



UPDATE OF PLAN IN PROGRESS 2021

RED WOOD ANT *Formica rufa*

1. INTRODUCTION

Formica rufa is the familiar large black and red wood ant of southern Britain as far north as Cumbria; in the north it is replaced by the very similar *Formica lugubrious* and *F. aquilonia*. It clearly prefers coniferous plantations but is capable of using broad-leafed woods, although it tends to form weaker colonies in the latter.



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Wood ants produce large dome-shaped nests up to a metre in height, often constructed from pine needles but they will use any available materials. A nest can support several hundreds of thousands of workers and, in the UK, up to 100 queens, with and numerous males from May to July. Nests are often very precisely located at the edges of rides and clearings so that they receive plenty of sunlight whilst remaining sheltered from cool winds. The 1cm long workers carefully maintain the nest's structure and temperature and forage a radius of several hundred metres in search of small invertebrates and other food items such as plant seeds which contain *elaiosomes* (protein/fat rich bodies) ; they search on the ground, usually along well-defined trails, and in the tree canopy (Donisthorpe, 1927).

The most important factor in protecting wood ants is to promote an adequate microclimate; favourable woodlands have a relatively open canopy and a high proportion of the area taken by glades, edges and gaps. Also essential to the success of *F. rufa* is the presence of certain species of aphid which are tended in colonies and protected from predators; they are milked for honeydew, the ants' main source of carbohydrate. Important host plants for the ant-tended aphids are juniper, Scots pine, sycamore, birch, oak, gorse and nettle; honeydew can account for 70% of the food requirements of a colony at certain times of the year (Hughes, 2006).

Because of their predatory activity, large populations have a considerable effect on the ecology of a wood, reducing the levels of many other invertebrates and possible other insectivores as they are very aggressive, biting and squirting formic acid at intruders. The nests support a number of scarce 'inquiline' insects, including the beetle *Clytra quaddripunctata*, which is present at the known Warwickshire site, and another ant, *Formicoxenus nitidulus*, which is historically recorded from Knowle.

2.	OBJECTIVES	TARGETS
Associated Action Plans are: 'Woodland'		
PLEASE CONSULT THE ' GENERIC SPECIES ' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR OBJECTIVES COMMON TO ALL SPECIES PLANS		
A.	To maintain the size and range of the known Warwickshire population of the red wood ant by appropriate management.	ongoing
B.	To increase population size and range by translocation to other sites, following extensive research into their suitability.	2025 tbc

3. NATIONAL BAP OBJECTIVES & TARGETS

The red wood ant is not currently a [UK Biodiversity Action Plan \(BAP\) Priority Species](#) although the decline of all wood ants has been flagged at a European level.

4. CURRENT STATUS

The decline in coppicing in the 20th century has been a major factor in the decline of wood ants in Europe (Hughes, 2006).

The [Victoria County History](#) for Warwickshire (1904) gives old records of *F. rufa* for Sutton, Hay Wood and Knowle, though [Hymenoptera](#) recording was very limited in such times. Although present in the West Midlands at two sites in Staffordshire and the Wyre Forest in Worcestershire, the Warwickshire sub-region now supports just a single colony although it seems to have been more widespread in the past. Arley Wood 42ha of broadleaf and Corsican pine, owned and managed by the Forestry Commission, contains the only community in Warwickshire. The ants live beneath the pine standards and are abundant throughout the wood with numerous active mobile nests.

The strong colony in Arley Wood was discovered seemingly in the late 1900's, and the presence of the associated beetle *Clytra quadripunctata*, suggests it is an old colony. This beetle has also been found at Bentley Park Wood, even though no wood ants are known to exist there. Four small ant nests from the Wyre Forest were released at Hay Wood in the 1980s in an attempt to re-introduce it there, but they do not appear to have established.

Population size and range in Warwickshire could be increased by further reintroductions to historic and appropriately managed sites by translocation from Arley Wood where the population is considered adequate to sustain the removal of a couple of nests. Ideally this should be carried out in the spring when the ants, having come through winter, are about to enter a growth phase (pers.comm. Richard Lamb, 2012).

