

Dr Roger Bamber

Qualifications BSc (1st Class Honours, Zoology), University of Newcastle-upon Tyne, UK
PhD (Marine Biology University of Newcastle-upon-Tyne, UK
IdQ in Marine Benthic Macro-invertebrate Groups

Affiliations Fellow of the Linnean Society of London, Council Member 1991-1994
Fellow of the Zoological Society of London
Member of the Institute of Ecology & Environmental Management
Member of the European Research Network on Aquatic Invasive Species
Council Member of Porcupine Marine Natural History Society, Hon Editor 1985-1994; Hon Secretary 2006-present
Member of the Biological Society of Washington
Environmental Partner of the Chartered Institution of Water and Environmental Management
Consulting Taxonomic 'Expert' to the Marine Conservation Society

Date of Birth 1 September 1949

Nationality British

Current Position at CWA

External Consultant

Summary of Employment

November 2008-Present Senior Partner, ARTOO Marine Biology Consultants LLP

Present roles include:

- Analysis of ships' hull-fouling, and transport and succession of fouling species
- Environmental impact assessment for marine inshore and deep-sea hydrocarbon and mineral exploration world-wide
- Environmental impact assessment for coastal developments and discharges
- Expert witness services for marine arbitration, P&I Clubs, and legal cases
- Conservation and management survey and assessment for statutory conservation organizations
- Field survey and interpretation of tropical meiofauna, coral reefs, marine cave faunas, coastal lagoons, etc.
- Strategic environmental assessment of power generation developments

May 2008- October 2008 Senior Consultant, Jacobs Environmental

May 2008 – Present Scientific Associate, Zoology Department, The Natural History Museum, London

May 1998- April 2008 Consultancy Leader, The Natural History Museum, London

April 1992- May1998 Director, Fawley Aquatic Research Laboratories Ltd. In charge of marine ecology, invertebrate biology and taxonomy, Environmental Impact Assessment and creative conservation

1990-Present Visiting Lecturer, Dove Marine Laboratory, University of Newcastle-upon-Tyne on Environmental Impact Assessment

1978-1992 Research Officer, Central Electricity Generating Board (now National Power plc), Marine Biology Unit. Working on the interactions between the marine environment and power generating station construction and operation.

1977-1978	Curation of Freshwater Bivalve Collection, Tyne-and-Wear Museums Service.
1997 to present	Independent Research on Pycnogonid and Peracarid Biology, and Taxonomy and Marine Community Ecology

Research Areas

Ships' Hull-Fouling: Interpretation of the species settling on vessels around the world, principally barnacles, including growth patterns, distributions, and succession of the fouling community.

Environmental Impact Assessment: Development of techniques for EIA, field assessments, desk assessments, research into options for creative conservation, consultation and production of Environmental Statements for industrial developments including nuclear and conventional power stations, jetties and tidal barrages in UK and abroad, project design and management for the ecological aspects.

Cooling Water Systems: Studies to improve the efficiency of power station cooling water systems to reduce blockages of intake screens, and animal mortalities, analyses of the effects of entrainment passage and mortalities, assessments of mussel fouling and chlorination regimes for their control.

Benthic Marine and Estuarine Community Ecology: Studies at the whole macrofaunal community level, on the community structure and species inter-relationships in relation to environmental characteristics (sediment, temperature, salinity, pollution) both in space and time.

Taxonomy: Analyses of intraspecific variability, descriptions of new species, the logical structure of genera and construction of taxonomic keys for pycnogonids, mysids, ostracods, halacarid mites, atherinid fish, polychaetes, isopods and tanaidaceans.

Marine Invertebrate Biology and Life History: Interpretation of life histories and longevity. Population structure and seasonality of selected species of crustaceans and cephalopods.

Ecophysiology/Ecotoxicology: Studies on the sub-lethal and sub-whole-animal responses of marine organisms to environmental conditions and pollutants.

Marine Zoogeography: Surveys, data collation and critical assessment of recording practices for marine species; distribution modelling within taxa in relation to ocean processes and climate mapping.

Marine Pollution: Studies on the ecological responses to marine pollution, principally in the following areas:

- **Marine fly ash disposal:** surveys on the effect of sea-dumping of power station coal ash, community responses, dispersion of the ash, laboratory studies on colonization of ash substrates, tube-building polychaete utilization of the ash, and co-ordinating a field trial on the potential for artificial reef construction using ash.
- **Thermal effluents:** field studies on the ecology of heated sea-water discharges, benthic responses at species and community level, reviews of the knowledge on crustaceans in thermal effluents and some issues of 'exotic' species associations and assessments of potential effects of proposed discharges.
- **Acidic sea-waters:** field and laboratory research into the potential effects of and species tolerance to reduced pH in sea-water, in association with power station flue-gas-desulphurization and global ocean disposal of CO₂.
- **Sewage outfalls, Oil Exploration, Salmon Farming:** environmental impact assessments of benthic community structure in relation to these various forms of organic pollution

Brackish Lagoons: Surveys of brackish lagoons and saline ponds, long-term monitoring of this rare habitat, and multivariate analysis of the UK national data set in close liaison with the Nature Conservancy Council (as was) leading to an understanding of community structure, and the criteria for their creation and management relating to their potential for 'creative conservation'. Member of the JNCC Saline Lagoon Working Group. Conservation surveys of sites proposed for SAC status; preparation of Best Practice guidelines under the UK HAP.

Atherinid Biology: A comprehensive collaborative programme of research into the UK sand smelt (taxonomy, life history, reproduction, behaviour, parasitology, evolution, and zoogeography).

Pycnogonids and Tanaidaceans: Studied the biology, distribution and taxonomy of these marine invertebrates, including a major review paper in collaboration with Françoise Arnaud of Station Marine d'Endoume, France. Identification and interpretation of pycnogonid and tanaidacean material. Author of the world Pycnogonid webpage "PycnoBase" (<http://www.marinespecies.org/pycnobase/>).

Population Parasitology: Studies on the synecology of invertebrate parasites of fish.

South China Sea Cave Fauna: Co-led an expedition to make a preliminary analysis of the marine fauna from submarine caves in Hong Kong, and put the species/communities in a conservation context.

General Experience:

The above programmes of research have involved field survey work, using grabs, corers, dredge, and remotely operated vehicles with underwater camera facilities, fishing gear, and a variety of instruments for habitat measurement, undertaken from shore, small and large vessels and hovercraft. This experience has led to expertise in the planning of survey work and the associated correct laboratory practice for faunistic sample analysis and sediment analysis (including QA) in data handling and statistical analyses, commonly involving computer systems and documentation. The emphasis on community studies has inevitably resulted in the development of sound taxonomic expertise across a range of marine animal taxa, and thence the development of collaborative contacts in many museums, universities and other research institutions world-wide.

Academic

A visiting lecturer at Newcastle University for the past seven years on their Environmental Impact Assessment and 'North Sea Forum' courses. Was also involved with a similar EIA course for Southampton University Biology Department from 1988 to 1994.

Publications

Over 160 peer-reviewed publications in scientific journals, together with contributions to books, conferences and 'grey' literature. A full list of titles is available on request.