

SOLVING PROBLEMS IN FISHERIES AND THE ENVIRONMENT



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SOUND SCIENCE

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INNOVATIVE RESEARCH

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IMPARTIAL ADVICE

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COMPREHENSIVE TECHNICAL FACILITIES

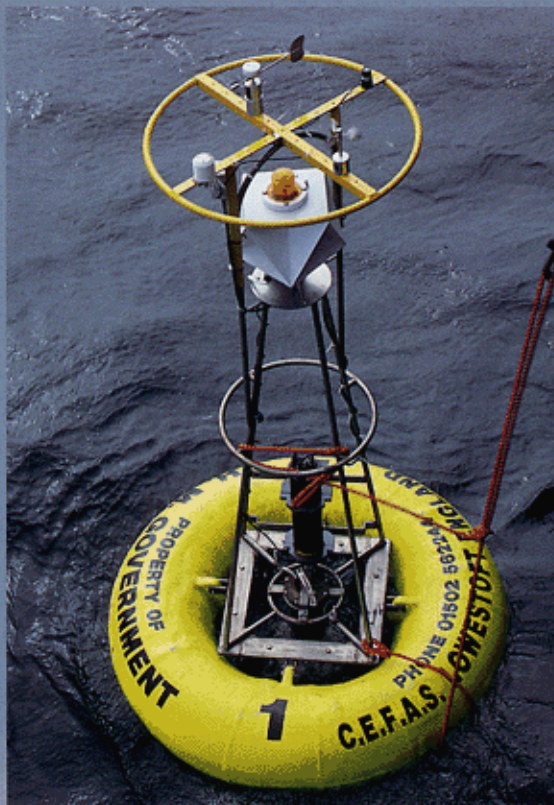
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COMMITTED TO MEETING OUR CLIENTS' NEEDS

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The Centre for Environment, Fisheries and Aquaculture Science, CEFAS, is a multidisciplinary scientific research and consultancy centre delivering solutions to meet the diverse needs of businesses and organisations active in marine, coastal, estuarine and freshwater environments.

 **CEFAS**  
*The Centre for Environment,  
Fisheries & Aquaculture Science*



CEFAS provides a comprehensive portfolio of research, consultancy and training services in fisheries science and management, environmental monitoring and assessment, fish and shellfish health, hygiene and cultivation, to clients around the world.

Established in 1902, we have a long and successful track record in delivering high quality, internationally respected scientific services to clients in a focused, confidential and impartial way.

## *Our Clients*

We tailor our services to meet the needs of a wide range of UK and international clients.

### **Our international public sector clients include:**

- The European Commission
- UN agencies
- Non-UK government departments and agencies

### **Our UK public sector clients include:**

- Department for Environment, Food and Rural Affairs
- Department for Transport, Local Government and Regions
- Department for International Development
- Health & Safety Executive; English Nature
- Environment Agency; Scottish Environment Protection Agency
- Defence Science and Technology Laboratory
- Local Authorities.

### **Our private sector clients include companies involved in:**

- oil & gas industry
- food industry
- aggregate extraction industry
- engineering & construction industry
- water services sector
- chemical, pharmaceutical and veterinary medicines manufacturing
- fish feed manufacturing
- aquaculture industry
- instrument manufacturing; and
- environmental consultants

In addition we maintain extensive collaborative links with research institutes and universities throughout the world.

## *Skills & Facilities*

- We have over 500 staff. Our well-trained scientists possess the up-to-date, multidisciplinary skills that are needed to tackle current problems in marine, estuarine and riverine environments.
- Many CEFAS scientists have international reputations and a wealth of experience in representation and negotiation at national and international level.
- We are experienced in working in, and managing the large international consortia that are often needed to tackle current environmental problems.
- All our work is conducted to high quality standards and, where appropriate, our analytical procedures are accredited to national and international standards.
- We have an active internal research programme to continually update our expertise. Recent projects have included investments in molecular biology, molecular genetics, biosensors, bio-geochemical modelling and the development of new immunoassay and analytical techniques.
- We apply advanced engineering and electronics techniques to the development of autonomous systems for high frequency, multi-parameter data collection. These systems range from innovative seabed landers, through buoy and ship mounted instruments, to microelectronic dataloggers for use in wildlife behaviour studies.
- We have three well-equipped specialist laboratories, comprehensive IT facilities and controlled environment aquaria and fish rearing facilities. We also have unique fisheries and environmental data archives and a comprehensive library housing one of the world's finest marine science collections.
- We are experienced in specialised IT application development for regulatory and research support - such as fisheries and ecosystem modelling software, data management systems, GIS and licensing systems.
- We operate two ocean-going research vessels with accreditation to ISO 9000 and IMO's International Safety Management Code which provide effective and versatile platforms for data acquisition.

