

# Company services



**Keystone Environmental**  
Practical Ecological Solutions

## Introduction

Keystone Environmental are a UK based environmental consultancy providing expert ecological advice and technical solutions to a wide range of clients.

Environmental services on offer at the practice, amongst others, include: advice on/design of sustainable development schemes, biodiversity audits, pre-acquisition surveys and reporting, preliminary scoping, ecological advice on planning applications, input to environmental statements and full EIA, GIS mapping, site survey and assessment, conservation management, licence applications, monitoring and research, desk top studies and consultations, and design/implementation of mitigation schemes, habitat creation, restoration and translocation.



Ecological Field Surveyor, surveying for reptiles

## Company Information

Keystone Environmental was formed to provide public agencies, government bodies, conservation organisations and private companies with expert ecological consultancy services. Our aim is to furnish our clients with sound scientific knowledge as the basis for making responsible decisions involving land use and resource management.

We pride ourselves on being at the forefront of ecological expertise and sustainable development. To this end we employ a team of highly trained people, all experts in a full range of biological disciplines, with membership to the Institute of Ecology and Environmental Management (IEEM). Our staff have excellent communication and negotiation skills and are fully competent at delivering practical solutions of benefit to all parties involved with a project. In support of the ecology team is an ecological contracting department staffed by a combination of ecologists/engineers and a graphics department for GIS mapping, report layouts and map production.

Since our inception we have been committed to delivering projects of the highest quality by investing in staff development, quality assurance and IT infrastructure. Operating from our offices in Gloucestershire we undertake projects throughout the UK and beyond. Clients range from consultant engineers, landscape architects, planners, architects and developers to government departments, local authorities and conservation organisations.

- Scoping
- Pre-Acquisition Ecological Surveys
- Habitat/Biodiversity Surveys
- Scheduled, Protected, Endangered
- and Special Status Species Surveys
- Monitoring Projects/Conservation Management
- Planning Advice and Project Management
- Information Technology and Multimedia
- Environmental Impact Assessment (EIA)
- Mitigation Design/Implementation and Sustainable Development
- Licence Application



## Scoping

Scoping plays a vital role in the initial stages of EIA and to ensure the EIA adequately provides the information the planning authority requires to reach a decision. It also aids on agreeing a scope of assessment and can significantly reduce consultation time/avoid costly delays caused by survey work being required at a later stage. Furthermore, scoping can aid in the planning of Phase 2 studies.

The practice routinely undertakes scoping exercises for a range of projects. These generally involve a combination of the following:

- Study of aerial photographs
- Identification of statutory/non-statutory designated sites
- Search of historical species records
- Review of local and regional plans, UK, regional and local Biodiversity Action Plans, Natural Area's Profile etc.
- Review of previous survey data
- Consultation with local authorities, Natural England, Wildlife Trusts, Environment Agency etc.
- Preliminary site survey

## Preliminary Site Appraisals

It is often extremely beneficial to undertake a brief ecological survey prior to site purchase since it can highlight the need for extensive Phase 2 studies and potential development constraints at the outset. Our clients can then benefit by negotiating mitigation costs into a purchase price and in certain circumstances are forewarned that the site is not a cost effective acquisition.

This type of appraisal would typically include:

- Site survey
- Report of findings which illustrates and analyses the survey data, includes a preliminary assessment of ecological value, identifies potential development constraints and further studies required

## Habitat/Biodiversity Surveys

Core staff of the practice are qualified and accredited to undertake a wide range of ecological surveys on terrestrial, freshwater and coastal, rural and urban habitats. The most commonly undertaken by the team include:

- Phase 1 and Extended Phase Habitat Surveys
- River Habitat Surveys
- River Corridor Surveys
- National Vegetation Classification
- Hedgerow Evaluations according to The Hedgerow Regulations 1997
- Ecological habitat evaluations for EcoHomes assessments

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## Habitat/Biodiversity Surveys cont...

