



Mr M Bowes.



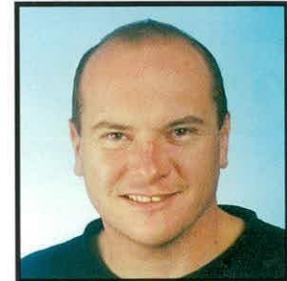
Mr D Davy-Bowker.



Dr E Y Haworth.



Mr M Gravelle.



Dr A Ibbotson.

Staff and External Activities



Mr J L Kelly.



Mr T Marsh.



Mr J Masters.

Staff changes

1997/98 saw the retirement of Dr E Y Haworth (see photograph above) from the IFE after 29 years service with the IFE (and FBA before it). Professor J G Jones also retired after 25½ years. Other staff departing the Institute in 1997/98 were Mr D Aspinall, Mrs P Corkish, Mr F H Denison, Mrs J Fenton and Miss M S Warwick. Our very best wishes are extended to all of them in their future careers.

New appointments during the year (see photographs on pages 42 & 43), were Mr M Bowes (Assistant Scientific Officer), Mr D Davy-Bowker (Scientific Officer), Mr M Gravelle (Assistant Scientific Officer), Dr A Ibbotson (Higher Scientific Officer), Mr J L Kelly (Technical Services), Mr T Marsh (Assistant Scientific Officer), Mr J Masters (Assistant Scientific Officer), Mr P Scarlett (Assistant Scientific Officer), Miss D Sturmey (Personal Secretary), Mrs N Thexton (Administrative Officer), Mr G Waimann (Professional and Technical

Officer) and Mr R Wiggers (Assistant Scientific Officer).

Honours and promotions

Dr P D Armitage received a DSc from the University of London and Dr S Brown was awarded the degree of Doctor of Philosophy from Liverpool University. Prof B J Finlay was elected Vice-President of the International Society of Protozoology for 1997/98 and was made an Adjunct Professor at Deakin University (Australia). Dr E Y Haworth was granted an Honorary Research Fellowship by the FBA. Dr W A House was promoted to IMP Grade 6 and Mrs K L Symes was promoted to HSO, as the Institute's Database Manager. Mr S Thomson was promoted to Band 7.

NERC/CEH activities

IFE staff continued to play key roles in the administration of NERC/CEH research programmes. Dr P D Armitage was a member of the Core Group for the Urban Integrating Fund

and Project Co-ordinator for Project 3.5 (Sustainability, Restoration and Remediation of Urban Environments). Dr A E Bailey-Watts, with responsibility for maintaining one of the still water monitoring sites, was actively involved in ECN discussions and workshops. Mr W R C Beaumont was the Vice President of the IPMS NERC Branch, Chairman of the CEH Union Side Whitley Committee and the Secretary for the IPMS at the River Laboratory. Ms C Butterwick acted as the Local Training Officer for the IFE Windermere Laboratory and also performed the role of Secretary for the IFE Section of the NERC Branch of the IPMS. Professor J M Elliott was a member of Core Group 4 for the CEH Programme Review. Mr I S Farr acted as the IPMS Safety Representative at the River Laboratory. Prof B J Finlay was the Project Leader for the CEH Programme Biodiversity Core Group. He was also a member of the Steering Group and Technical Committee for the Millennium Bid for the National Biodiversity Network and Mr M T Furse served as a member of the Countryside Survey 2000 Joint Management Team. Professor J Hilton was a member of the IPC Spectroscopy Steering Group. Dr S C Maberly acted as Programme Manager for the special topic 'Testable Models of Aquatic Ecosystems'. Dr L May was a member of the Environmental Diagnostics Data and Quality Assurance Sub-committee. Professor A D Pickering was a member of the CEH Management Board, the NERC/FBA Negotiating Team and the NERC Long-term Environmental Monitoring Review Group. Dr R W Pickup was on the NERC Freshwater Sciences Research Grants and Training Committee and the NERC EDGE Grants Award Committee. He also acted as a panel member for the NERC University Review Panel for MSc courses and for the ROPA Committee. Dr L C V Pinder was a member of the working party on the Thematic

Programme proposal Dynamics of Flood Plain Ecosystems and Project Co-ordinator for the Project 5.1 Biodiversity Characterisation, Pattern and Monitoring. Dr T G Pottinger was a member of the Interview Panel for the NERC Freshwater Science Fellowships. Prof C S Reynolds was the Programme Leader for CEH Core Strategic Programme Area 4. Mr M A Rouen was a member of the CEH Computing Committee.

Collaboration with other NERC Institutes

Extensive collaboration continued with most Institutes, including those of the Centre for Ecology and Hydrology (IH, ITE and IVEM). Dr P D Armitage collaborated with IH Wallingford on ecological flows/PHABSIM development and with IH Wallingford, ITE Bangor, Monks Wood and Merlewood regarding the Integrating Fund project The Environmental Characterisation of Urban Environments. Mr J A B Bass attended a CHASM workshop to give a short presentation. Mr W R C Beaumont worked with colleagues in IH Plynlimon and ITE Bangor on the Integrating Fund project Upland Canopy Closure and with IH Plynlimon regarding a MAFF project on afforestation. Mr K Clarke liaised with IVEM Oxford in relation to the Integrating Fund project Microbial Diversity and Ecosystem Function. This involved the electron microscopy of viruses present in water from Priest Pot and the effects of these viruses on other Priest Pot micro-organisms. Dr F H Dawson collaborated with ITE Monks Wood regarding plant distributions, ITE Merlewood in relation to ECOFACT surveys for Countryside 2000 and the IH Wetlands Committee. Dr J G Day worked closely with DML (Mr M F Turner) concerning CCAP management and strategy and cryopreservation research.



Mr P Scarlett.



Miss D Sturme.



Mrs N Thexton.



Mr G Waimann.



Mr R Wiggers.

Integration of projects within CEH features prominently.

