

Curriculum Vitae

Professor James McDougall MAIR
www.sls.hw.ac.uk/staff-directory/j-m-mair.htm

Nationality British
Languages English (mother tongue); Spanish (fluent); French (basic)
Departmental Address Centre for Marine Biodiversity and Biotechnology
School of Life Sciences (www.sls.hw.ac.uk)
Heriot-Watt University, Edinburgh EH14 4AS
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Tertiary Education History

1976 - 79 University of Liverpool / Universidad Nacional Autónoma de México
Qualification obtained: PhD in Marine Biology (University of Liverpool)
Thesis entitled 'Identification and behaviour of postlarval penaeid shrimp from west Mexico'
1972 - 76 University of Glasgow
Qualification obtained: BSc Hons in Zoology, 1st Class

Employment History

2009 - present Professor of Marine Biology, School of Life Sciences, Heriot-Watt University
2007 - 2009 Senior Lecturer, School of Life Sciences, Heriot-Watt University
2002 - 2007 Lecturer, School of Life Sciences, Heriot-Watt University
1996 - 2002 Lecturer, Department of Civil and Offshore Engineering, Heriot-Watt University
1984 - 1996 Senior Institute Biologist, Institute of Offshore Engineering, Heriot-Watt University
1983 - 1984 Research Associate, Institute of Aquaculture, University of Stirling
1979 - 1983 Institute Biologist, Institute of Offshore Engineering (IOE), Heriot-Watt University

Teaching Activities

Postgraduate:

Climate Change: Causes and Impacts (A11CC Course Coordinator);
Climate Change: Mitigation and Adaptation Measures (A11AM Course Coordinator);
Marine Resources and Sustainability (A11AS Course Coordinator);
Fisheries, Shellfish and Bioresource Exploitation (A11SF);
Diving Science and Consultancy (A11DV);
MSc Dissertation supervision of several MSc student dissertations per year

2008 - present: MSc Programme Director for the *Climate Change: Impacts and Mitigation*
1986 - 2010: MSc Programme Director for the *Marine Resource Development & Protection*

In 2010, I helped and supported the establishment of a cross-School MSc programme in 'Marine Spatial Planning'. I was responsible for the development and launch (in 2008) of the cluster of new MSc programmes within the School of Life Sciences including the programme entitled 'Climate Change: Managing the Marine Environment' and also the cross-School MSc programme entitled 'Climate Change: Impacts and Mitigation'. I am currently instigating the development of Distance Learning materials for my core courses within this degree programme. Through overseas contacts, and with funding from a Department for International Development/British Council "Higher Education Link" programme, I assisted the University of Guayaquil in Ecuador set up a similar "Marine Resources" MSc degree programme in Guayaquil and, in 2003, led two of its modules in its first year of operation and further teaching in 2006.

Administrative Activities

School of Life Sciences:

- I chair the Environmental Research Group (ERG) and collate reporting for REF 2014
- I am a member of the Board of Examiners for the School's *Applied Marine Biology* BSc programme and on the Examination Boards of relevant undergraduate and postgraduate degrees
- I am a member of the School's Management Committee, the Learning and Teaching Committee, and the Research Committee

Heriot-Watt University:

- I chair the Board of Studies and the Board of Examiners for the University's cross-School MSc programme in *Climate Change: Impacts and Mitigation* (2008 -)
- I am the Leader of the Management Group for the University's "Environment and Climate Change" Strategic Topical Theme (2008 -)
- As Topical Theme Team Leader, I am a member of the University's Research and Knowledge Exchange Board (2008 -)
- I look after the University's interests on the MASTS (www.masts.ac.uk) marine science pooling Executive Committee and as alternate for the *Biodiversity and Ecosystem Function* Joint research Theme on the MASTS Science Board
- I have represented the University in the development of the joint (Edinburgh, Heriot-Watt and Napier universities) Edinburgh Centre on Climate Change (www.climatechangecentre.org.uk)
- I chair the University's Diving Safety Sub-Committee
- I serve on the International Office's Central and South American ad hoc Working Group
- I was the co-ordinator of the Unit of Assessment (UoA17) for the RAE 2008 submission
- I served on Senate for 3 years (2002 - 2005) and was on the International Academic and Business Development (IABD) Forum during its operation
- I was on the Overseas Research Scholarships/JWS Selection Panel (2002 - 2004)
- Within the University, I was a member of the Postgraduate Recruitment Study Group, set up in 1996, and attended the Postgraduate Recruitment Fora during their operation (1999 - 2002) and on the University's Postgraduate Studies Committee (2003 - 2009)
- I have acted as internal examiner for several MPhil and PhD students
- From my earlier years of work in Heriot-Watt University's Institute of Offshore Engineering, I developed valuable experience in general project management activities and in dealing with external commercial and government clients as well as relating to and directing teams of junior staff and colleagues in biological field and laboratory management duties

