ST JOHN THE BAPTIST CHURCH, RUYTON-XI-TOWNS, SHROPSHIRE

CHURCHYARD ECOLOGICAL SURVEY AND EDUCATIONAL RESOURCE DEVELOPMENT

(2003-2004)

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CONTENTS

1 SUMMARY

- During the period 1st May 2003 - 30th April 2004, ecological survey work was carried out in the churchyard and around the castle ruins at St John the Baptist Church, Ruyton-XI-Towns.

- Plant species diversity was found to be high, with 101 native and 16 naturalised species. Many of these species are rare in the surrounding countryside, so the churchyard can be regarded as an oasis of species. The high diversity is related to the diversity of micro-habitats in the churchyard.

- Botanical information from the castle ruins indicated that vegetation clearance from the stonework was not a problem from a conservation viewpoint.

- Experimental uncut enclosures at the east and west ends of the churchyard produced attractive displays of wild flowers during the spring and summer.

- The enclosures demonstrate that species characteristic of low to moderate soil fertility and low to moderate disturbance survive in the churchyard, indicating remnants of ancient grassland that have never been ploughed, re-seeded or received fertiliser applications. Such grassland is of particular conservation value.

- Habitats to encourage invertebrates were created at the east end of the churchyard, for educational use. The habitats comprise low piles of logs, stones and old flowerpots, and have attracted many 'mini-beasts' such as woodlice, centipedes, millipedes, spiders and snails.

- A risk assessment was carried out for educational use of the east end of the churchyard.

- The east end enclosure and the 'mini-beast' habitats have been used by St John the Baptist Primary School.

- The local community has been informed about the work through two articles in The Three Parishes Newsletter, and no objections have been received about the uncut enclosures.

- It is suggested that the east and west ends of the churchyard be permanently managed as 'hay meadows' (cut just once or twice each year in the late summer) to optimise their conservation and educational value.

- It is suggested that the 'mini-beast' habitats be maintained and enhanced as a permanent educational resource for St John the Baptist Primary School.

2 INTRODUCTION

This report describes work carried out during the period 1st May 2003 - 30th April 2004, in the old churchyard and castle ruins at St John the Baptist Church, Ruyton-XI-Towns. The overall aims were to:

- Conduct a botanical survey, with particular attention to the castle ruins.
- Develop the churchyard as an educational resource for St John the Baptist Primary School.
- Involve the local community.
- Obtain general information and advice on ecological conservation in churchyards.
- Work towards an ecologically-sensitive churchyard management plan.

3 METHODOLOGY

3.1 Botanical Survey

Seasonal plant surveys were carried out and species lists compiled for the whole of the churchyard. More detailed information was obtained for the castle area and marked enclosures in the churchyard. These enclosures (at the eastern and western ends of the churchyard) were managed using the 'hay meadow' technique, i.e. they were left uncut during the spring and summer and monitored to see what species appeared. They were cut in August 2003.

3.2 Educational Resource Development

Discussions were carried out with the Headteacher and staff of St John the Baptist Primary School to discuss educational requirements. A number of ideas were produced to develop the east end of the churchyard for plant and invertebrate fieldwork. In particular, low piles of logs were installed to provide havens for 'mini-beasts', i.e.

invertebrates such as woodlice, centipedes, millipedes, spiders, slugs and snails. This was a constructive use of logs resulting from the clearance of vegetation from the castle ruins. Other places for the encouragement of invertebrates included low piles of stones, and old flower pots, in some cases 'seeded' with rotting leaves and windfall apples.

A risk assessment was carried out with respect to children working in the churchyard, using an established format provided by the school. The Shropshire Wildlife Trust was contacted for possible assistance.

3.3 Local Community Involvement

At the outset of the work, notices were put both in The Three Parishes Newsletter and by the enclosures in the churchyard, inviting comments. Subsequently, an article 'Conservation and Education in Ruyton-XI-Towns Churchyard' was written and published in the winter edition of the Newsletter, to inform the local community about results from the ecological work in 2003. A summary of the year's work was prepared for a public meeting on 29th April 2004.

Plans were made for the Cliffe Garden Club to have a guided visit to the churchyard in July 2004, providing an opportunity for local people to observe the various habitats and species, and be involved in discussions about management.

3.4 General Information

A visit was made to the God's Acre group office in Craven Arms, and subsequently to a one-day conference organised by this group in Church Stretton. This facilitated the collection of several churchyard conservation publications. Other literature consulted comprised botanical identification guides and relevant research material on plant ecology.

