

NORFOLK BIODIVERSITY ACTION PLAN

SHEPHERD'S NEEDLE (*Scandix pecten-veneris*)

Shepherd's needle is a member of the carrot family. It can grow to 60cm tall when supported by a crop. It has small white flowers arranged in umbels. Each seed has a long, needle-like projection up to 5cm long, which gives the plant its name. It flowers between April and July.

Ref 2/S16	Tranche 2	Species Action Plan 16
Plan Author:	Norfolk County Council	
Plan Co-ordinator:	Farmland BAP Topic Group	
Plan Leader:	Natural England	
Date: 18 June 2007	Stage: Final	

1. CURRENT STATUS

National Status

- Shepherd's needle is a species of arable land and waste places. It favours heavy calcareous clay soils which are dry in summer and is also known to occur on disturbed coastal sites, perhaps indicating its original niche prior to its expansion into arable habitats. It is an annual species which mainly germinates between October and early November, with a smaller second flush in the spring. It has a very low level of seed dormancy which renders it particularly vulnerable to periods of inappropriate management.
- Shepherd's needle was once widespread, being recorded from sites scattered throughout the UK. However, it has been declining severely for over 50 years and is now almost entirely restricted to southern and eastern England. It remains frequent in a small area of Suffolk, and where it does occur, it can be in very dense stands. The European distribution of shepherd's needle is centred mainly on the Mediterranean, extending westwards to the UK and northwards to Denmark. It has declined considerably throughout north-western and eastern Europe.
- In Great Britain, this species is classified as *Nationally Scarce*. It receives general protection under the Wildlife and Countryside Act 1981.

Norfolk Status

- Shepherd's needle occurs in approximately 30 tetrads in Norfolk, mainly to the south of the county where the soil is heavier. It became very rare in the mid-1980s but has recovered since 2000. Seed may be carried on the fleeces of mobile sheep flocks.
- In common with a suite of other arable plants, shepherd's needle is now largely restricted to the clay plateau. However, unlike the majority of these species (which favour sugar beet), shepherd's needle is most often found on the margins of winter cereals.
- Although it has declined alarmingly in recent years, shepherd's needle is reasonably widespread in the county. Indeed, after Suffolk, Norfolk holds the largest population of this species in the UK.

2. CURRENT FACTORS CAUSING LOSS OR DECLINE IN NORFOLK

- Susceptible to many broad-spectrum herbicides.
- Liable to suffer from earlier autumn ploughing.

3. CURRENT ACTION IN NORFOLK

- The Norfolk Flora Group check records for this species.

4. ACTION PLAN OBJECTIVES AND TARGETS

National

- Maintain current range of natural populations within 166 10km squares in the UK.
- Achieve a two-fold increase in the area of habitat suitable for the natural colonisation of the species by 2010 in priority areas.

Norfolk

- Maintain the current range of natural populations in Norfolk (approximately 30 tetrads).
- Ensure that populations remain viable at all current sites.
- Provide opportunities for the spread of shepherd's needle from extant sites.

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NATIONAL ACTION		NORFOLK ACTION	ACTION BY:	PARTNERS:
5.1	Policy and Legislation			
5.1.1	Encourage the development of relevant agri-environment schemes, such as the pilot Arable Stewardship Scheme in England, as a potential means of re-establishing shepherd's needle in the countryside. When reviewing such schemes, consider whether changes are needed to increase their potential benefits for this and other threatened arable species.	Ensure that shepherd's needle is included in HLS targeting and that appropriate Environmental Stewardship options are promoted to benefit this species, where it is likely to occur.	NE	Farmers and landowners
5.1.2	As far as possible, ensure that any seed of this species included in wildflower seed mixture is of native origin.	As far as possible, ensure that any seed of this species included in wildflower seed mixture is of native origin.	Emorsgate	
5.2	Site Safeguard and Management			
5.2.1	Continue with beneficial management at key sites, implement management at other extant sites and refine techniques as the results of research continue to emerge.	Promote beneficial management at all extant sites through appropriate Environmental Stewardship options.	NE	Farmers and landowners
5.2.2	Seek to develop a network of suitable habitats within the vicinity of shepherd's needle sites, thereby providing opportunities for its spread. Favourable management will include the relevant options outlined under appropriate agri-environment schemes, eg uncropped headlands.	Seek to develop a network of suitable habitats within the vicinity of shepherd's needle sites through Environmental Stewardship, thereby providing opportunities for its spread.	NE	Farmers and landowners