Professor J M Elliott collaborated with IH (R J Moore and V Bell) regarding the Integrating Fund project on Ecological Systems Subject to Hazards. Prof B J Finlay worked closely with IVEM and ITE in relation to the Integrating Fund project Microbial Diversity and Ecosystem Function. He also collaborated with both PML and ITE regarding the Millennium Fund Biodiversity Project and with ITE (Merlewood) working on the Soil Biodiversity Thematic Programme. Mr M T Furse collaborated with ITE (Merlewood and Monks Wood) over the planning of the next Countryside Survey. Dr D G George was in regular contact with IH Wallingford regarding the Integrating Fund and he also had periodic contact with PML in relation to Gulf-Stream dynamics. Dr G H Hall liaised with both ITE and IVEM with respect to the Integrating Fund project The Microbial Basis of Methane Oxidation in Soils. Dr W A House collaborated with Dr C Neal at IH on carbon dioxide in Humber rivers and with Dr P Donkin PML in relation to micro-organics in the Humber estuary. Dr M Ladle was in collaboration with both IH and ITE in relation to flow needs for fish. Dr L May worked with colleagues at IH and ITE on the Integrating Fund projects EASIER and Phosphorus in Catchments. She also collaborated with Roger Moore (IH) on Environmental Diagnostics (data harmonization) and with Drs K Bull and T Moffat (ITE, Monks Wood) on SEEDCORN (data archaeology). Dr R W Pickup collaborated with both ITE and IVEM with regard to the Integrating Fund project The Microbial Basis of Methane Oxidation in Soils, with the FBA in connection with an EU grant and with BGS on an EPSRC grant. Dr L C V Pinder collaborated with IH regarding the URGENT project River Corridors. Dr J T Smith worked with colleagues at ITE Merlewood on radionuclide pollution.

Mrs K L Symes collaborated with ITE Monks Wood (Environment Information Centre) regarding the SEEDCORN project. Dr E W Tipping worked with IFE, Bangor and IH, Plynlimon in connection with the Integrating Fund project Upland Canopy Closure. He also collaborated with ITE Monks Wood and ITE Bush on an Environmental Diagnostics project on metal critical loads and with BGS in relation to an EU project on nuclear waste disposal and a proposal to Environmental Diagnostics and on the modelling of ion-binding by humic substances. Dr I J Winfield collaborated with the Biological Records Centre at ITE Monks Wood on a feasibility study for an atlas of UK freshwater fish. Dr J F Wright worked with Dr J Weeks at ITE Monks Wood on the production of a final report to the Environment Agency entitled A Demonstration of the Feasibility of SOILPACS. He also published jointly Dr Moss at ITE Monks Wood.

Collaboration with other organisations

Dr P D Armitage served on the Biological Methods Committee of the British Standards Institute and Mr G D Collett served on the SCALE Aquaculture Project Advisory Committee. Dr F H Dawson served on the River Habitat Survey Technical Committee of the Environment Agency. Dr J G Day collaborated with NIES Tsukuba (Japan) on several topics including; culture collection management, taxonomic research and cryopreservation research. He also served on United Kingdom Federation of Culture Collections and the UKNCC. Professor J M Elliott led EC project partners from the Norwegian Institute for Nature Research (NINA), the Swedish University of Agricultural Sciences, the Netherlands Institute of Ecology and the University of Oviedo in Spain. Mr M T Furse was in

collaboration with S Hughes, Laboratório Regional de Engenharia Civil (LREC), Funchal for the preparation and submission of a paper entitled "Macro-invertebrate Fauna of Madeira". Ms D P Hewitt collaborated with seven European partners in relation to REFLECT, a successful bid to EU Framework IV. Professor J Hilton was a member of the Research Advisory Committee of the Centre for Aquatic Plant Management. Dr W A House worked on joint papers on surface chemistry with Dr B Zhmud at the Institute of Surface Chemistry in Kiev. He also collaborated with Professor Albanis, Ithaca, Greece regarding a visiting worker in relation to the COST 66 Pesticides Action Group and served on DoE's Technical Committee on Detergent and the Environment. Dr M Ladle collaborated with the Imperial College regarding oestrogenic substances. Dr S C Maberly has collaborated with Dr Wei Li from Wuhan, China, as part of a Royal Society Visiting Fellowship. Mr I McCulloch served as Chairman of Aslib Northern Branch and Dr C Paxton worked with Dr T Simon of Large Rivers Research Station, Ogden Dunes, Indiana, writing a paper on percid fish dispersal strategies. Prof A D Pickering served on the Area Environment Group (Northern Area) for the Environment Agency. Dr L C V Pinder collaborated with Dr G Pinay at CNRS in Toulouse, France in relation to the ERMAS II contract and Dr Van at the National Environment Agency in Vietnam in relation to the Darwin Initiative. Dr T G Pottinger undertook EC-funded research collaborations with Dr K Roed at the Norwegian College of Veterinary Medicine. Prof C S Reynolds served on the Environment Agency Toxic Algae Task Group, OFWAT CSC for the North West, the Field Studies Council, Kendal Town Council and the Agenda 21 Advisory Committee, SLDC. Dr J T Smith collaborated with various

international organisations in relation to three projects: EC Nuclear Fission Safety Programme; EC Inco-Copernicus Programme and a joint proposal to EC Inco-Copernicus. Dr E W Tipping had international connections with the Norwegian Institute of Forest Science, the University of Bayreuth and the Technical University in Denmark. Dr J M Winder was involved in the promotion of interactions between the IFE and archaeozoologists in Flanders, working at the Laboratory for Palaeontology, Ghent University and the Institute for the Archaeological Heritage of the Flemish Community in Brussels. Dr I J Winfield was involved in research of fish introductions with the Institute of Freshwater Research in Sweden, the Finnish Game and Fisheries Research Institute in Finland and Fischereiforschungstelle Baden-Württemberg in Germany. He was also a member of the UK component of the Baikal International Centre for Ecological Research, the IUCN/SSC Freshwater Fish Specialist Group, the IUCN/SSC Invasive Species Specialist Group, the EIFAC Working Party on the Influence of Management Practices on the Environment and the Regional Fisheries Advisory Committee of the Environment Agency, NW Region. Mr C Woof was involved in the PROTOS research programme which involved joint study with institutes in Norway, Germany and Spain. Dr J F Wright was in collaboration with scientists in Australia, Canada, the USA, Spain, the Netherlands, Sweden and Belgium who are all contributing chapters to the book on RIVPACS, based on the Workshops held at Reading University in 1997. He also served on the Moors River Standing Committee and was a member of the Advisory Board to the Identification Qualification (IdQ) scheme run by the Natural History Museum.

Many staff are engaged in collaborations beyond the Institute.

