

# NORFOLK BIODIVERSITY ACTION PLAN

Ref 1/S24	Tranche 1	Species Action Plan 24
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Plan Co-ordinator:	Norfolk Wildlife Trust	
Plan Leader:		
Date:	Stage:	
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## NORFOLK FLAPWORT (*Leiocolea rutheana*)

### 1. CURRENT STATUS

#### National Status

- Known to occur at two sites - Scarning Fen in Norfolk and Orton Moor in Cumbria. The former site is var. *laxa* and the latter site is var. *rutheana* (pers comm F.Rose). Both varieties formerly occurred in Norfolk. The size of the Cumbrian population is unknown. In addition to the records cited it has been recorded from Ireland (Lockhart 1989), and Scotland (Corner, in Blackstock 2002). The first of these references includes useful notes on the phytosociology and ecology of the species.
- *Leiocolea* is associated with the highly restricted *Juncus subnodulosus*- *Schoenus nigricans* (M13) vegetation community.
- The species is listed as critically endangered on the GB Red List and is protected under schedule 8 of the WCA 1981.

#### Norfolk Status

- According to Rose (1997) it is found at Scarning Fen and is not threatened through habitat changes at present. It has not been recorded from former sites for a number of years, namely Flordon Common, Buxton Heath, Booton Common, Holt Lowes, Swangey Fen (location probably destroyed) and possibly Coston and Kettlestone Fens. A survey undertaken in July 1997 did not locate *Leiocolea* at any of these former sites.

### 2. CURRENT FACTORS CAUSING LOSS OR DECLINE IN NORFOLK

- Lack of management, drainage and moss gathering have contributed to the decline of the species in Norfolk. A number of sites are considered to retain the NVC M13 community and calcareous flush fen species with which *Leiocolea* is associated.
- Any plans to widen the A47 in Norfolk may adversely impact on Scarning Fen.

### 3. CURRENT ACTION

- Fen management is being undertaken at Buxton Heath, Booton Common and Holt Lowes, although the last named site may require further considerable scrub clearance should the original location for *Leiocolea* be found. The continued presence of suitable habitat may be problematic following scrub clearance. Flordon Common and Coston Fen are both SSSIs and management should be undertaken to achieve favourable condition.
- The management situation at Kettlestone Fens (County Wildlife Site) is considered to be unfavourable.
- Francis Rose surveyed former and extant sites to ascertain status and make recommendations on future management. A report was produced by FR on the past

status and nomenclature of the species (Rose, F. Norfolk Flapwort (*Leiocolea rutheana*) Historical report 1997).

- A survey was undertaken during 2004 of all extant and former sites to ascertain the habitat management requirements and suitability for introduction (conclusions not published to date).

#### **4. ACTION PLAN OBJECTIVES AND TARGETS**

##### **National**

- Maintain the existing populations.
- Survey to establish current distribution.
- Re-establish in at least five former sites by 2004.

##### **Norfolk**

- Maintain existing population.
- Enhance former sites.
- Introduce appropriate variety to suitable sites by 2010 based on conclusions of 2004 survey.

## Norfolk Flapwort - Norfolk Action Plan

NATIONAL ACTION		NORFOLK ACTION	ACTION BY:	PARTNERS:
<b>5.1</b> <b>5.1.2</b>	<b>Policy and Legislation</b> Identify and encourage favourable water quality standards at new sites.	Establish and agree water quality requirements and incorporate in appropriate EA plans and policies.	EN	
<b>5.2</b> <b>5.2.1</b>	<b>Site Safeguard and Management</b> Encourage favourable management at former sites.	Implement best practice management at all extant and past sites which are SSSIs.	EN/NWT	
<b>5.3</b> <b>5.3.1</b>	<b>Species Management and Protection</b> None proposed.	Introduce appropriate var. to all suitable sites following assessment of suitability (2004 survey as discussed above).	EN/NWT	
<b>5.4</b> <b>5.4.1</b>	<b>Advisory</b> Ensure key bodies and landowners are aware of legal protection and conservation needs.	No action pending introduction when landowners will need to be consulted.		
<b>5.5</b> <b>5.5.2</b>	<b>Future Research and Monitoring</b> Survey all former sites in Norfolk and identify re-establishment potential.	Undertake survey of all former sites following restoration management. Planned in 2004.	EN/NWT	
<b>5.5.4</b>	Monitor extant population regularly and identify threats.	Monitor extant population at Scarning Fen.	EN/NWT	
<b>5.5.5</b>	Pass data to JNCC/BRC.	Pass data to JNCC/BRC and/or Norfolk BRC.	EN/NWT	

## NORFOLK DISTRIBUTION

See above.

## MANAGEMENT GUIDANCE

## REFERENCES

**Blackstock TH. 2002.** New Vice-County records and amendments to the Census Catalogue. Bulletin of the British Bryological Society. **79**, p. 39. [*Leiocolea rutheana* var *rutheana*. Basic mire, 270m, W end of Branxholme Wester Loch NT41 (vc80) Corner, conf. Long.]

**Lockhart ND 1989** *Leiocolea rutheana* (Limpr.) K. Muell. new to Ireland. *J Bryol* **15** (3); 525 - 530

**Rose F** Norfolk Flapwort (*Leiocolea rutheana*) Historical report 1997 unpub NWT).

In addition valuable accounts of the morphology and ecology of the species are provided by Damsholt, Paton and Schuster.

Damsholt, K. 2002. Illustrated Flora of Nordic Liverworts and Hornworts. Nordic Bryological Society: Denmark, Odense. [as *Lophozia rutheana*.]

Paton, J. 1999. The Liverwort Flora of the British Isles. Colchester: Harley Books.

Schuster, R. 1969. The Hepaticae and Anthocerotae of North America East of the Hundreth Meridian. Volume 2. New York: Columbia University Press.

## CONTACTS

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**PLAN PROGRESS (as at.....)**

	<b>Norfolk Action</b>	<b>Comments</b>
5.1.2	Establish and agree water quality requirements and incorporate in appropriate EA plans and policies.	
5.2.1	Implement best practice management at all extant and past sites which are SSSIs.	
5.3.1	Introduce appropriate var to all suitable sites following assessment of suitability (2004 survey as discussed above).	
5.4.1	No action pending introduction when landowners will need to be consulted.	
5.5.2	Undertake survey of all former sites following restoration management. Planned in 2004.	
5.5.4	Monitor extant population at Scarning Fen.	
5.5.5	Pass data to JNCC/BRC and/or Norfolk BRC.	