

GILKICKER WEEVIL

Pachytychius haematocephalus

Hampshire Biodiversity Partnership

1 INTRODUCTION

In the UK, the Gilkicker Weevil *P. haematocephalus* (Coleoptera: Curculionidae) is currently known only from Hampshire. It inhabits coastal areas where its host plant Common Bird's-foot-trefoil (*Lotus corniculatus*) is present. Larvae are known to feed within the pods of the host plant, and the species overwinters as an adult¹.

P. haematocephalus is identified as a priority species in the UK Biodiversity Action Plan (UK BAP), and the species is listed in the UK Red Data Book as endangered¹.

The species belongs to a southern European genus¹ and is at the northern edge of its range in the UK. It is relatively common in southern France and its range extends north to central Europe; it is also found in the Channel Islands. In Britain, the species is confined to a 5-kilometre strip of coastal shingle between Gilkicker Point and Browndown, near Gosport on the south Hampshire coast. The first British record for *P. haematocephalus* was at Gilkicker Point in 1872. Historical records also exist for Dorset and more dubiously for Wiltshire³.

Thus, as the species is restricted to Hampshire within the UK, this justifies its inclusion in the Hampshire BAP.

2 CURRENT STATUS

2.1 Ecology and Habitat Requirements

P. haematocephalus is most commonly found on exposed partially-vegetated coastlands which contain Common Bird's-foot-trefoil *Lotus corniculatus*. The larvae feed on the unripe seeds within the pods of the host plant, and the weevil is thought to require the plant to be growing in hot, sun-baked conditions³.

Within the weevil's range in Hampshire, it is found in three notably different microhabitats. The first is a steep south to south-west facing embankment surrounding Fort Gilkicker, the second is a strip of weathered concrete between the sea and the promenade, and the third is an area of undulating coastal shingle. All of these habitats are characterised by an early successional but reasonably stable vegetation structure, providing a continuous supply of *L. corniculatus*, and a proximity to the sea. As all known sites are within 100m of the

sea, it is thought that the species may require a relatively frost-free climate which is characteristic of maritime sites³.

Adults have been recorded from February to October⁴, with most records in June. They have also been found at the roots of grass tussocks adjacent to *L. corniculatus*³. The adults are flightless², and are assumed to be poor dispersers (raising a question over how they originally came to colonise Gilkicker Point). Little is known about other ecological requirements of the species.

A brief description and a key for identifying *P. haematocephalus* can be found in Joy (1932)⁵.

2.2 Population and Distribution

Until a survey carried out in 2000, records came from the steep south-facing bank surrounding Fort Gilkicker. During this survey, a total of 32 work-hours of intensive hand searching at the roots of *L. corniculatus* resulted in the discovery of a single specimen of the weevil, approximately 250m west of the fort. This result, whilst proving that the species was still present in the area, indicated that it was either very rare, or very difficult to find by hand searching³.

Following this survey, contractors undertook a survey of the coastline from Gilkicker Point to Browndown Ranges using portable suction samplers. Known sites were visited on several occasions in order to determine the main periods of adult activity. Sampling during June and July yielded small numbers of *P. haematocephalus* on all occasions, whilst a visit in September found no adults, suggesting that they had already dug themselves into *Lotus* roots for the winter³.

Additionally, the contractors visited several sites along the coastline of West Hampshire that contained areas of suitable shingle beach habitat which supported *L. corniculatus*. No weevils were found on any visits to these sites².

2.3 Important Sites

The results of the 2000 survey confirm that the species is confined to the coastline between Browndown Ranges and Fort Monckton, 400m east of Gilkicker Point, occurring in 5 1km National Grid squares within this area².

2.4 Protection

P. haematocephalus is listed in the UK Red Data Book as endangered, and is identified as a priority species under the UK BAP. Despite this, there is no protection for the majority of the species' breeding sites. Although Browndown ranges is a SSSI, as an active MoD site, damage to the habitat by military operations is a possibility. The MoD is aware of the populations of *P. haematocephalus* on their land and the species' requirements are being addressed in the management plan for the site.