Scientific societies

IFE staff continued to play a full role in the work of a wide range of scientific societies. Dr P D Armitage was a member of the North American Benthological Society. Dr A E Bailey-Watts was a member of the Chartered Institute of Water and Environmental Management and a Fellow of the Institute of Biology. Mr W R C Beaumont was a Licentiate Member of the Institute of Fisheries Management. Dr S Brown was a member of the British Section of the Society of Protozoologists. Miss C Butterwick was a member of the British Phycological Association. Dr F H Dawson acted as the Regional Treasurer for the Institute of Biology Regional Committee. Dr J G Day was a committee member of the United Kingdom Federation of Culture Collections, for which he also acted as Secretary and Newsletter Editor. He was also a member of the British Phycological Society, the European Culture Collection Organisation, the Society for Low Temperature Biology and the World Federation for Culture Collections during 1997/98. Professor J M Elliott was a member of the British Ecological Society and a Fellow of the Institute of Biology. Dr G F Esteban was a member of the Society of Protozoologists, the British Section of the Society of Protozoologists and the Real Sociedad Española de Historia Natural. Prof B J Finlay was a member of the Society of Protozoologists, the Society for General Microbiology, the Real Sociedad Española de Historia Natural and the British Ecological Society. Mr M T Furse was a member of the Freshwater Biological Association. Professor J Hilton was a Fellow of the Royal Society of Chemistry. Dr W A House was a Fellow of the Royal Society of Chemistry and a member of SETAC (Society for Environmental Toxicology and Chemistry) and a member of the International

Association on Water Pollution Research and Control. Mrs M A Hurley acted in the role of Chairman to the Lancashire and Cumbria local group of the Royal Statistical Society, of which she is also a Chartered Member. She was also a member of the International Biometrics Society. Dr C Paxton was a member of the Fisheries Society of the British Isles and of the Palaeontological Association and the Association for the Study of Animal Behaviour. Professor A D Pickering was a Fellow of the Institute of Biology and a member of the Society for Experimental Biology and of the Fisheries Society of the British Isles. Dr R W Pickup was a member of the Society of General Microbiology. Dr L C V Pinder was a Fellow of the Royal Entomological Society. Dr T G Pottinger was a member of the Fisheries Society of the British Isles and the Society for Experimental Biology. Prof C S Reynolds was a member of the British Ecological Society, the British Phycological Society, the American Society of Limnology and Oceanography, the International Association of Limnology, the Freshwater Biological Association, the Ecological Institute and a Fellow of the Institute of Biology. Dr E W Tipping was a member of the Royal Society of Chemistry, the Society of Chemical Industry, the International Soil Science Society, the British Soil Science Society and the International Humic Substances Society. Dr I J Winfield was a member of the British Ecological Society and the Honorary Treasurer of the Fisheries Society of the British Isles, a member of the Freshwater Biological Association and a Licensed Member of the Institute of Fisheries Management. Dr J F Wright was a member of the British Ecological Society, the International Association of Theoretical and Applied Limnology and a Life Member of the Freshwater Biological Association.

Staff are active in numerous learned societies.

Editorial commitments

Dr P D Armitage was a member of the Referee Panel for Water Research, Environmental Pollution, Archiv für Hydrobiologie and Hydrobiologia. Dr B J Finlay edited Archiv für Protistenkunde and acted as sub-editor for the European Journal of Protistology and for Protist. Mr M T Furse was a joint editor of the Proceedings of the RIVPACS International Workshop held in September 1997. Dr W A House was an invited editor for a special issue of The Science of the Total Environment: Land Ocean Interaction Study. Dr M Ladle acted as editor for the Proceedings of the 3rd Symposium of the Fleet Study Group.

The following members of staff also served as associate editors or members of the editorial board for a range of other scientific journals:

Dr P D Armitage – Regulated Rivers, Netherlands Journal of Aquatic Ecology.

Dr F H Dawson – Aquatic Conservation (Co-editor for special volume on Classification of Rivers '97-'98.

Professor J M Elliott – Annales de Limnologie and Wasser und Abwasser.

Dr W A House – Internationale Revue de Gesamten Hydrobiologie

Dr S C Maberly – Aquatic Botany, Freshwater Biology, International Revue für Gesamten Hydrobiologie.

Dr L May – Internationale Revue der Gesamten Hydrobiologie.

Prof A D Pickering – Diseases of Aquatic Organisms

Dr R Pickup – Microbiology

Dr T G Pottinger – Journal of Fish Biology (until May 1997)

Prof C S Reynolds – Archiv für Hydrobiologie, Journal of Plankton

Research, Aquatic Sciences, Limnologia, Limnetica, Ecological Research.

Dr E W Tipping – Environmental Technology

Dr I J Winfield – Journal of Fish Biology, Fish and Fisheries Research

Collaboration with Universities

Teaching

Dr A E Bailey-Watts was a specialist Lecturer at Napier University on the MSc course for the Biology of Water Resource Management and he held a seminar at Edinburgh University in for students on the MSc course in Environmental Chemistry. Mr G D Collett presented a lecture, workshops and field techniques to national environmental organisations at the Darwin Initiative Workshop on Biological Water Quality Monitoring held at Hanoi University in Vietnam. Prof J M Elliott acted as Adjunct Professor of Freshwater Biology at the Norwegian College of Fishery Science, University of Tromsø and also gave a seminar at the University of Lund in Sweden. Prof B J Finlay lectured at the Universities of Bangor, York and Konstanz. Mr M T Furse provided two weeks external tutoring for a BSc course in Outdoor Education and Environmental Science at the University College of St Martin's, Lancaster. He also lectured and provided a computer demonstration on RIVPACS III at Bournemouth University. Professor J Hilton was a visiting Professor at Reading University and an external examiner at Bournemouth University. Dr W A House was an Honorary member of the academic staff at Reading University. Dr M Ladle lectured at both the University of North London and Reading University. Dr S C Maberly gave a seminar at Bristol University on

Many staff have been engaged in teaching and lectures at Universities.

the impact of rising carbon dioxide on aquatic plants. Professor A D Pickering continued as Associate Professor at Brunel University. He was also a Member of Court, Lancaster University and gave a seminar at the university. Dr R W Pickup, as a Honorary Lecturer gave two lectures to undergraduates at the University of Lancaster on flow cytometry and environmental microbiology. Prof C S Reynolds was an Honorary Visiting Professor at the Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires and the Department of Geography at the University of Reading. He also held three workshops in Australia, CRC in Freshwater Ecology. Dr I J Winfield lectured on Fish Ecology at Lancaster University, was a guest speaker at a seminar held at the University of Wolverhampton and acted as an external examiner at the Universities of Hull, St Andrews and Nottingham.