External:

- I serve on the Executive Committee of MASTS (www.masts.ac.uk) pooling group (2009 -)
- I was one of two representatives from Heriot-Watt University serving on the cross-University ECCC Steering Committee to set up the Edinburgh Centre for Climate Change (2009 - 2010)
- I was External Examiner for the "*Marine Science*" Honours degree programme at the Scottish Association for Marine Science: SAMS UHI Millennium Institute (2004 - 2009)
- I served on the Validation Panel (External Assessor, 2006) for the research degree award programme at the North Atlantic Fisheries College, Shetland (part of UHI Millennium Institute – programme to be overseen by Aberdeen University until UHI attains full University status)
- I was an International Expert Evaluator for the European Union ALBAN programme for awarding postgraduate scholarships to Latin American students (2006 - 2008)
- I was a member of a Validation Review Panel (internal – March 2003, and external OUVS – May 2003) of the "*Marine Science*" Honours degree at the SAMS/UHI Millennium Institute
- I was a member of a Validation Review Panel of undergraduate marine programmes at the University of Plymouth in 1992
- I was the meetings coordinator for the Scottish Marine Group (2002 - 2008)
- I have served as External Examiner for several PhD students

Research Activities

A full list of publications is appended. After my PhD research, early work centred on oil industry and aquaculture impacts on the marine environment mainly through industrial consultancy work undertaken whilst on the staff of the Institute of Offshore Engineering (1979 - 1996). Since becoming a Lecturer in August 1996 in the Department of Civil and Offshore Engineering and subsequently in the School of Life Sciences (and able to apply for my own research grants) my research initiatives and grant applications now centre more on aspects of seabed habitat mapping for conservation management purposes (UK and overseas) including the development of diving, video, side-scan sonar and other remote sensing methods for studying marine habitats.

I have, over the last several years, also promoted research and postgraduate training links with organisations in the UK (SAMS Dunstaffnage Marine Laboratory, Edinburgh University, St Andrews University) and overseas: Ecuador (Universidad de Guayaquil, The Ecuadorian Navy's Institute of Oceanography - INOCAR, and the Charles Darwin Research Station, Galapagos); Colombia (Coralina, San Andres and the Marine Research Institute, INVEMAR, Santa Marta); Panama (the Smithsonian Tropical Research Institute and the University of Panama); Mexico (UNAM -The Autonomous National University of Mexico's marine research station, Mazatlán and Instituto Tecnológica de Mérida); Costa Rica (Universidad Nacional de Costa Rica). Research in Latin America and the Caribbean has mainly been supported by research grants from the UK's DEFRA Darwin Programme (<http://darwin.defra.gov.uk>).

Supervision of postgraduate students

2010 -	A Chivers	PhD	Invertebrate infauna of seamounts
2010 -	D Robinson	PhD	Ecology of large fauna in Gulf of Arabia
2006 -	J Agujetas	PhD	Primary production research in Panama
2006 -	M Cardenas	PhD	Contamination of Guayaquil Estuary, Ecuador (P-T)
2003-2007	L Barrios	PhD	Historical analysis of human activities on the coral reef environments of Panama (graduated)
2002-2005	S Benfield	PhD	Application of remote sensing, GIS and reef fish habitat modelling in the submerged reefs of Las Perlas Archipelago, Panama (graduated)
1997-2004	E Karpouzli	PhD	High resolution remote sensing of marine reef habitats: towards integration of satellite and sonar imaging techniques, San Andres, Colombia (graduated)
1993-1997	U Wittishingchai	PhD	A new approach to improving environmental management in the oil & gas industry in Thailand (co-supervisor with Prof. C S Johnston)
1991-1994	H Govan	PhD	Giant Clam (Tridacnidae) culture techniques (acting substitute supervisor for final year)
1987 - present			supervision of numerous MSc research dissertations

