

FENLAND DRAINAGE DITCHES

LOCAL HABITAT ACTION PLAN FOR CAMBRIDGESHIRE AND PETERBOROUGH

Last Updated: April 2009

1 CURRENT STATUS

1.1 Context

This Habitat Action Plan is intended to cover drainage ditch habitats within the Fenlands of Cambridgeshire – these are characterised by supporting aquatic and marginal habitats and by forming a network which, by virtue of strategic pumping stations, have been traditionally used to drain the fenland and make it suitable for cultivation and habitation. The area or indeed the total length of ditches in the county is not accurately known but it is clearly a large resource. The Action Plan can also be used as guidance for other drainage ditches outside the fenland area.

In East Anglia, drainage ditches have been vital to the maintenance of high quality agricultural land and in the Fenland Landscape Area of Cambridgeshire are still a dominant and highly characteristic landscape feature. Drainage ditches can vary in size from small roadside cuts to 30m wide agricultural drains which, connected together, comprise a large linear, mainly freshwater system. The flow of water in Fenland Landscape Area ditches is typically slow moving and is artificially regulated. However, some smaller drains can be dry, especially in summer. The drainage ditch network connects with streams and rivers which are covered by a separate Rivers and Streams LHAP.

1.2 Biological status

Although an artificial habitat, drainage ditches and their associated banks are of high value for a broad range of wildlife. There are many plants which have become associated with ditches. These include emergent species such as arrow head *Sagittaria sagittifolia*, flowering rush *Butomus umbellatus*, mare's-tail *Hippuris vulgaris*, branched bur-reed *Sparganium erectum*, greater water plantain *Alisma plantago-aquatica*, reed canary-grass *Phalaris arundinacea*, submerged species such as the hornwort *Ceratophyllum demersum*, water crowfoots *Ranunculus* Subgenus 'Batrachium', pondweeds *Potamogeton* species and floating species such as frog-bit *Hydrocharis morsus-ranae*, bladderworts *Utricularia* spp and duckweeds *Lemna* species.

The banks beside ditches can support a range of species-rich wet and dry grassland as well as stands of sedges, reed and even willow scrub. Reed and scrub attracts a range of birds such as reed bunting *Emberiza schoeniclus*, sedge warbler *Acrocephalus schoenobaenus* and reed warbler *Acrocephalus scirpaceus* and the ditch banks themselves are important in providing shelter especially in the flatter Fenland

Landscape Area. Other species associated with ditches include amphibians, the grass snake, water vole, otter, fish, molluscs and invertebrates such as the Scarce Chaser Dragonfly *Libellula fulva* and the Variable Damselfly *Coenagrion pulchellum*. In the Fens, there are many important invertebrates which have specialised in drainage ditches. The dry grassland banks beside ditches are also important feeding areas for barn owl and kestrel.

Rare species associated with drainage ditches include the Nationally Scarce species Marsh sow-thistle *Sonchus palustris* (reintroduced in Cambridgeshire), Fen pondweed *Potamogeton coloratus*, Fen ragwort *Senecio paludosus* (Red list: Critically Endangered), Hair-like pondweed *Potamogeton trichoides*, Whorled water-milfoil *Myriophyllum verticillatum*, Fringed water-lily *Nymphoides peltata*, Greater water-parsnip *Sium latifolium*, the stoneworts *Nitella tenuissima* (Red List: Endangered) and *Tolypella prolifera* (Red List: Vulnerable), the snails *Pseudanodonata complanata*, *Pisidium pseudosphaerium* (Red List: Rare), *Valvata macrostoma* (Red List: Vulnerable), the hairy dragonfly *Brachytron pratense*, the aquatic beetle *Donacia dentata*, the weevil *Bagous subcarinatus*, the relict fen diving beetle *Agabus undulatus* and the spined loach *Cobitis taenia*.

2 CURRENT FACTORS CAUSING LOSS AND DECLINE

Cambridgeshire fenland drainage ditch habitat loss and decline is brought about by:

Ditch Management

- Inappropriate cleaning and unsympathetic profiling of ditches, and cutting of bank side vegetation.
- In some cases, over growth of willow scrub or reed can reduce the over all wildlife value of a ditch although these successional habitats are of notable value for some invertebrates and birds such as the reed bunting.
- Uniformity of management over large areas simultaneously can reduce habitat diversity

Agricultural practice

- Agricultural intensification of surrounding land, particularly use of fertilizers, herbicides and insecticides. These, together with silage and slurry effluent, can leach into the water course.
- Water abstraction, particularly for summer irrigation.
- In some cases, loss of traditional bank side cattle grazing and puddling has lowered the value of some drainage ditches for specialist invertebrates.

