

# MEDICINAL LEECH

*Hirudo medicinalis*

Hampshire Biodiversity Partnership

## 1 INTRODUCTION

The medicinal leech has been identified by the UK Biodiversity Steering Group<sup>1</sup> and the Hampshire BAP as a priority species that requires conservation action. The New Forest, unlike other areas in the UK has shown a marked decline in species population<sup>3</sup>.

## 2 CURRENT STATUS

### 2.1 Ecology and Habitat Requirements

In Britain the medicinal leech is found in ponds and ditches with shallow margins, gentle gradients, dense stands of submerged vegetation, and eutrophic conditions. They require water with a high pH somewhere in the region of 6.2 – 7.2, and a low salinity<sup>7</sup>.

The habitat must also be suitable for host species, which include the domestic duck, mute swan, moorhen, coot, sheep, horses, cattle, marsh frog, common frog, stickleback, smooth newt and great crested newt<sup>7</sup>.

The medicinal leech is haematophagous, a parasite feeding only on blood. Its feeding behaviour has long been utilised for medical practice for drawing blood from a patient<sup>7</sup>.

Prey searching behaviour occurs between March and mid-October. Active food searching only occurs when the temperature reaches a threshold of 7°C; at 19°C there is 50% activity<sup>7</sup>.

The medicinal leech is hermaphrodite. Mating occurs in summer when the temperature reaches between 25.5°C and 27.5°C. Cocoons are laid above the water line under stones or the roots of marginal plants. After hatching, individuals must feed immediately. The young leeches feed frequently, but mature leeches may feed only once every few months<sup>7</sup>.

### 2.2 Population and Distribution

The medicinal leech is widespread throughout Europe. In Britain it is widely distributed, with concentrations in Dungeness, Cumbria, Anglesey and the New Forest<sup>1</sup>.

### 2.3 Important Sites

Within Hampshire the New Forest is known to be a site of key importance. The New Forest populations are a cause for concern as, unlike other areas in the UK, there has been a marked decline. There are historical records for twenty-four sites but when surveyed in 1998 and 1999 only four positive sites were found<sup>6</sup>.

### 2.4 Protection

The medicinal leech is protected under Appendix II in the CITES listing 1987; Appendix II in the Berne Convention; Annex Va in the Habitats and Species Directive; and Schedule 5 of the Wildlife and Countryside Act 1981<sup>7</sup>. It is also on the Red Data List<sup>8</sup> and all New Forest sites are designated as SSSIs.

## 3 CURRENT FACTORS AFFECTING THE MEDICINAL LEECH

Invasion of ponds by alien aquatic plant species such as *Crassula helmsii* and *Elodea canadensis* reduce dissolved oxygen levels at night causing suffocation<sup>3</sup>.

Livestock worming treatments, such as “ivermectins”, are a possible explanation for the decline in the New Forest where cattle and horses form the main host species<sup>3</sup>.

Drainage has caused the extinction of some populations and has also increased fragmentation of extant sites, reducing the chance that new areas will be colonised<sup>3</sup>.

Over-poaching at the water edge by livestock results in the loss of marginal vegetation, reducing availability of suitable cocoon laying sites<sup>3</sup>.

Poor management of suitable sites such as marl pits has resulted in extinction. Scrub has been allowed to become overgrown reducing the suitability of the habitat<sup>3</sup>.

Changes in weather have resulted in drier, longer summers. Ephemeral ponds are shorter lived, reducing the time available for breeding to occur<sup>3</sup>.

## 4 CURRENT ACTION

### 4.1 National

Implementation of the UK SAP is being undertaken by the Medicinal Leech Steering Group, chaired by RSPB. Glaxo-Wellcome have championed the species, providing funding for three years survey and research work<sup>7</sup>.

### 4.2 Local

With the UK funding, almost 60 sites have been surveyed by Hampshire Wildlife Trust over a 2-year period in the New Forest, 24 of which had historical records, and the remainder with suitable-looking habitat. As previously stated,

only 4 of these were found to support medicinal leeches<sup>6,10</sup>. In 2000 medicinal leech were found in two distinct ponds at one of these sites bringing the total to 5 ponds (Reeves, pers. comm).