Research funds acquired

2010	Scottish Funding Council	£438,750	Heriot-Watt University's component of MASTS research pooling grant
2009	Scottish Natural Heritage	£55,306	Site condition monitoring of the reef and shallow inlet and bay features of Loch Laxford marine cSAC *
2009	British Council	Budget with ITM	I am UK coordinator of AMERLINK project between HWU & Instituto Tecnológica de Mérida, Mexico on Climate Change and marine ecosystem sensitivity
2008	SNH	£63,500	Site condition monitoring study Mousa marine cSAC *
2008	Carnegie Trust	£53,715	PhD studentship for turtle ecology research in Panama (for Ms Fiona Monaghan – SLS UG graduate)
2008	Natural Environment Research Council	£79,600	Masters Training Grant (MTG) for "Marine Resource Development and Protection" Grant Manager (including MSc research component)
2007	SNH	£60,000	Site condition monitoring, Treshnish marine cSAC *

2006	DEFRA/Darwin	£93,944	Conservation management zoning implementation and facilitation in Perlas Archipelago, Panama
2006	NERC	£112,850	Masters Training Grant (MTG) for “ <i>Marine Resource Development and Protection</i> ” Grant Manager (included MSc research component)
2006	SNH	£140,000	Site condition monitoring study Sound of Barra marine cSAC *
2005	SNH	£44,372	Site condition monitoring study Loch Creran marine cSAC *
2005	SNH	£52,840	Site condition monitoring study Sound of Harris marine cSAC *
2004	SNH	£71,450	Biotope mapping and survey of Sullom Voe marine cSAC
2004	SNH	£60,840	Site condition monitoring study Loch Maddy marine cSAC *
2003	DEFRA/Darwin	£168,154	Marine biodiversity study of Las Perlas Archipelago, Panama
2002	SNH	£40,000	The development of broad-scale habitat maps of the Firth of Tay marine cSAC *
2001	SNH	£78,385	The development of broad-scale habitat maps of three marine Special Areas of Conservation Lochs Sunart, Laxford & the Sound of Barra *
2000	Carnegie Trust	£1,400	A research travel grant to enable me to take part in a 10-day oceanographic survey cruise with the Ecuadorian Navy around the Galapagos Islands
1999	SNH	£39,395	A study of horse-mussel beds/biogenic reefs in relation to their importance in marine Special Areas of Conservation
1998	SAMS Bursary	£1,000	Study of the potential of high resolution side-scan sonar to image different marine habitats, including the local <i>Serpulid</i> reefs
1998	NERC	£14,347	Potential of side-scan sonar techniques for mapping a variety of marine habitats in Scotland
1998	DETR (now DEFRA)	£119,935	Remote sensing and marine habitat mapping in San Andres Archipelago, Colombia
1997	DETR (now DEFRA)	£124,510	Marine invertebrate taxonomy/biodiversity and ecological studies in Ecuador

I was/am Project Leader/Principal Investigator on all above projects apart from those marked *(joint collaborator/Co-Investigator). The SNH-funded research projects are normally undertaken by a team of colleagues from SLS and jointly with other Universities such as Edinburgh University and St Andrews University.

Invitations to conferences/workshops

March 2006	Chairing and joint organiser of Darwin Research Project Conference, Panama (http://striweb.si.edu/darwin_initiative/)
July 2000	Chairing and presenting Darwin Biodiversity Conference, Guayaquil, Ecuador
June 1987	Oral Presentation at Aquaculture Conference in Cadiz, Spain
May 1985	British Council invitation to organise a Workshop/Seminar on tropical larval shrimp held at the Institute of Marine Research, Santa Marta, Colombia

Consultancy

In December 2009, I led a team of 3 consultants to provide Ecopetrol (Colombian Oil Company) with a 4 day course in marine environmental impact assessment. I obtained British Council/Department for International Development Higher Education Link funding (2000 - 2003) for a programme to advise and assist staff at the University of Guayaquil, Ecuador to develop and launch a new marine science Masters degree course (now in third cycle of operation). During my time (1979 - 1996) on the staff of the Institute of Offshore Engineering, most of the work undertaken was for industrial research/consultancy and mainly related to the North Sea Oil Industry and its impacts on the marine environment. I was project manager for numerous monitoring and impact studies and author of many consultancy reports to companies. Other consultancy work included studies on management practices to reduce risks of introductions of exotic organisms in tanker ballast water (1996) and trials of anti-fouling materials (1980 - 1986). I regularly act as a referee for manuscripts submitted for consideration for publication in journals such as: 'Marine Ecology Progress Series'; 'Estuarine, Coastal and Shelf Science'; and 'Aquaculture International'; and have refereed several NERC research proposals.