3.5 Management

Consideration was given to churchyard management in the light of the botanical survey results, discussion with the God's Acre group, the publications collected, and local opinions about churchyard management as far as they could be judged.

4 RESULTS

4.1 Botanical Survey

The total number of native species found during the survey period was 101, which together with 16 naturalised species gives a total of 117. A complete species list with annotations is provided in the Appendix.

Botanical information from the castle ruins was the basis of the assessment that removal of vegetation from the castle remains was not a problem from a botanical conservation viewpoint, on the grounds that the species present were generally common both from national and local viewpoints; and present elsewhere in the churchyard. However, there was one specimen of tutsan (*Hypericum androsaemum*), a relatively unusual shrub. This was removed on 20th June and potted for safe keeping and eventual replanting. Also, some specimens of purple cranes-bill (*Geranium ibericum x platypetalum*), a naturalised plant with attractive large flowers, were removed and potted, for eventual replanting. The castle was the only churchyard site for this hybrid, though it occurs elsewhere in old Ruyton-Xl-Towns gardens.

The large conifer at the east end of the castle was identified as a Lawson Cypress (*Chamaecyparis lawsoniana*). Removal of this tree was not judged to be a problem from a conservation viewpoint, on the following grounds. It is not a native species, it is common all over the UK, and there is no evidence that it is important for bird cover in Ruyton-XI-Towns churchyard. It was subsequently removed.

Monitoring of the enclosures demonstrated that with both the eastern and western areas there were attractive displays of wild flowers throughout the summer. There was a clear difference in species composition between east and west. For example, Ox-eye Daisy (*Leucanthemum vulgare*) was common in the east, and Lady's Bedstraw (*Galium verum*) in the west. The flowers attracted numerous butterflies and other insects. A problem which arose in the eastern part was the appearance of numerous plants of ragwort (*Senecio jacobaea*) - these were removed by hand to prevent seed production that might affect neighbouring areas. Ragwort is very toxic to livestock especially horses.

4.2 Educational Resource Development

Staff at St John the Baptist Primary School wrote lesson plans for using the churchyard in 2004. Two class visits took place during April 2004, both using the 'mini-beasts' habitats established during 2003 and the eastern 'haymeadow'. On these occasions the pupils worked with Janet Keeble of the Shropshire Wildlife Trust, describing the different habitat types and relating them to the distribution of different species of invertebrates. Future plans include more ecological work, an 'explorers' theme with the youngest pupils, and writing 'senses poetry' (yr 3/yr 4 literacy).

To address the issues raised in the risk assessment, a fence was constructed round the eastern end of the churchyard, and low dead spiky branches of yew were pruned. All gravestones in the eastern half of the churchyard were examined and ten were stabilised.

4.3 Local Community Involvement

Following publicity given in The Three Parishes Newsletter, there were no objections to leaving the east and west extremes of the churchyard uncut, or the establishment of the 'mini-beast' areas. Further, help was given by volunteers concerning the establishment of log habitats for 'mini-beasts', and ragwort eradication.

5 SUGGESTIONS FOR FUTURE MANAGEMENT

Overall, the churchyard can be regarded as an oasis of plant species. The diversity is high (101 native and 16 naturalised species) and many of these species are rare in the surrounding countryside. The high diversity is related to the diversity of micro-habitats in the churchyard, including trees and bushes providing an 'edge of woodland' habitat, path edges, walls, and grassland of different types. **The existing management regime is suitable for maintaining the overall habitat diversity.** It consists of regular grass cutting in spring and summer (with close-cutting being restricted to relatively small areas such as the Garden of Remembrance), and some weeding of paths and grave areas.

The experimental uncut enclosures at the east and west ends of the churchyard produced attractive displays of wild flowers during the spring and summer. These enclosures demonstrate that species characteristic of low to moderate soil fertility and low to moderate disturbance survive in the churchyard, indicating remnants of ancient grassland that have never been ploughed, re-seeded or received fertiliser applications. Examples of such species include Birdsfoot-trefoil, Pignut, Sorrel, Lady's Bedstraw, Ox-eye Daisy, Sweet Vernal-grass and Common Bent-grass. Such grassland is of particular conservation value.

It is therefore suggested that the east and west ends of the churchyard be managed as conservation areas, with the grassy parts being managed like a hay-meadow with cutting once or twice a year in the late summer.

These conservation areas, particularly the western one, also contain trees and bushes which require little regular management and provide cover for birds and small mammals.