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NATIONAL ACTION		NORFOLK ACTION	ACTION BY:	PARTNERS:
5.3	Species Management and Protection			
5.3.1	Undertake experimental management at eight carefully selected historic sites with the aim of regenerating this species from the seed bank, seeking opportunities through appropriate agri-environment schemes.	No action proposed.		
5.3.2	Collect seed from a representative number of extant sites throughout the range of this species and deposit in the Millennium Seed Bank at Wakehurst Place (Kew).	Offer Norfolk seed to Kew, as the species is fairly widespread in the county.	NE	
5.3.3	Assess the feasibility and desirability of reintroducing this species at selected sites should regeneration from the seed bank prove unsuccessful.	No action proposed.		
5.4	Advisory			
5.4.1	On sites where this species is a significant consideration, advise landowners and managers of the presence and importance of shepherd's needle, specific management for its conservation, and any potentially damaging activities. Particular attention should be given to optimal cultivation and harvest times.	As for red hemp-nettle, advise landowners and managers of the presence and importance of shepherd's needle, specific management for its conservation, and any potentially damaging activities. Particular attention should be given to optimal cultivation and harvest times.	NE	Farmers and landowners
5.4.2	As far as possible, ensure that all relevant agri-environment project officers are advised of locations of this species, its importance, management requirements and potential threats.	Ensure that relevant Natural England local team advisors are aware of the shepherd's needle action plan.	NCC, NE	

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NATIONAL ACTION		NORFOLK ACTION	ACTION BY:	PARTNERS:
5.5	Future Research and Monitoring			
5.5.1	Collate information and re-survey extant and historic sites where necessary in order to gain a more complete understanding of the current distribution and status of shepherd's needle. This will determine the range over which conservation action is appropriate and help to clarify the threats to remaining populations.	Consult County Recorders and other local botanists to update and collate data on Norfolk distribution.	NE, NCC	NBRC, local botanists, SNDC
5.5.2	Continue with monitoring and research work; extend to sites with extant and restored populations, with a view to refining conservation management techniques. Where possible, monitoring visits should be combined with meeting landowners to discuss conservation management for the species.	Monitor South Norfolk distribution.	NE	SNDC officers
5.5.3	Undertake research to determine the selectivity of all graminicides currently in use so as to identify which, if any, are suitable for use in field margins that support this and other threatened arable species.	Apply the results of this research to Norfolk, if appropriate.	NE	Farmers and landowners, agronomists
5.6	Communications and Publicity			
5.6.1	Publicise the plight of this and other threatened arable species. Articles should be written for relevant conservation and farming magazines and newsletters. Botanists should be encouraged to report any new records, eg through Atlas 2000 recording.	Consider developing an article with a well-known local author on arable weeds in general, possibly based on the Red List species.	NCC, NE	

