

Conserving Rosser's sac-spider (*Clubiona rosserae*) and developing fenland habitat management

The *Clubiona rosserae* Partnership (CrP)



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anglianwater



British Arachnological Society

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Objectives

To ensure that Rosser's sac-spider (*Clubiona rosserae*) is secure from extinction in East Anglia and UK.

To improve the management of fenland habitats for spiders and other taxa.

Aims

1. To deliver key sections of the national Species Action Plan (see Appendix 1) and the Anglian Water BAP (see Appendix 3).
2. To develop the knowledge of the species distribution and ecological requirements necessary to manage the species habitat correctly.
3. To disseminate ecological and distribution information to audiences relevant to the conservation of the species.
4. To inform the development of the future conservation of the species, including required actions, a monitoring programme and a priority assessment.
5. To develop and produce habitat management recommendations for fenland spiders.

Tasks

| Task | Done by |
|--|--------------------|
| <ul style="list-style-type: none">• References and experts in other countries in species range contacted, presence/absence, status and ecology summarised. | Buglife contractor |
| <ul style="list-style-type: none">• Detailed survey of species throughout current site/s. | Buglife contractor |

- Volunteer survey of potential sites within 25 km of current and historic sites. BAS
Volunteers
- Survey of remaining potential sites within 25 km of current and historic sites. Buglife
contractor+
BAS vols
- Natural history observations to inform proposed autecological research and identify management issues, particularly in terms of vegetation structure, sensitivity to habitat management techniques and water levels. Buglife
contractor,
BAS vols
- Detailed autecological research undertaken to define requirements, particularly in terms of vegetation structure, sensitivity to habitat management techniques and water levels. EN/UEA
PhD
student
- Additional data collected and analysed on the management of fens for other threatened spider species. Buglife
contractor,
BAS vols
+EN/UEA
student
- An appropriate monitoring programme defined. CrP
- Future conservation actions needed identified. CrP
- Conservation priority of the species assessed. CrP
- Resulting knowledge published in appropriate journal. Buglife
contractor,
+EN/UEA
student
- Simple leaflet produced and circulated to relevant audiences, including Environment Agency staff developing the relevant LEAP and WLMPs and licensing water abstraction; site managers and land owners of all current sites; those working on LBAPs and conservation officers in statutory agencies and NGOs (on *Clubiona rosserae* and/or fenland spider management depending on the outcome of earlier tasks). CrP
- A survey of other similar habitats for *Clubiona* spp. across the UK. BAS Vols

Project Management

This project to be undertaken as a partnership between Anglian Water, the British Arachnological Society, Buglife – The Invertebrate Conservation Trust, and English Nature

All organisations will work together to secure sufficient funding and to develop agreement on the tasks, methodology and outputs of the project.

Specific Roles

Anglian Water

Providing hydrological expertise and advice. Inputting up to £5K/annum. Facilitating access to AWS sites.

British Arachnological Society

Providing arachnological expertise and advice, undertaking a volunteer survey of potential sites, working with the contractor and the PhD student and undertaking a targeted survey of wetland *Clubiona* spp. across the UK

Buglife – The Invertebrate Conservation Trust

Coordinating project; managing finances and contracts; inputting c.£1-2K/annum if required, producing final report and leaflet.

English Nature

Providing conservation expertise and advice. Managing an PhD research student project based at UEA. Some financial assistance may be available. Facilitating access to SSSIs. Assisting with research at Chippenham Fen and Tuddenham Fen (setting traps, and similar).

Project details

Survey with detailed natural history and behaviour observations on current site/s.

Outputs – Detailed map of the distribution of Rosser’s sac-spider (*Clubiona rosserae*) on Chippenham Fen, Tuddenham Fen and any additional sites. Including comparisons between the species distribution and the distribution of habitat management and ecological features; detailed observations of behaviour through daily and annual cycles, and slide quality photographs of the spider.

