Appendix 1

Bitchet Common

A historical and ecological perspective

Produced on behalf of Kent Wildlife Trust for Sevenoaks District Council

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North West Kent Countryside Partnership

Kent wildlife Trust

Contents

1. Introduction

Bitchet Common is owned by the Knole Estate and managed by Sevenoaks District Council. The area is much loved and enjoyed by local people as a place to walk and ride.

An extensive consultation is taking place to look at whether management of the Common could be introduced that would increase people`s enjoyment of the area.

The Common is a SSSI (Site of Special Scientific interest) and as part of the process, Kent Wildlife Trust carried out an ecological survey of the area. Isabel Sturdy of the North West Kent Countryside Partnership used the results of the survey to provide the following information on the historical, ecological and wider landscape context of the Common.

This report was supported with funding from the Jill and Q Weston Fund.

2. General site information

2.1 Site description and location

Bitchet Common and Burnt Wood (Grid ref. TQ 565535) cover an area of approx. 28.5 ha on the Lower Greensand to the south-east of Sevenoaks. They, along with several other sites in the area, are part of the manorial wastes of the Knole estate and belonged to the Sackville family for centuries.

Bitchet Common comprises mixed woodland containing sessile oak, beech and birch with some areas of dense sweet chestnut as well as rowan, whitebeam, yew and naturalised Scots pine. The northern rim of the site and Burnt Wood contain ancient woodland (Kent and Medway Biological Records, 2011). The ground flora is dominated by bracken and brambles but there are areas of open heathland containing indicator species such as heather and bilberry. Burnt Wood, on the other hand, is an almost unmanaged area of sweet chestnut, with scattered larch and a few mature yew trees. Underneath is an almost impenetrable area of rhododendron with some open areas containing woodland indicator species such as the bluebell.

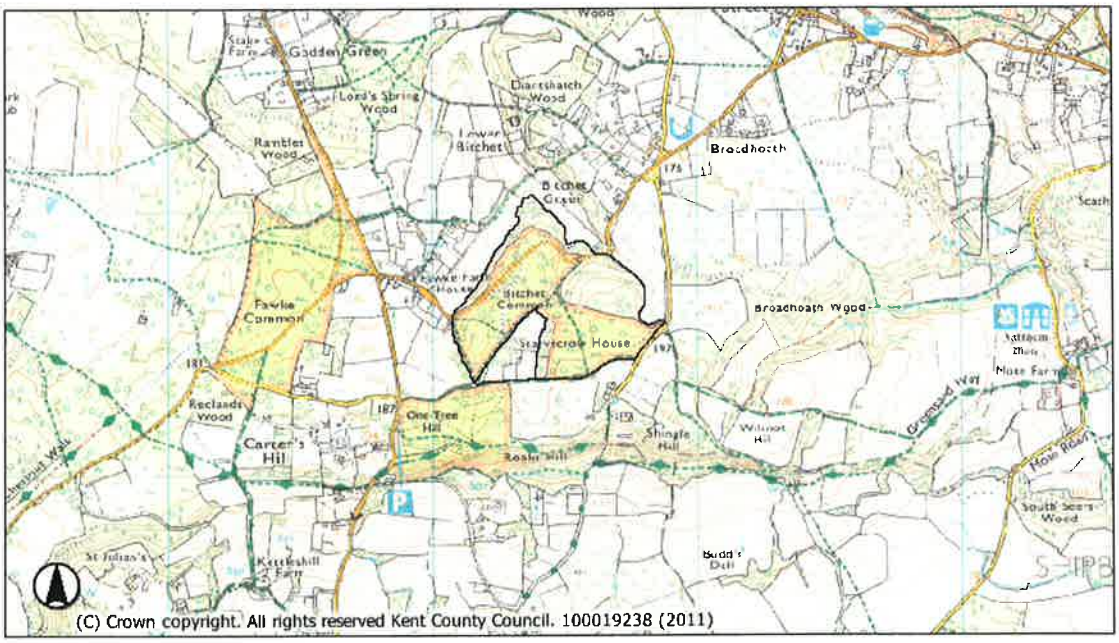


Fig. 1 Bitchet Common and Burnt Wood in the context of their surroundings

2.2 Access/ infrastructure

Access to the site can be gained easily on foot from One Tree Hill car park, which belongs to the National Trust, TQ558531. A public road runs from the south-west to the north-east of the site and private road reserved for access to neighbouring Starvecrow House and for site management runs north to south leading from the public road. The site is dissected by public footpaths with a public bridleway running along the southern boundary. The whole of the area is classified as open access land (see Fig. 2).

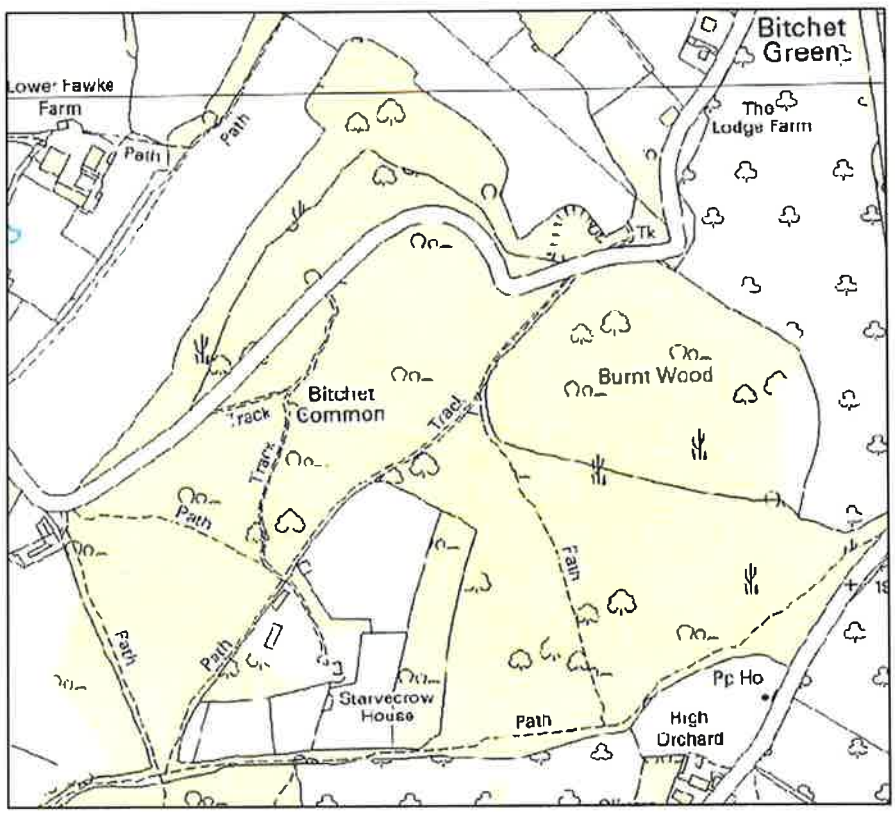


Fig. 2 Site access

2.3 Site history and past management

The site is likely to have passed into the hands of the Sackville family during the reign of Elizabeth 1 along with the rest of the Knole Estate and has remained there ever since.

Some clues as to the site's past use and management remain:

The two sections of heathland species (see Fig. 5) suggest that much of the site might have been a grazed heathland in days gone by. In the past Bitchet Common would have been managed by commoners grazing their animals, creating areas of open heath within the woodland. With changes in farming practices over the past century, grazing has ceased on the common, leading to the woodland gradually re-colonising the open areas. Indeed, Fig. 3 shows the entire southern section of the site as being open, most likely heathland.

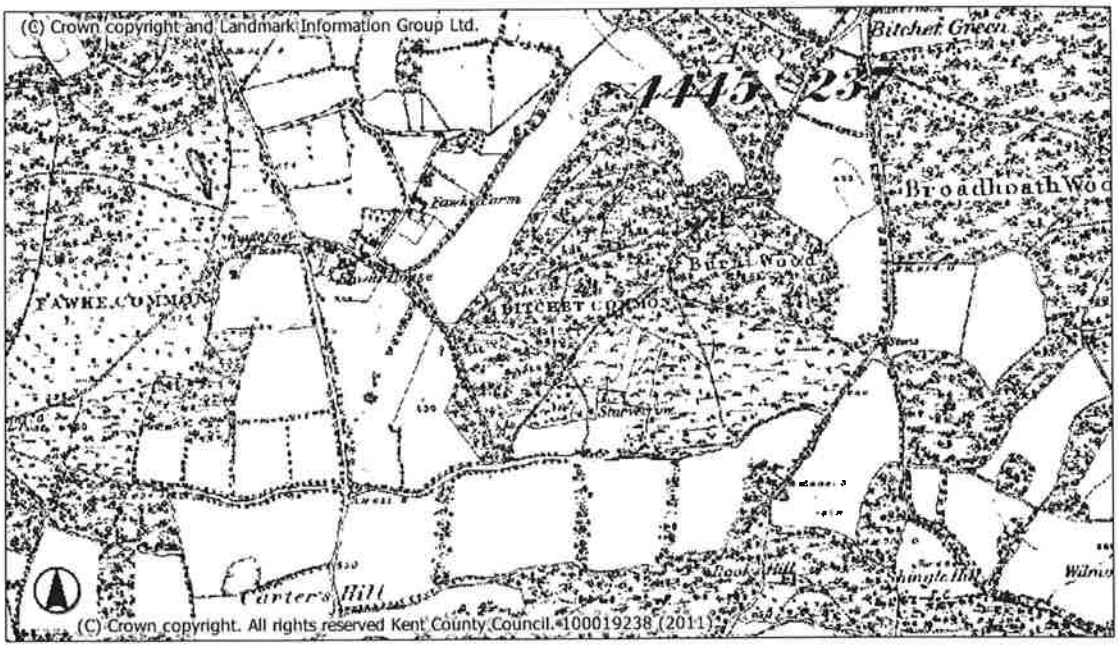


Fig. 3 1871-1890 map of Bitchet Common and Burnt Wood

An extract from a 1993 management plan by M Crighton Maitland for the Knole Manorial Waste states that, "Most of the area covered by these woodlands appears to have been wooded in prehistoric times, although grazing animals may have created and maintained transient glades. Clearing by man and grazing by domestic stock seems to have been completed by the time that the Domesday Book was compiled with the stand types varying from woodland to open heath with varying amounts of trees."

A map of the neighbouring One Tree Hill from 1911 shows the entire site as being open, one half of which was grazed grassland and the other of which was arable at the time (see Appendix 1).

Some of the woodland is believed to be of ancient origin (See Fig. 4) although there are also areas of more recent secondary and open woodland.