RESEARCH PUBLICATIONS

In my early research career I published four papers from my PhD work. Whilst working in industrial consultancy in the Institute of Offshore Engineering, my main outputs were on semi-confidential client reports. On becoming a lecturer in 1996 I started developing more academic research and now have numerous study areas enabling production of papers for peer-reviewed journals.

JOURNALS

Several manuscripts are at different stages of final preparation, including:

SCOTT, R, GUZMAN H M, GUEVARA J M & MAIR J M. "Coastal Impacts of Island Development: a Hydrological Model for Isla del Rey, Panama".

BARRIOS L M & MAIR J M. "Taxonomy and ecology of vermetid molluscs from the Las Perlas Archipelago, Pacific Coast of Panama".

BARRIOS L M, ELLIOT M & MAIR J M. "Vermetids as archives of climate change in the Tropical Eastern Pacific".

2012 PUBLICATIONS

MAIR, J M, CIPRIANI R, GUZMAN HM & USAN D. (2012). Fishery of the Green Jack *Caranx caballus* (Osteichytes: Carangidae) in Las Perlas Archipelago, Pacific Panama. Rev. Biol. Trop. (Int. J. Trop. Biol. ISSN-0034-7744) Vol. 60 (3): 1271-1288.

2010 PUBLICATIONS

HARPER S J M, BATES C R, GUZMAN H M & MAIR J M. (2010) "Acoustic seabed mapping to improve fishery management in Las Perlas Archipelago, Pacific Panama". Journal of Ocean and Coastal Management, 53, 615-623.

KENNEDY E V, GUZMAN H M, HOLDRIED M W, MAIR J M & SIMPSON S D. (2010) "Reef-generated noise provides reliable information about habitats and communities: evidence from a Panamanian case study". Journal of Experimental Marine Biology and Ecology, 395, 85-92.

MCGOWAN T, CUNNINGHAM S L, GUZMAN H M, MAIR J M, GUEVARA J M & BETTS T. (2010) "Mangrove forest composition and dynamics in Las Perlas Archipelago, Pacific Panama". RBT, International Journal of Tropical Biology and Conservation, 58, 857-869.

2009 PUBLICATIONS

BARRIOS L M, CHAMBERS S J, ISMAIL N, GUZMAN H M & MAIR J M. (2009) "Distribution of *Idanthyrsus cretus* (polychaeta: sabellaridae) in the Tropical Eastern Pacific and application of PCR-RAPD's tools for population analysis". *Zoosymposia*, 2, 487-503.

MAIR J M, SIBAJA-CORDERO J A, ARROYO M F, MERINO D, VARGAS R, GUZMAN H M & BENFIELD S. (2009) "Mapping benthic faunal communities in the shallow and deep sediments of Las Perlas Archipelago, Pacific Panama". *Marine Pollution Bulletin*, 58, 375-383.

MOORE C G, BATES C R, MAIR J M, SAUNDERS G R, HARRIES D B & LYNDON A R. (2009) "Mapping serpulid worm reefs (Polychaeta: Serpulidae) for conservation management". *Aquatic Conservation: Marine and Freshwater Ecosystems*, 19, 226-236.

2008 PUBLICATIONS

GUZMAN H M, BENFIELD S, BREEDY O & MAIR J M. (2008) "Broadening reef protection across the Marine Conservation Corridor of the Eastern Tropical Pacific: distribution and diversity of reefs in Las Perlas Archipelago, Panama". *Environmental Conservation*, 35, 46-54.

BENFIELD S, BAXTER L, GUZMAN H M & MAIR J M. (2008) "A comparison of coral reef and coral community fish assemblages in Pacific Panama and environmental factors governing their structure". *Journal of the Marine Biological Association of the United Kingdom*, 88, 1331-1341.

GUZMAN H M, CIPRIANI R, VEGA A, LOPEZ M & MAIR J M. (2008) "Population assessment of the Pacific green spiny lobster *Panulirus gracilis* in Pacific Panama". *Journal of Shellfish Research*, 27, 907-915.

OVIDO L, GUZMAN H M, FLÓREZ-GONZÁLEZ L, ALZUETA J C & MAIR J M. (2008) "The Song of the Southeast Pacific humpback whale off Las Perlas Archipelago, Panama: Preliminary characterization". *Aquatic Mammals*, 34, 458-463.

