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Prof Michael Fasham FRS, Collection

Mike Fasham joined the National Institute of Oceanography in 1968 and, with Jim Crease, developed one of the first shipboard computer systems in the world. He also began cooperating with Martin Angel, to use multivariate statistical techniques to analyse the zoogeographic distribution of zooplankton.

This was a major achievement in a field which was largely descriptive at the time, and in 1973 he joined the Marine Biology department, where he brought his strong mathematical skills to bear on a range of topics. In the late 70s and early 80s, Mike worked on the centuries old question of what produces spatial variability, or “patchiness”, in plankton, using both theoretical and observational approaches. He added an in situ fluorometer to the SeaSoar undulator to map the small-scale distribution of phytoplankton.

Between 1970 and 1980, he carried out theoretical and observational studies of temporal and spatial distributions of plankton, and developed models of the ocean carbon and nitrogen cycles. He also had a strong interest in the role of the oceans in climate change.

His classic paper ‘A nitrogen-based model of plankton dynamics in the oceanic mixed layer’ (1990) has been cited more than 500 times. The Fasham-Ducklow-McKelvie model, as it became known, was subsequently embedded in the first three-dimensional ecosystem model of the Atlantic developed at Princeton University.

Mike Fasham became Head of the Biological Modelling Group in the George Deacon Division of the Southampton Oceanography Centre (SOC), which was established in 1995. From 1998 to 2000, he also served as chairman of the international committee of the Joint Global Ocean Flux Study (JGOFS), which was aimed at understanding the fluxes of carbon and associated nutrients in the ocean. Mike Fasham played a key role in the development of the international Joint Global Ocean Flux Study (JGOFS), serving on the National and International Committees and ultimately as chair of the International Committee from 1998 to 2000.

Professor Fasham was elected as a Fellow of the Royal Society in 2000 and received the Challenger Society Silver Medal in 2002. He was elected to his Chair at the University of Southampton in 2001, and continued to publish papers even after his retirement from SOC, by then renamed the National Oceanography Centre, right up until his death in 2008. He was awarded the Challenger Society Silver Medal in 2002 and in recognition of his major contributions to marine science he was elected a Fellow of the Royal Society in 2000.

Development of shipboard computing system RRS <i>Discovery</i>	Box
Development of shipboard computing system RRS <i>Discovery</i> - notebooks, correspondence <ul style="list-style-type: none">- Ship Reports 1970 - RRS <i>Discovery</i> Cruise, 31, February 1970- Biology Cruise system, 1970 – Data/Methodology- Ship system – circulars and documentation, 1969-1970- 2 notebooks- Computer/ data cruise reports- RRS <i>Discovery</i> Cruises, 29-49 – calibration factors and digital filters – Cruises 30, October/December 1969; Cr 43, October/November 1971; Cr 45, February/April 1972; Cr 48 August/ 1972; Cr 49 August/October 1972.	1
Miscellaneous computer/data reports <ul style="list-style-type: none">- RRS <i>Discovery</i> meteorological computing system 1970/72 (2 copies)- Ship operating instructions- On line hyperbolic fix calculation- Ship data sampling system, Mk 2- Ship-borne Wave Recorder – provisional scheme for interfacing to computer- Pitch and roll buoy system- IBM Flow charting worksheet, RRS <i>Discovery</i> Cruise 29, August-October 1969- Description of programs contained on the special system disc, 186	1