In Burnt Wood there is a block of approx. 20 stub pollarded pedunculate oaks. This could indicate that this part of the site was used as wood pasture, the tradition of using the same land for trees as for grazing animals by pollarding the trees to produce timber, above grazing level. If so, it is likely that the heather extended as far as Burnt Wood, since heathland species are very common on the floor of wood pasture (Rackham, 1986).

A ditch and bank runs across the centre of the site in Section 2 (see Fig. 5) which would have marked a historical boundary, probably for the management of livestock.

In Burnt Wood at TQ 56691 56385 there is a distinct depression where soil seems to have been removed in the past. It is possible that this is an old chert mine, similar to one situated close to Knole Park (Booth, 2011).

M Crighton Maitland's plan mentions that in the early 20th century some estate woodlands outside the Park were enclosed and planted with sweet chestnut for coppice. This would explain the dominant sweet chestnut in Burnt Wood.

In 1925 the site was made subject to the 1899 Commons Act and management was passed over to Sevenoaks District Council, which is obliged to manage the site in accordance with the still-current 1899 act.

The 1987 storm destroyed some 66% of tree cover in Bitchet Common. Clearance over most of the area was followed by partial restocking (20%) of the blown areas in 1989 and 1990, and natural re-growth has also restored much of the woodland cover. Some areas of 1987 fallen wood do remain, however, particularly at the southern end of the site.

Under the 1993 plan some thinning and coppicing took place on the site, through contractual works harvesting the timber. Some small areas were opened up and the increase in light to ground level lead to a rise in heath species such as heather and bilberry, but also encouraged the growth of bracken and birch regeneration.

As part of a management plan written to cover Seal Chart, Bitchet Common and Fawke Common 1999-2004 a programme of bracken control took place on Bitchet Common. This covered the two existing areas of heath (See Fig 5), one of which already contained heathland species (beneath the power lines) and one of which showed no evidence of heathland species and was intended as a trial area for heathland restoration. Measures included both spraying with Asulam and mechanical scraping of the bracken and were successful on both sections.

An electricity pylon extends across the site (see Fig 5) and the ride beneath it is subject to clearance management. This ride gives an indication of the potential effect of clearance on ground flora elsewhere on the site.

The site remains within the ownership of the Knole Estate and is managed by Sevenoaks District Council.

2.4 Relationships with the local community

Bitchet Common is owned by the Knole Estate and managed by Sevenoaks District Council under the Commons Act 1899. It lies within Seal Parish, whose councillors are currently interested in improving access to all commons within the parish. Burnt Wood is not part of the Common and owned by a local landowner, Ian Mitchell, who is open to collaborative management.

This plan has been produced independently of a 2009-2029 "Sevenoaks Commons Management Plan" by the Knole Park Estate and Sevenoaks District Council with a view to harvesting timber from the Commons and is intended to work alongside it without conflict.

The site is predominantly used for informal walking, dog walking and horse riding. Its out-of-the-way location means that fly tipping is not an issue and Sevenoaks District Council report very few problems with public use of the site.

The site borders on land owned by the National Trust (One Tree Hill), with which it shares its SSSI status. The National Trust is open to joined-up management techniques.

A private residence, Starvecrow House, is situated in the middle of the site. This residence contains grazed acid grassland and its owner has been actively engaged in the consultation process.

2.5 Conservation status

The site lies within the Kent Downs Area of Outstanding Natural Beauty (AONB) (see Fig. 4).

Part of the site (Bitchet Common) is designated SSSI (Broadleaved, mixed and yew woodland – lowland) along with the neighbouring One Tree Hill (see Appendix for citation).

The site's woodland is a Biodiversity Action Plan (BAP) priority type (Lowland Beech and Yew Woodland) which is subject to a Habitat Action Plan (HAP).

The site's heathland is also subject to a HAP, with only 16% of heathland remaining in the UK compared to its extent in the 19th century (Kent BAP, 2011).

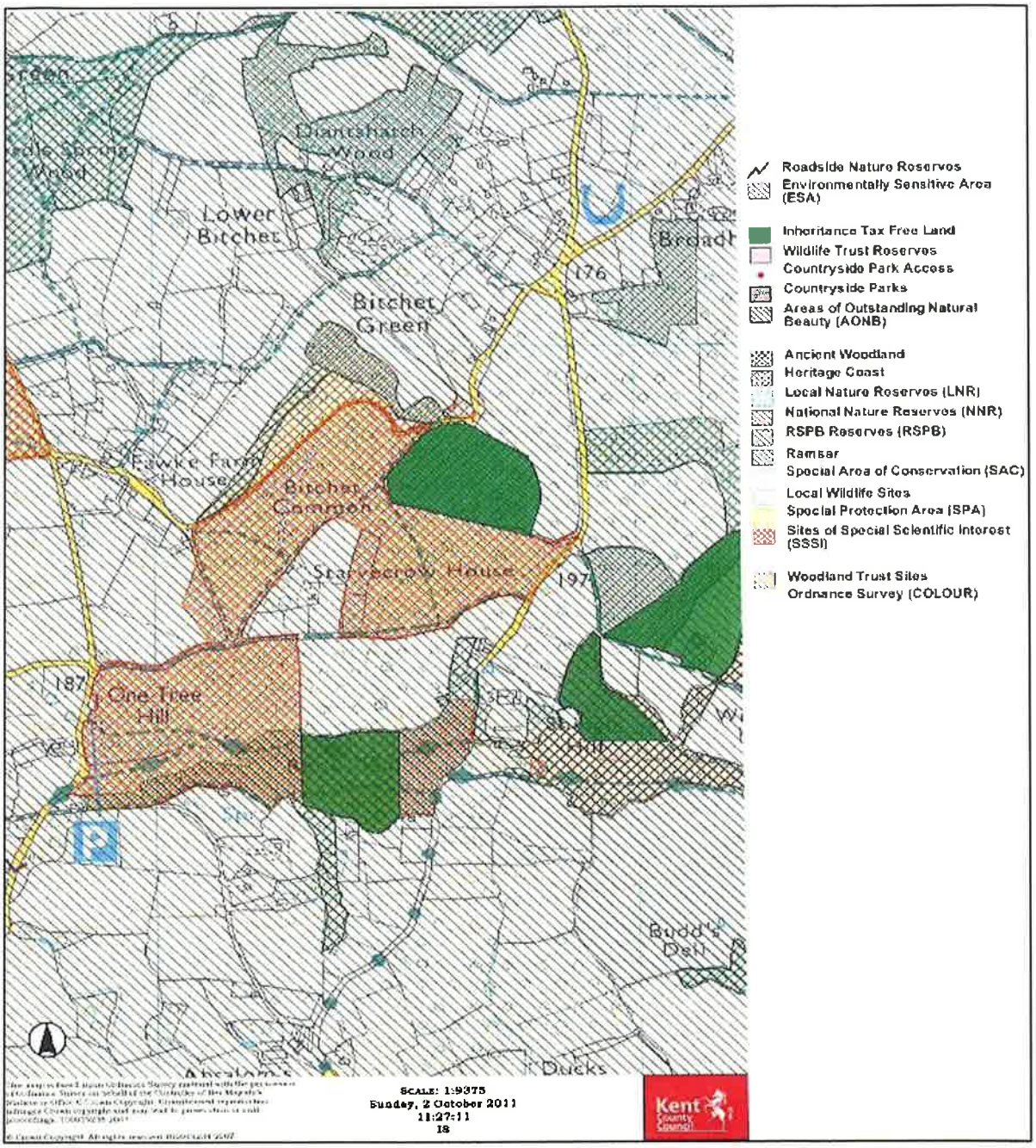


Fig. 4 Map from Kent Landscape Information System (KLIS) showing the coverage of the AONB, the SSSI and ancient woodland.

3. Environmental Information

3.1 Geology and soils

The site lies on the Lower Greensand and to the north of the site this is overlain by angular chert drift giving rise to nutrient-poor, acidic soils. This results in a series of higher plateaux and valleys with a diverse mixture of tree species.

3.2 Topography and hydrology

The site consists of high plateau areas with sloping embankments. At the foot of the ridge there are isolated small wetland areas however there is no open water present.

3.3 Summary of habitat types, flora and fauna

Surveys of the site's flora and fauna were carried out in August 2011 by Fred Booth MBE of the Kent Field Club. The full survey is included in Appendix 2.

It is recommended that further surveys are carried out in spring to pick up on early flowering species, and that a long-term monitoring programme for maintenance and restoration works is set up.

The resulting information has allowed the site to be split into 6 compartments for the purposes of this plan and a summary of the habitat types of each compartment follows.

Compartment 1
Consists of a high plateau area with sloping embankments down to the paths. It includes fine mature sessile oaks with mature beech, hazel and scattered rowan and whitebeam trees. Silver birch exists both as mature specimens but with a majority of younger seedling growth.

A pylon line extends across this section which has clearly been managed and beneath is a strong colony of ling *Calluna vulgaris,* with some bilberry *Vaccinum myrtillus* and wavy hair grass *Deschampsia flexuosa*. Bramble is developing.

Compartment 2
Although some heathland specialities do occur, including bilberry and wavy hair grass, conditions are different to compartment 1 over much of the area. An old ditch and bank runs across the lower area and bilberry is dominant in some places nearby.

Conditions are more open in places at the western end, near to the access track, but there is not the same heathland diversity and density as in Compartment 1.

The track along the southern boundary presents much wetter conditions. Water run off following heavy rain exposes the dense chert layer which exists under the track way.

Compartment 3
Here the main woodland cover is similar to other sections, but includes a large open plateau area with few mature trees remaining. Scots pine, whitebeam, sessile oak, holly and hazel are all found in the surrounding woodland, but only isolated mature trees, such as the Scots pine, remain in the open section.

Here the heathland community is of outstanding quality, with dense stands of ling, and with young plants seen to be developing in the few open areas. Bilberry occurs towards the north and wavy hair grass is present wherever there is any more open ground. Young silver birch is abundant and bracken is present but dominant as in other areas.

The southern area of this section adjoins a main boundary path contains abundant fallen wood from the 1987 storm.

Compartment 4
This section shows the least evidence of heathland conditions, being occupied by abundant mature trees and a carpet of bracken and bramble. Almost impenetrable conditions exist over much of the area and there is considerable rhododendron along the border with Burnt Wood and within the compartment itself. Storm damaged fallen trees are again abundant here along the southern edge. There is a signficant open area within this compartment.

Compartment 5
This is the area known as Burnt Wood, and presents a totally different woodland structure. It is an almost unmanaged area of sweet chestnut, with scattered larch and a few mature yew trees. There is a typical open chestnut woodland floor with some bluebells evident. The main under storey is a very large and almost impenetrable area of rhododendron. A few rowan seedlings are present but it is of relatively low wildlife interest at present.

One feature of considerable interest is a block of some 20 stub pollarded pedunculate oaks *Quercus robur* (see 2.3).