Pollution

- Pollution with domestic effluent

Water Level

- Inappropriate regulation of water flow or water level within the ditch system.
- Lowering of the summer water table through abstraction (off-site) and climatic change.

Habitat Loss

- Filling in of ditches for agricultural land gain.
- New housing at settlement edges can result in the loss of local watercourses (through culverting etc.).

Introduced species

- Threats from introduced species (eg mink – predation on watervole; *Elodea* species and *Crassula helmsii*, which can reduce ditch biodiversity and cause drainage problems).

3 CURRENT ACTION

Legal Status

- Inclusion of drainage ditches within important sites such as SSSIs affords a degree of legal protection. For example, the Nene and Ouse Washes SPAs contain drainage systems and are protected by international law; however these are specifically covered by the floodplain grazing marsh LHAP while ditches in an arable context are not.
- Water abstraction from drainage systems is carefully licensed by the Environment Agency. Additionally, local EA policy encourages water abstraction and storage during the winter months which lowers the demand for water during the vulnerable summer period.
- Culverting of drainage ditches requires land drainage consent from the EA. The EA is generally opposed to culverting and is committed to retaining and restoring open water courses and their value for wildlife.
- Section 12 of the Land Drainage Act 1991 obliges the internal drainage boards so far as may be consistent with their statutory functions to further the conservation and enhancement of natural beauty and wildlife of drainage systems for which they oversee. In addition, IDBs will be required to maintain their own Biodiversity Action Plans from 2010.
- There is a range of national, regional and local planning policies that, along with other legislation, set out requirements for biodiversity conservation. Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation (ODPM, 2005) is the key national planning policy document for biodiversity in England. It sets out the key principles that regional planning bodies and local planning authorities should adhere to in order to ensure that biodiversity is fully considered in the development of planning policy and determination of planning applications. The seven policies within the Environment chapter of the Regional Spatial Strategy for the East of England (GO-East, May 2008) set out the requirements for proper consideration to be given to the potential effects of development on the natural, built and historic environment of the East of England. At the local level, the planning policy documents of local planning authorities should take account of BAP and HAP targets and priorities, setting overarching policies for the protection and enhancement of biodiversity.

Management, Research and Guidance

- There is a long term commitment to sympathetic management and quality monitoring of drainage ditches of nature conservation value within Cambridgeshire by Natural

England, the RSPB, the Environment Agency, the Wildlife Trust, Internal Drainage Boards, Middle Level Commissioners and other key partners. Natural England (NE) and the Association of Drainage Authorities (ADA) produced 'The drainage Channel Biodiversity Manual'

- Major areas of the Cambridgeshire drainage ditch resource are managed by Internal Drainage Boards (IDBs). The objectives and activities of the IDBs reflect the views and concerns of the organisations and individuals they comprise.
- Key sites such as Woodwalton Fen NNR have extensive traditional ditch systems which are managed and help provide examples of good working practices.
- There is an on-going programme of survey, re-survey and evaluation of drainage ditches with high wildlife interest as part of the County Wildlife Sites system operated by the Wildlife Trust for Cambridgeshire. This process is dependent on Local Authority and other funding. In 2008-9, a large-scale survey of Greater water-parsnip in the ditches of the Fens is to be undertaken by Plantlife International; records of other species will also be collected and these records will be made available to inform the conservation of ditch biodiversity.

4 OBJECTIVES AND LONG TERM TARGETS

4.1 Objectives

- Favourable wildlife management of ditches but with respect for their important land drainage and flood defence functions.
- Increased use of buffer zones beside ditches
- Raise awareness/ value of the wildlife importance of ditches
- Improve water quality within ditches following National EA and EC Freshwater Fish Directive guidance (Targets set by EA in relation to Local Environment Agency Plans).

