



Freshwater ecology



Wetland coastal habitat.

Mott MacDonald's team of ecologists has extensive experience in providing ecological services across different aquatic environments including rivers, lochs, reservoirs, wetlands and brackish waters.

Our services include:

- Water quality studies and modelling
- Aquatic macrophyte surveys and assessments
- Aquatic macro-invertebrate surveys and assessments
- Diatom surveys
- Phytoplankton and zooplankton surveys
- Freshwater fish surveys
- Protected species surveys: white-clawed crayfish, great crested newts, water voles, otters and birds
- River Corridor Surveys
- River Habitat Surveys
- Data interpretation – Lotic Invertebrate Index for Flow Evaluation (LIFE) and Biological Monitoring Working Party (BMWP) indices
- River Invertebrate Prediction and Classification System (RIVPACS) analysis
- Appropriate assessments

Our distinctive capabilities

As a multi-disciplinary company Mott MacDonald is in a unique position to be able to undertake highly detailed hydrological and ecological assessments. Through a combination of field surveys, data analysis and modelling, we are able to link changes in the hydrological conditions with impacts on the ecology in a system.



A watercourse in Kent.



*Four-spotted chaser (*Libellula quadrimaculata*).*



Diatom sampling.



Great silver water beetle (Hydrophilus piceus).

Contact us

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Phytoplankton sampling.

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Why the need for freshwater assessments?

- Works that may affect or be near a water course should be investigated to assess potential impacts on the water course and protected species.
- Under UK legislation, third parties are under legal obligation not to damage designated sites, which could be downstream of any development or discharge.

Ecological surveys and assessments

We offer specialist ecological advice in order to meet regulatory requirements and provide best practice in ecological assessments to:

- Evaluate impacts in freshwater ecosystems (eg designated sites and protected species).
- Identify endangered species in relation to UK and international legislation.
- Evaluate the status and condition of water bodies in relation to Environmental Agency standards and objectives.
- Recommend necessary mitigation measures.

Multi-disciplinary approach

Our expert team approach is to integrate the different aspects of freshwater environments (physical, chemical and biological) to deliver the most complete and accurate answers to our clients. This approach ensures compliance with EU and UK legislation regarding the status and management of water course, notably the:

- EU Water Framework Directive
- EU Urban Waste Water Treatment Directive
- EC Habitats Directive
- EC Birds Directive
- Countryside and Right of Way Act (CROW)

Recent projects

- AMP4 Environmental Investigations. Ecological assessments in protected areas (SSSIs and SACs) including macrophyte, diatom, algal, and aquatic invertebrate surveys.
- Drought Permit – Aquatic invertebrate survey to species level. Interpretation of existing Environment Agency invertebrate rivers from Kent to Staffordshire. The use of indices such as LIFE scores formed a major part of this work.
- River Basin Management in Romania. EU Monitoring. Specialist monitoring and aquatic biology assessment of current practices in two pilot river basins in Romania, to ensure compliance with the EU Water Framework Directive.