2003 - 2007 PUBLICATIONS

BENFIELD S, GUZMAN H M, MAIR J M & Young J. (2007) "Mapping the distribution of coral reefs and associated sublittoral habitats in Pacific Panama: a comparison of optical satellite sensors and classification methodologies". *International Journal of Remote Sensing*, 28, 5047-5070.

CHAMBERS S J, DOMINGUEZ-TEJO E L, MAIR J M, MITCHELL L A & WOODHAM A. (2007) "The distribution of three eyeless *Chaetozone* species (Cirratulidae: Polychaeta) in the north-east Atlantic". *Journal of the Marine Biological Association of United Kingdom*, 87, 1111-1114.

GREATHEAD C, DONNAN D, MAIR J M & SAUNDERS G R. (2007) "The sea pens *Virgularia mirabilis*, *Pennatula phosphorea* and *Funiculina quadrangularis*: distribution and conservation issues in Scottish waters". *Journal of the Marine Biological Association of United Kingdom*, 87, 1095-1103.

HARRIES D B, COOK E, DONNAN D W, MAIR J M, HARROW S & WILSON J R. (2007) "The establishment of the invasive alga *Sargassum muticum* on the west coast of Scotland: Rapid northwards spread and identification of potential new areas for colonisation". *Aquatic Invasions*, 2, 367-377.

HARRIES D B, HARROW S, WILSON J R, MAIR J M & DONNAN D W. (2007) "The establishment of the invasive alga *Sargassum muticum* on the west coast of Scotland: a preliminary assessment of community effects". *Journal of the Marine Biological Association of United Kingdom*, 87, 1057-1067.

MEDINA B, GUZMAN H M & MAIR J M. (2007) "Failed recovery of a collapsed scallop (*Argopecten ventricosus*) fishery in Las Perlas Archipelago, Panama". *Journal of Shellfish Research*, 26, 9-15.

BENFIELD S, GUZMAN H & MAIR J M. (2005) "An assessment of mangrove forest structure and development after human reclamation in Panama City, Panama". *Journal of Environmental Management*, 76, 263-276.

DEFEW L H, MAIR J M & GUZMAN H M. (2005) "An assessment of metal contamination in mangrove sediments and leaves from Punta Mala Bay, Pacific Panama". *Marine Pollution Bulletin*, 50, 547-542.

CRUZ M, GABOR N, MORA E, JIMENEZ R & MAIR J M. (2004) "The known and unknown about marine biodiversity in Ecuador (Continental and Insular)". *Gayana*, 67, 232-260.

ROBINSON G, CHAMBERS S & MAIR J M. (2004) "Records of benthic marine invertebrates from offshore waters west of Shetland & Orkney". *Porcupine Marine Natural History Newsletter*, 16, 13-24.

KARPOUZLI E, MALTHUS T, PLACE C, MITCHELL A, GARCIA M & MAIR J M. (2003) "Underwater light characterization for correction of remotely sensed images". *International Journal of Remote Sensing*, 24, 2683-2702.

SOMERVILLE S, MILLER K & MAIR J M. (2003) Methods for assessing the extent of beach litter on shores". *Marine Pollution Bulletin*, 46, 1184-1190.

Prior to 2003

MAIR J M, MATHESON I & APPELBEE J F. (1987) "Offshore macrobenthic recovery in the Murchison Field following the termination of drill cuttings discharges". *Marine Pollution Bulletin*, 18, 628 - 634.

MAIR J M, KINGSTON P F & HILL S. (1986) "The effects of ballast water effluent on the macrobenthos around Sullom Voe, Shetland". *Water Science and Technology*, 18, 331.

MAIR J M, WATKINS J L & WILLIAMSON D I. (1982) "Factors affecting the immigration of postlarval penaeid shrimp into a Mexican lagoon system". *Oceanologica Acta*, V, 339-345.

MAIR J M. (1981) "The identification of small juvenile penaeid shrimp from the Pacific coast of Mexico". *Bulletin of Marine Science*, 31, 174-176.

MAIR J M. (1980) "Salinity and water-type preferences of four species of postlarval shrimp (*Penaeus*) from Mexico". *Journal of Experimental Marine Biology & Ecology*, 45, 69-82.