However, prior to any introductions, it would be essential to establish why the ant is no longer at historic sites and subsequently to monitor any introductions over a considerable period of time.

4.1 Legal and Policy Status

A wide range of species and habitats are protected under international and domestic laws, including the [Wild Birds Directive](#) (1979), the [Wildlife and Countryside Act](#) (1981), the [Conservation Regulations](#) (1994) and [EC Habitats Directive](#) (1992). Protection of sites is afforded nationally through [Sites of Special Scientific Interest](#) (SSSI) designation, [Special Areas of Conservation](#) (SAC) and Local Nature Reserve (LNR) statutory status. Other sites are offered recognition of their value through Local Wildlife Site status (LWS), Local Character Areas and identified Landscape Scale Areas. The [National Planning Policy Framework](#) (2019, para.175) states conditions with regard to any development negatively affecting biodiversity, including protected sites, ancient woodland and other irreplaceable habitats (paragraph 118). The Wildlife & Countryside Act and schedule 2 of the [Conservation of Habitats & Species Regulations](#) (2017, as amended) make it an offence to intentionally kill, injure, take, possess, sell, buy or transport a range of species.

No legal protection exists for the red wood ant although its rarity, and the rarity of its associated beetle *Clytra quadripunctata*, in the sub-region makes both of them Regionally

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Scarce species that can be considered when designating LWSs. Arley Wood was classified as a LWS in 2008 and thus has an element of protection through the planning process.

4.2 Current Factors Affecting the Species

- **Large-scale forestry operations** could potentially eliminate the species, though it is fairly tolerant of normal woodland management and recreational pressure.
- **Deliberate persecution of the nests** by uninformed individuals could always pose a threat.
- **Continuing incremental loss** as scrub and woodland patches are lost to agricultural diversification.
- **The need for a high quality ecologically diverse habitat** as red wood ants can take as many as 60000 prey items per day and over a quarter of a tonne of honeydew per nest per season.
- **The current trend for returning PAWS (Planted Ancient Woodland Sites) to broadleaf** – these are ancient woodland sites where the semi-natural woodland has been replaced with a plantation.
- **Corsican pine is subject to infection** from the fungus [Red Band Needle Blight](#).
- **Change of ownership**

5. LOCAL ACTION

- Occasional visits to Arley Wood by naturalists provide feedback to the [Warwickshire Biological Record Centre](#) (WBRC) regarding the continuing presence of the ant colony.
- The '[North Arden Heritage Trail](#)' board (North Arden Heritage Trail Project 2007-12) in the centre of the wood gives information about the ant and its rarity in the county.
- The [Forest Design Plan for Arley Wood 2011-2021](#) involves the management of the current areas of broadleaves using a selective felling programme that will ensure that there is a continuous broadleaf cover and seed source to help regenerate former ancient woodland sites. Management will include thinning and selective felling of areas of pure conifers with wood ant nests to encourage their development. Due to the mobility of the ant nests regular surveys will be undertaken to monitor their spread and growth to ensure that forestry operations, including restocking, do not adversely affect population growth. There will be some restocking with conifers (4ha) for the ants.

Arley Wood – proposed Forest Structure in 2014

Corsican pine dominates the central area of the woodland. Rides have been widened.



Arley Wood – proposed Forest Structure in 2025

Corsican pine stands have been opened up and an understorey of pine and broadleaves is now becoming established.



- **Forestry Commission (now Forestry England), with WBRC:** woodland management and mapping of all known nests:
 - in 2012: 17 nests were recorded.
 - in 2014: the number was 16/17, with 3/4 other areas of activity.
 - in 2014: habitat management was carried out to improve the habitat for the wood ant, clearing bracken from around nests along the main path to allow more light onto them for warmth, and marking their position with posts. Location of more nests in the area of the wood towards the pond is predicted and further mapping and management will take place in 2015 (to be confirmed).
- **Butterfly Conservation Warwickshire (BCW):** a potential translocation site was identified in 2016, 3 small woods at Monwode Lea Farm next to Arley Wood.