<p>JGOFS (Joint Global Ocean Flux Study) (Historical Documents, papers, proceedings of Meetings, symposia, correspondence and notebook.</p>	
<ul style="list-style-type: none"> - Folder – (Ring binder) containing: JGOFS (Joint Global Ocean Flux Study) NAPG (North Atlantic Planning Group) Correspondence 1994 (Split into – International, United Kingdom, France, Germany, Spain, Holland, Norway, Benthic Project, ISPRA (Joint Research Centre, EU), MAST (MArine Science and Technology), EEC (European Union) - Folder - (Ring Binder) containing: Correspondence 1989-1990 (JGOFS) A-Z of organisations/individuals 	2
<ul style="list-style-type: none"> - Folder – (Ring binder) containing: General correspondence/ notes/ 1986-2001 A-Z of organisations/individuals 	3
<ul style="list-style-type: none"> - Folder – (Ring binder) containing: GOFS (Global Ocean Flux Study) Correspondence A-Z of organisations/individuals, 1986-1989 	4
<ul style="list-style-type: none"> - Folder – M.Fasham – notebooks JGOFS/BOFS/GOFS (1 folder) 	5
<p style="text-align: center;">BOFS (Biogeochemical Ocean Flux Study)</p> <p>BOFS was a major UK contribution to the International Geosphere-Biosphere Project’s Joint Global Ocean Flux Study (JGOFS). The Project ran from April 1987 until March 1993. The BOFS North Atlantic Data Set was collection during the initial five year period. The Sterna 1992 Project took place in 1992 in the Southern Ocean area.</p> <p style="text-align: center;">The aim of the BOFS Project was to improve understanding of:</p> <ul style="list-style-type: none"> -The processes that control carbon exchanges between the atmosphere, the surface ocean and the ocean interior. - The sensitivity of these processes to climate change. 	
<ul style="list-style-type: none"> - BOFS. Special Topic Action Plan, 1987 - BOFS Community Research Programme, 1st Annual Report of Scientific Steering Group, March 1987-April 1988. - UK BOFS contribution to JGOFS North Atlantic Programme, Summary of 1989 field activities (based on 3 month Cruise, Mid-May to Mid-August with 3 legs each of 30 days. Discovery 182 (May/June) concentrated on intensive measurements of the carbonate system and phytoplankton production. Discovery 183 (June/July) was focused towards understanding the roles of zooplankton and bacteria and the study of particulate material. zooplankton and bacteria and the study of particulate material. Discovery 184 (July/August) was primarily a benthic cruise, collecting multicore, box core and Kasten core samples in addition to water column studies. - BOFS Publicity. - BOFS Scientific Steering Committee, Minutes and Annual Reports, 1988-1993. - BOFS Proposal prepared by UK GOFS (Global Ocean Flux Study) Working Group, February 1986, with appendices to Proposal as reports of the UK GOFS Workshop, Bristol, 4-6 July 1986. - IOSDL contribution to BOFS – Summary for NERC Scientific Management Audit 1994 	6

