



## 16.1 Introduction

Bitterns *Botaurus stellaris* are secretive birds which are confined almost entirely to lowland marshes dominated by Common Reed. They feed predominantly on fish (notably eels) but they also take a wide variety of other foods such as amphibians, insects, small birds and mammals. The males advertise their territories by a characteristic deep booming noise which allows the breeding population to be well known.

Up to the 17th century bitterns were widespread throughout England but land drainage and hunting led to a steady decline. By the 1880s they were extinct as a breeding species in this country. They recolonised in the early 1900s. At that time there were estimated to have been around 80 booming males. Since then there has been a steady decline linked to the loss of suitable habitat. There were only 16 booming males in the UK in 1994.

In the winter the resident population is increased by the arrival of birds from the continent. The size of the influx is dependent on the severity of the weather but is never great. The total wintering population is generally less than 100 birds.

Nature conservation organisations have given a high priority to efforts to arrest and then reverse the decline. English Nature, the RSPB and others are putting a great deal of effort into managing existing breeding sites for Bitterns and the creation of new sites. In Hertfordshire, the Lee Valley is particularly important

for wintering Bitterns and has the potential to make a significant contribution to their conservation. It regularly supports three or four Bitterns throughout the winter and it could with appropriate management support breeding Bitterns.

## 16.2 Current status

The total European population of Bitterns was estimated to be 2500-2700 pairs in 1976. There was a 30-50% decline after the 1978/79 winter. Bittern numbers appear to be declining in 17 countries, stable or fluctuating in nine, and increasing in only three. In the UK the Bittern is a declining, localised and rare breeding species. Breeding pairs are confined almost entirely to lowland marshes in Norfolk, Suffolk and Lancashire. In 1994 there were only 15 or 16 booming males. Numbers are boosted in winter by continental immigrants when between 30 and 100 birds are recorded each year.

Records published in the annual *London Bird Report* and *Birds of the Lee Valley* show that until the late 1960s the Bittern was an irregular visitor to the Lee Valley. During the 1970s between one and two birds wintered in the Lee Valley below Ware, with the same pattern during the 1980s. Exceptions to this were extremely harsh winters such as 1978/79 and 1981/82 when seven and six birds were recorded. Since 1991 the number of wintering Bitterns has increased with four or five birds present in recent winters, and five to seven in 1995/96.

In recent years the majority of records have come from Rye Meads/Rye House Marsh and Cheshunt gravel pits – particularly 70 Acres Lake where up to four birds have been present at one time. The largest areas of reedbed in the Lee Valley are at Rye Meads and one would expect this to be a favoured area. The birds feed extensively in the reed fringes of the sewage treatment lagoons and in ditches around the lagoons. During the day they roost in the larger reedbeds of the Herts & Middlesex Wildlife Trust nature reserve or the RSPB Rye House Marsh reserve. Occasional records come from other sites in Hertfordshire, most notably from Tring Reservoirs and Stocker's Lake.

## **16.3 Current factors causing loss or decline**

### **16.3.1 Loss of habitat**

The quantity of reedbed is declining. Surveys indicate only 5000 hectares of reed in the UK and only 53 sites greater than 20 ha. There was a greater than 50% decline in the Norfolk and Suffolk Broads between 1946 and 1977. Increased awareness, conservation and protection in recent years have not stopped the decline. There has been a loss of 5-10% in England over the last decade and further losses are predicted. The main causes have been uncontrolled natural succession leading to drier habitats, conversion to grassland by grazing, and salt water, incursion due to the failure of sea defences.

In Hertfordshire the situation is slightly different in that the major loss of reed is historical. In recent years small reedbeds have developed around wet gravel workings but these are now under threat. The total area of reedbed is only about 12 hectares.

### **16.3.2 Declining reedbed quality**

The quality of reedbed is also declining. If Bitterns are indicators of reedbed quality, then 19 out of 30 sites, which have held Bitterns are no longer of sufficient quality. The principal cause appears to be natural vegetation succession leading to drier and /or more wooded habitat, and a lack of management to control it. Few of the reedbeds in Hertfordshire are in ideal management regimes.