One further site has been identified in Fareham, which may have medicinal leech. This site needs further clarification.

Fact sheets have been produced by Hampshire Wildlife Trust to heighten awareness of medicinal leech conservation within Hampshire, disseminate the results of the survey, and to promote management, which benefits the species<sup>2, 3, 4, 5</sup>.

The medicinal leech is cited in the SAC Management Plan for the New Forest<sup>11</sup>.

## 5 OBJECTIVES

The overall aim of this Plan is to protect and increase the distribution and population of medicinal leech in Hampshire. This broad aim translates the specific objectives set out below. Where feasible, objectives have been allocated targets against which achievement can be measured. The 'Proposed Action' table in section 6 identifies the action to be taken to meet these objectives.

	OBJECTIVES	PROPOSED ACTIONS
<b>A</b>	Maintain existing populations and range of medicinal leech in Hampshire; ensure no further loss or fragmentation	<b>1 – 4, 11-12</b>
<b>B</b>	Enhance the status of the medicinal leech in Hampshire by addressing the factors thought to cause their decline, and by enhancing the suitability of habitats currently unoccupied by medicinal leech to affect an increase in distribution.	<b>1-4, 11-12</b>
<b>C</b>	Establish and maintain a comprehensive understanding of medicinal leech distribution, status and ecological requirements within Hampshire through appropriate research, surveying and monitoring	<b>3-11</b>
<b>D</b>	Promote communication, education and awareness of the status and needs of the medicinal leech.	<b>1, 3 , 7-12</b>

## 6 PROPOSED ACTION

The following table lists the actions required to achieve the objectives set out in this Plan. Each action has been assigned to one or more 'Key Partners'. Key Partners are those organisations that are expected to take responsibility for the delivery of the actions assigned to them, according to the targets set in this Plan. Other organisations may also be involved in the delivery of action, and they have been indicated in the 'Others' column.

Key to symbols in Action Table:

- ◆ To be completed by the indicated year. Work can commence at any time before the due date, at the discretion of the Key Partner.
- ◆⇨ Design or production of a plan/strategy to be completed by this year and then followed by its implementation.
- ➡ To start by the indicated year and usually followed by ongoing work. A start arrow in year 2003 can indicate a new action, or a new impetus to existing work.
- ⇨ Work that has already begun and is ongoing.

	ACTION	DELIVERY BY		YEAR						MEETS OBJ.
		Key Partner	Others	2003	2004	2005	2006	2010	2015	
◆ = complete by    ➡ = start by ⇨ = ongoing    ◆⇨ = design by and implement										
<b>Site and Species Policy and Protection</b>										
1	Ensure that the management plans for the New Forest Candidate Special Area of Conservation (NF cSAC) are adhered to, and that the management of the sites within the New Forest is compatible with the habitat requirements of the species.	EN	HWT, EA, NFC	⇨	⇨	⇨	⇨	⇨	⇨	A, B, D
<b>Site and Species Management</b>										
2	Encourage the sympathetic management of habitats that currently contain medicinal leech populations.	HWT, FC	EN, NFC, NFDC, Verderers	⇨	⇨	⇨	⇨	⇨	⇨	A, B
3	Encourage landowners to take up beneficial land management schemes (e.g. Countryside Stewardship Scheme) at sites currently containing or adjacent to medicinal leech populations – if extant populations are found outside of the New Forest	FWAG, HWT, DEFRA	EA, LA's, EN	⇨	⇨	⇨	⇨	⇨	⇨	A, B, C, D
4	Utilise survey and research information to identify currently unoccupied sites, which are, or may become, suitable for supporting medicinal leech populations and encourage suitable management to maintain and improve them.	HWT, EN	HWT, LA's	⇨	⇨	⇨	⇨	⇨	⇨	B, C