## Expertise & capabilities

### Environmental assessment & analysis

- environmental impacts of chemicals, pesticides, pharmaceuticals
- toxicity of complex environmental samples
- environmental impact assessments for dredging, aggregate extraction, oil & gas exploration and production, waste disposal, pipeline discharges
- environmental impact assessments of aquaculture developments
- hazard assessments of chemicals

### Environmental monitoring & management

- coastal zone management
- environmental quality status reports
- contaminant, waste, and nutrient transport and fate studies

### Fish & shellfish disease, health and safety

- safety and efficacy assessments for medicines and therapeutants
- disease diagnosis
- disease prevention and control
- inspection and health certification
- pathology and parasitology
- shellfish hygiene
- virus detection in shellfish

### Aquaculture

- optimisation of feed composition and delivery
- formulated feeds for on-growing
- environmental effects on reared fish quality, behaviour and survival
- stock enhancement
- fish growth rate, maturity, size and uniformity
- spawning manipulation & sex control for all-female broods
- broodstock, hatchery, nursery, and on-growing technology
- shellfish stock enhancement
- cod, turbot, lemon sole cultivation

### Fisheries Management

- stock assessment
- managing sustainable fisheries and conserving stocks
- multispecies modelling
- ecological modelling
- effects of fishing on the marine ecosystem
- management of salmonid and freshwater fish stocks
- managing viable fishing industries



### Biology of fish and shellfish

- population biology
- ecology of marine and freshwater fish and shellfish
- early life history and population dynamics of fish and shellfish
- fish behaviour, physiology, reproduction and genetics

### Instrumentation development

- innovative autonomous systems for cost-effective, high-frequency, multi-parameter data capture and telemetry in the marine environment.
- biosensor development
- electronic and software design for animal and fish telemetry, environmental monitoring and industrial systems monitoring
- specialists in miniaturisation of electronic instrumentation including prototyping of hybrid circuits



### *Working with our clients*

In order to meet our clients' needs we are used to working in flexible ways that include:

- Confidential contract research - short and long term
- Collaborative and consortia-based research
- Scoping assessments, baseline characterisations
- Monitoring: routine, one-off and long-term
- Training: one-to one, courses, registration for postgraduate degrees in association with UK and overseas universities.
- Advice: regulatory, practical, interpretation
- Project management
- Evaluation and appraisal of programmes, projects and studies
- Literature reviews
- Technology transfer: training, licensing and joint ventures.

#### **Private sector clients**

At CEFAS we have a broad portfolio of scientific expertise and instrumentation to meet the diverse information needs of businesses and their consultants. We aim to provide practical solutions based upon sound research and assessment. Our expertise in research, monitoring and interpretation enables our customers to make informed development decisions, to understand and manage the likely impacts their activities may have upon the environment, and to ensure they have the information they need to be able to comply with regulations.

#### **Public sector clients**

Because of our long-standing association with our parent department, the UK's Department for Environment, Food and Rural Affairs, our major strengths are a thorough understanding of policy and regulatory processes and expertise in developing and implementing control measures. Our scientists are experienced at participating in, managing and interpreting short and long term monitoring programmes. They also have considerable experience in the development of policy and in representing Government Departments, the UK and other organisations nationally and internationally.



CEFAS is an Executive Agency of the Department for Environment, Food & Rural Affairs (DEFRA)

*More information about CEFAS can be found on our website <http://www.cefass.co.uk>. Alternatively, to discuss your needs with one of our specialists, please contact:*

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