Methodology

Sweep netting, beating, use of refuge traps and pitfall trapping as appropriate, also including experimentation with the use of artificial refugia (e.g. rolls of corrugated cardboard), throughout the seasons. Quantified sampling effort (e.g. timed sweep netting) should be used to enable comparison of sample station results. Measurements to be noted relating to habitat features that may be associated with the occurrence of individuals, retreats or egg sacs, including notes on times of observations; vegetation type and structure; soil type; aspect; prey types; grazing pressure; cutting cycle stage; distance to and density of scrub/carr; distance/association with water bodies; and water levels/regime (consulting with AWS staff where assistance is needed). The contractor to arrange for slide quality photographs of the species to be taken, any field identification features to be noted.

Desk study

Output – A fully referenced report containing current knowledge of the biology of the species. Including the information available in European literature; knowledge acquired from

arachnologists who have encountered the species throughout its range; a summary of the history of the species in the UK and a map of European occurrence.

Methodology

Searching the web, journals of key European arachnological societies, directories of scientific references and books on European arachnids. Telephone conversations with experts and others who have encountered the species. A list of UK records from the SRS/BRC.

Autecological research

Output – PhD report on the ecology of *Clubiona rosserae* and other fenland spiders, containing detailed observations, statistical analyses and management recommendations.

Methodology

Direct in-situ and/or ex-situ observation of behaviour of *Clubiona rosserae* and other fenland species, quantified measurement of distribution, measurement of factors relating to the occurrence of individuals, retreats and egg sacs, including analysis of some of the following (to be advised by detailed observations of in situ behaviour) vegetation type and structure; soil type; aspect; prey; grazing pressure; cutting cycle stage; distance to and density of scrub/carr; distance/association with water bodies; and water levels/regime.

Survey of potential sites

Output – List of *Clubiona rosserae* survey results for all sites where the Rosser's sac-spider (*Clubiona rosserae*) could currently occur within 25 km of Chippenham and Tuddenham Fens.

Methodology

All potentially suitable sites within 25 km of Chippenham and Tuddenham will be surveyed by either BAS volunteers or the Contractor. The list below is intended to be good guidance, but it is expected that there will be some refining of the list to include overlooked sites within 25 km and to better define where the best marginal vegetation is along the rivers. There will be a BAS field trip in May 2003, on this trip at least five target sites will be examined, and perhaps one or more of the most promising sites just outside the 25 km radius. The Contractor will tackle 15 of the remaining target sites (half a day each). It will hopefully be possible for the Contractor and BAS to collaborate to arrange for volunteers to assist with this survey, either by accompanying the Contractor, visiting the sites with the Contractor or surveying at a different time of year. The methods used for the survey will primarily be sweep netting, beating and searching, with possibly some pitfall or cardboard refugia trapping. If possible survey in two seasons (e.g. Summer and Winter) is preferable. The survey should cover a range of wetland types with open fen/emergent vegetation within 25 km of the two sites. If resources become stretched and it is not possible to cover all the potential sites then only a sub-sample of river margin habitats should be visited.

1 Target Sites

- Tuddenham Fen/Cavenham Heath
- Wicken Fen
- Chippenham Park
- Fordham Abbey/Woods
- Landbeach Marina Park
- Ouse Washes
- Botany Bay/Lakenheath Fen
- West Stow/Lackford Pits
- Hopton Fen
- Stow Cum Quy Fen
- East Wretham (Micklemere etc.)
- West Tofts Mere
- Brandon Fen?
- Lynford Arboretum
- River Snail
- River Lark
- Little Ouse
- River Kennet

River Ouse
River Cam
River Thet
River Glem
River Stour
+ Others?

2 Sites Just Outside 25 km

Brickkiln Covert
West Mere
Oxborough Fen
Thompson Common
Foulden Common
Lopham and Redgrave Fen
East Harling Fen
Fowlmere

Targeted survey of wetland *Clubiona* spp. across the UK

Output – Detailed mapping of fenland *Clubiona* spp. in the UK. Analysis of distribution against major physical variables, habitat and micro-habitat features.

Methodology

BAS volunteers will be asked to target wetland sites, in particular fenlands, and survey for *Clubiona* spp. and record site details (guidance documents will be produced). In addition BAS volunteers will mount an un-intensive survey of similar habitats across the UK to check that *rosserae* is not being overlooked among commoner species.