6. PROPOSED LOCAL ACTIONS

ACTION AN UPDATE IS IN PROGRESS	Lead	Partners	By
PLEASE CONSULT THE 'GENERIC SPECIES' ACTION PLAN IN CONJUNCTION WITH THIS DOCUMENT FOR ACTIONS COMMON TO ALL SPECIES PLANS			
Policy, Legislation & Protection			
PL1. Ensure that Forest Design Plans continue to consider the needs of the red wood ant.	FE	WBRC NWBC	ongoing
Site / Species Safeguard & Management			
SM1. Ensure that the current Forest Design Plan for Arley Wood is implemented to account for the needs of the red wood ant, in particular protection for the nest sites.	FE	WBRC WCC	ongoing
SM2. Restore at least one historic site (e.g. Hay Wood to good condition for the ant, following research (see RM2).	FE	LOs	2025 tbc
SM3. Re-introduce the ant to one historic site e.g. Hay Wood, by the translocation of 2 whole nests in the spring.	FE	WBRC CRec	2025 tbc
SM4. Check other woodland sites for relic populations of the ant.	CSG	BCW HBA LEs Unis CRec	2025
Research & Monitoring			
RM1. Continue regular monitoring of Arley Wood; record changes in distribution and number and responses to management activities in the wood.	FE	WBRC	every 5 years tbc
RM2. Research records for all woodlands in the county to find historic sites.	WBRC	CRec Unis	2025
RM3. Research conditions at historic sites (see RM2) to ensure conditions are suitable for translocation and check feasibility prior to any translocation work. Produce a 3-year plan for a reintroduction project and apply for funding.	CSG	BCW FE Unis CRec	2025 tbc
RM4. Monitor the results of any translocation (see SM3) at both donor and recipient woods for at least 5 years.	CSG	BCW FE Unis CRec	2030 tbc

Communication, Education & Publicity			
CP1. Ensure that the County Council ecologists and Local Biodiversity Action Plan (LBAP) team are informed of any revisions to the management plan for Arley Wood.	FE	WBRC	ongoing

Abbreviations: **BCW** - Butterfly Conservation Warwickshire, **CRec** – County Recorder, **CSG** – Core Steering Group, **FE** – Forestry England, **HBA** – Habitat Biodiversity Audit, **LEs** – Local Entomologists, **NWBC** - North Warwick Borough Council, **Unis** – Universities, **WBRC** – Warwickshire Biological Record Centre, **WWT** – Warwickshire Wildlife Trust.

7. PROGRESS WITH ACTIONS

From 2015–2020 there will be a rolling programme of reporting on progress, of 10 action plans per year with an annual summary of results. Progress with this plan up to 2019 can be seen at www.warwickshirewildlifetrust.org.uk/LBAP

8. BIBLIOGRAPHY

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Natural England (2016) [Conservation Strategy for the 21st Century](#). Sets out how NE will help deliver DEFRA's ambitions for the environment to reverse biodiversity loss, sustain distinctive landscapes and enhance engagement with nature.

Warwickshire, Coventry and Solihull Local Biodiversity Action Plan

Worldwide Fund for Nature (2018) [The Living Planet Report](#): aiming higher.
Published in collaboration with the Zoological Society of London.

9. FURTHER INFORMATION

Habitat Biodiversity Audit (HBA) for Warwickshire, Coventry & Solihull – mapping data set and associated information. Phase 1 ([JNCC](#)) 1996-2002 and Phase 2 (Local Wildlife Sites) ongoing.

Kirby, P. (1992). [Habitat management for Invertebrates](#): a Practical Handbook. RSPB.

[Buglife](#) - the Invertebrate Conservation Trust

[Bees, Wasps & Ants Recording Society](#) (BWARS) is the national society dedicated to studying and recording bees, wasps & ants (aculeate Hymenoptera) in Britain & Ireland.

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10. CONTACT tbc