The objectives of the UK Biodiversity Action Plan for *P. haematocephalus* are to "enhance the population at Gilkicker Point by 2010" and to "introduce a population to a suitable south coast site by 2010, if not refound in any of its former localities"¹. It has been suggested that raising the level of protection afforded to all known breeding sites to at least SINC status would help to achieve the first objective³. The UK BAP also suggests considering the extension of the existing Gilkicker Lagoon SSSI to include the banks of the Fort, although this needs reviewing to take into account the currently known range of the weevil at both Gilkicker Point and Browndown¹.

3 CURRENT FACTORS AFFECTING THE GILKICKER WEEVIL

- The main threat to the species is the degradation of its coastal habitats, by natural causes, and by humans.
- Unsympathetic coastal defence works could damage the habitat¹. The modification of the shingle habitat close to the sea for 400m east and 600m west of Fort Gilkicker should be avoided².
- Coastal development for leisure and tourism, in particular the 'tidying-up' of the shingle beach or the removal of areas of weathered concrete, could severely decrease the area of suitable habitat³.
- Disturbance to the host plant either by visitor trampling¹ across the entire site, or by military vehicles³ at Browndown Ranges, could be a threat to the species.
- Coastal erosion¹ and storm damage³ could threaten the habitat itself, or could result in the destruction of patches of the host plant.
- Encroachment by scrub, particularly Turkey Oak¹, may threaten populations of *L.*

corniculatus, which is quickly out-competed in dense swards³.

- The destruction of the slopes of the embankment below Fort Gilkicker as a result of any renovation work would obviously cause the local extinction of the population at that site³.

4 CURRENT ACTION

4.1 National

- The Gilkicker Weevil is one of several scarce phytophagous beetles that are the subject of research coordinated by English Nature and Leeds University. A steering group coordinates this work.
- Action to conserve the species may require future co-operation with organisations in Dorset if it is found that the species still exists there.

4.2 Local

- In 2000, Hampshire Wildlife Trust, with volunteers from the Hampshire Network for Invertebrate Conservation (HNIC), undertook a survey of sites around Gilkicker Point. Only a single specimen was found, but this was 250m west of the fort, proving that the embankment at the fort was not the only breeding site left in Britain³.
- A survey commissioned by English Nature took place later in 2000. The objectives of the project were to search for likely sites for *P. haematocephalus* in Hampshire, and to provide locations of all colonies found, as well as to record any useful ecological information on the species.
- The report produced concluded that although the distribution of the species at Gilkicker Point and Browndown is wider than was originally thought, the species is still extremely local, and protection of its fragile habitat should be a prime objective of any future conservation work³.
- To work towards the objectives of the UK BAP, several actions are planned. These include further survey and monitoring work, the investigation of the potential for captive breeding, and the production of an information leaflet. These actions are to be carried out by contractors, HWT Staff, and volunteers.

5 OBJECTIVES

The overall aim of this Plan is to protect and increase the distribution and population of *P. haematocephalus* 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
A	Maintain existing populations of <i>P. haematocephalus</i> by preventing loss and damage of sites significant for the species.	1 – 7, 12 – 13, 15 – 16
B	Establish and maintain a comprehensive understanding of <i>P. haematocephalus</i> distribution, status and ecological requirements through appropriate research, survey and monitoring.	8 – 14
C	Investigate the potential for introducing <i>P. haematocephalus</i> to suitable coastal sites to enhance the population in Hampshire. This objective is to include the enhancement of existing sites, and investigation of the potential for captive breeding.	5– 6, 8, 10, 13
D	Promote communication, education and awareness of the status and needs of <i>P. haematocephalus</i> , particularly amongst land owners and managers.	15 – 17