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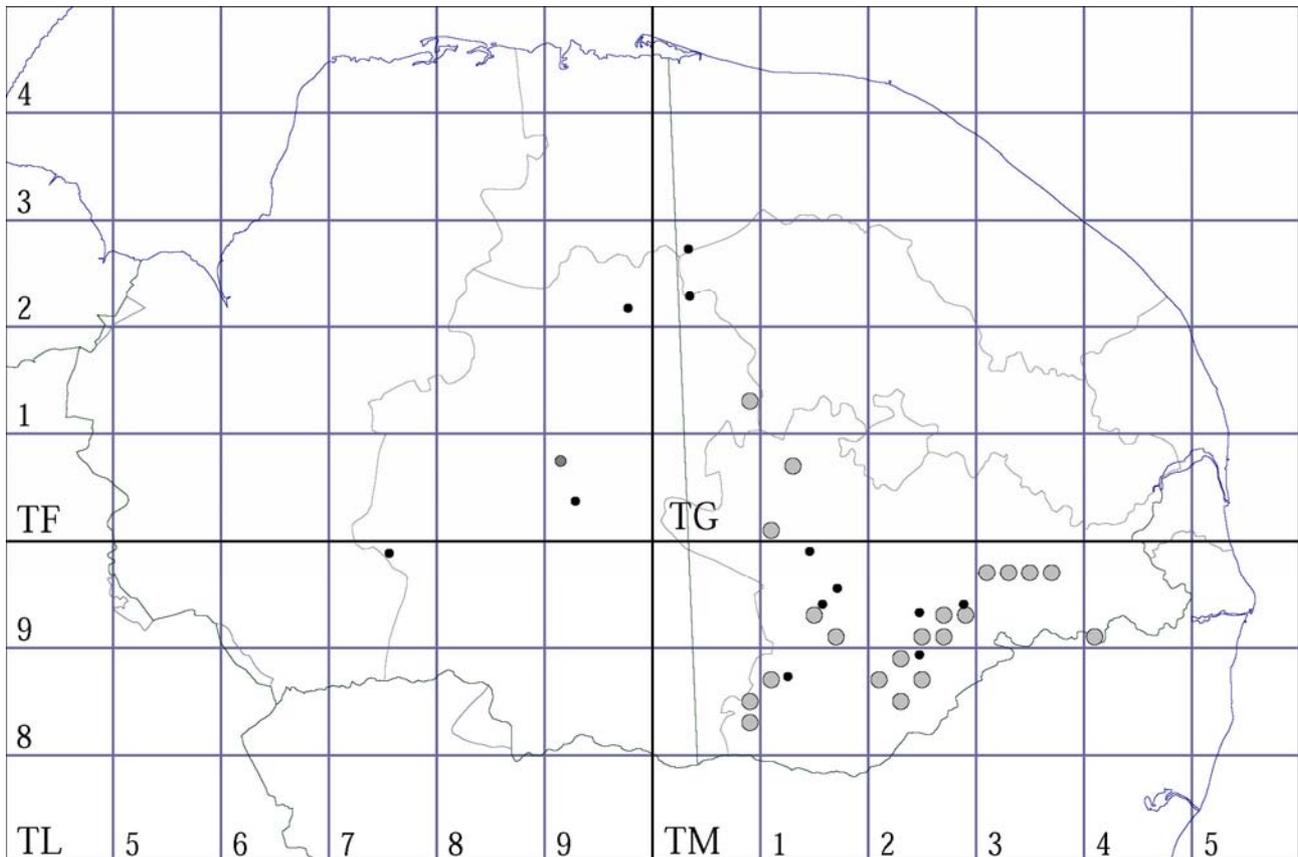
NATIONAL ACTION		NORFOLK ACTION	ACTION BY:	PARTNERS:
5.6.2	Develop links with European ecologists working to conserve threatened plants of arable habitats.	No action proposed.		
5.6.3	Establish arable conservation display and education centres with the aim of raising public awareness of this threatened group of the UK flora.	No action proposed.		
5.7	Links with Other Actions Plans			
5.7.1	It is likely that implementation of this action plan will benefit other arable species, including <i>Arabis glabra</i> , <i>Bromus interruptus</i> , <i>Centaurea cyanus</i> , <i>Filago lutescens</i> , <i>Filago pyramidata</i> , <i>Fumaria occidentalis</i> , <i>Fumaria purpurea</i> , <i>Galeopsis angustifolia</i> , <i>Galium tricornutum</i> , <i>Silene gallica</i> , <i>Torilis arvensis</i> and <i>Valerianella ramosa</i> .	It is likely that implementation of this action plan will benefit other arable BAP species in Norfolk.	Heathland BAP Topic Group; Farmland BAP Topic Group	
5.7.2	The plan should be considered in conjunction with that for cereal field margins.	This plan should be considered in conjunction with the Norfolk HAP for cereal field margins.	Farmland BAP Topic Group	

Abbreviations

NBRC	Norfolk Biological Records Centre
NCC	Norfolk County Council
NE	Natural England
SNDC	South Norfolk District Council

NORFOLK DISTRIBUTION

The Norfolk distribution of shepherd's needle is shown below, based on records from 1986 to 2006. The size of the dots indicates uncertainty of location (rather than abundance). The large grey dots are based on tetrad records only, whilst the smaller black ones have six-figure grid references. Middle-sized dots are based on 1km square records. The fine lines represent district boundaries.



MANAGEMENT GUIDANCE

(This guidance is a general summary; for more detailed information or advice, please consult the references or contacts below.)

Germination is from October to December, but a few seedlings appear in spring.

Conservation headlands or cultivated margins within either spring or autumn crops are the recommended farm management approach for this species. It competes poorly with improved crop varieties and related species are susceptible to a wide range of herbicides. (ELS/HLS options EF9, EF10, EF11, HF14, HF16, HF19 or HF20).

Buffer strips sown with grass will be detrimental to the conservation of this species, as they fail to provide the open disturbed ground conditions necessary for the plant to flourish, in the only area of the field where the seed bank may still exist.

Farm conservation advisors will have to overcome its reputation as a pernicious weed. This has undoubtedly contributed to its downfall.

REFERENCES

Beckett, G., Bull, A. and Stevenson, R. (1999). *A Flora of Norfolk*. Norwich: Jarrold Book Printing.

Wilson, P. and King, M. (2003). *Arable Plants – A Field Guide*. Peterborough and Old Basing, Hampshire: English Nature and **WILD**Guides Ltd.

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