



## Research Information Note

*English Nature Research Reports, No. 675*

Ribbon-leaved water-plantain *Alisma gramineum* Lejeune:  
a review of conservation work carried out under English Nature's Species Recovery  
Programme and the UK Biodiversity Action Plan, 1991 to 2005

Report Authors: edited by Margaret A Palmer Date: November 2005

Keywords: ribbon-leaved water-plantain, SRP, review

### Introduction

This review of the work on *Alisma gramineum* carried out under English Nature's Species Recovery Programme and the UK BAP, covers the period from 1991 to 2005. It is a collation and summary of information contained in contract reports produced by ITE, Terry Wells and Tim Pankhurst. In addition, it draws on the draft ecological profile of the species produced by Tim Pankhurst and Richard Lansdown. The review also includes information obtained from site managers in English Nature and the Welland and Nene Internal Drainage Board.

### What was done

Ribbon-leaved water-plantain *Alisma gramineum* is Critically Endangered in Britain and is threatened over much of its European range. It is a priority species under the UK Biodiversity Action Plan. Current targets for the species are to maintain all known UK populations in a viable state and to restore the species to three formerly occupied sites by 2005. This review summarises the work carried out on *Alisma gramineum* in the period 1991 to 2005, under English Nature's Species Recovery Programme and the UK Biodiversity Action Plan. The main sources of information were contract reports produced by the Institute of Terrestrial Ecology, Terry Wells, Tim Pankhurst and Richard Lansdown.

*Alisma gramineum* is sporadic in occurrence and its population size fluctuates widely. It has long been known at Westwood Great Pool, Worcestershire, and is still present there. After an absence of many years, it reappeared briefly in 1991 and 1992 in a newly-dredged drain that flows into the River Glen, Lincolnshire. *Alisma gramineum* has also been recorded from the River Glen itself and other associated drainage channels, a drain in Cambridgeshire and a mere in the Norfolk Breckland, but there have been no recent records from these sites. The species is believed to have declined as a result of competition from more vigorous plants, eutrophication of water bodies and unsuitable site management.

Previous locations in Britain for *Alisma gramineum* were searched to see if the plant had reappeared and were assessed for their suitability as translocation sites. Plants were introduced to two of these sites, but in each case they persisted for only two years. Reserve cultivated populations have been established and seed from the UK population is stored in the Millennium Seed Bank, Royal Botanic Gardens, Kew.

## Results and conclusions

The following are key findings from the ecological research on *Alisma gramineum*.

- The species is a poor competitor and needs open areas in which to become established.
- Seed only germinates when the pericarp is removed or decays and the seed coat is punctured. Disturbance of the substrate by animals, flooding or human activity may trigger the germination of dormant seed.
- It is possible that long-lived submerged populations may act as sources, replenishing or replacing the more vulnerable emergent stands with germinands produced from cleistogamous flowers.
- When water bodies are drawn down, the plant adopts a marginal growth form, enabling cross-pollination and rejuvenation of populations to occur.
- On the European mainland, dynamic metapopulations occur where there are complexes of suitable sites linked by factors such as seasonal hydrological events, animal movement or common management practice, which facilitate dispersal of propagules.

In the absence of natural processes that create bare substrate, management of lakes and watercourses is required to provide suitable conditions for *Alisma gramineum*. Options include creating marginal scrapes, regularly de-silting drainage ditches, allowing poaching by stock and manipulating water levels. The long-term survival of metapopulations of *Alisma gramineum* in the UK may depend on restoring mobile wetland systems such as those currently proposed for large areas of the Cambridgeshire fens.

Suggestions are made for the future direction of work on *Alisma gramineum*.

## English Nature's viewpoint

English Nature is committed to the conservation of this rare species which features among the top 5 English priorities but recognises that the conditions required to retain this plant are moving water rather than the static conditions in which it occurs and this needs to be investigated further. Excellent summary of work undertaken, results and directions for future work.

## Selected references

- Anon. 2005. *Great Fen Project*. English Nature, The Wildlife Trusts, Huntingdonshire District Council, Environment Agency.
- Björkqvist, I. 1967. Studies in *Alisma* L. I. Distribution, variation and germination. *Opera Botanica* 17, 1-128.
- Björkqvist, I. 1968. Studies in *Alisma* L. II. Chromosome studies, Crossing experiments and Taxonomy. *Opera Botanica* 19, 1-138.
- Reports by Terry Wells et al, 1992 - 94; 1997-2000; by Tim Pankhurst 2001-05
- Cheffings, C.M., & Farrell, L. 2005. *The vascular plants Red Data List for Great Britain*. Species Status No. 7. Peterborough: Joint Nature Conservation Committee.

**Further information**

*English Nature Research Reports* and their *Research Information Notes* are available to download from our website: [www.english-nature.org.uk](http://www.english-nature.org.uk)

For a printed copy of the full report, or for information on other publications on this subject, please contact the Enquiry Service on 01733 455100/101/102 or e-mail [enquiries@english-nature.org.uk](mailto:enquiries@english-nature.org.uk)