Much of the central area is silver birch with bracken but with no heathland plant indicators.

On the southern boundary there is a broad zone where there has been some management of the trees, including coppicing of the sweet chestnut. There is considerable open ground in which there is mature sweet chestnut, coppiced chestnut, silver birch, and yew. The ground flora consists only of a few bracken plants, and much seedling holly. Holly forms a dense thicket between the managed area and the main wood.

The main interest in this section is the small area adjoining the main cross path on the northern side, where there has been coppicing of the chestnut over a depth of some 50 metres. This is on sloping ground and adjoins the main access path. This is in what appears to be the much wetter zone across the whole site, and a different plant community exists here. Soft rush *Juncus efussus*, greater bird's foot trefoil *Lotus uliginosus*, red campion *Silene dioica*, hemp nettle *Galeopsis tetrahit*, common fleabane *Pulicaria dysenterica* ,

slender St John's wort *Hypericum pulcrum* and several fern species are found here, including lady fern *Athyrium felix-femina*.

Compartment 6

This is again in contrast to the remainder of Bitchet Common and extends north from the road down a sloping bank, very steep in places towards the eastern end. There is an assembly of mature trees adjoining the road, with beech, sessile oak and yew, and a zone of holly at the top of the steeply sloping ground. The lower levels at the western end are unmanaged sweet chestnut. At the eastern end there is a further low plateau which has an ash hazel structure with some field maple. Some mature yew and beech are also found here. The ground flora includes bluebells *Hyacinthoides non-scripta* but is thinly carpeted with bracken and bramble. Dog's mercury is abundant at the eastern end. No heathland indicator species recorded here.

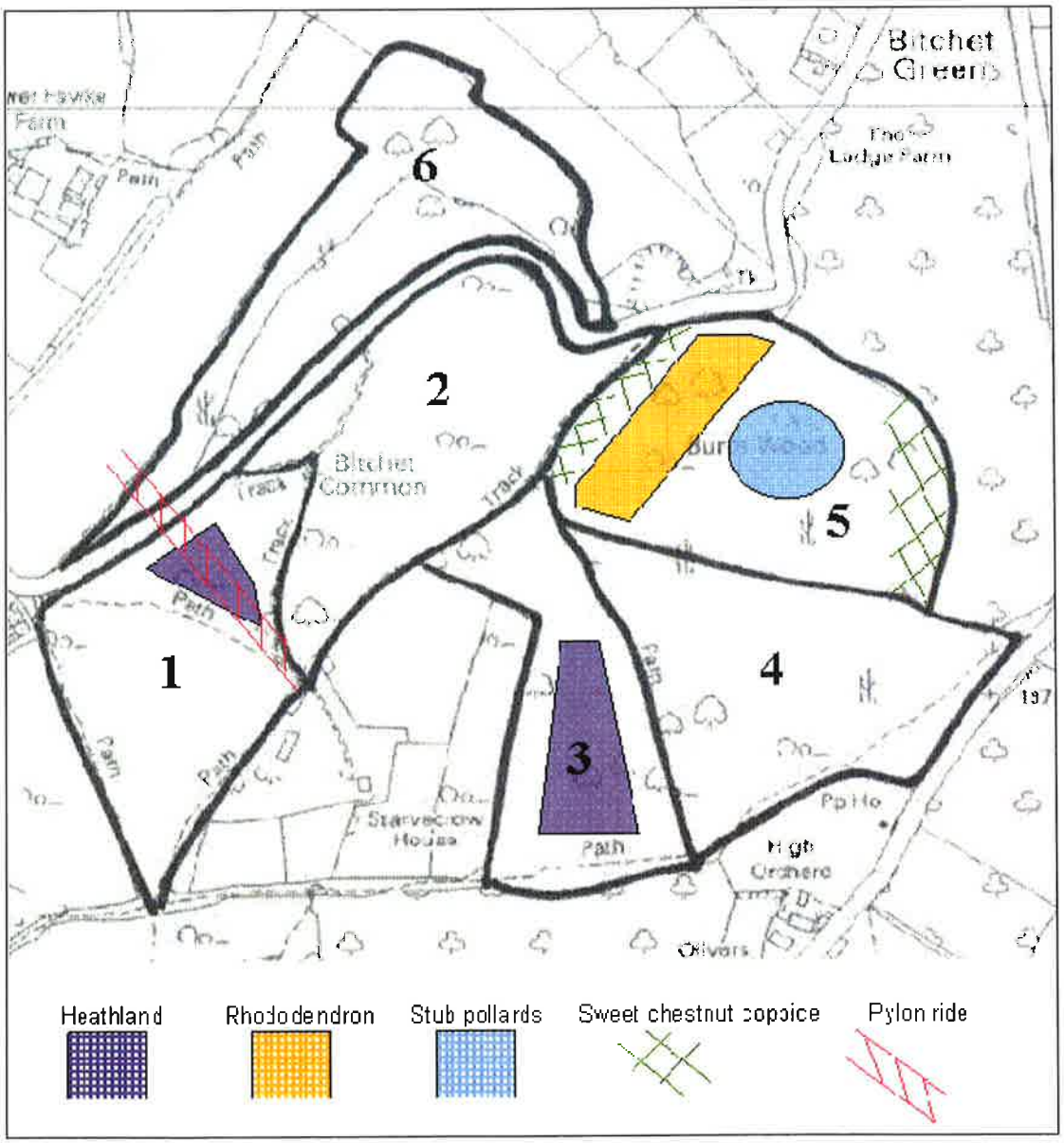


Fig. 5 Map showing site's 6 compartments and habitat features

Note: Since the above map was produced access into the whole area has shown extensive rhododendron in compartment 4 and some in 2.

3.4 Notable species

The slug *Tandonia rustica* has been noted as present at its only British locality (Natural England SSSI citation) at One Tree Hill and Bitchet Common.

Along the eastern boundary of Compartment 1 the uncommon least yellow sorrel *Oxalis exilis* was found.

The very local and uncommon fungus *Cordyceps longisegmentis* which is parasitic on an underground truffle species *Elaphomyces* was found present.

The BAP-listed moths *Lycia hirtaria* Brindled Beauty and *Aporophyla lutulenta* Deep-Brown Dart was reported on the site in 1999 (KMBRC records)

Red data book funguses *Amanita virosa* (destroying angel) and *Fomes fomentarius* (tinder bracket) were reported in 1998 and *Russula aurea* (gilded brittlegill) in 2006.

KMBRC records (2011) list roosts and non-roost sitings of the brown long-eared bat *Plecotus auritus*.

Conditions appear very suitable for the dormouse, although no evidence was found during surveys.

The common lizard is also likely to be present, although no evidence was found during surveys.

Full survey results and species lists are included in Appendix 2.

4. Wider landscape connections

As previously mentioned, the site forms part of the Knole Estate's manorial waste and has several partner commons including Fawke Common and Seal Chart. The site shares its SSSI status with the National Trust's One Tree Hill which borders on its southern side.

4.1 Greensand heaths and commons BOA

Bitchet Common and Burnt Wood sit right in the centre of the Kent BAP's Biodiversity Opportunity Area (BOA) for Greensand heaths and commons (see map in Appendix 3)

The BOA's targets are as follows:

1 Pursue opportunities for creation of acid grassland and heathland where this would contribute to the county-wide target of creating, by 2015, up to 145ha in blocks of at least 1ha and no more than 500m from other existing or new semi-natural habitat.

2 Enhance or reinstate woodland management – including wood pasture management where appropriate – and restore plantations on ancient woodland sites to native woodland; extend and reconnect fragmented woodlands where this would not conflict with grassland conservation and enhancement.

3 Pursue opportunities for quarries to be restored to maximize their

biodiversity potential. Where appropriate, seek restoration to heathland and/or acid grassland as a condition of permissions for aggregates extraction

4 Engage communities within target areas by raising awareness of biodiversity and encouraging them to get involved in biodiversity action

Targets 1, 2, and 4 can realistically be achieved with the help of appropriate management of this particular site, and have been taken into account during the preparation of the management prescriptions (see section 5.2).

Efforts have been made on sites across other counties to restore their traditional heathland sites and some efforts have been extremely successful, with those involving the joining up of local heathland sites achieving significant results and creating important wildlife corridors. Case studies can be found in Appendix 6.

4.2 Medway and Low Weald Wetlands and Grasslands BOA

Bitchet Common and Burnt Wood also sit within the Kent BAP's Biodiversity Opportunity Area (BOA) for Medway and Low Weald Wetlands and Grasslands (see map in Appendix 4)

The BOA's targets are as follows:

1 Pursue opportunities for creation of wider river floodplains with riparian corridors around natural drainage channels.

2 Pursue opportunities for the establishment, by 2020, of a new, landscape-scale, freshwater wetland complex, including fen, wet woodland, reedbed and wet grassland, in which successional processes are allowed to proceed. In this context, a 'landscape-scale' complex should be considered as extending over at least 1000 hectares.

3 Secure the appropriate conservation management of all existing Lowland Meadows.

4 Pursue opportunities to create new species-rich neutral grassland, particularly close the Marden Meadows SSSI and south of Sevenoaks, where this will contribute to meeting the target of creating, by 2015, 100ha in the Low Weald and High Weald, in blocks of 2ha or more.

5 Enhance or reinstate woodland management, and extend and reconnect fragmented woodlands where this would not conflict with grassland conservation and enhancement.

6 Continue to encourage the positive management, restoration and re-creation of hedgerows, particularly where this would reconnect other habitats or enhance the landscape, in particular where these have been removed due to agricultural intensification.

7 Improve the management of invasive species in and alongside water courses.

8 Maintain, restore, recreate and buffer ponds, particularly to establish networks of sites to support great crested newt.

Target 5 can realistically be achieved with the help of appropriate

management of this particular site, and has been taken into account during the preparation of the management prescriptions (see section 5.2).

4.3 Opportunities for Bitchet Common and Burnt Wood

The Sevenoaks District Council Green Infrastructure and Biodiversity document (SDC, 2011) states:

Lowland heath is generally present along the rides and within the clearings of the woodland on the plateau with secondary woodland having seeded into what once was open common. Examination of KLIS shows that there are still recognisable pockets or acidic grassland and heath throughout the BOA but these have become fragmented and provide no connectivity for heathland species other than those that can fly. There is a fragment of heathland which is kept free of scrub within SE04 RNR and another on the plateau of Scords Wood and Brockhoult Mount SSSI. Pockets of remnant heath can be found throughout the Westerham Mines SSSI. The species present include ling and bell heather, European gorse, wavy hair grass, tormentil (Potentilla erecta) and heath bedstraw. These fragments would provide useful stepping stones if further areas of secondary woodland were restored to heath.