4.2 Targets

1. Maintain the extent of ditches of conservation value in Cambridgeshire
2. Maintain the quality of ditches of conservation value
3. Restore diversity to, or otherwise rehabilitate, ditches of conservation value in Cambridgeshire

'Conservation value' is here defined as 8 or more vascular plant or presence of a single Red List or 2 Nationally Scarce vascular plant or 9 or more Odonata species recorded per 20m length.

5.ACTIONS FOR DRAINAGE DITCHES

LAST UPDATED: January 2009

BAP TARGET	PROGRESS TO 2010	ACTION	LEAD PARTNER/S	PRIORITY / DATE	RESOURCES
1) Maintain the extent of ditch of conservation value in Cambridgeshire		1.1 Develop a project to identify important drainage ditches targeting rare ditch species with specific emphasis on invertebrates and relic fen species. Those ditches of sufficient conservation value should be considered for County Wildlife Sites status.	NE, BiodP, WiT, PL	Ongoing	PL Sium survey. WiT CWS surveys. BRC data.
		1.2 Prepare maps, detailed site descriptions and management statements for drainage ditches of conservation value	NE, WiT, PL	2009	CWS data, PL survey
	CWS project brought into being IDB BAPs launched in 2010	1.3 Deliver advice to owners and managers of 'conservation value' drains, especially Internal Drainage Boards; support IDBs in the development and maintenance of their own BAPs.	BSG, FWAG, Las, NE, EA, WiT, PL, IDBs	Ongoing	IDB conservation officers, PL fens project, CWS project, Water for Wildlife Project
	?	1.4 Promote the management and restoration of 'conservation value' ditches through Environmental Stewardship targeting creation of buffer zones on land adjoining ditches.	DEFRA		
		1.5 Support and encourage integration of research studies into the effects of water abstraction and quality of ditch habitats	NE, PL	Ongoing but developments by 2009	NE arable ditches work, PL fens project
		1.6 Review management of all drainage ditches of wildlife value which receive no statutory protection (not SSSI or IDB). Some will be CWS and some not.	WiT (CWS ditches); BiodP		

		Work to be done identifying leads for ditches that are not CWS.			
	EA policy on culverting	1.7 Encourage house builders to adopt policies to protect ditches when drawing up plans for new developments and encourage drainage ditches to be seen as a positive feature, particularly as part of SuDS, rather than an obstacle; seek to modify LDF to allow this.	District Authorities, EA	ongoing	
		1.8 Encourage local community involvement with important drainage ditch sites	WiT, PL, BiodP, IDBs	Ongoing	
2. Maintain the quality of ditches of conservation value		2.1 Identify uncommon drainage ditch species and determine whether individual species needs are met by ditch management statements.	IDB's, EA, PL	2008	BRC data, PL Sium survey, PL fens project
	Not done	2.2 Prepare a Species Action Plan (SAP) for species which do not benefit from 'typical' ditch management.	NE, WiT, EA, PL	2009	PL fens project
		2.3 Bring all drainage ditches within current (1999) Cambridgeshire SSSIs into favourable management.	NE	2010	Most SSSIs in conservation management
		2.4 Identify ditches of high conservation value and outline the influence of the management regime to allow good practice to spread	MLC, IDB, PL	ongoing	Part of Cliff Carson's work
3. Restore diversity to or otherwise rehabilitate former ditches of conservation value		3.1 Identify at least 3 opportunities for the restoration and rehabilitation of drainage ditches and implement restoration plans	IDB's EA, WiT, PL, BRC	2009	PL Sium survey
		3.2 Bring 60 km of key drainage ditches of conservation value (outside statutory SSSIs) into favourable management and introduce buffer zones	BSG, IDB's, FWAG	2010	IDB conservation officers
		3.3 Introduce buffer zones to all ditches of conservation value and to 25% of all ditches in the County, e.g. by	BSG, IDB's, FWAG	2010	IDB conservation officers

		maintaining and establishing grass margins, and if appropriate planting willows to improve habitat and provide landscape features			
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Abbreviations

ADA	Association of Drainage Authorities
BiodP	Biodiversity Partnership
BRC	Biological Records Centre
BSG	Biodiversity Steering Group
EA	Environment Agency
FDC	Fenland District Council
FRCA	Farming and Rural Conservation Agency
FWAG	Farming & Wildlife Advisory Group
IDB	Internal Drainage Board
LAs	Local Planning Authorities
LDF	Local Development Framework
NE	Natural England
PL	Plantlife International
RSPB	Royal Society for the Protection Of Birds
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
WiT	Wildlife Trust for Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough

6 LINKS TO OTHER PLANS

Grazing Marsh and Marshy Grassland HAP, Hedgerows HAP, Grassland HAPs (Roadside Verges aspects). Streams and Rivers HAP

BAP species associated with Drainage Ditches:

European Otter - *Lutra lutra*

European Water Vole - *Arvicola terrestris*

European Eel - *Anguilla anguilla*

Great Crested Newt – *Triturus cristatus*

Shining ram's-horn snail – *Segmentina nitida*

Stoneworts - *Nitella tenuissima*, *Tolypella prolifera*, *Tolypella intricata*

Greater Water-parsnip - *Sium latifolium*

There will be more BAP species associated with drainage ditches. For a full list of UKBAP species occurring in Cambridgeshire and Peterborough, contact the Biodiversity Partnership Coordinator.

7 REVIEW OF ACTION PLAN

Arrange monitoring and review of these targets annually and reset targets and responsibilities for the following 3 years.

8 REFERENCES

Bratton, J.H (ed.). 1991. British Red Data Books. 3: *invertebrates other than insects*. Peterborough, JNCC

Cambridgeshire and Peterborough UKBAP species – spreadsheet prepared by the Cambridgeshire and Peterborough Biological Records Centre (from October 2008) available from the Biodiversity Partnership Coordinator

Colston A, Gerrard C & Parslow P 1997. *Cambridgeshire's Red Data Book*.

Crompton G & Whitehouse H L K 1983. *A Checklist of the Flora of Cambridgeshire*.

Defra & ada, & NE 2008, Internal Drainage Board Biodiversity Action Planning – A guide to producing IDB Biodiversity Action Plans, available from <http://www.defra.gov.uk/envIRON/fcd/policy/idbrev/idbbapguidance.pdf>

Foster, G.N. In prep. *Review of scarce and threatened Coleoptera of Great Britain. Part 3, water beetles*. Peterborough, JNCC.

GO-East (2008): *East of England Plan – The Revision to the Regional Spatial Strategy for the East of England*, available on http://www.gos.gov.uk/goeast/planning/regional_planning/

Natural England/ADA 2008, The Drainage Channel Biodiversity Manual, available for download from www.naturalengland.org.uk

Nature Conservancy Council. 1989. *Guidelines for the selection of biological SSSIs*. Peterborough, NCC.

Newbold, C., Honnor, J. & Buckley, K. 1989. *Nature conservation and the management of drainage channels*. Peterborough, NCC.

Rodwell, J. S. 1992. *British plant communities volume IV. Wetland communities*.

Stewart, A., Pearman, D. A. & Preston, C. D. (eds.). 1994. *Scarce plants in Britain*. Peterborough, JNCC

Stewart, N. F. and Church, J. M. 1992. *Red data books of Britain and Ireland: stoneworts*. Peterborough, JNCC.

9 LIST OF INDIVIDUALS AND ORGANISATIONS TO BE CONSULTED

Anglia Ruskin University
Anglian Water
Beetle Specialists
Bird Specialists
British Dragonfly Society
British Herpetological Society
Buglife – The Invertebrate Conservation Trust
Butterfly Conservation
Cambridge City Council
Cambridge Natural History Society
Cambridge Preservation Society
Cambridgeshire and Peterborough Amphibian and Reptile Group
Cambridgeshire and Peterborough Biological Records Centre
Cambridgeshire Bat Group
Cambridgeshire County Council
Cambridgeshire Mammal Group
Cambridgeshire Greenbelt Project
Countryside Restoration Trust
East Cambridgeshire District Council
Environment Agency
Farming and Wildlife Advisory Group
Fenland District Council
Flies Specialists
Flowering Plant Specialists
Froglife
Huntingdonshire District Council
Huntingdonshire Fauna and Flora Society
Internal Drainage Boards
Kingfisher Bridge Project
Langdyke Trust
Middle Level Commissioners
Moth Specialists
National Farmers Union
Natural England
Peterborough City Council
Plantlife
RSPB - East Anglia
South Cambridgeshire District Council
The Wildlife Trust
University of Cambridgeshire County Council
Wildfowl and Wetland Trust