

PO851
T0905645

0611053

SPECIES RECOVERY PROGRAMME 2005

**NEW FOREST CICADA (*Qcadetta montana* Scopoli)
(Hemiptera: Cicadidae): Progress Report 2005**

Bryan J Pinchen & Lena K Ward

December 2005

SPECIES RECOVERY PROGRAMME 2005

**NEW FOREST CICADA (*Cicadetta nwnntana* Scopoli)
(Hemiptera: Cicadidae): Progress Report 2005**

Contents

1.1. Summary	1
1.2. Monitoring Cicadas at Gibbet Wood in 2005	2
1.2.1. Turrets	
1.2.2. Singing Males	
1.2.3. Egg Nests	
1.3. Other Monitoring at Gibbet Wood in 2005	3
1.3.1. Temperature Logging	
1.3.2. Other Insects Recorded	4
1.4. Other Possible Cicada Sites	7
1.4.1. Denny and Matley Woods	
1.4.2. King's Garn Gutter	
1.4.3. Furzy Lawn Inclosure	
1.4.4. Island Thorns Inclosure	
1.4.5. Raven's Nest Inclosure	
1.4.6. Franchises Wood	
1.4.7. Pig Bush and Honey Hill	8
1.4.8. Ferny Crofts	
1.5. Reports of Cicadas	9
1.6. Scarring Experiment	10
1.7. Photographic Monitoring	12
1.8. Publicity	13
1.9. Discussion	14
2.0. References	15
2.1. Acknowledgements	16
2.2. Figures	17
2.3. Plates	23

Appendix 1 Felling Plan for Gibbet Wood, winter 2005/06

1.1. Summary

This report summarises work on the New Forest Cicada during 2005.

At Gibbet Wood no cicada turrets, singing males or current year's egg nests were recorded.

Miniature temperature loggers were installed at two different depths below the ground in Gibbet Wood, two were also buried in two differing areas of habitat in Island Thorns Inclosure.

The scarring experiment begun in 2000, was monitored.

No cicada song was heard in the New Forest during 2005. Coverage at Gibbet, Denny and Matley Woods, Ferny Crofts, Raven's Nest Inclosure, Pig Bush and Honey Hill, Franchises Wood, Island Thorns and Furzy Lawn Inclosures was good, so we may conclude that cicadas were either absent or present in exceedingly low numbers.

Suggestions for future research, and monitoring are presented.

The New Forest Cicada Steering Group wishes to acknowledge the financial support of Bristol Zoo Gardens and English Nature.

1.2 Monitoring Cicadas at Gibbet Wood in 2005

1.2.1. Turrets

Two visits were made to the glades to search for the presence of pre-emergence turrets. The first visit was made on 11th April, with the second 1st May. Despite a thorough search of the whole area no earthworks resembling turrets could be found.

1.2.2. Singing Males

Five visits were made to listen for the presence of singing males. The visit dates were 9th and 23rd May, 9th and 13th June and 11th July. All visits were made between 10:00 and 16:00hrs, and only when the temperature was greater than 18°C and the wind was only slight. No cicada song was heard during any of the visits.

1.2.3. Egg Nests

A search was made for egg nests during the visit on 11th July but no nests of the current year were found.

1.3. Other Monitoring at Gibbet Wood in 2005

1.3.1. Temperature Logging

Miniature temperature loggers (Tinytalk II) were placed in the soil at two depths (5 and 15 mm) in Glades 1 and 4 at Gibbet Wood in the same positions as previous years. Two loggers were also placed at 5 mm depth at Island Thoms Inclosure, -one in an open area after clear fell, and the other in a clearing in a replanted conifer plantation. All recordings were set to run from 1st February 2005 to 14th September 2005 (1800 records) at 3-hourly intervals. This covered possible dates of turret construction, emergence of adult cicadas, singing, and oviposition.

All data from the loggers (1997-2005) have been collated in an ACCESS database (*cictemps.mdb*).

Temperatures (°C) were recorded by the loggers at Gibbet Wood and Island Thoms from February to September 2005 (Figures 1 and 2). Cicada activities such as turret building, emergence, flight and oviposition are thought to be temperature related. Grant & Ward (1992) found that *C. montana* sings more readily at temperatures >20°C, so this temperature is indicated on the graphs. However, it must be remembered that records of the soil temperature will not exactly parallel that of the temperature above ground.

The results for all four loggers at Gibbet Wood showed the usual differences of higher temperatures and greater diurnal fluctuations at the shallower depth of 5 mm as compared to the loggers at 15 mm. More details about the gradients in soil temperature and diurnal fluctuations and how they might affect cicada nymphs are in Pinchen & Ward (2003).

The maximum daily temperatures recorded by the loggers at 5 mm depth are contrasted for all four sites (Fig 3). This is interesting in showing the greater warmth of the clear-fell site at Island Thoms in the earlier part of the year, while later in the summer Glade 1 at Gibbet Wood is warmer. This is assumed to be due to the increase in shading. The replanted area at Island Thoms is relatively cool and Glade 4 at Gibbet Wood is even colder and more shaded and both are thought to be unsuitable for ovipositing cicadas now.

The number of days with temperatures of 20°C and over at 5 mm are compared for Gibbet Wood and Island Thoms from April-July (Fig 4). The temperature in the clear-fell at Island Thoms has been the warmest for the four years of recordings. In the first two years the temperatures were similar to that on a cicada site in Belgium (Les Rivelottes in 2001). Although the temperature has dropped in the last two years it is still warmer than Glade 1 at Gibbet Wood. Here the temperatures have been relatively stable although fluctuating - probably due to intermittent clearance and bracken cutting. The replanted area at Island Thoms had 40 hotter days in the first year and only 12 in 2005 and is unlikely to have been useful for cicadas. Glade 4 at Gibbet Wood had >60 days at >19.9°C in the first year after clearance, but declined sharply in the year and became progressively colder over the next seven years.