Costs

Year 2002/3 (October 2002 - July 2003)

| Expense | Paid by | £ |
|--|----------------|-------------------------|
| Contract 1 | | |
| Survey of potential sites | | |
| Survey of species on current site/s. | | |
| Detailed observations of in situ behaviour | | |
| Desk Study | | |
| Photographs | | |
| Total | Buglife | £5.5 K - £7 K |
| Project Management | | |
| Meetings arrangements | AW/Buglife | £200 |
| Stationery | Buglife | £140 |
| Report production and distribution | Buglife | £250 |
| Project management (including contract and finances) | Buglife | £1500 |
| Provision of hydrological expertise | AW | £300 |
| Travel and subsistence to meetings | All | £300 |
| Total | | £2640 |
| Voluntary work | | |
| Site survey, provision of expertise and advice and attendance at meetings - estimate 45 days | BAS | £9,000 |
| Costs - T&S | ? | £1,500? |
| Value - £200/day/arachnologist | N/A | £9,000 |
| Total Value | | £18,590 - £20,190 |
| Total Accrued Costs | | £9,590 - £11,190 |

Year 2003/4 (July 2003-June 2004) (draft)

| Expense | Paid by | £ |
|--|----------------|--------------------------|
| Contract 2 | | |
| Survey of potential sites | | |
| Survey of species on current site/s. | | |
| Detailed natural history and behaviour observations | | |
| Leaflet text | | |
| Total | Buglife | £5.5 K - £7 K |
| PhD | | |
| Contribution | | |
| Equipment. | | |
| T&S | | |
| Total | EN | £14,000 |
| Project Management | | |
| Meetings arrangements | AW/Buglife | £300 |
| Stationery | Buglife | £240 |
| Report production and distribution | Buglife | £300 |
| Project management (including contract and finances) | Buglife | £1800 |
| Provision of hydrological expertise | AW | £300 |
| PhD guidance/advising | EN+BAS | £450 |
| Travel and subsistence to meetings | All | £370 |
| Total | | £3760 |
| Leaflet | | |
| Design | ? | |
| Production and distribution | ? | |
| Total | ? | £1,000? |
| Voluntary work | | |
| Site survey, provision of expertise and advice and attendance at meetings - estimate 20 days | BAS | £5,000? |
| Costs - T&S | | £600? |
| Value - £250/day/arachnologist | | £5,000? |
| Total Value | | £29,860 - £31,360 |
| Total Accrued Costs | | £24,860 - £26,360 |

Background

Status

Rosser's sac-spider (*Clubiona rosserae*) is an endangered species. In the UK it is known only from two wetlands, Chippenham Fen (Cambridgeshire) and Tuddenham Fen (Suffolk). The spider has been regularly recorded at Chippenham Fen, but is only known from one old record at Tuddenham Fen (1969). In addition to the two sites in East Anglia the species has been recorded from the Netherlands, France, Hungary, Poland, Siberia, Slovakia and Czechoslovakia, it is thought to be very local throughout its range.

Ecological requirements

Rosser's sac-spider (*Clubiona rosserae*) has been found in piles of cut sedge, reeds and sedge tussocks. It requires high water tables, and river dredging and water abstraction may have caused the extinction of the spider at Tuddenham Fen (Bratton 1991, Harvey et al. 2002). If the ecology is comparable with related species it is likely to be a nocturnal stealth hunter and it is known to construct a diurnal retreat constructed by bending over the leaf of a grass or similar plant and creating a silk sac between the leaves (pers com Peter van Helsdingen).

Other Information

Adults have been found in February, May, June, September and October. Identified by the National Trust as a species likely to benefit from the creation of more wetland in the fens (Anon undated).

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- Kupryjanowicz J., 1995. Pierwsze stwierdzenie *Clubiona rosserae* Locket, 1953 (*Araneae: Clubionidae*) w Polsce. Prz. zool., 39: 83-85.
- Samu, F. & Szinetár, C., 1999 Bibliographic check list of the Hungarian spider fauna. Bull. Br. Arachnol. Soc. 11:161-184.

Appendix 1

SAP delivery analysis

This project will provide the following level of Action Plan delivery (see Appendix 2).

5.1 Policy and legislation

- 5.1.1 Necessary information provided to enable delivery.
- 5.1.2 Necessary information provided to enable delivery.

