Renewables</i>	Advice in relation to technical issues such as EMF, underwater noise, stakeholder consultation and environmental monitoring programmes.