The decline in warmth of this small Glade 4 (c. 25 m diam.) at Gibbet Wood, where there has been virtually no management is displayed in more detail in Fig 5. This shows the contrast in the maximum daily temperature at the start of the records in 1997 when the glade was first cleared and the much lower temperatures in 2005, which frequently fell below the mean for the last six years.

In conclusion these results show that cleared glades are initially very warm and might be attractive to ovipositing cicadas. However, if the glades are small they soon become shaded and colder - the higher temperatures may only persist for a very few years. However, if larval food plants like Purple Moor grass *Molinia caerulea* and woody shrubs were present initially these successful glades would support the larval development of the next generation.

1.3.2 Other Insects Recorded

A number of insects were recorded in the glades at Gibbet Wood, whilst surveying for cicadas. A list of those species recorded appears below, 306 insect species have been recorded here between 1994 and 2004. All data has been entered into an ACCESS database (*icada3*). All records have also been submitted to the relevant county and national recorders.

- 11th April Lepidoptera: Butterflies
Gonepteryx rhamni, *Pararge aegeria*
 Hymenoptera: Aculeates
Bombus jonellus, *B. lucorum*, *B. pascuorum*, *B. pratorum*, *B. terrestris* *Apis mellifera*, *Vespa vulgaris*, *Andrena haemorrhoa*, *Nomada ruficornis*
 Diptera: Hoverflies
Platycheirus abimanus, *Eristalis pertinax*, *Melanostoma aestivum*, *Criorhina ranunculi*, *Parasyrphus punctatus*
 Diptera: Beeflies
Bombylius major
 Heteroptera: Bugs
Kleidocerys resedae, *Elasmotethus tristriatus* (a single specimen beaten from Yew *Taxus baccata*)
 Orthoptera and allies:
Forficula auricularia
- 1st May Orthoptera and allies
Nemobius sylvestris (N), *Tetrix undulata*, *Pholidoptera griseoptera*, *Chorthippus parallelus*
 Lepidoptera: Butterflies
Gonepteryx rhamni, *Inachis io*
 Diptera: Hoverflies
Platycheirus abimanus, *Epistrophe eligans*, *Eristalis pertinax*, *Eristalis tenax*, *Melanostoma aestivum*, *Syrphoctonus pipiens*, *Xylota segnis*
 Diptera: Craneflies
Dolichopeza albipes

Hymenoptera: Apidae
Bombus pratorum, *Bombus pascuorum*, *Apis mel/ifera*, *Andrena haemorrhoa*,
Nomadaflava, *Nomada panzeri*

9th May

Lepidoptera: Butterflies
Pararge aegeria
Orthoptera and Allies
Forficula auricularia
Diptera: Hoverflies
Helophilus pendulus, *Epistrophe e/igans*, *Erista/is arbustorum*, *Erista/is pertinax*, *Platycheirus albimanus*, *Myathropaflorea*, *Sericomyia Iappona*,
Xylota abiens (N)
Hymenoptera: Aculeates
Formicajusca, *Vespu/a vulgaris*, *Dolichovespula sylvestris*, *Bombusjonellus*,
Bombus pascuorum, *Bombus terrestris*, *Andrena pubescens*, *Andrena chrysoceles*
Heteroptera
Piezodorus lituratus

23rd May

Lepidoptera: Butterflies
Pieris brassicae, *Gonepteryx rhamni*, *Lycaena phlaeas*, *Polyommatus icarus*
Orthoptera and Allies
Leptophyes punctatissima
Diptera: Hoverflies
Melanostoma sea/are, *Epistrophe e/igans*, *Erista/is pertinax*, *Xylota segnis*,
Chrysotoxum bicinctum, *Baccha elongata*
Hymenoptera, Apidae
Bombus pascuorum, *Apis mel/ifera*

9th June

Odonata: Damselflies
Pyrrhosoma nymphula
Lepidoptera: Butterflies
Gonepteryx rhamni
Orthoptera and Allies
Chorthippus paral/elus, *Chorthippus brunneus*, *Omocestus rujipes* (N),
Nemobius sylvestris (N), *Meconema thalassinum*, *Leptophyes punctatissima*
Diptera: Hoverflies
Myathropaflorea, *Platycheirus albimanus*, *Xylota segnis*, *Melanostoma sea/are*, *Syrittapipiens*, *Xylota abiens* (N)
Diptera: Beeflies
Bombylius major
Diptera: Brachycera
Dioctria atricapil/a
Hymenoptera: Aculeata
Bombus pratorum, *Bombus pascuorum*, *Sphecodes ephippius*, *Vespa crabro*

Heteroptera

Acanthosoma haemorrhoidale, *Kleidocerys resedae*

13th June

Orthoptera and allies

Chorthippus para/le/us, *Chorthippus brunneus*, *Nemobius sylvestris* (N)

Diptera: Hoverflies

Eristalis pertinax, *Myathropaflorea*, *Xylota segnis*, *Voluce/la bombylans*

Diptera: Robberflies

Dioctria atricapilla

Hymenoptera: Aculeates

Anoplius nigerrimus, *Sphecodes ephippius*

11th July

Odonata: Dragonflies and Damselties

Cordulegaster boltonii, *Orthetrum cancellatum*

Orthoptera and Allies

Pholidoptera griseoptera, *Omocestus rufipes* (N), *Chorthippus para/le/us*,

Chorthippus brunneus

Lepidoptera: Butterflies

Och/odes venata, *Polygonia c-album*, *Maniolajurtina*, *Pararge aegeria*,

Argynnis paphia, *Aphantopus hyperantus*, *Pyronia tithonus*

Diptera: Brachycera

Haematopotapluvialis, *Machimus cingulatus*, *Machimus atricapillus*,

Chrysops viduatus

Hymenoptera: Aculeatea

Vespa crabro, *Dolichovespula media*, *Anoplius nigerrimus*, *Formicafusca*,

Leptothorax acervorum, *Lasius niger*, *Apis mellifera*, *Bombus hortorum*,

Bombus lucorum, *Bombus pratorum*, *Bombus sylvestris*

t.4. Other Possible Cicada Sites

1.4.1. Denny and Matley Woods

Seven visits were made to Denny and Matley Woods on 5th April, 25th April, 7th May and 30th May, 8th June, 18th June, 26th June to search for pre-emergence turrets, and to search for the presence of singing males. Visits were made between 10:00 and 16:00hrs, when the temperature was above 18°C and the wind only slight. No cicada song was heard during any of the visits.