It is further suggested that the educational value of the east conservation area be continued by maintaining and enhancing the 'mini-beasts' habitats.

6 CONCLUSIONS

It may be concluded that the churchyard is a rich oasis of native plant species. Areas of grassland containing indicator species for relatively undisturbed and low fertility conditions are of particular conservation interest.

Work done during the period covered by this report has already developed the east end of the churchyard as a valuable educational resource for St John the Baptist Primary School, and there is potential for further development of such work.

Existing management is suitable for maintaining a variety of micro-habitats within much of the churchyard. However, it is suggested that the east and west ends be designated as conservation areas, with a hay meadow management regime.

The local community has been kept informed about the work, and opportunities have been provided for comments and suggestions. Several people have shown interest, and no objections to the above type of management have been received.

APPENDIX : CHURCHYARD FLORA

St John the Baptist Church, Ruyton-XI-Towns. Species list for the whole churchyard 2003/2004, in taxonomic order following Clapham *et al* (1987).

Notes on ecological preferences (from Grime *et al* 1989) have been added for the most abundant herbaceous species in the east and west enclosures, i.e. those with a Braun-Blanquet rating of 1 or higher. These indicator species are shown in *italic type.*

NATIVE SPECIES

Taxaceae

Taxus baccata (Yew)

Ranunculaceae

Anemone nemorosa (Wood anemone)

Ranunculus acris (Meadow Buttercup)

Ranunculus repens (Creeping Buttercup)

Ranunculus bulbosus (Bulbous Buttercup)

Ranunculus ficaria (Celandine)

Papaveraceae

Chelidonium majus (Greater Celandine)

Cruciferae

Cardamine pratensis (Cuckoo Flower)

Cardamine hirsuta (Hairy Bitter-cress)

Alliaria petiolata (Jack-by-the-Hedge)

Sisymbrium officinale (Hedge Mustard)

Arabidopsis thaliana (Thale Cress)

Hypericaceae

Hypericum androsaemum (Tutsan)

Caryophyllaceae

Silene dioica (Red Campion)

Silene latifolia (White Campion)

Cerastium glomeratum (Mouse-ear Chickweed)

Stellaria media (Chickweed)

Stellaria graminea (Lesser Stitchwort)

Malvaceae

Malva sylvestris (Common Mallow)

Malva neglecta (Dwarf Mallow)

Geraniaceae

Geranium robertianum (Herb Robert)

Aquifoliaceae

Ilex aquifolium (Holly)

Buxaceae

Buxus sempervirens (Box)

Leguminosae

Vicia hirsuta (Tare)

Vicia sativa (Common Vetch)

Lathyrus pratensis (Meadow Vetchling)

Medicago lupulina (Black Medick)

Trifolium repens (White Clover)

*Distribution wide-ranging, though centred on vegetation associated with fertile habitats subject to moderate disturbance***.**

Trifolium pratense (Red Clover)

Lotus corniculatus (Birdsfoot-trefoil)

Absent from habitats in which competition is intense. Centred on vegetation associated with habitats of moderate to low productivity and occasional disturbance.

Rosaceae

Rubus fruticosus (Bramble)

Rosa canina (Dog Rose)

Geum urbanum (Wood Avens)

Prunus avium (Wild Cherry)

Crataegus monogyna (Hawthorn)

Onagraceae

Epilobium hirsutum (Great Willow-herb)

Epilobium montanum (Broad-leaved Willow-herb)

Epilobium obscurum (Short-fruited Willow-herb)

Araliaceae

Hedera helix (Ivy)

Most characteristic of shaded habitats. Distribution centred on vegetation associated with moderately fertile, undisturbed habitats.

Umbelliferae

Chaerophyllum temulentum (Rough Chervil)

Anthriscus sylvestris (Cow Parsley)

Conopodium majus (Pignut)

Distribution centred on vegetation associated with relatively undisturbed and relatively unproductive conditions.

Aegopodium podagraria (Ground-elder)

Heracleum sphondylium (Hogweed)

Polygonaceae

Rumex acetosa (Sorrel)

Wide-ranging distribution, but centred on vegetation in which competition is limited by moderate impacts of disturbance and reduced productivity.