Research

In addition to the above teaching commitments, 1997/98 saw a continuation of the extensive research collaboration between the IFE and universities throughout the UK, Europe and further afield. Dr P D Armitage collaborated with Dr R S Wotton (UCL) regarding slow sand filtration and chironomid ecology/pesticide-mucus/silk interaction, with Dr Paul Wood at the University of Huddersfield in relation to siltation at low flows/cave fauna and with Professor A Gurnell on an URGENT project on stream restoration. At an international level he collaborated with Dr B Malmqvist at the University of Umeå in connection with chironomidae distribution and taxonomy, with Dr M Baez at the University of La Laguna, Tenerife regarding chironomidae distribution, with Dr J Prenda at the University of Huelva, Spain in relation to fish habitat studies and Dr I Pardo of the

University of Santiago in Spain regarding mesohabitats/macroinvertebrates. Dr A E Bailey-Watts collaborated with Dr J Farmer at Edinburgh University on lake and reservoir sediment chemistry, with Dr D McStay of Robert Gordon's University in Aberdeen in relation to laser technology and the remote sensing of algal populations, with Dr R Duck at the University of Dundee and with Dr C Foxall, University of East Anglia regarding Lake Tanganyika. Mr W R C Beaumont was involved with the UK Acid Waters Monitoring Network and, in this context, collaborated with Dr S Patrick, University College of London. Dr S Brown continued the collaboration with J F De Jonckheere at the Institute of Hygiene and Epidemiology in Brussels on the molecular systematics of vahlkampfiid amoebae. Mr K Clarke liaised with Dr I Head, Dr N Gray and R Harrod at Newcastle University on the subject of the genetics of freshwater bacteria. Dr F H Dawson was in collaboration with the Department of Geography at Cambridge University regarding vegetation and fluvial geomorphology. Dr J G Day collaborated with Dr E E Benson of the University of Abertay, Dundee and with Dr K J Rana at the University of Stirling whilst undertaking cryopreservation research. He also worked with Drs R J Smith and J Eccleston-Parry at Lancaster University on cyanobacterial identification. Prof B J Finlay continued the collaboration with Prof T Fenchel at the Marine Biological Laboratory, Helsingør, Denmark, with Dr R Hirt at the Natural History Museum and Professor P A Tyler at Deakin University, Australia. Mr M T Furse collaborated with Dr B Walley, University of Staffordshire and Dr G Tapia, University of Valencia in connection with the modification and testing of the Biological Monitoring Working Party score system for quantifying the ecological quality of

Liaison and collaboration with like-minded scientists feature prominently.

rivers. He also worked with Dr D Murray from the University of Dublin on the collection of chironomid pupal exuviae material on three islands in the Azores, in association with studies on Madeira. Professor J Hilton collaborated with both Liverpool and Manchester Universities in relation to PhD students and with Bournemouth University regarding the application of the GIS to freshwater ecology. Dr W A House worked with the Department of Biology at Birmingham University on the development of a phosphate ionophore. He also collaborated with Cardiff University on the biochemistry, adsorption and degradation of non-ionic surfaces, and with PRIS, University of Reading studying the interactions of pesticides with sediments. Dr S C Maberly visited Ancona University in Italy to undertake research. Dr L May worked with the University College, London on Environmental Diagnostics and with the University of Edinburgh regarding nutrient load to Bassenthwaite Lake/Esthwaite/River Thames. Dr R W Pickup collaborated with the Universities of Liverpool and Newcastle on CASE and full grant awards, with the University of Central Lancashire for a PhD studentship and MSc project placements, with the University of Sheffield in relation to an EPSRC grant and with the Universities of Galway and Ghent in connection with EU grants. Dr L C V Pinder was in contact with Professor G E Petts of the University of Birmingham and Dr V Black of the University of Loughborough for the EC contract on European river margin ecosystems. He also collaborated with Dr J P Sadler at the University of Birmingham on biological water quality and the NERC URGENT project on river corridors. At an international level, Dr Pinder collaborated with the Universities of Lund and Umeå (Sweden), the Universities of Neuchâtel and Lausanne (Switzerland), the University of Rennes

(France), the University of Bologna (Italy) and the University of Hanoi (Vietnam). Dr T G Pottinger worked with Dr C R Tyler and C Harris at Brunel University on the impact of endocrine disrupting chemicals on gonadotropin levels in rainbow trout. Overseas research by Dr Pottinger included; Dr F Knudsen at the University of Oslo and Professor S Fevolden of the University of Tromsø in Norway, Dr Paul Balm at the University of Nijmegen in the Netherlands, Professor M de la Higuera at the University of Granada and Dr M Izquierdo at the University of Las Palmas. Prof C S Reynolds collaborated with Napier University on the joint supervision of a PhD student. Dr J T Smith liaised with Dr D Ireland at the University of Glasgow and with Dr P Appleby of the University of Liverpool on radionuclides in soils and sediments. He also worked with Dr D Timms of the University of Portsmouth on radiocaesium sorption. Dr E W Tipping collaborated with Professor G E Millward at the University of Plymouth on the LOIS project on metal-particle interactions, with Dr M Ashmore at Imperial College on the Environmental Diagnostics project on metal critical loads and with both Dr J Hamilton-Taylor (University of Lancaster) and Dr M N Jones (University of Manchester) on humic substances modelling. Dr J F Wright worked with Dr S Hopkins at the University of Reading regarding SOILPACS.

Members of staff also acted as supervisors for students registered for PhD degrees:-

Miss J Anderton (Greenwich, P/t) The effects of lead mining on Ullswater, English Lake District (Dr Haworth)

Mr S Ball (Lancaster, CASE) The role of picophytoplankton in lakes of different trophic state (Dr Maberly)

Joint research projects are a feature of the IFE programme.

- Mr T L Beaumont (Liverpool, CASE)
Interactions of cortisol and adrenosensitivity during chronic stress in salmonid fish (Dr Pottinger)
- Mr C Brereton (London, CASE) The role of silt and mucus secreted by invertebrates in retaining organic matter over the substratum of streams (Dr Armitage)
- Mr S Bryan (Lancaster, CASE) Testing models of metal speciation in freshwaters (Dr Tipping)
- Miss C Cannan (Southampton, CASE) Extrapolation of reach level channel and riparian habitat information to catchment scale (Dr Armitage)
- Mr F L Charlton (Edinburgh, CASE) Remote sensing of freshwater phytoplankton (Dr George)
- Mr M Child (Liverpool, NERC/CASE) Effects of UV-B radiation on microbial communities (Dr Pickup).
- Mr D Clarke (Exeter, CASE) Microthermal habitats in British rivers (Dr Ladle)
- Mr S Clough (St Andrews) Compositions Distribution and dynamics of populations of river fish (Dr Ladle)
- Mr J Cotton (Liverpool, CASE) Bacterial plasmids in deep freshwater sediments (Dr Pickup)
- Miss P S Davies (Leeds, Tesco (FBA)) Phosphorus dynamics in limnetic ecosystems (Dr Reynolds)
- Mr A Elliott (Napier, CASE) Modelling community assembly in relation to succession and disturbance, using PROTECH (Dr Reynolds)
- Miss L A Fear (Lancaster, CASE) Microbial community changes in the gut of *Gammarus pulex* (Dr Pickup)
- Mr R A Fleck (Dundee) Assessment of cell damage and recovery in cryopreserved freshwater protists (Dr Day)
- Miss E Hawtin (Birmingham) Chironomids in lowland rivers in relation to water quality and physical habitat (Dr Pinder)
- Mr R D Hedger (Edinburgh, CASE) Spatial scales of dynamics in lakes (Dr George)
- Mr C Hinchcliffe (Newcastle, FBA CASE) Ecology of *Ochrobium* in lake water (Dr Pickup)
- Mr R Howarth (Newcastle, CASE) Phylogenetic analysis of *Achromatium oxaliferum* (Dr Pickup)
- Mr D M John (Cardiff, CASE) Survival fate of organosilicone and alkyphenol ethoxylate pesticide adjuvants (Dr House)
- Miss W Lester (Reading, CASE) The distribution and fate of micro-organic pollutants in river sediments (Dr House)
- Miss J Long (Reading) LOIS Project (Dr House)
- Mr M Longshaw (Plymouth, MAFF [CSG]) Transmission of myxosporidiosis in freshwater teleosts (Dr Ladle)
- Miss R Meade (Liverpool, CASE) In situ detection of nitrifying bacteria (Dr Pickup)
- Miss W Pagen (University of Central Lancashire, PhD) Characterisation of nickel resistance determinants in bacteria (Dr Pickup)
- Ms V Reid (Hull, CASE) Long-term changes in Lake Windermere zooplankton (Dr George)
- Miss E Scott (Liverpool, CASE) Environmental effects on bacterial populations in freshwater (Dr Pickup)
- Mr M Scott (Manchester, CASE) Climatic effects on the export of dissolved organic matter from peat (Dr Tipping)