MAIR J M. (1979) "The identification of postlarvae of four species of *Penaeus* (Crustacea:Decapoda) from the Pacific coast of Mexico". *Journal of Zoology, London*, 188, 347-351.

BOOKS

MAIR J M, MORA E & CRUZ M. "Manual de campo de los invertebrados bentónicos marinos: moluscos, crustáceos y equinodermos de la zona litoral Ecuatoriana". Universidad de Guayaquil, Ecuador, 2002, 105 pages + vii. ISBN 9978 42 287 0.

MAIR J M, MORA E, CRUZ M, CALLES A, ARROYO M F & MERINO D. "Guía de campo para la colección y preservación de invertebrados marinos". Universidad de Guayaquil, Ecuador, 2000, 78 pages + vi. ISBN 9978 59 005 6.

MAIR J M. "5.3: CRUSTACEA" (pp 55 - 58) in: Mackie *et al*, "Benthic biodiversity in the southern Irish Sea. Studies in Marine Biodiversity and Systematics". The National Museum of Wales. BIOMOR Reports 1, 1995, 263 pages + iv. ISBN 0 7200 0427 6.

CONSULTANCY REPORTS

MAIR J M, LYNDON A R, MOORE C G & SOTHERON I S. (2010). Biotope Mapping and Survey of Sullom Voe Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report 351. 128pp. Senior Consultant.

MAIR J M, MOORE C G, LYNDON A R & SOTHERON I S. (2010), Site Condition Monitoring of the Sullom Voe Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report 350. 85pp. Senior Consultant.

MOORE C G, EDWARDS D C B, HARRIES D B & MAIR J M. (2009). The establishment of site condition monitoring of the rocky reefs of the Treshnish Isles Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report No. 302, (ROAME No. RO7AC705). 193 pp. Joint Consultant.

HARRIES D B, MOORE C G, MAIR J M & LYNDON A R. (2009). The establishment of site condition monitoring of the rocky reefs and sea caves of Mousa Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report No. 326, (ROAME No. RO7AC705). 263 pp. Joint Consultant.

HARRIS D B, MALTHUS T J, KARPOUZLI E, MOORE C G, LYNDON A R, MAIR J M, SERVICE M & MITCHELL A. (2007). Biotope mapping of the Sound of Barra, Scotland. Scottish Natural Heritage Commissioned Report No.258 (ROAME No. F06PA04). 250 pp. Joint Consultant.

MALTHUS T J, HARRIES D B, KARPOUZLI E, MOORE C G, LYNDON A R, MAIR J M, FOSTER-SMITH B, SOTHERAN I, & FOSTER-SMITH D. (2007). Biotope mapping of the Sound of Harris, Scotland. Scottish Natural Heritage Commissioned Report No. 212 (ROAME No. F01AC401/2). 243 pp. Joint Consultant.

MOORE C G, SAUNDERS G, MAIR J M & LYNDON A R. (2006). The inauguration of site condition monitoring of marine features of Loch Maddy Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report No. 152, (ROAME No. FO2AA409). 60 pp. Joint Consultant.

MOORE C G, SAUNDERS G R, HARRIES D B, MAIR J M, BATES C R & LYNDON A R. (2006). The establishment of site condition monitoring of the subtidal reefs of Loch Creran Special Area of Conservation. Scottish Natural Heritage Research Commissioned Report No. 151, (ROAME No. FO2AA409). 60 pp. Joint Consultant.

MOORE C G, SAUNDERS G R, MAIR J M & LYNDON A R. (2006). The establishment of site condition monitoring of the saline lagoon, Loch an Duin, North Uist Site of Special Scientific Interest. Scottish Natural Heritage Research Commissioned Report No. 150, (ROAME No. FO2AA409). 60pp. Joint Consultant.

MOORE C G, MAIR J M & Edwards D. (2005). "Site condition monitoring of the intertidal sediment flats of Loch Paible (Balranald Bog and Loch nam Feithean SSSI)". Scottish Natural Heritage Commissioned Report No. 101 (ROAME No. F02AA409a). 31 pp. Joint Consultant.

MOORE C G, LYNDON A R & MAIR J M. (2004). "The establishment of site condition monitoring of marine sedimentary habitats in the Sound of Arisaig cSAC". Scottish Natural Heritage Commissioned Report No. 071 (ROAME No. F02AA409). 60pp. Joint Consultant.