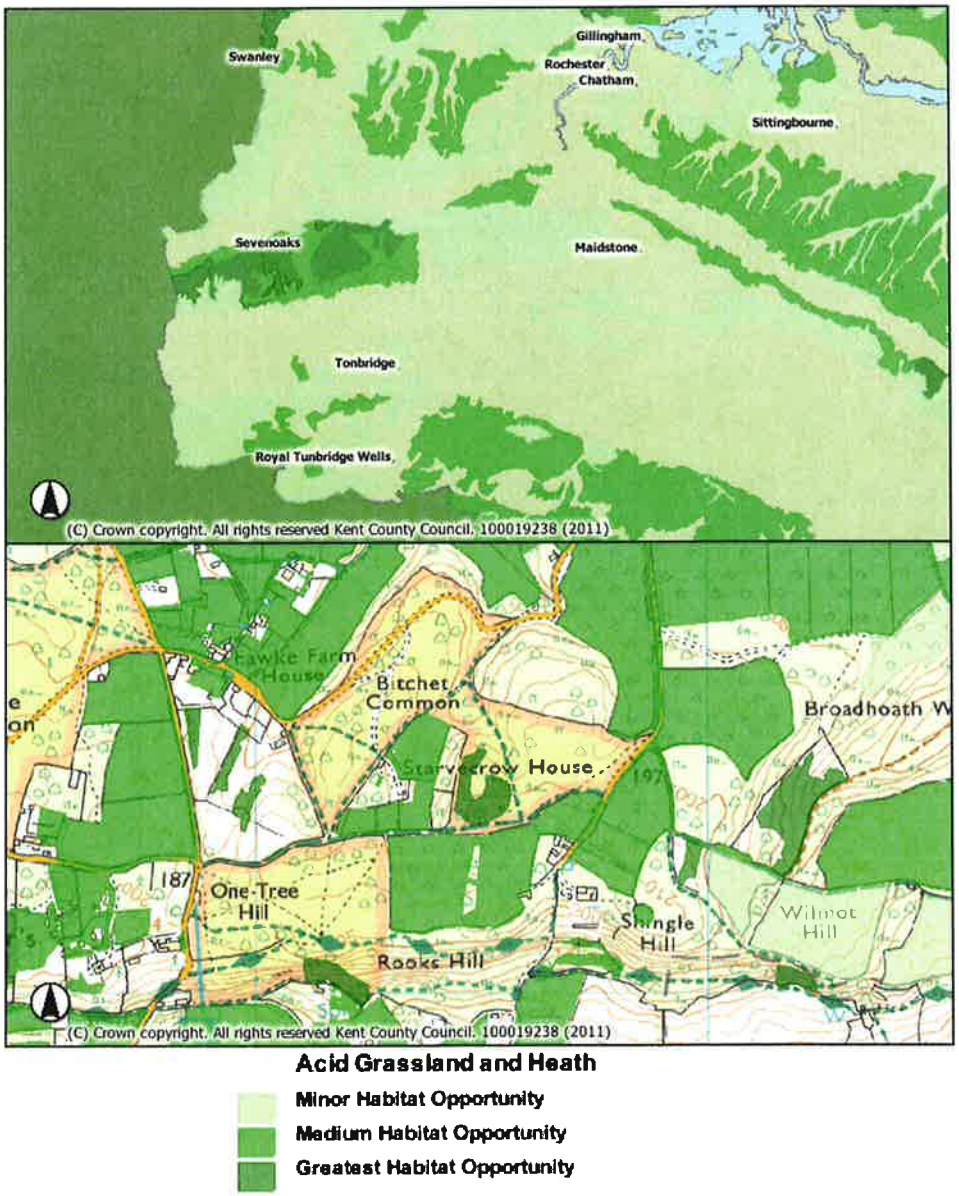


Fig 6 Maps showing distribution of heathland opportunity areas

As shown in Fig. 6 Bitchet Common contains an area classified by Kent BAP as being of "Greatest Habitat Opportunity" for acid grassland and heath, with the neighbouring Starvecrow House being classified as a "Medium Habitat Opportunity". Looking at the wider picture, there is a belt of Greatest and Medium habitat opportunities stretching east to west on either side of the site, placing it in an ideal position to form part of a corridor of heathland.

To assess the feasibility of creating such a wildlife corridor, many of the neighbouring landowners were consulted as to their opinions on collaborative management.

The following map (Fig. 7) shows the area surrounding Bitchet Common with land marked in purple representing those landowners who are interested in joint management with KWT to create habitat corridors. The map is by no means exhaustive and further investigation could cover a much wider area. Please note that boundaries are approximate.

Each parcel of land is marked with a number which corresponds to the list of landowners in Appendix 5.

Land marked with green hatching represents landowners who could not be reached, with numbers linking to related notes in Appendix 5.

As can be seen from the map, there is the potential to create a substantial corridor of collaborative management and further investigation could no doubt turn up more interested landowners.

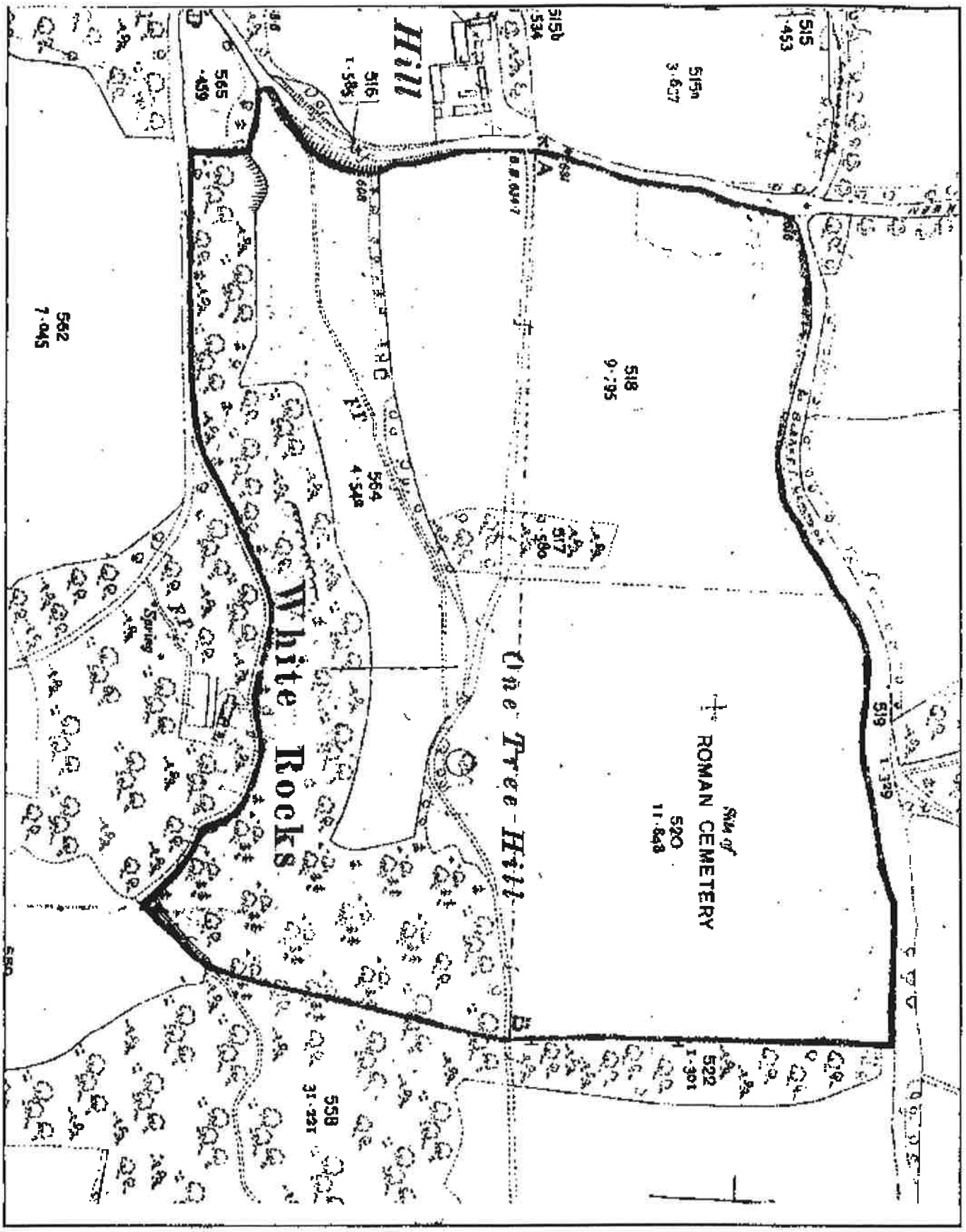
SEVENOAKS
5
6
1
3
4
2
15

Fig. 7 Map of Bitchet Common (centre) and surrounding area showing location of landowners interested in collaborative management

Appendices

Appendix 1 – Map of One Tree Hill, 1911

Map courtesy of National Trust, 2011



Appendix 2

Ecological Survey
Bitchet Common, Sevenoaks

August 2011.

Field Surveyor
Fred Booth M.B.E

Note: Following receipt of this report, further work has taken place on those areas that were inaccessible to Fred Booth. Where applicable a small update is noted on the original report.

A note is also made against the compartment numbers on Fred Booth`s report to show how they relate to the compartments on Isabel Sturdy`s report.

CONTENTS

Ecological Survey
Bitchet Common, Sevenoaks

Introduction

In accordance with the instructions of Isabel Sturdy, North West Countryside Partnership, a survey was conducted of Bitchet Common area, Sevenoaks to assist in the preparation of a management plan for the site.

The objectives of the survey were to determine botanical species present, together with incidental records of invertebrates, mammals and birds, with an assessment of the habitats present.

Observations on possible future management should also be given.

The Site

Bitchet Common comprises an area of woodland situated on heathland which forms part of the One Tree Hill and Bitchet Common Site of Special Scientific Interest. An additional adjoining woodland area, Burnt Wood, was also included in the survey area.

The location and survey area shown on the map Figure 2. The centre of the survey area is about TQ 565536.

The area has a number of well defined access paths and a public road which provide useful boundaries to various sections of the woodland and have been used for the purposes of this survey to identify seven survey areas, as shown on the Drawing Figure 2. Each section is described separately and a relevant species list included for each area.

An electricity pylon line extends across the site (see drawing Figure 2) and the pylon ride is subject of clearance management. This pylon ride is considered a very important feature as it gives an indication of how the ground flora may develop elsewhere on the site with appropriate management.