<p>GOFS (Global Ocean Flux Study) To understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean.</p>	
<ul style="list-style-type: none"> - Reports on seminars on Global Ocean Flux Study at the Institute of Oceanographic Sciences, 21 March 1985. - NERC Seminar on GOFS, Royal Society, 4 February 1986, Programmes and list of participants –background papers. - GOFS Workshop, Bristol, 4-6 July 1986. - GOFS Workshop, Bristol, 4-6 July 1986, - notes for discussions etc. - Report on US GOFS Steering Committee Meeting, 6-7 December 1986, San Francisco. 	6
<p>JGOFS Meetings/ Committees/ Planning Groups/ Steering Committees/ Papers</p>	
<ul style="list-style-type: none"> - North Atlantic Pilot Study, Report of 2nd Meeting/ Cruise Co-ordinating Committee, Den Haag, Netherlands, September 1988 - North Atlantic Pilot study, Report of 3rd Meeting/ Cruise Co-ordinating Committee, Moss Landing, California, USA, December 1988 - North Atlantic Pilot study, Report of 3rd Meeting/ Cruise Co-ordinating Committee, Moss Landing, California, USA, December 1988 - North Atlantic Pilot study, Report of 4th Meeting/ Cruise Co-ordinating Committee, Kiel, West Germany, February 1989 - The JGOFS, talk by M. Fasham, given at the Royal Society, London, 16 November 1990 - Report of the 5th Session of JGOFS Scientific Steering Committee, Washington, DC, November 1990 - The UK Contribution to JGOFS 1992-1997, draft, September 1990 , UK-JGOFS - Report by the JGOFS Process Study Talk Team, 31 October 1991. - JGOFS North Atlantic Planning Meeting, Institut fur Ostseeforschung, Warne Muende, April 1993. - Report by the JGOFS Global Synthesis and Modelling Task Team to JGOFS Scientific Steering Committee, October 1994. - Report of the JGOFS North Atlantic Planning Group Meeting, Observatoire Oceanologique, Roscoff, France, May/June 1994. - Purpose and Agenda of the DIS/GAIM/JGOFS Planning Meeting – Ocean modelling/data activities, June 1994 - JGOFS, 9th Meeting of the Scientific Steering Committee, October 1994, Victoria, BC, Canada, - JGOFS Data Management Task Team, Business Meeting, November 1994, Report and Chairman’s recommendations to JGOFS, by Roy Lowry, May 1995. - JGOFS Remote Sensing Task Team – Remote Sensing in the JGOFS Program, Draft, May 1995, submitted by J.A.Yoder. - JGOFS International Scientific Symposium, Ville Franche-sur Mer, France, May 1995, participants. - JOGOF 5TH Meeting of the North Atlantic Plannin Group, Nansen Centre, Bergen 29-31 May 1996. - JGOFS International GLOBEC NMWorking Group, Meeting, Nantes, France, July 1995 – participants. - JGOFS Meeting of the Ad-Hoc UK-JGOFS working groups 15 August 1995, with covering letter to Dr David Drewry, Director, NERC, from Dr G.Shimmield. 	7

<ul style="list-style-type: none"> - JGOFS Workshop on 0 and 1-dimensional models of upper ocean biogeochemistry, November/December 1995, Observatoire Midi-Pyrenees, France. - JGOFS 11th Meeting, JGOFS Scientific Steering Committee, April 1996, Baden Munstereifel, Germany. - JGOFS Planning Groups and Task Teams – activities and membership, North Atlantic Planning Group membership (July 1996) - JGOFS Scientific Steering Committee, Meeting Minutes, Dunstaffnage Marine Laboratory, Oban, Scotland, May 1997 – draft - International JGOFS Modelling Symposium, 20-26 May 1997, Resume by R.B.Hanson and Colleen Moloney. - JGOFS Progress Report (1997), International Project Office, JGOFS, by R.B.Hanson and J.G.Field. - JGOFS, North Pacific Task Team Meeting, Minutes, Pusan, South Korea, October 1997. - JGOFS Executive Meeting, Williamsburg, Virginia, USA, 30-31 October 1997, Agenda and Minutes – <u>Unofficial document</u> - JGOFS DMTT (Data Management Task Team), Chairman’s Report, May 1997-April 1998. - JGOFS Update and accessibility to JGOFS data and information. (Report 27 January 1998 to participants of the Regional Committee for Cooperative Investigation in the North and central Western Indian Ocean – DRAFT) - JGOFS Report to the IGBP (International Geosphere-Biosphere Programme) Steering Committee, Meeting, February 1998. - JGOFS Annual Report, submitted 1 August 1998, by R.B. Hanson - JGOFS Invitation to POMME Research Project Meeting, Paris September 1998, to discuss possible cooperation on the investigation of subduction and water mass transformation in the NE Atlantic. - JGOFS 13th Scientific Steering Committee, Meeting April 1998, Capetown, South Africa. - JGOFS Equatorial Pacific Synthesis Group, Draft Report, Meeting, School of Oceanography, University of Washington, Seattle. 21 September 1998. - JGOFS Data Management Task Team, Business Meeting, Bergen, Draft Report/ JGOFS Data Management and Synthesis Workshop, Draft Summary, September 1998. - JGOFS Executive Meeting and Synthesis Workshop, Southampton Oceanography Centre, Southampton, October 1998. - JGOFS Executive Meeting, August 1999, Johns Hopkins University, Baltimore, Maryland, USA. 	7
<ul style="list-style-type: none"> - JGOFS Scientific Steering Committee, 15th Meeting, April 2000, Bergen, Norway, Agenda and Briefing Papers. - JGOFS Open Science Conference, Ocean Biogeochemistry: a new Paradigm, April 2000, Bergen, Norway. - JGOFS. Paper. The Changing carbon cycle: a mid-term synthesis of the JGOFS, Ed by R.B. Hanson et al (Some conclusions and highlights of the JGOFS Project, by JG Field et al, pp.493-499) - JGOFS Report, 34, October 2001, North Atlantic Synthesis Group Meetings, 1st, 1998; 2nd, 1998; 3rd, 2001. - JGOFS A Sea of Change, Final Open Science Conference, May 2003. Washington, DC, JGOFS Accomplishments and the future of ocean biogeochemistry, 	8