Rumex obtusifolius (Broad-leaved Dock)

Urticaceae

Parietaria judaica (Pellitory)

Urtica dioica (Common Nettle)

Ulmaceae

Ulmus glabra (Wych Elm)

Corylaceae

Corylus avellana (Hazel)

Fagaceae

Quercus robur (Oak)

Primulaceae

Primula veris (Cowslip)

Primula vulgaris (Primrose)

Oleaceae

Fraxinus excelsior (Ash)

Ligustrum vulgare (Privet)

Solanaceae

Solanum dulcamara (Woody Nightshade)

Scrophulariaceae

Digitalis purpurea (Foxglove)

Veronica chamaedrys (Germander Speedwell)

Distribution centred on vegetation from which more robust species are excluded by some disturbance and moderate infertility.

Veronica hederifolia (Ivy-leaved Speedwell)

Labiatae

Prunella vulgaris (Selfheal)

Stachys sylvatica (Hedge Woundwort)

Ballota nigra (Black Horehound)

Lamium purpureum (Red Dead-nettle)

Plantaginaceae

Plantago lanceolata (Ribwort Plantain)

Wide-ranging distribution, but most frequent in vegetation associated with reduced soil fertility and moderate disturbance.

Campanulaceae

Campanula rotundifolia (Harebell)

Rubiaceae

Galium verum (Lady's Bedstraw)

Confined to relatively undisturbed habitats, and concentrated in vegetation associated with unproductive conditions.

Galium aparine (Goosegrass)

Caprifoliaceae

Sambucus nigra (Elder)

Compositae

Senecio jacobaea (Ragwort)

Senecio vulgaris (Groundsel)

Bellis perennis (Daisy)

Achillea millefolium (Yarrow)

Distribution centred on vegetation associated with moderately disturbed and relatively fertile conditions. Most characteristically, a species of grazed and ungrazed grasslands.

Leucanthemum vulgare (Ox-eye Daisy)

Wide-ranging, but centred on vegetation associated with intermediate levels of disturbance and productivity.

Arctium minus (Lesser Burdock)

Cirstum vulgare (Spear Thistle)

Cirsium arvense (Creeping Thistle)

Centaurea nigra (Knapweed)

Lapsana communis (Nipplewort)

Hypochoeris radicata (Cat's-ear)

Distribution centred on vegetation associated with moderate disturbance and intermediate fertility.

Tragopogon pratensis (Goat's-beard)

Sonchus oleraceus (Sow-thistle)

Sonchus asper (Spiny Sow-thistle)

Hieracium pilosella (Mouse-ear Hawkweed)

Crepis capillaris (Smooth Hawk's-beard)

Taraxacum officinale (Dandelion)

Liliaceae

Hyacinthoides non-scripta (Bluebell)

Juncaceae

Luzula campestris (Sweep's Brush)

Araceae

Arum maculatum (Cuckoo-pint)

Gramineae

Festuca rubra (Red Fescue)

Lolium perenne (Rye-grass)

Poa annua (Annual Meadow-grass)

Dactylis glomerata (Cock's-foot)

Bromus sterilis (Barren Brome)

Elytrigia repens (Couch-grass)

Arrhenatherum elatius (False Oat-grass)

Distribution very wide-ranging, but highest frequencies occur in association with highly productive and undisturbed vegetation.

Trisetum flavesens (Yellow Oat-grass)

Anthoxanthum odoratum (Sweet Vernal-grass)

Distribution centred on vegetation associated with low to intermediate productivity and subject to slight or moderate disturbance.

Holcus lanatus (Yorkshire Fog)

Wide-ranging distribution, centred on vegetation associated with moderately disturbed and relatively fertile conditions.

Agrostis capillaris (Common Bent-grass)

Particularly abundant in permanent pasture. Wide-ranging distribution but centres on

vegetation of intermediate to low productivity subject to moderate or low intensities of disturbance.

Agrostis gigantea (Black Bent-grass)

Alopecurus pratensis (Meadow Fox-tail)

NATURALISED SPECIES

Mahonia aquifolium (Oregon-grape)

Cerastium tomentosum (Dusty Miller)

Geranium endressii x versicolor (Druce's Crane's-bill)

Geranium ibericum x platypetalum (Purple Crane's-bill)

Acer pseudoplatanus (Sycamore)

Prunus domestica (Damson)

Prunus laurocerasus (Laurel)

Sedum album (White Stonecrop)

Sedum reflexum (Reflexed Stonecrop)

Syringa vulgaris (Lilac)

Pentaglottis sempervirens (Alkanet)

Symphoricarpos albus (Snowberry)

Veronica filiformis (Slender Speedwell)

Hyacinthoides hispanica (Spanish Bluebell)

Galanthus nivalis (Snowdrop)

Narcissus varieties (Daffodil)

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