1.4.2 King's Garn Gutter

This area was visited on three occasions, to search for singing males and egg nests. The visits were made on 9th May, 13th June, and 19th June. No evidence of cicadas was recorded during any of the visits. Many of the areas previously identified as being suitable for the species are now being shaded by plantation growth and are becoming increasingly unlikely to be used by cicadas.

1.4.3 Furzy Lawn Inclosure

Following the discovery of a possible turret and hearing possible song in 2000 this area has been visited with more frequency. A total of three visits were made; on 11th April, 9th May, 9th June. No turrets or structures resembling turrets were found and no instances of song recorded.

1.4.4 Island Thorns Inclosure

This area had been identified as having suitable looking habitat during survey in 2001. Two visits were made to search for singing adults. The visits were made on 19th and 10th July, no evidence of cicadas was recorded during any of the visits.

1.4.5 Raven's Nest Inclosure (S0256147)

This area was visited on 23rd June to listen for cicada song. The proximity of this clear-fell/replant area to Gibbet Wood suggested it should be worth visiting. Suitable habitat exists throughout much of the area, but no cicada song was heard. Searches were made of low shrubs for oviposition sites but none were found.

1.4.6 Franchises Wood (SU2317)

This area was visited on 15th May to search for possible suitable habitat and any early singing male cicadas. Despite an extensive walk throughout the wood little suitable habitat was found and no cicadas heard.

1.4.7 Pig Bush and Honey Hill (S03604)

This area was visited to search for suitable habitat and the presence of singing male cicadas. Area of steep south-west facing bank adjacent to the Culverley car park (SU368045) contains suitable habitat with a mix of different height ground flora, low scrub and some *Pteridium aquilinum* cover. Visits were made on 11th, 18th and 25th June but no cicadas recorded.

1.4.8 Ferny Crofts (S03605)

This area was visited on 11th June to search for suitable habitat and the presence of singing male cicadas. The areas to the south and west of Ferny Crofts fenced Scout enclosure is considered to contain suitable habitat. A further late visit on 14th July failed to locate any cicadas,

1.5 . Reports of Cicadas

Two reports of cicadas were received during the year. The first: in late June was reported by local birdwatcher Mark Moody. He reported hearing loud cicada song between 03.00 and 05.00 hours at Southampton Docks on 25th June. Mr Moody is familiar with foreign cicadas and recognised the song from trips abroad. He was unable to locate the insect which appeared to sing from low scrub near the service railway line. It was not reported again and is likely to have been accidentally imported with goods from southern Europe, perhaps a stowaway in a container.

A second report of a 'cicada' came in early November from local naturalist Mr Alan Hold. He had been presented with a 'cicada-like' insect for identification, that had been found in a beehive on the outskirts of Southampton, during the process of cleaning the hive. BJP was able to determine that this specimen was in fact a Death's Head Hawkmoth *Acherontia atropos* which has become completely devoid of any scales. This species often enters beehives to feed on the honey stored within. With its large wings held roofwise over the body and lack of any scales, it could easily be mistaken for a large cicada species.

1.6. Scarring Experiment

The objective of this experiment was to simulate the scars made by ovipositing female cicadas and to monitor the subsequent wound healing annually by observation of the external structures and by cross-sectioning to see internal changes. The scars were approximately 10 mm long and made in one and two year stems of oak *Quercus rober*, beech *Fagus sylvatica* and birch *Betula pendula* on 17th July 2000 (Pinchen & Ward 2000). By counting the annual rings from the year of damage, we hope to be able to predict the years when cicadas in the soil below identified oviposition scars could be building emergence turrets. Literature references to wound healing is presented in Pinchen & Ward (2003).

Five years after the damage, the wounded twigs of birch and oak had died. Plate 1 therefore shows cross-sections at the centre of the scarring in the beech twigs only. The location of the outer limits of the scarring is shown by the arrows and note that the magnification is greater for the younger smaller twig.

1-year beech twig, diam. 4 mm (Scar 9 mm x 5 mm)

Like 2004 the one-year old beech twig is very small but the outer margins of the scar are just visible. The central ridge is not very clear although there are raised patches in a few places. The scar takes up about 20% of the circumference. Internally the woundwood rings have closed together and although there is still an indication of their position in relation to the scar at the surface and the black wound seal in the centre of the twig. Of the five annual rings the outermost two are harder to distinguish and show that there has been little growth in these two years.

2-year beech twig, diam. 8 mm (Scar 12 mm x 7 mm)

The margins of the scar are still fairly obvious and there is a raised lumpy central area where the original cut was made. However, the central area still bulges more, and there are clear raised ridges marking the edges of the scar. The scar is about 25% of the circumference. Internally there is an indentation still where the woundwood wings have closed. The shape of the cut is still visible in the sealed off area of the wound, but there is some additional discolouration in the pith indicating possible spread infection. Five annual rings after scarring can be counted, but as in the one-year old twig the outer three rings are less clear indicating poor growth.

Conclusion

In 2005, the scarred twigs of birch and oak have all died and it seems that simulated cicada damage has been the cause of death and poor health at least in the birch. The annual growth in the last two to three years in the two beech twigs has not been good either.

Summarising the results of these experiments we can suggest that birch is unlikely to be very useful in searching for oviposition scars and dating them because of the early death of the twigs, and difficulties in counting the annual rings in ring porous wood..

oak is good for counting the annual rings to date any scar, but after about four years the scars became harder to distinguish on the external bark. Oak may also be more prone to infections within the conducting tissue. These may arise from the wound, but are more likely to be related to the abortion of lateral buds. It is probable that there is a demographic longevity factor in the survival of twigs in all the trees even without scarring, but we have no information about this point.