### **16.3.3 Water quality**

Water quality is also important. Eutrophication (high levels of nutrients) can cause reed die-back and problems of rehabilitation. High nitrate and phosphate cause the breakup and degeneration of floating reed-mats, and lead to anoxic (without oxygen) sediments, which do not support food or reed colonisation. Algal blooms can decrease feeding efficiency because of turbidity (cloudiness) and direct fish kills. Pollution, which contaminates their food, may also contaminate Bitterns.

## **16.3.4 Other factors**

Other factors, which may affect Bitterns include hard weather, excessive water abstraction, persecution and egg collecting.

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## **16.4 Current action**

Bitterns and reedbeds are given high priority for action within *Biodiversity: The UK Steering Group Report*, which includes costed action plans for both.

English Nature has a Species Recovery Programme for Bitterns. Key actions are to improve the management of existing reedbeds and to encourage the creation of new, large reedbeds.

The RSPB has a species action plan for Bitterns and a habitat action plan for reedbeds.

The Lee Valley Conservation Group have prepared a Bittern Action Plan for the Lee Valley. The principal partners in this plan are the RSPB, the Lee Valley Park Authority, The Wildlife Trust, English Nature, Thames Water Utilities and the Environment Agency. This Bittern Action Plan for Hertfordshire is largely a summary of the Lee Valley plan.

## 16.5 Bittern Action Plan

### Objectives, actions and targets

**Objective 1:** Maintain, enhance and create sufficient quality and quantity of reedbed in Hertfordshire to enable Bitterns to overwinter and breed

**Targets:**

- a) Produce at least a minimum of 10 ha of new reedbed across Hertfordshire by 2014
- b) Increase the number of wintering Bitterns to 15 by 2014; increase the number of regular wintering sites to five by 2014 and attract one booming male/breeding pair by 2014

Action code	Action	Target start date	Target end date	Lead partner	Other partners
B/A/1.1	Conduct a countywide reedbed condition assessment to ascertain the most appropriate management for each reedbed for Bitterns	2003	2005, then every five years	HMWT	HBAPSG
B/A/1.2	Identify opportunities for extending reedbeds using AH criteria: sites to include Stanborough Reedmarsh, Wilstone/Marsworth (including sewage works), Stockers Lake, Springwell Reedmarsh, Tewinbury, Hilfield Park and Aldenham Reservoirs (Distinction between existing reedbed and new)	2003	2005	HMWT	HBAPSG, HCC
B/A/1.3	Identify and contact site owners regarding the reedbed assessment/extension project to gain their involvement	2003	2005	HMWT	HBAPSG
B/A/1.4	Extend all existing reedbeds, where possible, creating at least 2 ha at Turnford and Cheshunt Pits (North Met Pit), 1 ha at Stanstead Innings, 6 ha at Rye Meads and 1 ha at Amwell	2003	20013	HBAPSG	Landowners/managers, EU LIFE Nature Fund
B/A/1.5	Identify and create four blocks of 0.2 ha reedbed across the county on opportunity sites (0.2 ha from AH wintering project)		Identify by 2005, then one a year	HBAPSG	Landowners/managers, CMS
B/A/1.6	Continue active management of reedbeds in favourable condition for Bitterns, improving habitats for fish populations and spawning in existing areas and stocking where appropriate; at Turnford and Cheshunt Pits, Rye Meads, Amwell and Tring (from AH criteria)		Report annually at meetings	HBAPSG	RSPB, LVRPA, HMWT, BW
B/A/1.7	Conduct a site survey for the potential for new reedbeds		Every three years a report	HBAPSG	RSPB, LVRPA, HMWT, BW

B/A/1.8	Write site management plans/statements for all reedbed sites including management for Bitterns. To be updated after reedbed criteria. Sites to include: Amwell, Rye Meads, Stanstead Abbots, Turnford and Cheshunt Pits, Tring (Wilstone and Marsworth), Tyttenhanger, Panshanger, Stockers Lake, Stanborough Reedmarsh, Hilfield Park Reservoir, Aldenham Reservoir		As reviewed	HBAPSG	RSPB, LVRPA, HMWT, BW, TVW, HCC, CMS
B/A/1.9	Designate new reedbed areas as SSSI/SPA if Bittern usage is confirmed			EN	
B/A/1.10	Carry out baseline fish survey, Lee Valley (Amwell, Rye Meads, 70 Acres, North Mat Pit, Abbots Lake) and Tring. Monitor and act on fish population data i.e. management plan		Annually	HBAPSG	RSPB, LVRPA, HMWT, RMRG, BW, Cemex, FoTR