<b>Research, Survey and Monitoring</b>										
5	Following the baseline surveys carried out in 1998-99 conduct five-yearly surveys in order to closely monitor medicinal leech population trends. Including surveys of sites which have not been surveyed previously, but which may contain medicinal leech.	HWT, EN, FC				◆⇔	◆			C
6	Undertake research through a University MSc or PhD project into the effects of Ivermectin in medicinal leech – funding dependent.	MLSG				◆⇔				C
7	Produce report on the effect of livestock worming treatments on the medicinal leech (and other BAP species), to discuss the issues and practical alternatives, and promote a good practice guide for graziers and land managers.	HWT, HBIC						◆⇔		C, D
<b>Communication, Awareness and Promotion</b>										
8	Facilitate the collation of all distribution and population data to one accessible source within the county and ensure appropriate incorporation within national databases.	HWT, HCC	JNCC	⇔	⇔	⇔	⇔	⇔	⇔	C, D
9	Ensure that the needs of medicinal leech are considered within other species and habitat action plans in Hampshire	HCC		◆						C, D
10	Conduct presentations/training days to all appropriate organisations and individuals within Hampshire highlighting the status of medicinal leech and appropriate protection and conservation measures.	HWT		◆						C, D
11	Ensure printed information on medicinal leech conservation requirements and sympathetic management is available to all land managers and relevant bodies within Hampshire.	HWT		◆						A, B, C, D
12	Ensure liaison with the Hampshire BAP Steering Group to prevent duplication of effort with regard to wetland habitat action plans or those of other particular wetland species. Liase with national medicinal leech BAP steering group to facilitate exchange of information on research and national issues.	HCC, HWT, RSPB	MLSG	⇔	⇔	⇔	⇔	⇔	⇔	A, B, D

**KEY TO ORGANISATIONS:**

DEFRA Department for Environment, Food and Rural Affairs  
 EA Environment Agency  
 EN English Nature  
 FC Forestry Commission  
 FRCA Farming and Rural Conservation Agency  
 FWAG Farming and Wildlife Advisory Group  
 HCC Hampshire County Council

HWT Hampshire Wildlife Trust  
 LAs Local Authorities  
 MLSG Medicinal leech steering group  
 NFC New Forest Committee  
 NFDC New Forest District Council  
 RSPB Royal Society for the Protection of Birds

## REFERENCES

- 1 Biodiversity – The UK Steering Group Report: Volume2: Action Plans, 1995. HMSO
- 2 Medicinal leech fact sheet 1: Ecology. Hampshire Wildlife Trust and RSPB.
- 3 Medicinal leech fact sheet 2: Status. Hampshire wildlife Trust and RSPB
- 4 Medicinal leech fact sheet 3: Conservation and monitoring. Hampshire Wildlife Trust and RSPB.
- 5 Medicinal leech fact sheet 4: Summary of New Forest Report. Hampshire Wildlife Trust and RSPB
- 6 Reeves, R (1999). Survey of medicinal leech (*Hirudo medicinalis*) in the New Forest, 1998 & 1999. UK Medicinal Leech BAP Steering Group.
- 7 Ausden, M. and Dawes, S (2000) Medicinal leech progress report June 1999 to December 1999. UK Medicinal Leech BAP Steering Group
- 8 Bratton, J. H (ed) (1991). British Red Data Books 3 – Invertebrates other than insects. JNCC
- 9 Elliott, J. M. and Mann, K. H. (1979) A key to British freshwater leeches. Freshwater biological association publication No.40
- 10 Reeves, R. (1998) New Forest medicinal leech survey 1998 interim report. Hampshire Wildlife Trust.
- 11 Westerhoff, D. and Wright R. (2001) The New Forest (SAC) Management Plan. English Nature.

This is one of many Habitat, Species and Topic Action Plans being prepared by the Hampshire Biodiversity Partnership. It will be monitored by the Partnership and fully reviewed.

This species action plan has been prepared by Debbie Wicks and Richard Reeves on behalf of the Hampshire Biodiversity Partnership.

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