Scars on beech are clearer and the twig life longer, but probably cicadas do not use this tree as often for oviposition, as it has less mention in the literature. The annual rings are also fairly easy to count, although those rings near the centre and around the sealed off wounds may be distorted or missing and cannot be counted so easily.

t.7. Photographic monitoring

Fixed point photography was continued in the glades at Gibbet Wood with the photographs being taken on 14th September. Plate 2 illustrates the current condition of four glades. Plate 3 illustrates the two locations of temperature loggers in Island Thorns Inclosure.

t.8. Publicity

A brief paper detailing the history, ecology and conservation work on the species in Britain was published in the Bulletin of the Amateur Entomologist's Society in April (Volume 64. No. 459). An appeal for records of the cicada was made in this paper, but none were forthcoming after the publication of this article.

The search for the cicada and conservation work undertaken at Bristol Zoo was publicised during a television series, broadcast in the south-west during September and featuring the conservation work undertaken at the Zoo.

1.9. Discussion

t.9.1. Monitoring and Research

The monitoring of any signs of cicadas should continue at Gibbet Wood. This includes searching for pre-emergence turrets, egg nests and listening for singing males.

More attention should also be paid to areas highlighted as containing suitable looking habitat, at Denny and Matley Woods, Pig Bush and Honey Hill, Ferny Crofts, and Raven's Nest, Island Thorns and Furzy Lawn Inclosures.

Monitoring of the scarring experiment should be continued to better aid our identification of cicada oviposition scars.

2.0. References

- GRANT, J. A. & WARD, L. K. (1992). English Nature Species Recovery Programme - New Forest Cicada (*Cicadetta montana* Scopoli) (Hemiptera: Cicadidae). pp52 + 6 figures. English Nature/NERC Contract (T09056kl)
- PINCHEN, B. J. (2005). Quiet songster of the woods - The New Forest Cicada. Bulletin of the Amateur Entomologist's Society. Volume 64, Number 459, pp 47-52.
- PINCHEN, B. J. & WARD, L. K. (2000). Species Recovery Programme 2000. New Forest Cicada (*Cicadetta montana* Scopoli) (Hemiptera: Cicadidae): Progress Report 2000. Contract No: FST20-37-06 SRP - New Forest Invertebrates. Report to English Nature, November 2000. Pp 27.
- PINCHEN, B. J. & WARD, L. K. (2003). Species Recovery Programme 2002. New Forest Cicada (*Cicadetta montana* Scopoli) (Hemiptera: Cicadidae): Progress Report 2002. Contract No: CPAU/03/03/157 SRP - New Forest Cicada Survey Work. Contract Report to English Nature, January 2003. Pp 38.

•2.1. Acknowledgements

We acknowledge the help and assistance of Dr David Sheppard, English Nature, Peterborough; Warren Spencer, Paula Donnelly and Neil Maddison at Bug World, Bristol zoological Gardens and the Forestry Commission in the New Forest.

The New Forest Cicada Steering Group wishes to acknowledge the financial support of Bristol Zoo Gardens and English Nature.

2.2. Figures

- 1 Temperature, °C in Glades 1 and 4 at Gibbet Wood at two depths in 2005
- 2 Temperature, °C at Island Thorns in clear-felled and replanted areas in 2005 (loggers at 5 mm depth)
- 3 Maximum daily temperature (°C) in 2005 at all four sites with loggers at 5 mm depth
- 4 Number of days April-July 1997-2005 with temperatures >19.9°C at Gibbet Wood and in the cleared and planted area at Island Thorns (Belgian cicada site in 2001 shown for reference)
- 5 Maximum daily temperature, °C March to August in the Glade 4 at Gibbet Wood in 1997 (year after clearance), in 2005 (increased shade) and mean figures for 1999-2005 (loggers at 5 mm depth)

