

Dr ROBERT NUNNY

Marine Environmental Scientist

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Date of Birth: 16/03/50 **Nationality:** British **Languages:** English and Spanish (fluent)

Expertise:

Oceanographer, hydrographer and sedimentologist, with a wealth of practical experience working in estuarine, coastal and shelf environments worldwide. Extensive practical skills in seabed mapping and associated field data collection. Wide involvement in studies examining processes of sediment contamination. Experienced data analyst, including use of GIS and PC-based modelling systems. Active in basic research into sediment transport processes.



Team member of multi-disciplinary environmental impact, contamination and conservation projects in sensitive temperate and tropical coastal zones. The wide range of projects completed includes impact reviews for the widening of the Panama Canal, audits of environments surrounding North Sea, Gulf, Asian Archipelago and Caspian oilfields, LNG port operation on the periphery of the Congo Canyon and Environmental & Social Impacts related to airport creation within the wetlands of Manila Bay. Skilled in the provision of data on the physical environment for input to studies of all aspects of marine biology, but in particular the benthos, coral reefs, mangrove forests and sea turtles.

Manager of large-scale multi-disciplinary work programmes. For example, the comprehensive baseline survey of Lyme Bay, a highly sensitive coastal region of Southern England, undertaken between 1994 and 1996 as a precursor to oil exploration by Kerr-McGee Oil (UK) Ltd (>£0.5M) and the WRIScS (1997-2001) Land-Ocean Interaction study, initiated with the support of the Belize Coastal Zone Management Project and EU funded (>0.75M ecu), addressing the impacts of terrestrial runoff on the ecology of the inner margins of the Belize Barrier Reef.

Trainer of Vocational Skills and facilitator for Institutional Strengthening in the Developing World. Projects include staff training for contamination monitoring in Hong Kong waters, running workshops on Physical and Chemical data acquisition in tropical coastal zones in Central America, and GIS training of UK and African graduates. Provision of training frameworks for GIS (Open College Network) and Coastal Environmental Conservation National Occupational Standards.

Education:

PhD., Geography Dept., University of Exeter, 1971-1974. Upper estuarine sediment dynamics. Teign Estuary.
BSc(Comb.Hon. II-1) Geography and Geology, Exeter University 1971.

Career Summary:

- 2018 to date - Independent consultant (part time)
- 1993 to 2018 - Managing Director of Ambios Environmental Consultants Ltd
- 2001-2014 - Director of Ambios Ltd
- 1979 to 1996 - Independent consultant in the commercial sector, trading as "Sea Sediments".
- 1975 - 1979 - Sedimentologist, Aquatic Environment Protection Division 2, Ministry of Agriculture, Fisheries and Food (now CEFAS), UK. Resigned.

NOTES ON RELEVANT EXPERIENCE: coastal and estuarine sediment systems

My particular area of expertise relates to marine and estuarine sediments, with emphasis on original data collection and research for input to conceptual and mathematical models, frequently for application in Environmental Impact and Mitigation studies. My experience extends back over the past fifty years; more recent key projects include:

- Routine shelf and estuarine seabed mapping (GIS-based bathymetry, sediment characterisation, acoustic profiling etc) at many UK and world locations. Development of methodologies for acoustic and satellite/aerial imagery mapping of habitat/biotopes for major conservation groups (eg English Nature, Scottish Natural Heritage, UK Wildlife Trusts).
- A wide experience in working with harbour and marina development and all scales of shipping and navigation. Recent projects include input to Cowes Harbour Regeneration programme (sediment flux monitoring), advice and data collection management of the River Parrett fluid mud system in relationship to Environment Agency engineering works, the Noss Marina development EIA on the River Dart in Devon, the Dales Voe Platform decommissioning site in Shetland and the Ardersier Port wind turbine fabrication site in the Moray Firth. I was involved with the EIA aspects of small boat quay development in the Isles of Scilly and the Inner Hebridean Small Islands, and (as the aquatic expert within a Parsons Brinkerhof team), looked at the aquatic environmental concerns associated with the enlargement of the Panama Canal (lock construction, lake level management, dredging of approach channels).
- Studies of local sediment circulation systems for conceptual and mathematical model inputs to harbour, marina and navigation development plans and EIAs (including 2006 Widening and Deepening of the Panama Canal, Burry Port, Hayle, Folkestone, Warren Point, Small Isles, Scilly Isles, River Dart). Worked 2008-15 (with HR Wallingford) on the Congo (Soyo-Angola) looking at channel sedimentation issues.
- A regional study of sediment and contaminant pathways from drainage-basin sources through the coastal zone; Belize Barrier Reef, Central America. (EU funded, Ambios in partnership with Exeter University Dept. of Geography and Raleigh International Ltd. WRIScS project - Watershed-Reef Interconnectivity Scientific Study, 1997-2001).
- Investigations of shoreline dynamics within coastline protection studies at various sites, for example the Holderness Coast and Isles of Scilly. Notable study of the stability of the crests of gravel reefs emplaced for shoreline protection, (DoE Minerals Division and British Coal funded projects, in partnership with Halcrow Ltd). Recently involved with Black Sea gas pipeline shore-crossing sites (Bulgaria and Russia, EIA and ESIA studies) for the South Stream project (URS, ERM) and looking at the stability of the southern shore of the entrance to the River Congo (Soyo ALNG port), including canyon stability concerns. Auditing ESIA aspects of mangrove/fishpond replacement (biodiversity offsetting) for Manila International Airport land reclamation, and associated shoreline erosion concerns related to fill dredging.
- Study of environmental issues (including coastal erosion) associated with the UK marine dredging industry (DoE Minerals Division, published by HMSO). Studies of sediment circulation systems as part of EIAs for current Gravel Dredging Licences (ERM Ltd).
- Acoustic investigations for location of seabed-buried armaments (UXO) in harbour construction areas - Massawa (Eritrea), Dover, Thames, Portsmouth. (Fellows International).
- Audits of seabed conditions in oilfields in the North Sea, Caspian Sea, Malaysia and The Gulf (Environmental Resource Management Ltd).
- Expert Witness in a range of Public Enquiries and court cases, concerned with sediment-related water quality issues. Clients have included British Coal, MAFF, Loch Ryan Oyster Fishery and Seasalter Shellfish, HR Wallingford and the Thames Cackle Fishermen.