34 post-graduate students are engaged in research projects at IFE.

Mr D Short (Liverpool, CASE)
Quantitative models of sediment records and atmospheric fluxes (Prof J Hilton)

Mr R Skidmore (Durham) The effect of environmental conditions on the plankton production dynamics in the feeder rivers of the Humber Estuary and the flux of autochthonous carbon to the Estuary (Dr Maberly)

Miss R Stidson (Lancaster, CASE)
Chemical weathering in upland catchments (Dr Tipping)

Mr S Walker (Aberystwth) Otolith structure as a possible indicator of stress in fishes (Winfield and Pottinger)

Miss C Whitby (Liverpool, CASE)
Nitrification in freshwater systems (Dr Pickup)

Miss S L Woodruffe (Birmingham, CASE) Biomineralisation reactions with algal biofilms & phytoplankton assemblages (Dr House)

MSc Students from the Universities of Lancaster, Napier, Oslo and Freiburg were supervised by Dr Armitage, Professor Hilton, Mr Bass & Dr Pottinger.

During the year the following research students were awarded the degree of Doctor of Philosophy:

Mr G Biagini, Mrs A Brookes, Ms S Brown, Miss D Bunker, Miss N J Fielding, Miss S Griffiths, Miss A Hartley, Miss S J Marshall, Mr G Rhodes and Mr P Wood.

International meetings and visits

Dr P D Armitage presented a paper to the 7th International Symposium on Regulated Streams in Tennessee. Dr A E Bailey-Watts made several trips abroad in relation to the Lake Tanganyika Biodiversity Protection Project (LTBPP); these included visits

to Tanzania, Zambia, and Burundi. He also visited Chiang Mai University in Thailand as the main speaker at the 5th Water Research Centre Workshop. Mr W R C Beaumont travelled to the USA to evaluate electrofishing equipment. Dr F H Dawson visited Madeira, Poland and Trébon in relation to various scientific projects and attended the European meeting on Tree Litter Breakdown in Rivers and Streams, held in Spain. Dr J G Day participated in Cryo 97 in Barcelona, contributed to an international congress on *in vitro* biology in Washington and to EECO XVI in Cascais, Portugal. Professor J M Elliott attended an annual meeting for his EC project in Nieuwersluis, the Netherlands. Dr G F Esteban visited the Deakin University in Warrnamboll, Australia in July 1997 to investigate the ciliated protozoa from several water bodies. She also made two trips to the Universidad Complutense de Madrid in Spain in relation to the supervision of two PhD students in the Department of Microbiology. Prof B J Finlay travelled to Denmark, Australia and Spain to carry out joint research in the subjects of microbial diversity and the diversity of protozoa in fresh waters and gave a plenary lecture at the International Conference of Protozoology held in Sydney. Mr M T Furse went to Northern Spain as part of an external tutoring session for the University College of St Martin's. Dr D G George travelled to Brussels for a project planning meeting in DG11 and also to Lammi, Finland for a project planning meeting for the new INTAS funded project on climate change. Mrs M A Hurley visited the Netherlands in to attend a meeting of partners on the EC funded project under the FAIR programme. Mr M Lee travelled to both Eire and Spain on a number of occasions during 1997 to upgrade the LIFE AQMS installations. Mr S Lofts attended the PROTOS Principal Investigators' meeting at the BITOEK Research Institute, University of

Institute staff travel extensively in their work.

Bayreuth, Germany. Professor A D Pickering presented a paper on oestrogenic substances at the EURAQUA meeting held in Koblenz, Germany. Dr R W Pickup travelled to Australia as an invited speaker at the AusSM lecture. Dr L C V Pinder travelled quite extensively during 1997, visiting Umeå in Sweden, Hanoi in Vietnam, Trento and Bologna in Italy and CEMAGREF in Lyon, France in relation to various research projects. Dr T G Pottinger visited Norway for an EC project co-ordination meeting and the University of Las Palmas to lecture and chair an EC project meeting. Dr C S Reynolds was invited to speak at the Australian Society of Limnology and also contributed to a meeting on harmful algae, held in Spain. Mr M A Rouen upgraded the Automatic Water Quality Monitoring Stations in both Killarney, Co Kerry in Ireland and Granada in Spain. Dr J T Smith travelled abroad on several occasions. He attended an EC Inco-Copernicus Radioecology Co-ordinators meeting in Bonn, Germany and visited Belarus and Russia for field experiments for the Inco-Copernicus programme. He also travelled to Slovenia to attend an EC Nuclear Fission Safety project meeting, to the Netherlands for a CEC project meeting and was an invited speaker on dating sediments and determination of sedimentation rate at the Finnish Centre for Radiation and Nuclear Safety in Helsinki. Dr E W Tipping attended a meeting of participants of the PROTOS project (EU) in Bayreuth, Germany. He also attended a scientific meeting on humic substances in Finland and was invited to speak at a workshop on critical loads for heavy metals and persistent organic pollutants in Germany.