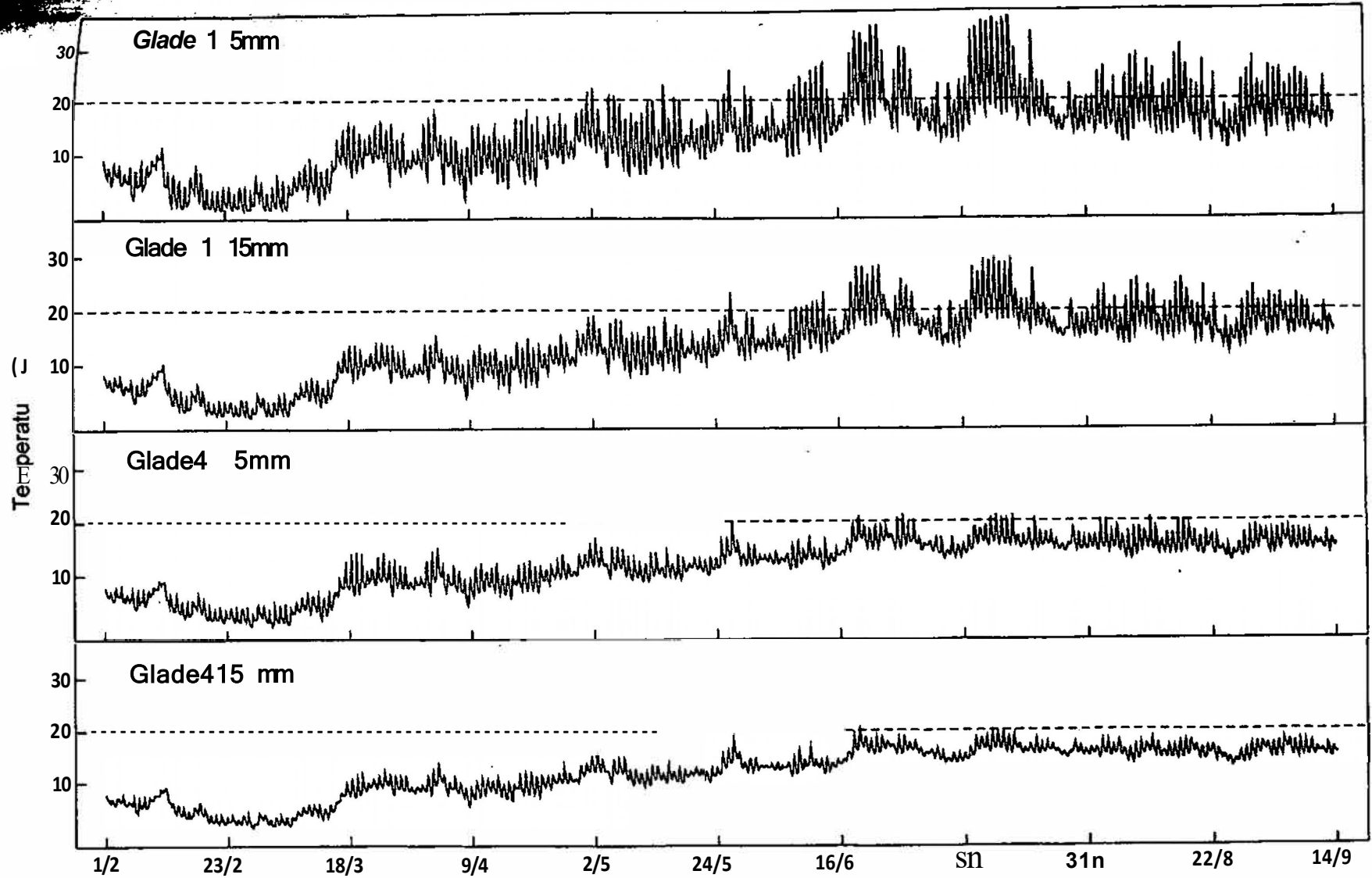


Fig 1. Temperatures °C in Glades 1 and 4 at Gibbet Wood in 2005 (loggers at 2 depths)

Fig 2. Temperature oC at Island Thorns in clear-felled and replanted areas in 2005 (loggers at 5 mm)

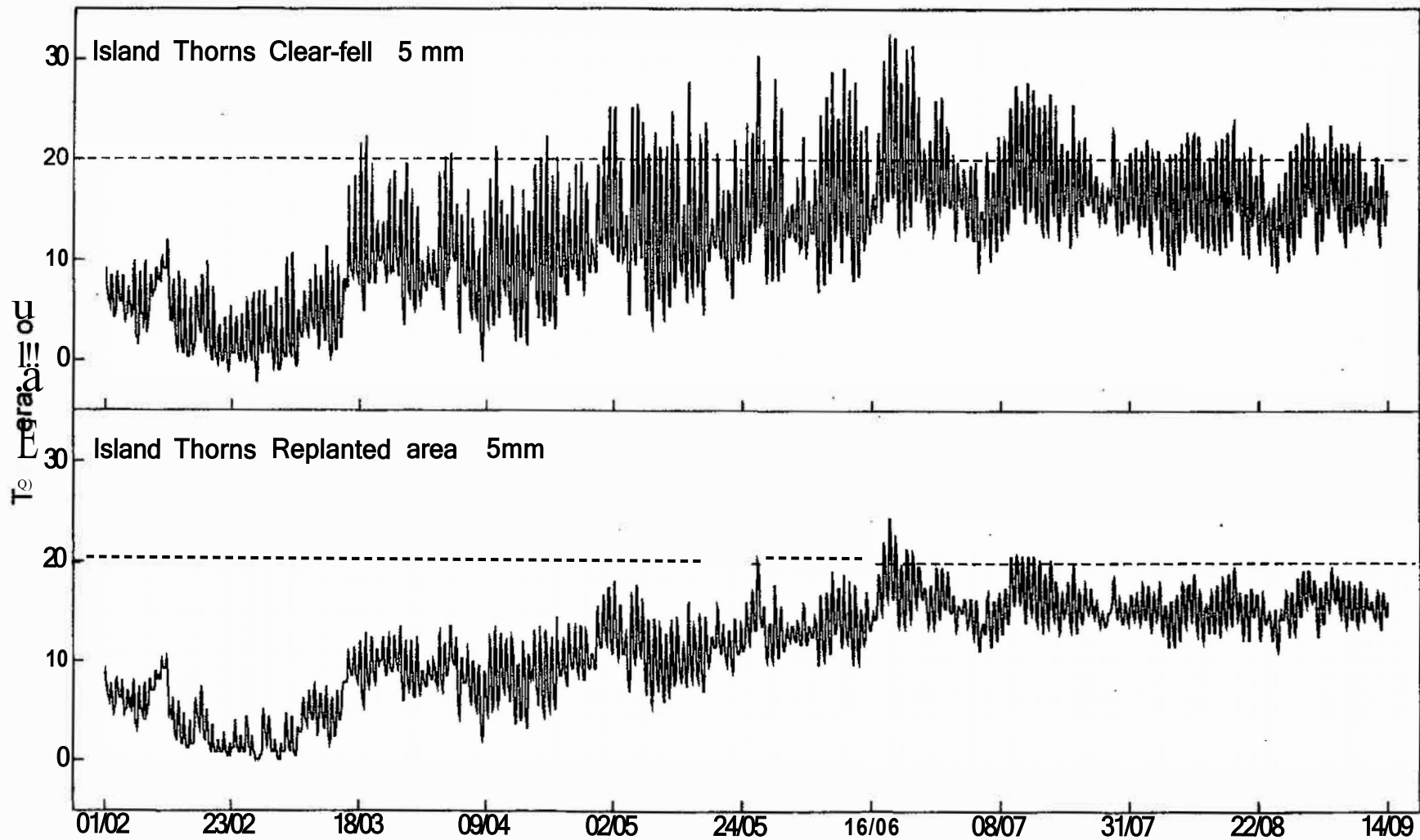


Fig 3 Maximum Daily Temperature (°C) in 2005 at all four sites with loggers at 5 mm depth