5.2 Site safeguard and management

- 5.2.1 Necessary information provided to enable delivery.
- 5.2.2 Necessary information provided to enable delivery.
- 5.2.3 Necessary information provided to enable delivery.
- 5.2.4 Necessary information provided to enable delivery.

5.3 Species management and protection

- 5.3.1 None is currently proposed in the SAP, any required actions identified.

5.4 Advisory

- 5.4.1 Necessary information provided to enable delivery.

5.5 Future Research and Monitoring

- 5.5.1 Delivered
- 5.5.2 Delivered
- 5.5.3 Necessary information provided to enable delivery.
- 5.5.4 Necessary information provided to enable delivery.

5.6 Communications and Publicity

- 5.6.1 Delivered

Appendix 2

National Species Action Plan for Rosser's sac-spider (*Clubiona rosserae*)

1. Current Status

1.1 *Clubiona rosserae* favours wet fen habitats and it has been recorded on several occasions in piles of cut sedge. Adults have been found in February, May, June, September and October. It was first described as recently as 1953, and it is possible that this species has been under recorded due to confusion with *C. stagnatilis*, a closely related and common species.

1.2 *Clubiona rosserae* has been found at only two sites in Britain: Chippenham Fen NNR (Cambridgeshire), and Tuddenham Fen (West Suffolk), which is part of the Cavenham Heath NNR. The population size at these two sites is not known. *C. rosserae* has also been found in Czechoslovakia, Poland and, possibly, Siberia.

1.3 In Great Britain this species is classified as *Endangered*.

2. Current factors causing loss or decline

2.1 Not known

3. Current Action

3.1 Both of the localities where this species has been recorded in Britain are NNRs.

4. Action plan objectives and targets

4.1 Maintain populations at all known sites.

5. Proposed actions with lead agencies

5.1 Policy and legislation

5.1.1 Address the requirements of this species in the LEAP process and in relevant WLMPs. (ACTION: EA, EN, IDBs, LAs, MAFF)

5.1.2 Take account of the species' requirements in response to applications for water abstraction licences. (ACTION: EA)

5.2 Site safeguard and management

5.2.1 Ensure that activities external to the extant sites do not further threaten the level of the water table. (ACTION: EA, EN)

5.2.2 Where possible, ensure that all occupied habitat is appropriately managed, including management of encroaching scrub, by 2008. (ACTION: EN)

5.2.3 Ensure that the species is included in site management documents for all relevant SSSIs. (ACTION: EN)

5.2.4 Consider notifying as SSSIs any newly-discovered sites holding key populations of *Clubiona rosserae* where this is necessary to secure their long-term protection and appropriate management. (ACTION: EN)

5.3 Species management and protection

5.3.1 None proposed.

5.4 Advisory

5.4.1 In the event of discovering populations at new sites, advise landowners and managers of the presence of the species and the importance of beneficial management for its conservation. (ACTION: EN)

5.5 Future Research and Monitoring

5.5.1 Undertake surveys to determine the status of this species, including potentially suitable sites within a radius of 25 km of the extant sites. (ACTION: EN)

5.5.2 Conduct targeted autecological research to inform habitat management. (ACTION: EN).

5.5.3 Establish an appropriate monitoring programme for the species. (ACTION: EN)

5.5.4 Pass the information gathered during survey and monitoring of this species to a central database for incorporation into national and international databases. (ACTION: EN)

5.6 Communications and Publicity

5.6.1 Promote opportunities for the appreciation of the species and the conservation issues associated with its habitat. This should be achieved through articles within appropriate journals, as well as by a publicity leaflet. (ACTION: EN)

5.7 Links with other action plans

5.7.1 This action plan should be considered in conjunction with that for fens.

Lead Partner: English Nature

Contact Point: English Nature: Martin Drake

Local implementation: No current local implementation

Appendix 3

AW Biodiversity Action Plan

Summary of relevant objectives

| | | |
|---------------------------------|--|--|
| Fens | Anglian Water aims to ensure all fens on its own landholdings are under favourable management by 2005 and SSSI fens are not detrimentally affected by its operations by 2010 | By 2010 |
| <i>Clubiona rosserae</i> | Priority | In association with planned AMP3 investigations, survey for this species at relevant sites and investigate links with abstraction. |

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Conservation Director Matt Shardlow

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