The soil structure is mainly on Lower Greensand with strong deposits of chert with a shallow soil layer, creating low nutrient mainly acidic conditions. This results in a series of higher plateaux and valleys with a diverse mixture of tree species embracing mature beech *Fagus sylvatica,* sessile oak *Quercus petrea*, ash *Fraxinus excelsior*, sweet chestnut *Castanea sativa* and yew *Taxus baccata* with holly *Ilex aquifolium,* hazel *Corylus avallana* and a strong population of mature and self set birch *Betula* species. Rowan *Sorbus aucuparia* and whitebeam *Sorbus aria* also occur.

The principal ground cover is formed by bracken *Pteridium aquilinum* with bramble *Rubus fruticosus agg.* Plant diversity is most marked along the

edges of the various paths and tracks. There are some small wetter areas at the foot of some of the greensand slopes, but no open water occurs here.

In Burnt wood, Section 6, there is a plantation of sweet chestnut, which is also found in small numbers elsewhere on the area. Here there is a strong understorey of *Rhododendron ponticum* and occasional larch *Larix deciduas* with some stub pollarded pedunculate oak *Quercus robur.*

The Survey

Three visits were made , on 16th , 22nd and 25th of August, when the whole site was walked using mainly the access paths, but also with excursions into the central areas of each of the 7 sections. A separate plant species record was made for each of the survey areas as set out in Appendix 1, but the variations are largely concerned with the pathside and roadside areas.

Surveys of woodland at this late stage of the year must of necessity be somewhat limited and fail to identify some early spring flowering species, and the very extensive bracken cover, much of which is more than 6 feet high, creates some further restriction.

Although principally directed towards the plant species present, searches were also made for evidence of protected species and incidental records were made of other species present. Photographs of habitat features were taken and a selection of this record is included at Appendix 3.

Results.

Section 1. (Section 1 on the main plan)

This is the most westerly section and, as in all other areas, includes a higher plateau area, with sloping embankments down to the various paths.

The ride edges provided most of the botanical information, but the overall diversity includes fine mature sessile oaks with mature beech, hazel and scattered rowan and whitebeam trees. Silver birch exists both as mature specimens but with a majority of younger seedling growth.

The central plateau area has a thin cover of birch with some sessile oak, beech and sweet chestnut but of primary interest is the strong colony of ling *Calluna vulgaris,* with some bilberry *Vaccinum myrtillus* and wavy hair grass *Deschampsia flexuosa*. This shows clearly that a basic heathland plant community is well established under the thin birch cover and suggests it could easily be included in a management programme to further enhance the heathland.

The main pathway between sections 1 and 2 also shows these heathland features and indicates that these adjoining sections could be linked in any management programme. A narrow pathway exists across Section 1 and Section 2, linking with the main access track which forms the boundary

between Sections 2 and 3 and then continuing across Section 3. This narrow pathway provides a good insight into the conditions which exist.

As this section slopes down towards the road, the tree cover is more mature and the heathland diversity considerably reduced.

Section 2 (Section 1 on the main plan)

This is similar in many respects to section 1, with a similar tree community and areas of ling, bilberry and wavy hair grass at the upper plateau level. A pylon line extends across this section which has clearly been managed and demonstrates how the heathland community can be developed by cutting and clearing the tree cover and bracken community. This ride has a fine assembly of ling, bilberry and wavy hair grass and also showed a better level of invertebrate interest, with meadow grasshoppers, hoverflies and bumble bees active on the flowering plants. Bramble is developing and, although this is of itself a valuable habitat for insects and nesting birds, it shows that the management must be ongoing or the value could be quickly lost. This pylon ride again shows its importance where the ride reaches the roadside, where the heathland communities are showing well, in contrast to the other woodland adjoining.

The eastern boundary of this area is formed by the main access track leading to Sarvecrow House. This track provides opportunity for some plant species to flourish in the higher light levels, and includes the uncommon least yellow sorrel Oxalis exilis. In considering future management the importance of this track as access to Starvecrow House must be considered.

The road margin also benefits from the more open conditions with a much increased plant diversity, but not indicative of heathland conditions.

Section 3 (Section 2 on the main plan)

This is a substantial area between the road and two of the main access tracks. Although some heathland specialities do occur, including bilberry and wavy hair grass, conditions are different to the previous 2 sections over much of the area. An old ditch and bank runs across the lower area and bilberry is dominant in some places nearby. Note: Rhododendron is found in parts.

Conditions are more open in places at the western end , near to the access track, which might also be included in a linked management programme, but there is not the same heathland diversity and density as in Sections 1 and 2.

The southern boundary is formed by the main access track adjoining Sections 4 and Burnt Wood Section 6.. The south side of this track presents much wetter conditions, although no open water was observed. In wetter weather conditions this was found to be a very wet area. Water run off following heavy rain exposed the dense chert layer which exists under the trackway. Water pepper becomes a dominant plant in the tracks leading across this path. See also comments under Section 6 Burnt Wood regarding the coppiced area of the sweet chestnut adjoining this path.

Section 4 (Section 3 on the main plan)

Here the main woodland cover is similar to other sections, but is of special interest as it includes a large plateau area where recent management has created a broad open area, with few mature trees remaining. Scots pine , whitebeam, sessile oak, holly and hazel are all found in the surrounding woodland, but only isolated mature trees, such as the Scots pine, remain in the open section. Conditions here even suggest that the open nature and heathland might support nightjar. The few taller trees could also attract tree pipit. Bird species were not abundant during this very late survey period and only wren and robin were observed, with woodpigeon, magpie, great spotted woodpecker, and signs of green woodpecker, were recorded in the vicinity.

Here the heathland community is of outstanding quality, with dense stands of ling, and with young plants seen to be developing in the few open areas. Bilberry occurs towards the north and wavy hair grass is present wherever there is any more open ground. Young silver birch is abundant and bracken is present but not in the dominating state as other areas. .

This area demonstrates how outstanding heathland conditions are a very real probability if similar management is undertaken elsewhere.

Bees were active with many hoverflies

The southern area of this section adjoins a main boundary path and it was apparent that this border of the wood had received major damage during the 1987 storm and there was abundant fallen wood across the whole section

Section 5 (Section 4 on the main plan)

This section showed the least evidence of heathland conditions, being occupied by abundant mature trees and a carpet of bracken and bramble. Almost impenetrable conditions exist over much of the area restricting opportunity for close examination of the ground flora. Attempts were made at several points to gain a reasonable access without success. A further visit in spring might show a richer plant community. Only the edges of the access paths produced any plant diversity.

The storm damaged fallen trees were again abundant here along the southern edge..

In view of the success of the management of Section 4, at a similar plateau level, it appears possible to carry out clearance management of a small selected area to determine whether the latent heathland community could be restored here.

Update August 2012 – more exploration of this section shows extensive rhododendron invasion, notably on the border with Burnt Wood and well into the section itself.

Section 6 (Section 5 on the main plan)

This is the area known as Burnt Wood, and presents a totally different woodland structure. It is an almost unmanaged area of sweet chestnut, with scattered larch and a few mature yew trees. There is a typical open chestnut woodland floor with some bluebells evident. The main understorey is a very large and almost impenetrable area of rhododendron . A few rowan seedlings are present but it is of relatively low wildlife interest at present.

One feature of considerable interest is a block of some 20 stub pollarded pedunculate oaks *Quercus robur*– indicating some past historical use of the wood which might be known to the Knole estate. It suggests it may have been used as wood pasture

Much of the central area is silver birch with bracken but with no heathland plant indicators.

Holes indicating an old disused badger sett were found at one point. Here the underlying structure of dense chert was exposed.

On the southern boundary there is a broad zone where there has been some management of the trees, including coppicing of the sweet chestnut, but suggests it may have been as a result of the 1987 storm. There is considerable open ground in which there are mature sweet chestnut, coppiced chestnut, silver birch, and yew. The ground flora consisted only of a few bracken plants, and many seedling holly. Holly forms a dense thicket between the managed area and the main wood.

The boundary between Burnt Wood and section 5 of the main survey area is not clear and in the survey this boundary was probably crossed. In one area at TQ 56691 53685 there is a distinct depression where soil may have been removed at some time in the past leaving more open ground with a wetter floor of mosses, decaying silver birch but no appreciable ground flora. There were no heathland species noted here. It is possible that this is an area where chert has been extracted, similar to the chert mining area near to Knole Park. It appears this zone was at the boundary between the two survey areas.

The depression also adjoins a steep embankment from which the rhododendron community extends for a considerable distance.

The main interest in this section is the small area adjoining the main cross path on the northern side, where there has been coppicing of the chestnut over a depth of some 50 metres. This is on sloping ground and adjoins the main access path.

This is in what appears to be the much wetter zone across the whole site, and a different plant community exists here. Soft rush *Juncus efussus*, greater bird's foot trefoil *Lotus uliginosus*, red campion *Silene dioica*, hemp nettle

Galeopsis tetrahit, common fleabane *Pulicaria dysenterica* , slender St John's wort *Hypericum pulcrum* and several fern species are found here, including lady fern *Athyrium felix-femina*.

Section 7 (Section 6 on the main plan)

This is again in contrast to the remainder of Bitchet Common and extends north from the road down a sloping bank, very steep in places towards the eastern end. There is an assembly of mature trees adjoining the road, with beech, sessile oak and yew, and a zone of holly at the top of the steeply sloping ground. The lower levels, remote from the road, at the western end are unmanaged sweet chestnut. At the eastern end there is a further low plateau whicxh has an ash hazel structure with some field maple. Some mature yew and beech are also found here. The ground flora includes bluebells *Hyacinthoides non-scripta* but is thinly carpeted with bracken and bramble. Dogs mwercury is abundant at the eastern end. None of the heathland indicator species recorded elsewhere were found here, and it appears to be a section which does not lend itself to the heathland development project.

The roadside area does provide a greater plant diversity

Observations

The survey has shown that Bitchet Common covers a diverse assembly of woodland conditions and management. It is considered that research into the historical management and uses of the site would provide valuable information to support any proposed management programme

In a significantly large area on the higher plateau areas there are strong signs of a heathland community, and in Section 4, where there has been a recent clearance this become very well established.

Elsewhere on the plateaus of Sections 1 and 2 there is a large area where the mature trees are limited and a silver birch community exists with bracken and strong populations of the heathland indicators ling, bilberry and hair grass. The area also extends into the edge of Section 3, but here the main understorey is bracken although bilberry is abundant at lower levels near the minor access path . The managed pylon ride through section 2 shows clearly the benefit of tree control and cutting of the vegetation to produce fine stands of ling, bilberry and hair grass.

In combination these areas suggest that a heathland restoration project of some tree clearance of the birch and control of the bracken could produce a diverse heathland community.

Much of the woodland cover includes a mixture of mature tree species which suggest it may be ancient woodland. Other areas indicate a plantation structure and, in Burnt Wood, stub pollarded oaks tend to suggest possible past use for animal grazing, or more positive management for production of

oak bark – but this would be rare in the county. Section 7 is also largely unmanaged coppiced sweet chestnut.