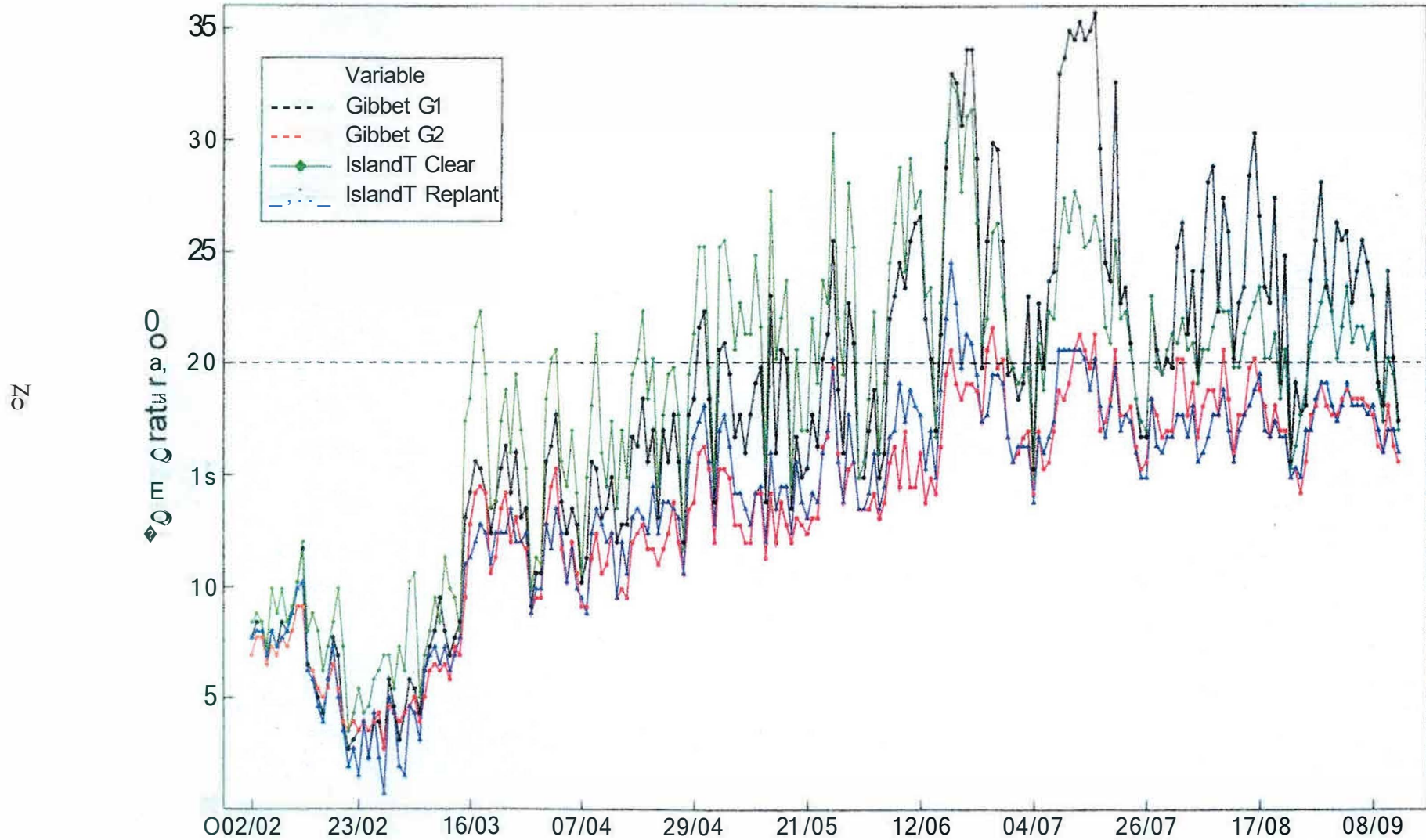


Fig 4. Numbers of days April-July with temperature >19.9 oC at Gibbet Wood and in the cleared and replanted areas at Island Thorns (Belgian cicada site in 2001 shown for reference (Loggers at 5 mm)