**Objective 2:** Monitor for and collate all records of Bitterns

**Target:** Maintain an annual summer and winter monitoring programme

Action code	Action	Target start date	Target end date	Lead partner	Other partners
B/A/2.1	Conduct roost watches and summer booming monitoring		Annually	HBAPSG	RSPB, HMWT, RMRG, LVRPA, HBC, FoTR
B/A/2.2	Carry out reactive counts if new sightings occur		Ongoing	HBAPSG	RSPB, HMWT, RMRG, LVRPA, HBC, FoTR
B/A/2.3	Monitor all reedbed sites during the winter (Jan/Feb), at least three times		Annually	HBAPSG	RSPB, HMWT, RMRG, LVRPA, HBC, FoTR
B/A/2.4	Collate records and publish findings		Annually	HBAPSG	HBC

**Objective 3:** To increase knowledge of Bittern ecology**Target:** Carry out a research project by 2004

Action code	Action	Target start date	Target end date	Lead partner	Other partners
B/A/3.1	Carry out research into the feeding ecology and habitat preferences of wintering Bittern	2003	2004		RSPB, HMWT, RMRG, LVRPA, AH
B/A/3.2	Assess the feasibility of colour-ringing, radio-tagging, wing tagging and satellite tagging/implants, to investigate Bittern movements and use of sites within the Lee Valley	2003	Every three years	HBAPSG	RSPB, RMRG, LVRPA, TW

**Objective 4:** Raise awareness for Bittern and reedbed conservation in Hertfordshire**Target:** Maintain an annual programme of public events

Action code	Action	Target start date	Target end date	Lead partner	Other partners
B/A/4.1	Use the Herts Bittern Action Plan Steering Group to exchange and disseminate information on Bitterns and reedbeds		Ongoing	HBAPSG	
B/A/4.2	Issue a post winter press release each March on the progress of the Bittern, ensuring that it goes on steering group members' websites		Annually	HBAPSG	FoTR, HBC, LVRPA, RMRG, RSPB
B/A/4.3	Develop interpretative programmes and media to communicate reedbed and Bittern conservation to the public		Ongoing	HBAPSG	HMWT, BW, RSPB, LVRPA, HBC, RMRG, FoTR
	LVRPA Bittern Discovery Trail		2006	LVRPA	
	Aren't Birds brilliant again	2004	2005	RSPB	LVRPA
	Autumn/winter bittern walk/roost watch		Annually	FoTR	
	Hold a county Bittern SAP day (joint with Tring)		2005/06	HBAPSG	
	Interpretation panels at Tring reservoirs to include Bittern/reedbed information		2004	BW	
	Aren't Birds Brilliant Outreach Schools	Winter 2004/05	Winter 2005/06	RSPB	
	IEEM reedbed course for Bitterns		Dec 2005	HMWT	
B/A/4.4	Publish reports on Bittern ecology in <i>British Birds</i> and <i>British Wildlife</i>		2005	RMRG (AH)	

### **Relevant Action Plans:**

#### *Hertfordshire Plans*

Water Vole; Otter; Wetlands

Lee Valley Regional Park Authority BAP

#### *National Plans*

Bittern; Reedbeds

### **Abbreviations (Partners)**

**BW** – British Waterways

**CMS** – Countryside Management Service

**EA** – Environment Agency

**EN** – English Nature

**FoTR** – Friends of Tring Reservoirs

**HBC** – Herts Bird Club

**HBAPSG** – Herts Bittern Action Plan Steering Group

**HCC** – Hertfordshire County Council

**HMWT** – Herts & Middlesex Wildlife Trust

**LVRPA** – Lee Valley Regional Park Authority

**RMRG** – Rye Meads Ringing Group (AH) – Alan Harris, RMRG

**RSPB** – Royal Society for the Protection of Birds

**TVW** – Three Valleys Water

**TW** – Thames Water

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