Registration, and call for abstracts and posters.	
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<ul style="list-style-type: none"> - JGOFS Executive Meeting, Bergen, Norway, September 2003. - JGOFS Folder - Southern Ocean, JGOFS/WOCE, Miscellaneous Documents/ correspondence 1990-1991 and British Antarctic Survey Correspondence 	8
JGOFS – Canada	
<p>JGOFS Folder</p> <ul style="list-style-type: none"> - JGOFS Canada - Canadian National Plan for JGOFS – Canadian Committee for JGOFS, January 1989. - JGOFS Canada – Canadian Research Proposal – Canadian Committee for JGOFS, September 1990. - JGOFS Canada – Canadian Programme for the JGOFS Report, Update of Activities and Proposed Plans for year 1993, from D.Farmer (project leader) and Craig McNeil , 13 Oct 1992. - JGOFS Canada – Meeting of the Scientific Advisory Committee, McGill University, Faculty Club, 30 October 1992. - JGOFS Canada – Annual Meeting, October 1993, Halifax, Nova Scotia. - JGOFS Canada – Year 1, Annual Report 1st February 1993. - JGOFS Canada – Green Plan: Ocean climate – proposal – annual report etc. - JGOFS Canada – <i>Fluxes, newsletter of the Canadian JGOFS Programme, Vol.1, 1st November 1993, Field Sites 1993.</i> - JGOFS Canada – Year 2, Annual Report (1993/94). - JGOFS Canada – Miscellaneous notes/ correspondence with JGOFS Canada Secretariat, 1990-1994. 	8
IGBP (International Geosphere-Biosphere Programme)	
<p>IGBP Folder</p> <ul style="list-style-type: none"> - IGBP – 6th Meeting of Special Committee for IGBP, Academy of Sciences USSR, Moscow, March 1990 – Draft minutes. - IGBP – 13th Meeting of Special Committee for IGBP, Boulder, Co., USA, February 1998 – Draft minutes. - IGBP Scientific Committees, Task Force on Global Analysis, Interpretation and Modelling (GAIM), list, 1992-1997 and membership list. - IGBP Special Committee – Scientific Steering Committee list, 1993-2000. - IGBP Special Committee – <i>Information Circular, September 1998.</i> 	9
<p>IGBP Folder</p> <ul style="list-style-type: none"> - Miscellaneous correspondence/ meetings, notices 1994-1998. 	9
<p>JGOFS Folder</p> <ul style="list-style-type: none"> - Folder marked ARCACHON, modelling, meeting, proposals (1994), includes JGOFS Synthesis Objectives. 	9
<ul style="list-style-type: none"> - JGOFS France, Programme Flux Oceaniques, 1999 	9
<ul style="list-style-type: none"> - UK-GLOBEC Discussion Meeting on the links between climate, plankton and fisheries, Royal Society, London, 26 February 2004 - Abstracts. Arranged by UK GLOBEC and UK IGBP Committees supported by NERC, GLOBEC Project. 	9