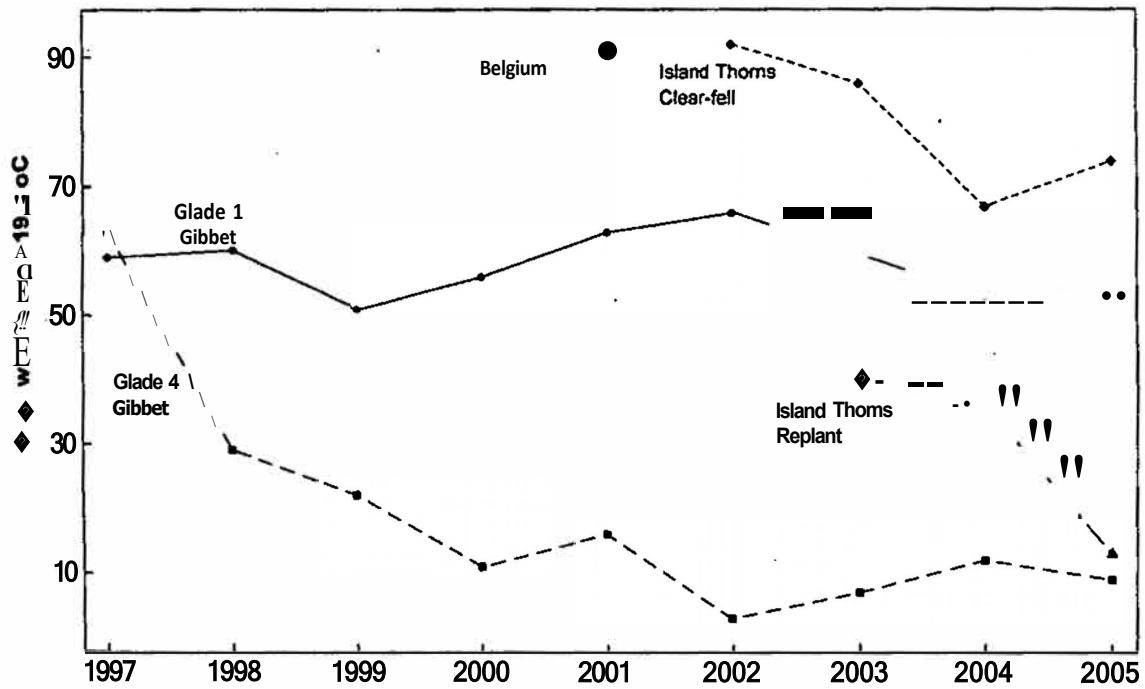
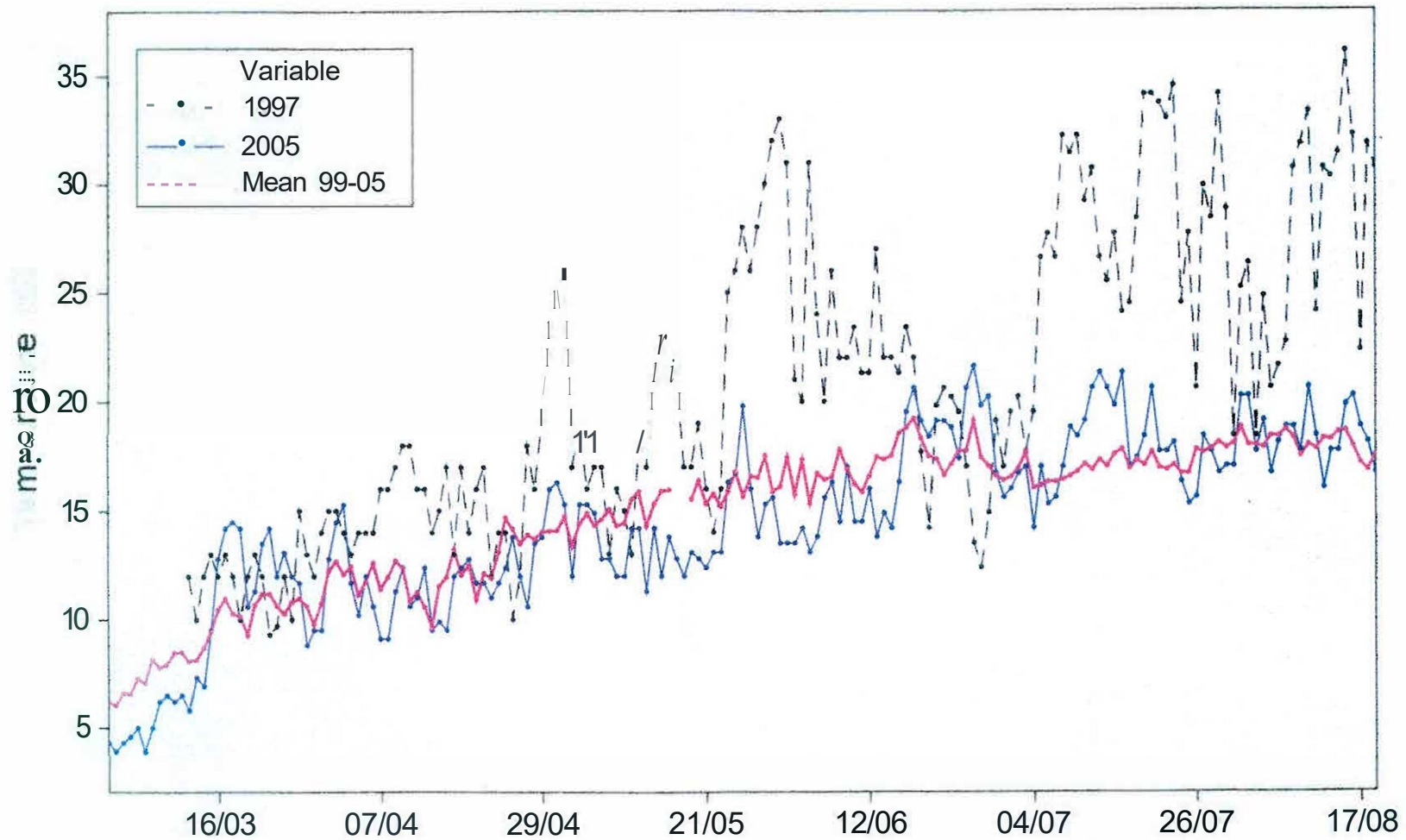


Fig 5. Maximum daily temperature oC March to August in Glade 4 at Gibbet Wood in 1997 (year after clearance), in 2005 (increased shade) and mean figures for 1999-2005 (logger at 5 mm)



2.3. Plates

Plate 1

Beech twigs sectioned in 2005 after initial scarring of one- and two-year old twigs in July 2000

Plate 2

2.3.1 Glade 1 - *Molinia caerulea* growing well, but shading by bracken and shrubs increasing.

2.3.2 Glade 2 - Good growth of *Molinia caerulea*.

2.3.3 Glade 3 - Oak covering part of the glade.

2.3.4 Glade 4 - Shading by bracken and shrubs increasing.

Plate 3

2.3.5 Island Thoms Inclosure, showing locations of two temperature loggers.

te 1

Beech twigs sectioned in 2005 after initial scarring of one and two year old twigs in July 2000.



Diam3 mm

Initially one year old beech twig



Diam5mm

Initially two year old beech twig



2.3.1



2.3.2

7



2.3.3



2.3.4



Island Thorns Inclosure, logger position in ex-clear-fell site

2.3.5



Island Thorns Inclosure, logger position in replant site

2.3.5

APPENDIX 1

Felling Proposals for the cicada glades at Gibbet Wood, winter 2005/06.

It is proposed that a large proportion of the 30 year old birch is removed to enable the glade to become more open and less heavily shaded to provide more suitable habitat for the New Forest Cicada *Cicadetta montana* population. The attached map shows the locations of the trees to be felled and cleared.

The birch trees selected for felling currently fall into two areas; those bordering the 'Original Glade 1' where cicadas were most abundant in the past; and those to the south of this glade where the ground slopes gently away towards the Inclosure fence.