Public understanding of science

Mr K Clarke participated in a teaching session for the A-Level students of Ulverston Victoria High School and demonstrated electron optics and electron microscopy together with specimen preparation techniques. Dr B J Finlay gave a BBC Radio Cumbria interview on the life of a research scientist. Dr M Ladle had coverage on BBC Radio 4 and ITV South Today on smolt counting. He also continued a series of diary monologues on the River Frome for the BBC Radio Bristol Natural History Unit, in addition to a regular feature for the magazine "Sea Angler". Professor A D Pickering gave a radio interview for Radio Cumbria on the reversal of acidification in Cumbria and hosted visits to the Windermere Laboratory by three natural history societies. In addition, he gave illustrated talks on the work of the IFE to four local organisations and acted as a judge at the BAAS British Youth Science Fair. Dr T G Pottinger's popular article "Selective Breeding for Stress Tolerance" appeared in the publication Trout News. Dr E W Tipping gave a radio interview on acid rain recovery for Radio Cumbria. Dr I J Winfield contributed an article that appeared in The Times on the subject of conservation of glacial, relict fish species.

Staff contribute willingly to the communication of science to the public.

Appendix 1

Location of CEH sites

Centre for Ecology and Hydrology

Directorate

1. Wallingford

Institute of Freshwater Ecology

2. Windermere
3. Wareham
4. Edinburgh

Institute of Hydrology

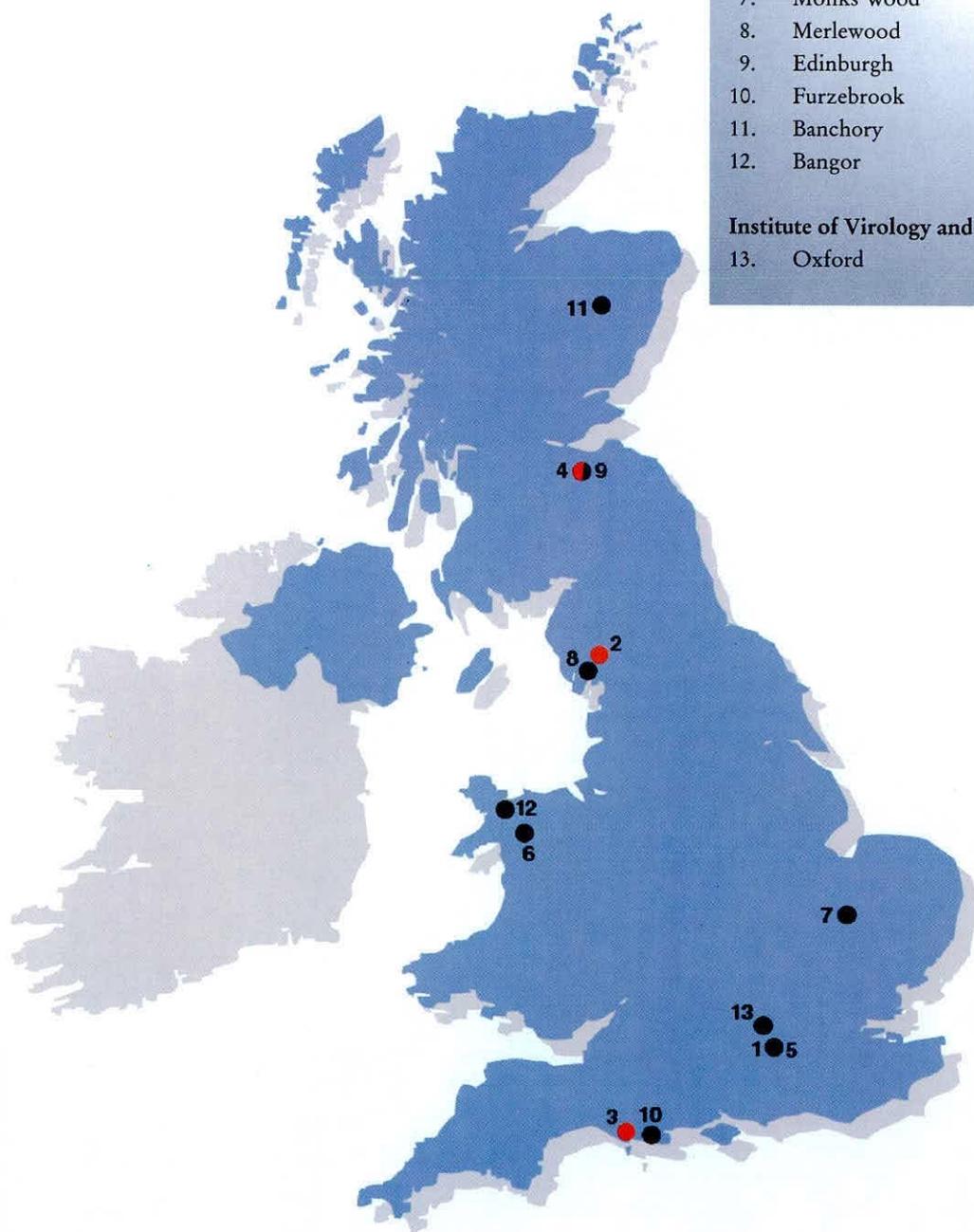
5. Wallingford
6. Plynlimon

Institute of Terrestrial Ecology

7. Monks Wood
8. Merlewood
9. Edinburgh
10. Furzebrook
11. Banchory
12. Bangor

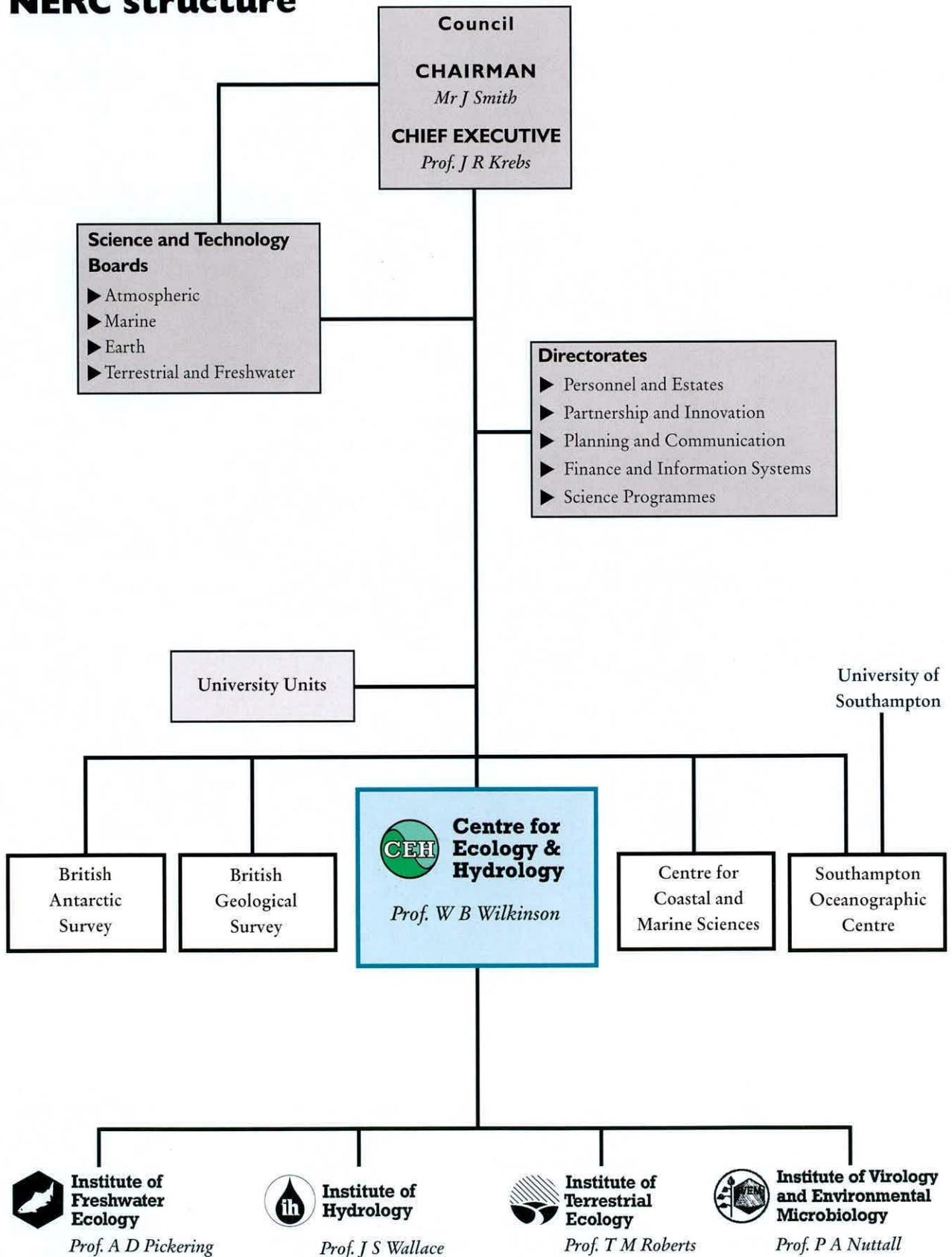
Institute of Virology and Environmental Microbiology