Species accounts

The botanical survey produced a typical schedule of woodland and heathland species with none of special interest or designation.

At this early stage in the fungus season there was a good selection of typical woodland species as shown in the list attached. One species was of special interest, the very local and uncommon *Cordyceps longisegmentis* which is parasitic on an underground truffle species *Elaphomyces*. The parent tuber could not be located in the tangled tree root system so could not be identified.

The invertebrate record was poor, with only two butterfly species, few bumblebees and hoverflies and only meadow grasshopper. This was probably caused by the late season and the overall cloudy and wet weather conditions.

Common shrew (dead) was recorded, with evidence of mole, grey squirrel and bank vole . There were no feeding signs of small mammals despite the abundance of hazel nuts and fallen wood cover. Runs of bank vole were seen under some debris.

Protected species

Search was made for indications of the presence of protected species but only the possible disused badger sett in Burnt Wood was recorded. No other evidence of badger was found. The wood is clearly a suitable place for feeding and roosting bats and if any control of mature trees is proposed they should be checked for use by bats. Conditions appear very suitable for dormouse, although no direct evidence was found. .

There is no open water on site and none seen in the vicinity, and newt species are most unlikely.

No evidence of reptiles was found, although the habitat is suitable for common lizard and they are likely to be present..

No protected plant species was found.

Management Suggestions

The Google image of the site (Appendix 4) tends to show where more open conditions exist and where management to promote heathland may be appropriate.

Information on the historic management is important.

1. Clear seedling birch from selected areas of Sections 1, 2 and 3 (Sections 1 and 2 on main plan) and control bracken to produce a heathland sward. It will be necessary to introduce a continued control

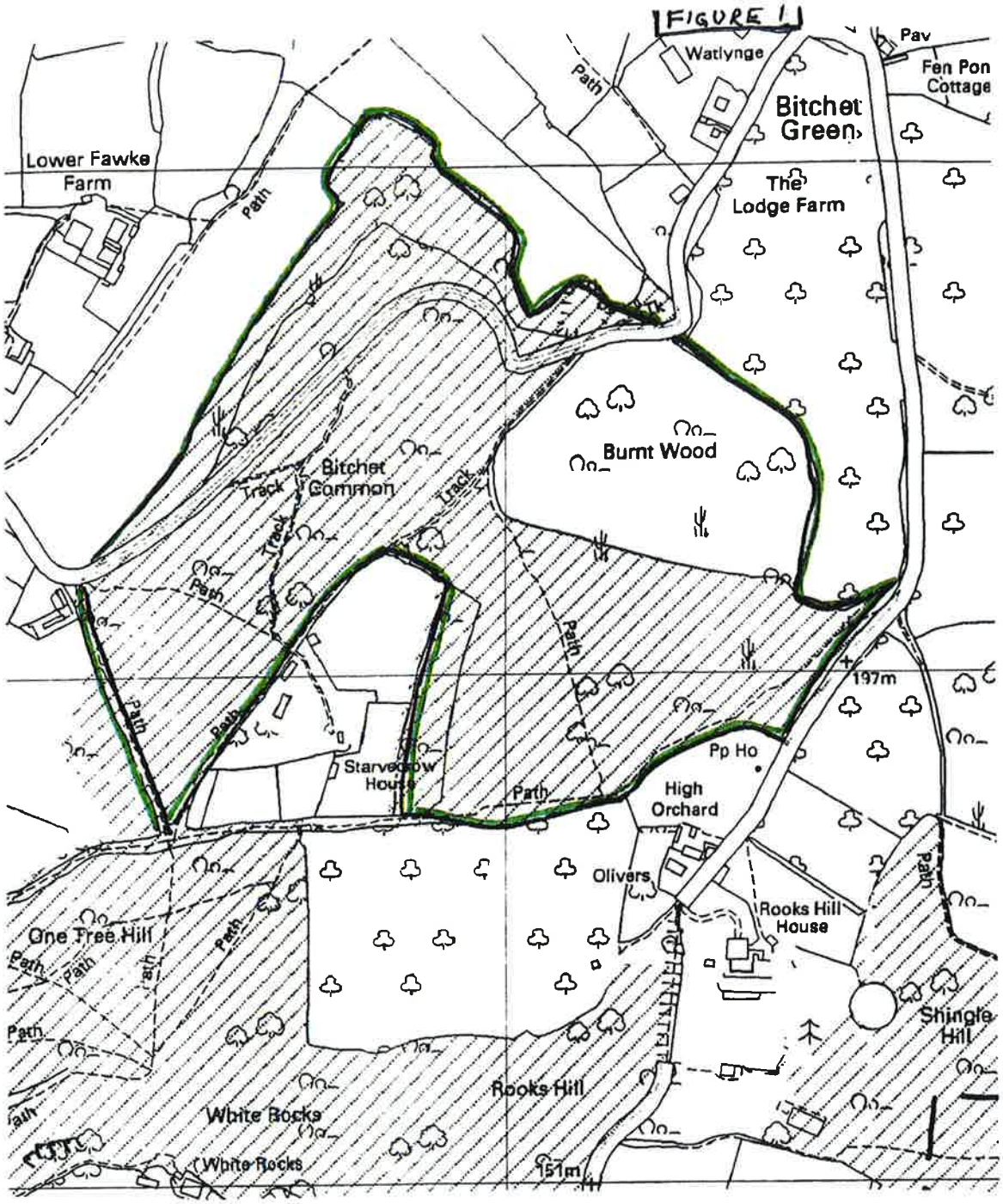
programme, probably by grazing . Some continued manual control is also likely to be necessary.

2. In Section 4 (Section 3 of the main plan) continue management of the open heather rich heathland area, with reduction of the seedling birch community. It would be of benefit to create an age structure variation in the dense heather community by selective clearance of small areas

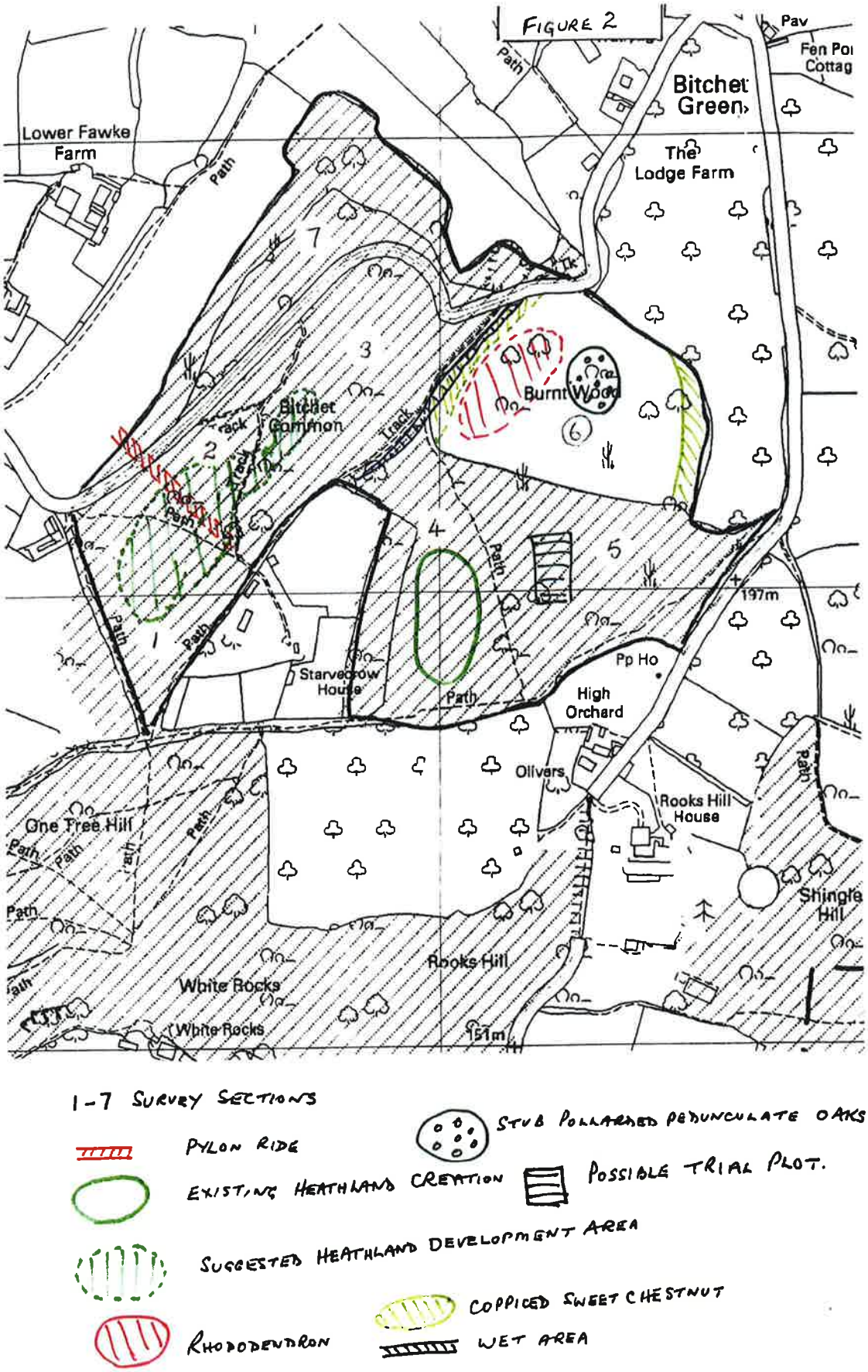
3. In section 5 (Section 4 of the main plan) where no direct evidence of the heathland plant communities was found, there are some open birch and bracken areas where it is suggested there should be a clearance of birch and control of bracken over a limited area , as elsewhere, to determine whether there is potential for a full management programme to be introduced.

4. In Burnt Wood clear and control as much as possible of the rhododendron cover. Without control the wood will become progressively reduced in diversity.