The birch trees immediately adjacent to the original glade are currently creating too much shade on the woodland floor, creating conditions which are not ideal for cicada use/colonisation. By removing these the ground will be able to warm more rapidly during the spring and summer, and will also allow further colonisation of ground flora - an important component of the habitat which can be used for oviposition, and feeding stations for both adult and nymphal stages.

The birch trees to the south of the glade are currently casting excessive shade over the main glade area during the height of summer - again lowering the ambient temperature and creating less than ideal conditions for the species. It is proposed that these should be felled on the top on the slope with a 2 m barrier/wind break being left along the fence line of the Inclosure adjoining the golf course. This will provide shelter from the prevailing wind, maintain the shelter and warmth within the glade and provide a screen from excessive public access and use.

Other trees and shrubs present; lime, crab apple and hawthorn should be left, these provide recognised oviposition sites and a spring nectar and pollen resource for a range of invertebrate species.

A large beech tree to the south east of the original glade should be left, as should the larches and other conifers present in the felling area.

Felled stumps should be left between 6" and 18" proud of the soil to provide a source of rotting, standing wood, thus creating habitat for a range of invertebrates, including hoverflies, clearwing moths and beetles. Cut brush can be burnt on site and ideally large logs removed, alternatively these can be stacked in suitable locations at the edges of the glade.

It is also requested that the bracken growing in the cleared areas be sprayed to reduce and inhibit its growth during the summer 2006.

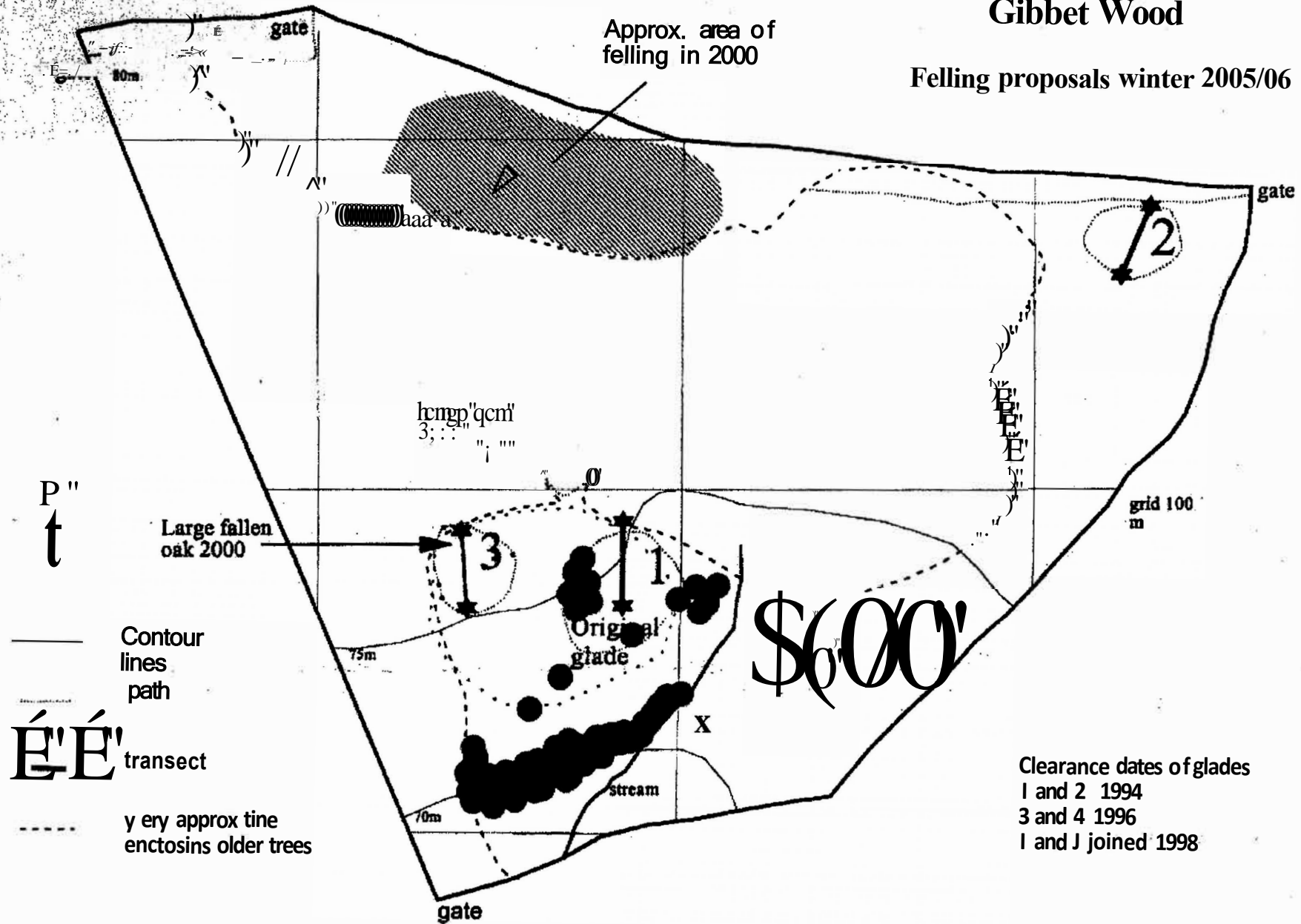
Subject to agreement of the above works by the Forestry Commission, the exact trees to be felled will be clearly marked by B J Pinchen prior to the works taking place. When a suitable date for felling and clearance work has been agreed B J Pinchen (and possibly a volunteer working party from Bristol Zoo Gardens) will be available to assist with the felling and clearing work.

Proposal submitted by the New Forest Cicada Steering Group. 01 October 2005.

By: **Jan J Pinchen, Dr Lena K Ward, Dr David Sheppard and Warren Spencer.**

Gibbet Wood

Felling proposals winter 2005/06



Clearance dates of glades
 1 and 2 1994
 3 and 4 1996
 I and J joined 1998

X Large Beech to be left

Disc trees recommended for felling

E