13. Oxford



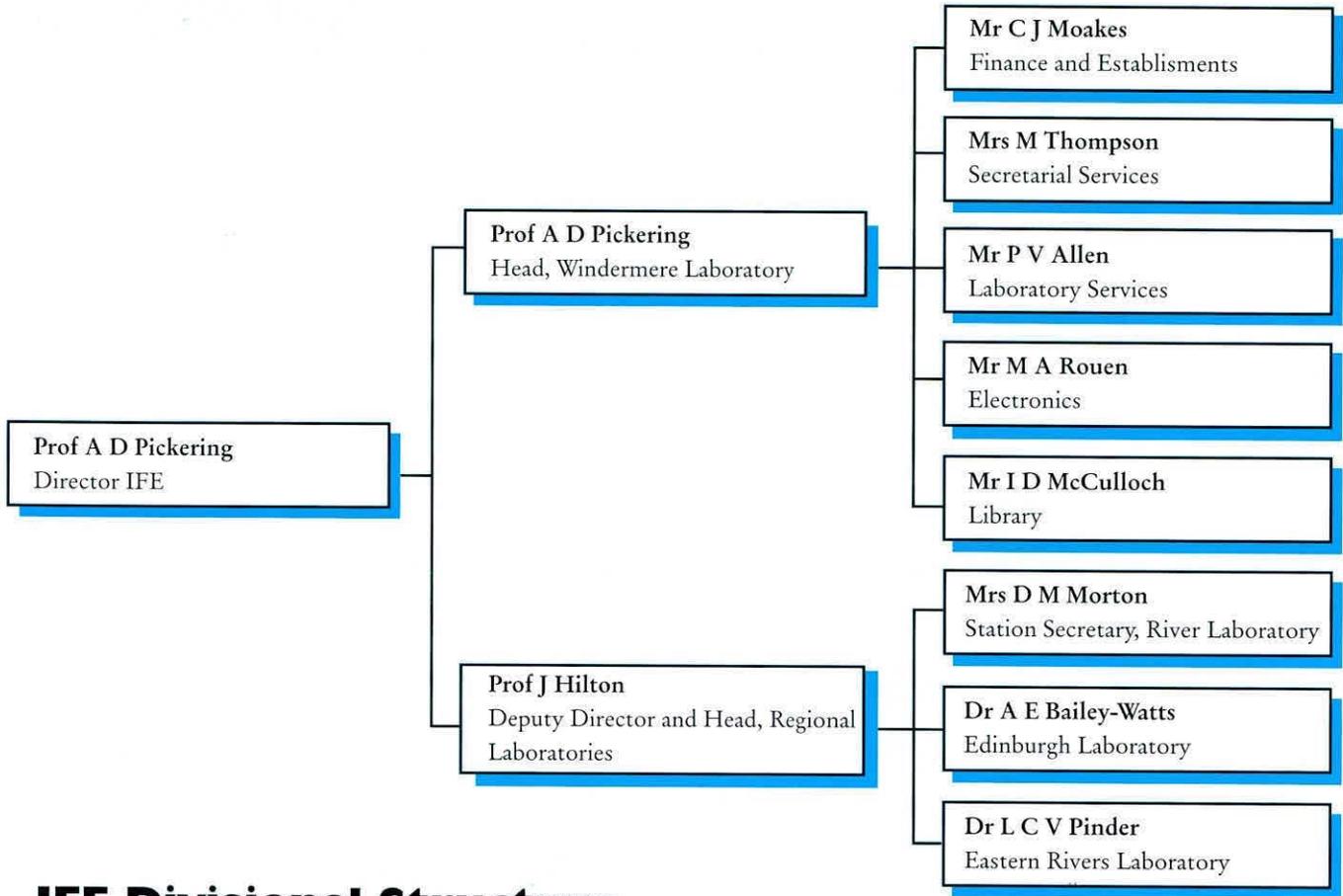
Appendix 2

NERC structure

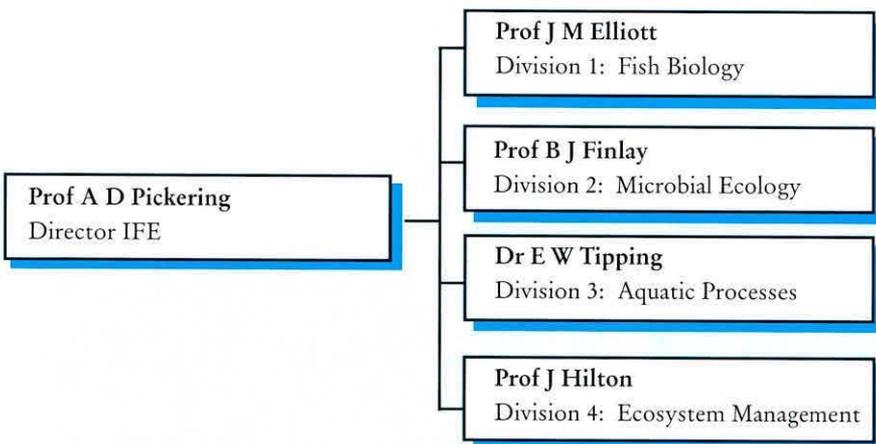


Appendix 3

IFE Management/ Administration/Services



IFE Divisional Structure

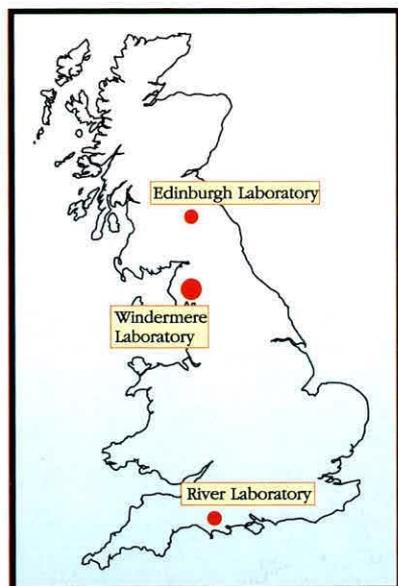


Appendix 4

The Institute of Freshwater Ecology

The Institute of Freshwater Ecology (IFE) was formed in 1989 when the Natural Environment Research Council undertook the management of the staff and the laboratories of the Freshwater Biological Association (FBA) and, therefore, draws on more than 60 years' experience into all aspects of strategic, freshwater research.

The IFE is a component Institute of the Centre for Ecology and Hydrology (see Appendix 2 for details) and, as such, has the capability to adopt a truly multidisciplinary, scientific approach for the study of complex environmental problems. The Institute of Freshwater Ecology carries out research into freshwater, wetland and estuarine environments and offers a range of environmental services to an international user community, based upon a sound scientific knowledge of aquatic biology, ecology, chemistry and physics.

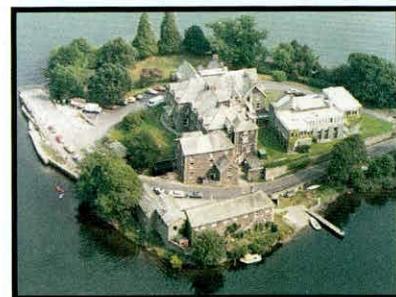


IFE Laboratories in the U.K.

The IFE operates from 3 laboratories located at strategic sites throughout Great Britain (the Windermere Laboratory in Cumbria, the River Laboratory in Dorset and the Edinburgh Laboratory in Midlothian) with its headquarters at the Windermere Laboratory. The staff complement is 99% posts of which 74 are directly engaged in scientific research and, at any one time, the laboratories also host over 50 visiting scientists, post-graduate students and temporary workers.

IFE scientists are active in national and international networks for environmental monitoring and research and many of the Institute's staff are visiting professors, readers and lecturers at UK Universities. Particularly strong links have been established between the IFE and Edinburgh, Lancaster, Liverpool, Birmingham, Brunel and Reading Universities. Staff hold key posts in appropriate scientific societies and serve on national and international committees and, through research collaboration and a network of contacts, are able to maintain their positions at the forefront of their respective fields.

The 'user community' of the IFE includes the NERC, Government Departments both in the UK and abroad, regulatory authorities, conservation bodies, private industry (including the water industry), the academic community and the general public, who are the ultimate end-users of research leading to wealth creation and improvement in the quality of life.



IFE Headquarters Windermere Laboratory

Further information on the services, facilities and research programme of the Institute of Freshwater Ecology can be obtained from:-

Professor A D Pickering
Director

The Institute of Freshwater Ecology
Windermere Laboratory
Far Sawrey
Ambleside
Cumbria LA22 0LP

Telephone: 015394 42468

Facsimile: 015394 46914

E-mail: a.pickering@ife.ac.uk



**Institute of
Freshwater