LYNDON A R, MOORE C G, MAIR J M & EDWARDS D. (2004). "Site condition monitoring survey of intertidal mud and sandflats in Kentra Bay, Lochaber, August 2003". Scottish Natural Heritage Commissioned Report No. 074 (ROAME No. F02AA409). 74 pp. Joint Consultant.

MOORE C G, LYNDON A R, MAIR J M & EDWARDS D. (2004). "Site condition monitoring of the intertidal sediment flats of the Loch Moidart and Shiel Woods cSAC". Scottish Natural Heritage Research Commissioned Report No. 051, (ROAME No. FO2AA409). 60 pp. Joint Consultant.

BATES C R, MOORE C G, MALTHUS T, **MAIR** J M & KARPOUZLI E. (2004). "Broad scale mapping of habitats in the Firth of Tay and Eden Estuary, Scotland". Scottish Natural Heritage Research, Survey and Monitoring Report No.007 (ROAME No. F01AA401D). 2004, 180 pp. Joint Consultant.

BATES C R, MOORE C G, MALTHUS T, HARRIES D B, AUSTIN W, **MAIR** J M & KARPOUZLI E. (2004). "Broad scale mapping of sublittoral biotopes, Sound of Barra, Scotland". Scottish Natural Heritage Research, Survey and Monitoring Report No. 005 (Roame No. F01AA401B). 145 pp. Joint Consultant.

BATES C R, MOORE C G, HARRIES D B, AUSTIN W & **MAIR** J M. (2004). "Broad scale mapping of sublittoral habitats of Loch Laxford, Scotland". Scottish Natural Heritage Research, Survey and Monitoring Report. Report No. 004 (ROAME No. FO1AA01A). 91 pp. Joint Consultant.

MAIR J M, MOORE C G, KINGSTON P F & HARRIES D B. (2000). "A review of the status, ecology and conservation of Horse Mussel (*Modiolus modiolus*) beds in Scotland". Scottish Natural Heritage. Research, Survey and Monitoring Report No. Roame No. F99PA08). 64 pp. Senior Consultant.

HEIP C, BREY T, CREUTZBERG F, DITTHER J, DORJES J, DUINEVEL G, KINGSTON P **MAIR** J, RACHOR E, RUMOHR H, THIELEMANS L & VENAOSMAEL C. (1985). "Report on an inter-calibration exercise on sampling methods for macrobenthos". ICES Benthos Methods W G C M 1985/L, 194 pp. Joint Consultant.

Between 1980 and 1995 over forty commercial consultancy environmental reports were produced for industry and government clients in my role as Project Manager at IOE, Heriot-Watt University.

CONFERENCE PAPERS PUBLISHED AS PROCEEDINGS

KARPOUZLI E, MALTHUS T, PLACE C & **MAIR** J. (2001) "A spatial model to predict water attenuation for the bathymetric correction of remotely sensed images". In: SIRC (Spatial Information Research Center) 12th Colloquium "The Evocation of Spatial Knowledge". 6 pages.

MITCHELL A, GARCIA M, MOW-ROBINSON J M, KARPOUZLI E & **MAIR** J. (2001) "Marine mapping techniques using remotely sensing data in the archipelago of San Andrés, Providence and Santa Catalina (Colombia)". Proceedings of the IX Latinamerican Congress on Marine Science (COLACMAR), San Andres, Colombia, September 17-29, 4 pages.

GARCIA M, MITCHELL A, MOW-ROBINSON J M, KARPOUZLI E, FORBES R, MORALES A, VELEZ C & **MAIR** J. (2001). "Composición de los macroinvertebrados infaunales en los sectores de wildlife San Andres y Smooth Water Bay - Old Providence". Proceedings of the IX Latinamerican Congress on Marine Science (COLACMAR), San Andres, Colombia, September 17-29, 5 pages.

EDITED PROCEEDINGS

BLANCHARD J, **MAIR** J & MORRISON I. (Eds.). (1980) Proceedings of the Diving Science Symposium. The 6th International Scientific Symposium of the World Underwater Federation (CMAS), September. Published by the Natural Environment Research Council. 319 pp. 1982. Joint Symposium Co-ordinator and Proceedings Editor.

MAGAZINE AND UNREFEREED ARTICLES

MAIR J. (1987) "Opportunities in Offshore Science and Engineering". Graduate Scientist and Engineer, 9, 46-47.

Between 1987 and 1996 I wrote over 20 short articles for the News Section of the Journal Marine Pollution Bulletin.