Extended Phase 1 Habitat surveys include a basic search for protected species and are used to provide ecological information for master planning and in support of planning applications. The practice undertakes up to a hundred of these surveys annually. A report using this methodology would typically include:

- Data search of statutory and non-statutory organisations
- Review of UK, Regional and Local Biodiversity Action Plans, Natural Areas Profile, planning policies etc.
- Methodology section
- Analysis of field survey and data search results
- Assessment in accordance with IEEM guidelines for valuation of key ecological features and site as a whole
- Identification of development constraints and/or if master plan available, preliminary impact assessment
- Recommendations for further detailed survey work if required, appropriate courses of action to address occurrence of scheduled species etc.



Newt surveying using bottle trapping technique

## Scheduled, Protected, Endangered and Special Status Species Surveys

Phase 1 surveys and scoping exercises may highlight the need for Phase 2 surveys. The practice employs staff with a wide range of survey skills and licences covering the following:

- Higher and lower plants
- Badger, Otter and other large mammals
- Water Vole, Bats, Dormouse and other small mammals
- Great Crested Newts and other amphibians
- Reptiles
- Birds
- Invertebrates
- White-clawed crayfish

The practice has employed the use of Phase 2 surveys to provide information for:

- Masterplan design
- Planning applications
- EcoHome assessment
- Impact assessment
- Development of mitigation proposals
- Monitoring programmes
- Population research
- Landscape designs
- Complete biodiversity audits
- Design of management prescriptions
- Habitat creation, restoration and translocation
- Species translocation

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## Monitoring Projects

At the practice one of our strengths is our ability to develop and implement monitoring projects across a range of scales, from large habitat networks down to population monitoring of specific species. Since the recent introduction of changes to the interpretation of European legislation, monitoring of the effects of development and feedback on the success of mitigation schemes have become more important, in many circumstances being required to fulfil licence conditions.

The aims that drive the monitoring projects the practice has implemented are varied e.g.

- To fulfil monitoring requirements of Natural England licences
- To provide feedback on the success of mitigation schemes such as translocations, use of wildlife tunnels to facilitate safe animal movement across roads etc.
- To generate population statistics for ongoing research projects



Slow Worm survey

- To target areas of biodiversity loss and gain
- To provide information for the design and review of management prescriptions

## Conservation Management

There is growing recognition and understanding that well designed management strategies play a vital role in the maintenance of habitat quality and linkages which indirectly benefit the wildlife species these habitats support. At the practice staff have the expertise to design and implement comprehensive short and long-term management plans which target wildlife species, habitats and habitat networks /corridors. This is achieved through:

- Desk top research
- Consultation with statutory and non-statutory organisations
- Review of detailed survey data
- Knowledge of species and community interactions
- In-depth understanding of wildlife legislation and environmental policy
- Careful balancing of client requirements, and in many circumstances the need for public use, with targeted conservation/biodiversity maintenance and gain
- Use of communication and negotiation skills
- Visual presentation

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## Planning Advice

At the practice it is our belief that conservation and development are not necessarily contradictory goals. With rational planning and guidance, development can proceed in a sustainable fashion without threatening biodiversity or ecosystem sustainability.

Services on offer include:

- In-depth knowledge of current legislation and environmental policy to ensure legal compliance
- Independent advice to local authorities and other decision makers
- Constraints and opportunities analysis
- Habitat evaluation
- Integration of EIA and decision making processes
- Consultation with statutory and non-statutory organisations
- Sustainable development design and assessment

## Project Management

We pride ourselves on our ability to deliver cost effective projects from inception to completion on time and on budget.

Staff are experienced in:

- Conceptual and preliminary project design
- Feasibility studies
- Deliverable timescales and budget management  
Status reports and project reviews
- Stakeholder engagement and communications programmes

- Risk management and quality assurance
- Establishing advisory partnerships
- Appointing, briefing and co-ordinating multidisciplinary teams

## Information Technology and Multimedia

Providing support for our environmental consultancy and ecological contracting departments and offering services to external clients is our IT and Multimedia team offering:

- Full Computer Aided Design (CAD) facilities
- Global Positioning Systems (GPS) and Geographic Information Systems (GIS) for vegetation mapping, species and resource inventories, spatial habitat modelling etc.
- Creation of CD-ROMs
- Graphic design for creation of interpretation boards, newsletters to raise public awareness, guides, leaflets and brochures etc.
- Integration of plans, digital photographs, 3D visualisation with high quality reports
- 3D modelling and animation working with developers, architects, landscape architects and conservation organisations to bring projects to life and enhance visual perception

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## Environmental Impact Assessment (EIA)

Under the EC EIA Directive, EIA is a mandatory requirement for types of proposals listed in Annex 1 and those projects listed in Annex 2 that are likely to have significant environmental effects. They may also form part of assessments that are undertaken on a voluntary basis or as separate, freestanding studies.