FIGURE 1



SURVEY AREA

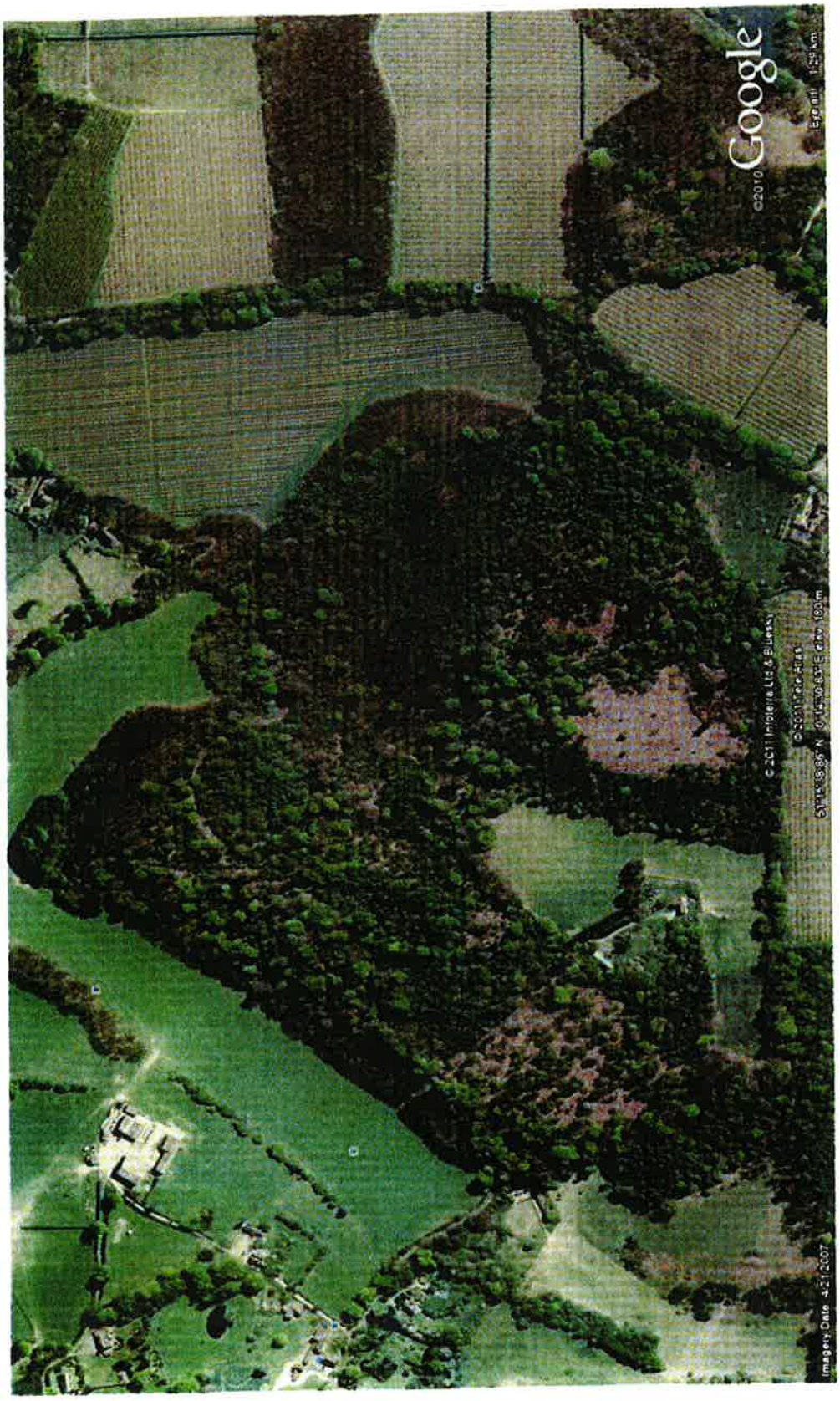


Note: More recent visits show extensive rhododendron on the border of Burnt Wood and section 5 and well into section 5 itself. Also in section 3.

APPENDIX 4


Google
©2010
Eye alt 1.29 km
© 2011 Infoterra Ltd & Bluesky
© 2011 GeoEye
51°15'35.86" N 0°12'30.85" E elev 190 m
Imagery Date: 4/21/2007

APPENDIX 4



Photographs

Bitchet Common - ling in pylon ride

Bitchet Common - view along side path of section 1 showing bilberry and wavy hair grass

Bitchet Common view along pylon ride section 2 from north

Bitchet wood Himalayan honeysuckle -pylon ride

Bitchet Common - section 2 roadside area with fallen trees

Bitchet Common - view of pylon ride where it reaches roadside bank showing ling and bilberry

Bitchet Common sweet chestnut area of Section 7 west end

Bitchet Common - view of mature tree lined roadside margin section 7

Bitchet Common - section 3 trackside heathland community

Photo 2 Bitchet Common - deep gully by track margin of section 3

Bitchet Common - track margin section 3 showing chert bedding

Bitchet Wood section 3 birch and bracken - possible clearance area

Burnt Wood - coppiced area - ferns and foxgloves

Burnt Wood path beside coppiced section

Burnt Wood path beside coppiced area showing wetter conditions with water pepper

Burnt Wood coppiced area north side showing larch

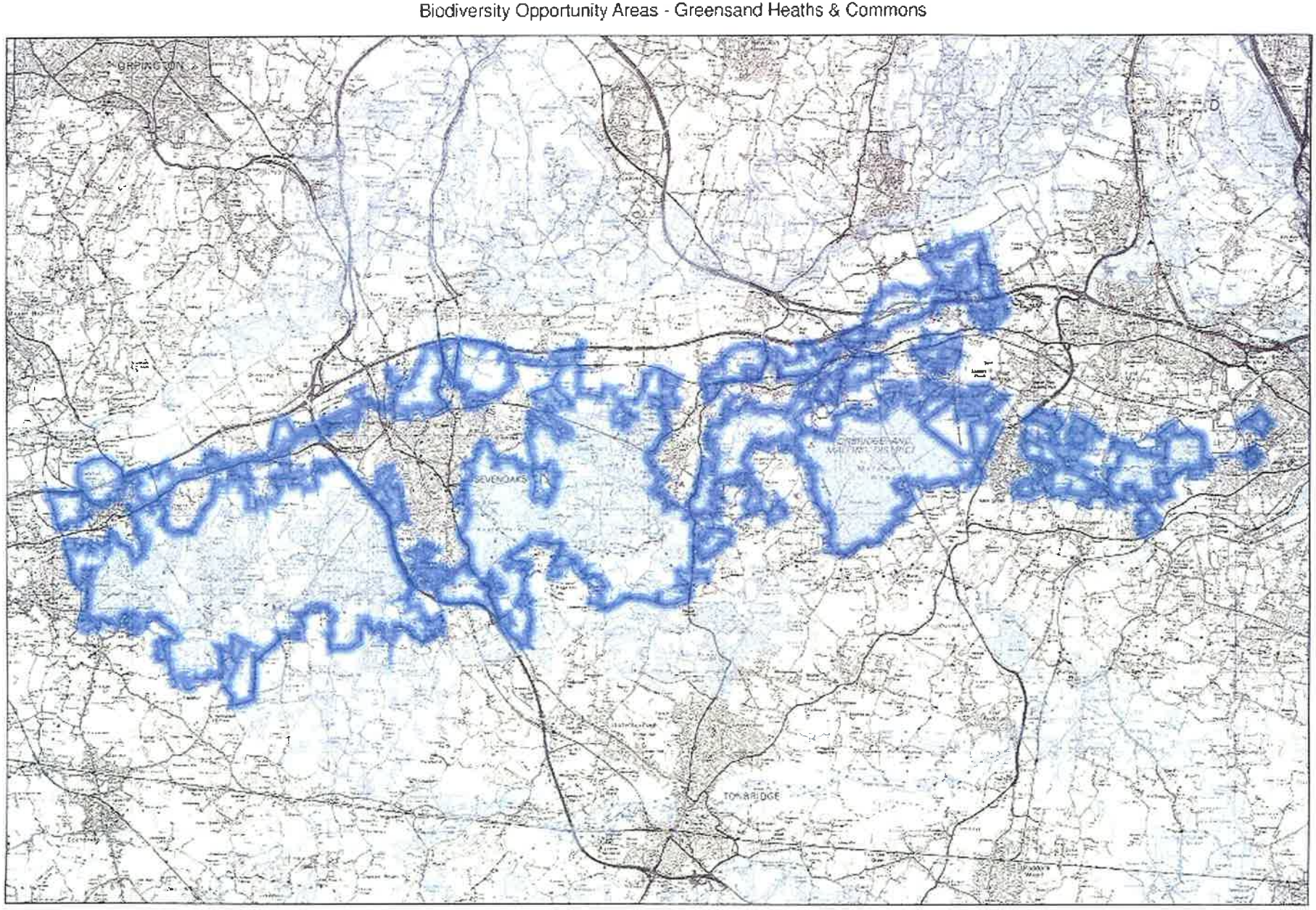
Burnt Wood rhododendron cover 1

Burnt Wood stub pollarded oaks 3

Bitchet Wood - cleared glade with ling, bracken and birch

Bitchet Wood - section 4 - cleared glade - ling and birch.

Appendix 3 – Map of Greensand heaths and commons BOA local to the study site (www.kentbap.org.uk, 2011)



Appendix 4 – Map of Medway and Low Weald Wetlands and Grasslands BOA local to the study site
(www.kentbap.org.uk, 2011

Appendix 6 - One Tree Hill and Bitchet Common SSSI citation

COUNTY: KENT SITE NAME: ONE TREE HILL AND
BITCHET COMMON
DISTRICTS: TONBRIDGE AND MAILING; SEVENOAKS
Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended.
Local Planning Authority: Tonbridge & Malling District Council; Sevenoaks District Council
National Grid Reference: TQ 570535 Area: 76.11 (ha.) 188.06 (ac.)
Ordnance Survey Sheet 1:50,000: 188 1:10,000: TQ 55 SE
Date Notified (Under 1949 Act): 1951 Date of Last Revision: 1981
Date Notified (Under 1981 Act): 1990 Date of Last Revision: –
Other Information:
This site lies within the Kent Downs Area of Outstanding Natural Beauty. Part of the site is owned by the National Trust.
Reasons for Notification:
Situated to the south-east of Sevenoaks, this site comprises an extensive area of woodland of varied composition on the Lower Greensand. Some plants and invertebrates of restricted distribution are present, including the slug *Tandonia rustica* at its only known British locality.
On the plateau, in the north of the site, the Lower Greensand is overlain by angular chert drift giving rise to acidic soils. To the south there is a steep scarp slope where the exposed ragstone (a calcareous sandstone) has resulted in contrasting soils of more base-rich status. These varying soil types are reflected in the woodland composition. Much of the woodland is believed to be of ancient origin, though there are also areas of more recent and open secondary woodland.
Bitchet Common has acidic soils supporting mixed woodland: sessile oak *Quercus petraea* and beech *Fagus sylvatica* predominate together with coppice of birch *Betula* sp. and some sweet chestnut *Castanea sativa*. Other tree and shrub species present include hazel *Corylus avellana*, holly *Ilex aquifolium*, yew *Taxus baccata*, whitebeam *Sorbus aria* and rowan *S. aucaparia*. The ground flora is dominated by bracken *Pteridium aquilinum* and bramble *Rubus fruticosus* agg. whilst other species such as heather *Calluna vulgaris*, bilberry *Vaccinum myrtillus* and heath bedstraw *Galium saxatile* are also frequent. The plateau of One Tree Hill supports a similar vegetation, though here there is also dense scrub principally of hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa* and elder *Sambucus nigra*. The top of Shingle Wood, and the upper slopes of Broadhoath, Wet Bank and Martins Woods are also on similar soils to Bitchet Common. More mature trees are present in these areas and bluebell *Hyacinthoides non-scripta* is locally dominant in the ground flora.
The valley of Martins Wood contains damp, more base-rich soils. Coppiced ash *Fraxinus excelsior* often predominates here though there is also much hazel, field maple *Acer campestre* and alder *Alnus glutinosa*. Some large pedunculate oak *Quercus robur* standards occur. Bramble and bluebell are dominant in the ground flora of the drier areas whilst in the wettest parts they are replaced by species such as opposite-leave golden-saxifrage *Chrysosplenium oppositifolium*, pendulous sedge