Ecology**

Appendix 5

The Freshwater Biological Association

The FBA is an independent organisation, a registered Charity and a Company Limited by Guarantee

The Association conducts research into all aspects of freshwater science and technology and provides a Membership organisation and independent scientific opinion.

The FBA provides scientific continuity – it was founded in 1929 and has a long history of achievements in freshwater science. This includes the publication of more than 2500 papers in recognised scientific journals and a series of independent publications (including identification keys for freshwater taxa, analytical methods, etc.).

The FBA possesses one of the finest freshwater libraries in the world, and provides essential advisory services to its members. Many national and international awards and honours have been bestowed upon the Association and its senior staff in recognition of the quality and importance of their scientific achievements.

Membership is open to individuals and organisations that wish to support the Association. Members receive copies of the FBA's *Freshwater Forum*, and its Newsletter *FBA News*. They may obtain other publications, including *Freshwater Biology*, at a substantial discount, visit the Laboratories, and use the Library by agreement with the Director.

The Mission of the FBA is to promote freshwater science:

- through an innovative research programme
- an active membership organisation
- by providing sound, independent scientific opinion

The FBA has four core objectives:

1. To support a programme of research of the highest quality by attracting scientists of the highest calibre as staff, research fellows, students and visitors and providing them with a well-found laboratory, opportunities and training to develop their interests.
2. To promote freshwater science by all means available, including education and provision of a membership organisation in which those committed to the subject can share common interests.
3. To provide sound, independent scientific opinion on matters relating to fresh waters and their conservation to local and national governments, organisations and individuals.
4. To maintain and develop the following services for a growing membership and the wider community:
 - The library and other international archives including electronic access to new databases.
 - A publication programme including scientific publications (including keys), special volumes, materials for general education and the application of new technology to provide greater access to our knowledge base.
 - A programme of national and international meetings, collaborating with other bodies where appropriate.
 - General and specialist courses.

All enquiries concerning Membership and the Association's activities should be addressed to:

The Acting Director
Freshwater Biological Association
The Ferry House
Ambleside
Cumbria LA22 0LP

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International: 4415394 42468
Facsimile: 015394 46914
E-mail: CSR@fba.org.uk