Permanent staff at the practice offer the expertise necessary to undertake EIA projects in respect of ecology for both public and private clients. The guidelines we follow are those set out by the Institute of Ecology and Environmental Management (IEEM) and typically involve the following procedures:

- Scoping exercise
- Identification of key ecological features
- Evaluation of key ecological features
- Prediction of impacts
- Assessment of impact significance and implications
- Development of mitigation strategies
- Review of residual impacts



Great crested newt mitigation strategy – proposed development site

## Mitigation Design/Implementation and Sustainable Development

At the practice we draw on a strong understanding of conservation issues to help corporations, resource management agencies and environmental and development organisations develop mitigation and sustainable development strategies that reflect the best in conservation ecology and 'green business' whilst minimising effects on a scheme's programme. We take the view that mitigation proposals need not be viewed simply as a costly legal necessity to compensate for biodiversity loss or reduce impacts to scheduled species but should be seen as an opportunity to design innovative schemes that can combine ecology and nature conservation with development to fulfil sustainable development planning policies.

We have expertise in the following areas:

- Consultation with statutory and non-statutory organisations, landscape architects, stakeholders etc.
- Mitigation strategy design and implementation
- Overseeing roles and ecological clerk of works
- Species capture and exclusion techniques
- Habitat creation and restoration
- Ecological landscaping
- Species and habitat translocation
- Sustainable development design, assessment and implementation

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## Licence Application

The practice employs professionals with the expertise necessary to apply for Natural England and Countryside Council for Wales (CCW) licences etc.

Expertise covers:

- Application and implementation of European Protected Species licences eg. bats, GCN, Dormice, Sand Lizard, Smooth Snake
- Pre-emptive consultation
- Application for temporary and permanent Badger sett closure and sett disturbance
- Monitoring Great Crested Newt migration using drift fencing and pit traps
- Obtaining approval for reptile translocation schemes and receptor sites
- Re-location of White-clawed Crayfish
- Obtaining EA approval for Water Vole translocation schemes

## Ecological Contracting

In support of our team of environmental consultants and offering services to external clients is our ecological contracting department. Formed by staff qualified in ecology, groundworks and engineering, the team is able to fuse site specific design with innovative green engineering to produce and implement successful mitigation, conservation management, habitat creation, restoration and habitat/species translocation schemes. When undertaking ecological contracting projects we aim to impact as little upon the environment as possible and are fully capable of devising practical solutions on the spot to address any unforeseen complications that may arise during the course of the contract.



Reptile and GCN hibernacula construction

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## Ecological Contracting cont...

We can apply this approach to a range of habitats and fauna as follows:

### Great Crested Newts and other amphibians

- Installation and maintenance of newt proof fencing (exclusion and drift fencing)
- Design and installation of site specific newt proof access gates and grids for use with newt proof fencing
- Installation of pit traps for monitoring purposes
- Pond creation and restoration
- Great Crested Newt receptor site design and creation
- Design and creation of newt hibernacula
- Translocation

### Reptiles

- Installation and maintenance of reptile proof fencing
- Reptile receptor site design and creation
- Design and creation of reptile hibernacula
- Translocation

### Birds

- Design, fabrication and installation of Barn Owl nest boxes

### Bats

- Installation of bat boxes
- Design and creation of artificial summer bat roosts
- Design and creation of winter hibernation sites

### Other mammals

- Design, fabrication and installation of artificial Badger setts
- Design and creation of Otter holts
- Installation of Otter proof fencing
- Water Vole exclusion fencing and capture
- Sensitive vegetation removal
- Translocation

### Habitats

- Creation
- Restoration
- Translocation
- Site rehabilitation
- Re-vegetation programmes



Weir inlet into a reedbed and three GCN breeding ponds – construction and monitoring

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