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										
Site and Species Policy and Protection										
1	Where populations of <i>P. haematocephalus</i> exist outside of designated conservation areas, consider extension of the SSSI at Browndown, or designation as a SINC, etc. in line with current criteria.	EN	LAs, HCC	➡		◆				A
2	Review the effectiveness of existing site protection measures in preventing deterioration and loss of <i>P. haematocephalus</i> habitats.	EN	HWT	➡		◆				A
3	Ensure that the relevant shoreline management plans allow management of coastal shingle sites that is compatible with the habitat requirements of the species.	HCC	MoD, LAs	➡	⇨	⇨	⇨	⇨	⇨	A
4	Ensure that the shoreline management plans take account of the objectives of this SP by maintaining, and where possible, increasing the area of suitable habitat.	HCC	LA's	➡	⇨	⇨	⇨	⇨	⇨	A

Site and Species Management											
5	Ensure favourable management of coastal shingle habitat along the South Coast to enable expansion of the population, where suitable habitat exists.	HWT	DWT	↔	↔	↔	↔	↔	↔	↔	A, C
6	Endeavour to increase the distribution of <i>P. haematocephalus</i> by ensuring appropriate management of sites adjacent to existing populations.	MoD, Land-owners	Las	↔	↔	↔	↔	↔	↔	↔	A, C
7	Use information provided by the upcoming surveys to determine appropriate management practices.	HWT			◆↔						A
Research, Survey and Monitoring											
8	Survey all current, historical and potential sites for <i>P. haematocephalus</i> to determine the exact distribution and status of the species, and to identify areas with potential for introductions.	HWT (contractors)	HNIC	◆							B, C
9	Monitor a standard sample of the populations at Browdown and Gilkicker Point once monthly to record autecological / population information, and environmental parameters such as foodplant distribution.	HWT (contractors)			◆↔		◆				B
10	Investigate the potential for captive breeding to provide material for population introductions, and assess the potential for volunteers to aid in such a programme. Implement this programme if possible.	HWT contractors)	HNIC	◆↔			◆				B, C
11	Survey known habitats to provide a more detailed definition of habitat requirements (e.g. NVC, foodplant density).	HWT	HCC HBIC	◆↔			◆				B, C
12	Develop a condition assessment table for habitats supporting populations of <i>P. haematocephalus</i> , in order to facilitate monitoring of sites. Once available, use table to record current condition of sites and monitor subsequent changes.	HWT/EN	HNIC		◆↔		↔		↔		A, B, C
13	Monitor the effect of any restoration work at Gilkicker Point on <i>P. haematocephalus</i> , (if required), and consider translocation of weevils or Bird's-foot-trefoil if necessary.	HWT	HNIC		◆↔		↔		↔		A, B, C
14	Liaise with Scarce Phytophagous Beetle steering group (EN/Leeds University) re research and conservation requirements for <i>P. haematocephalus</i>	HWT		↔	↔	↔	↔	↔	↔	↔	B, C, D
Communication, Awareness and Promotion											
15	Convene meetings with relevant landowners (dependent on survey results) to advise on management practices.	HWT		◆						↔	A, D
16	Produce an awareness / advisory leaflet to ensure that land owners and the public are aware of extant populations	HWT		◆							A, D

17	Provide data to county and national databases to ensure that up-to-date information on the status of the species is available.	HWT, HBIC.		↔	↔	↔	↔	↔	↔	D
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KEY TO ORGANISATIONS:

DWT Dorset Wildlife Trust
 EN English Nature
 HBIC Hampshire Biodiversity Information Centre
 HCC Hampshire County Council

HNIC Hampshire Network for Invertebrate Conservation
 HWT Hampshire Wildlife Trust
 LA's Local Authorities
 MoD Ministry of Defence

REFERENCES

1. UK Biodiversity Group. (1999). *Tranche 2 Action Plans – Volume 4: Invertebrates*, English Nature.
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4. Hyman, P.S. (1992) UK Nature Conservation No. 3 – A review of the scarce and threatened Coleoptera of Great Britain, Part 1. Joint Nature Conservation Council
5. Joy, N. H. (1932 [reprinted 1997]) A practical handbook of British Beetles. (Two volumes – Volume one: Text) E W Classey Ltd.

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.

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