Carex pendula and great horsetail *Equisetum telmateia.*
The ragstone escarpment supports woodland of varied composition. There is much neglected coppice of ash and hazel together with some mature beech. Mature wych elm *Ulmus glabra* was formerly quite frequent but many specimens have been killed by Dutch Elm Disease A range of species characteristic of relatively base-rich soils is found amongst the ground flora: this includes dog's mercury *Mercurialis perennis*, early-purple orchid *Orchis mascula* and green hellebore *Helleborus viridis*, the latter species being scarce in Kent*. Bryophytes (mosses and liverworts) are frequent, including a liverwort with a predominantly western distribution, *Porella arboris-vitae* -- found here at its only known locality in Kent. The escarpment is extremely steep in places and minor landslip are not infrequent. Such events open up the woodland and thus there are some areas containing dense scrub or ruderal vegetation.
Although the invertebrate fauna has not been extensively, investigated, the ragstone escarpment in particular is known to support a variety of species of interest. The large and distinctive slug *Tandonia rustica* was discovered here, for the first time in Britain, in 1986. Also present are two nationally scarce** snails, the point snail *Acicula fusca* and Rolph's door snail *Macrogastra rolphii*, both of which are typically found in ancient woodland. This is also the only known Kent site for the bristletail *Dilta hibernica.*
* Scarce in Kent: recorded from between 1 and 5% of the 2km x 2km tetrads in Kent.
** Nationally scarce: recorded from between 16 and 100 10km x 10km squares in Britain.

Appendix 7 - Case studies: heathland restoration projects on the Greensand ridge

The long, curved belt of the Wealden Greensand runs across Kent parallel to the North Downs and through Surrey, moving south to adjoin the Hampshire Downs before curving back eastwards to run parallel with the South Downs in West Sussex.

Bitchet Common's sloping topography, belts of ancient mixed woodland and remnant heathland make it typical of this belt. The site shares not only its characteristics with other greensand sites, but also their challenges and threats. The loss of open heathland commons to encroaching birch, oak and pine scrub has been noted across the Greensand belt due to a decline in traditional management regimes such as grazing. This is resulting in the loss of the Greensand's characteristic open views from tops of hills, as well as forcing the rapid decline of heathland species.

There have been some successful programmes to restore remnant corridors of heathland on the ridge, of which two are detailed below and might provide an insight into how a similar programme might come into being in Kent.

Case study 1 -The Heathlands of the Greensand Ridge Project

The Greensand Trust, in partnership with other organisations (Natural England, RSPB, the Wildlife Trust, Bedfordshire Rural Communities Charity and the Farming and Wildlife Advisory Group), has been delivering this project since 2008 to deliver improvements across the whole of the Ridge in Bedfordshire.

The programme's targets are as follows:

1. Maintain the 2007 extent (37.5 ha) and condition of lowland heathland in Bedfordshire and Luton
2. By 2010 achieve favourable condition on 12.5 ha of lowland heathland, then maintain: **Project target = 12ha**
3. Restore by 2020 5 ha of lowland heathland that no longer meets the priority habitat definition. Restore an additional 14 ha by 2030: **Project target = 10ha**
4. Re-establish 20 ha of lowland heathland by 2010 and an additional 110 ha by 2030: **Project target = 5ha**
5. Create by 2030 at least one patch of heathland larger than 30 ha
6. Maintain the 2005 extent (131 ha) and condition of acid grassland in Bedfordshire and Luton: **Project target = 2ha**
7. Achieve by 2020 favourable condition on 15 ha of acid grassland, and on an additional 37.5 ha by 2030: **Project target = 5ha**
8. Restore by 2015 32.5 ha of currently degraded or relict acid grassland: **Project target = 3ha**
9. Re-establish by 2020 10 ha of acid grassland from neglected, semi-improved or improved grassland, or arable land.

This is being achieved by carrying out works across 14+ sites along the Greensand ridge combining practical restoration works, ongoing biological

monitoring and public consultation. A co-ordinated grazing programme is also being established.

The full project report can be found here:

http://ukbars.defra.gov.uk/uploaded/progress_reports/ef9083df00c94354b01ae22b8b10365f.pdf

Case study 2 - The Sussex Wealden Greensand Heaths (SWGH) Project

This is a 5-year lottery funded partnership project, led by the Sussex Downs Conservation Board working with Tomorrow's Heathland Heritage, Department for Environment, Food and Rural Affairs (DEFRA), English Nature, National Trust, West Sussex County Council. The Project has over £750,000 to help conserve and restore heathland in West Sussex. The majority of this has come from a HLF grant.

More than 80% of the heathland in West Sussex has been lost in the last 200 years. The Project aims to restore lost heathlands to their former glory whilst conserving existing areas. A special feature of the project is the **Serpent Trail**, a 40-mile footpath that snakes its way through the spectacular woodland and heathland scenery of the project area (countryside around Haslemere, Midhurst, Petworth, and Petersfield).

More details can be found here:

http://www.vic.org.uk/pro/heaths_project.html

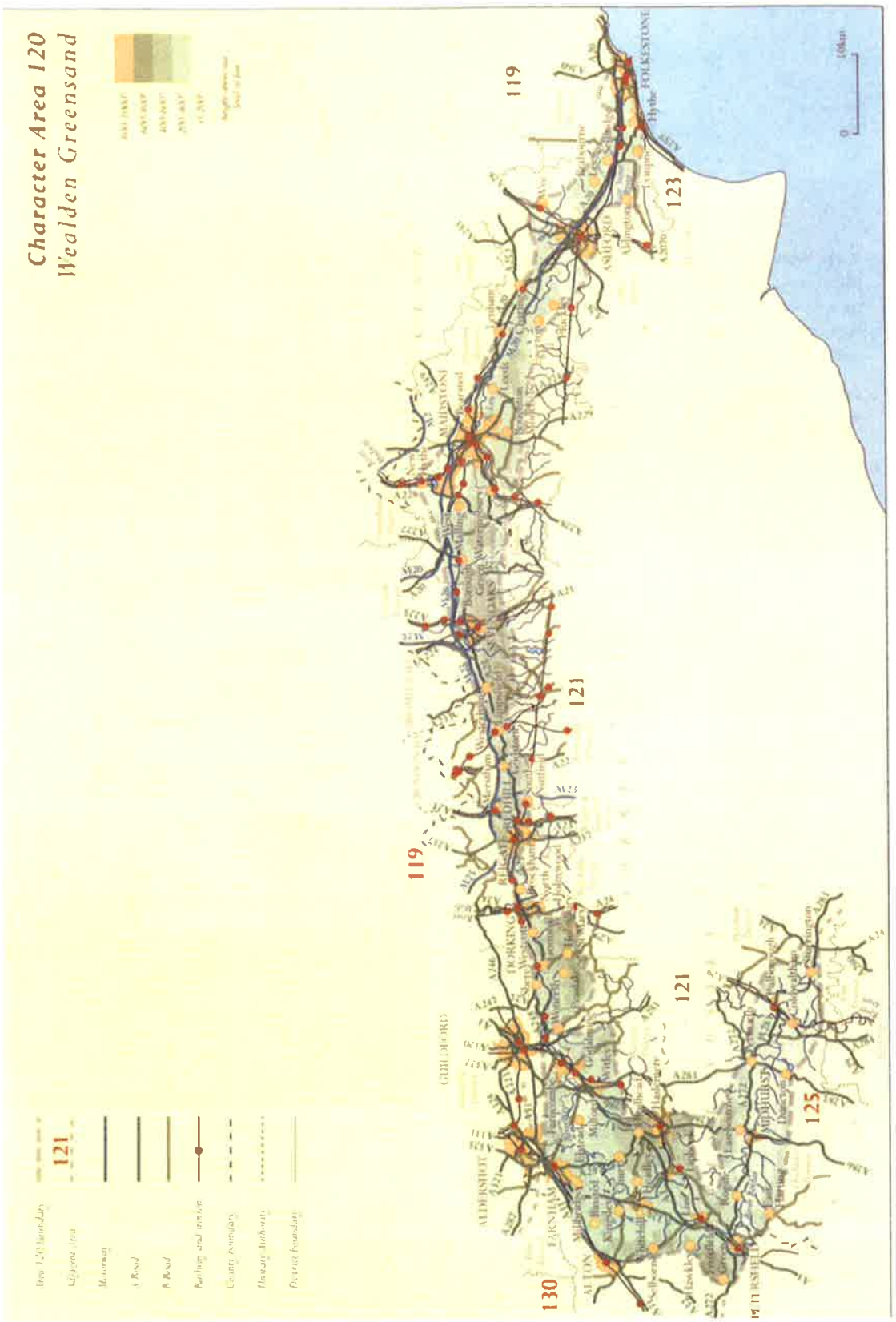


Fig. 11 Map of the Greensand belt, (Natural England, 2011)

Appendix 8 - Common Standards Monitoring Guidance for Lowland Heathland

The condition of UK lowland heathland habitats is assessed using Common Standards Monitoring Guidance for Lowland heathland habitats from the Joint Nature Conservation Committee (JNCC). This involves making an assessment of individual sites using a series of habitat characteristics or attributes and standardised condition categories. Sites are judged to be in favourable condition when the objectives for the habitat are being met. Sites with habitat that is in an unsatisfactory state are classed as in unfavourable condition. Where this is the case, a judgement is made as to whether the habitat is: (i) recovering – moving towards the desired state; (ii) declining – moving away from the desired state; or (iii) no-change – neither improving nor declining. Sites are classed as destroyed (partially or completely) when the habitat is no longer present and there is no prospect of being able to restore it.

The full document of monitoring guidance, "**Common Standards Monitoring Guidance for Lowland Heathland** Version February 2004 ISSN 1743-8160 (online) ", can be found at:

http://jncc.defra.gov.uk/pdf/CSM_lowland_heathland.pdf

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