

APPENDIX B To Fittleworth Objection

Response to the Ecology and Nature Conservation Report for Horncroft Sandpit

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Introduction

This response relates to the Ecology and Nature Conservation (ENC) sections of the Application. The proposals for Horncroft Sandpit or quarry combine phased quarrying with phased planting during the lifetime of the works, together with additional planting immediately following. The aim of such planting, together with the removal of key species from site before works start and the provision of nest boxes after, more or less makes up the ecological mitigation measures for this proposal. Much of the argument for supporting the proposal is based around the Applicant's emphasis on these measures for not merely counteracting the impacts but actually improving the site for wildlife.

This report identifies the shortcomings of this assertion and concludes that the ecological impacts of this quarry will be major during the next 20 years, and significant for up to some 50 years. It is possible that in the longer term, the ecology of the site will again have become interesting and beneficial for some species, but this will be a changed environment.

Context

The Horncroft quarry site lies on a belt of sand that historically supported the lowland heath that resulted from woodland clearance and livestock grazing; the names of Horncroft Common, Coates Common, Sutton Common and Horncroft Warren all refer back to this past time. Heathland habitats typically support a relatively low diversity of species (in terms of numbers of different species and variation between species); this is identified within the ENC report but not explained well. The demanding environment that the dry, acid sand produces, together with light grazing, typically gives rise to species that are either well adapted to these extreme conditions, or species that do particularly well once competition from other species is reduced. Heather and dry acidic grassland typically dominate, often supporting a number of well adapted insects, reptiles and birds that are considered to be rare generally. The quarry site at Horncroft sits adjacent to the open heath of Lord's Piece which was restored as part of the Sussex Wealden Greensand Heaths Project; indeed one of the country's newest long distance footpaths, the Serpent Trail, skirts the quarry site to 'showcase' some of the finest heathland and woodland landscapes in the South East.

However, modern land use choices for these sandy areas have meant that the extent of the heathland habitat is much reduced, to the extent that the lowland heaths of Southern England are rare habitats. Because the fertility of the sand is so low, the land is not conducive to growing demanding crops, so large areas of this sand ridge were planted with coniferous plantation as part of the UK's post war timber sustainability programme. Smaller plantations such as those found on the slopes of Horncroft Warren and, until recently, on the adjacent land of Lord's Piece and Coates Castle park were also commonplace. In fact, the value of this timber is typically low which has meant that unless grants are awarded to help with the cost of felling, much of the timber remains as standing.

'The beautiful and internationally rare lowland heath habitat, 80% of which has been lost since the early 1800's, often through neglect and planted woodlands'¹ so their conservation has been the focus of government grant funding. The nature conservation value potential of Horncroft is demonstrated by the nearby SSSI at Coates Castle, the Greensands Heath conservation activities on Lord's Piece and Sutton Common, and the designation of the SNCI at Horncroft Pasture. Recently on Coates Castle SSSI and Lord's Piece, conifers have been felled and birch scrub removed.

Horncroft habitats

Like so many areas along this sandy ridge, and for good reasons, the Horncroft quarry site has most recently been managed in ways that have not encouraged a heathland vegetation. The slopes of Horncroft Warren still support some coniferous plantation and are used by pheasants reared locally, and the field of Mansby below has supported free-range pigs in rotation with maize; these management choices have most likely led to a lower than potential average ecological value. When describing the quarry site, the ENC report emphasises the pig field and the conifers, yet acknowledge that simple low impact land management changes would improve ecological value of the site.

Broadleaved habitats: The report describes the broadleaved habitats but fails to acknowledge the real impact that the removal of these areas will have prior to quarrying. Some $\frac{1}{3}$ of the site is deciduous woodland and scrub. Most significant are the mature deciduous trees that may have established between 1845 and 1876², most of which are pedunculate oaks. Their situation on the lower north-facing slopes, together with the sandy soil, is probably the reason that they have adopted wonderful, twisted forms that give a magical quality to these parts of the site. They also occur on the eastern and the western boundaries of the site along the bridleway. Other established trees such as sweet chestnut (once coppice), and stands of younger but relatively mature birch, are also features of the slopes of Horncroft Warren. Referred to as Category A and B trees in the Application, the

¹ The Serpent Trail Official Guide

² Based on research of relevant Tithe Maps and OS maps

mature, or 'veteran' oaks effectively form an extension into this small valley from the ancient woodland located to the south of the site. These veteran trees³ are in the mature stage of their life and have important wildlife features including hollowing or associated decay fungi, holes, wounds, multi stems and large dead branches.

The ENC report notes that '*mature pedunculate oak standards also occur in other locations around the Site as scattered trees on the edges of various compartments Such veteran specimens would be considered as of significant value for historical and biodiversity reasons in their own right*'. It also states '*Studies of foliage eating invertebrates found that oak (including pedunculate and sessile) supported the greatest number of species at 284 with silver birch third supporting 229*'.

Birch has high conservation value providing a light, open canopy that gives a light shade on the woodland floor. This allows varied ground flora especially mosses, grasses and flowering plants to grow and a wide range of insects, birds and many other animals. The Chaffinch, Tree Pipit, Willow Warbler, and Robin are characteristic to Birch woodlands. You may also find the Woodcock, Nightingale, Woodpecker or Redpoll⁴.

Coniferous plantations: With regard to the plantations that cover about 1/6th of the Site, the Douglas fir, larch and Cyprus have little to commend them for wildlife. The Scots pine, however, is a native tree (although not naturally occurring in the South of England) and is excellent for wildlife when mature, and some of the pines on site are indeed mature or relict. It is of interest to note that the ENC report states that '*by comparison with the deciduous species mentioned above Scot's pine was found to have 91 associated invertebrate species placing it 8th in the list of tree species*', which is higher than many native broadleaves. Lichens and insects grow around and in the cracks on the trunk. Birds such as the Siskin, Great Spotted Woodpecker, Great Crested tit and Crossbill can feed well around a Scots Pine⁵.

Ground flora: In terms of floristic diversity on acid soils, we would expect this to be low even in the broadleaved woodland. Generally, the enclosed canopy and low fertility of the soil means that the ground flora is sparse, and under the mature plantations is spartan. Nevertheless, contrasting to the findings in the ENC report, bluebells are abundant under the broadleaves and along the ancient banks, together with some wild daffodils; these species suggest that these areas may have been undisturbed for centuries. The ENC report acknowledges the presence of limited strips of acid grassland and the probability of former heathland under some of the plantations, which suggests that simply by removing the plantations it is likely that the desired heathland and acid grassland would re-establish from the suppressed seed bank in the soils. This is likely to be far more effective than trying to establish these habitats on the floor of the worked out quarry.

³ The Woodland Trust Ancient Tree Hunt

⁴ Forestry Commission factsheet: <http://www.forestry.gov.uk/forestry/infd-5nlfap>

⁵ Forestry Commission factsheet: <http://www.forestry.gov.uk/forestry/infd-5nlfap>

The apparent poverty of the ground vegetation encourages the view that these are relatively unimportant woods for wildlife, but in fact the opposite is the case⁶. Rather than considering the flora of Horncroft as isolated units, it is more relevant to recognise the rich floristic mosaic of oak/birch/chestnut woodland and scrub, stream, heathy and acid grassland rides, adjacent ancient woodland, species rich pasture, ponds and restored lowland heath, of which Horncroft is a part. And we should not forget the importance of the deadwood from fallen broadleaved trees which support many woodland wildlife species such as epiphyte lichens, fungi and wood-utilising beetles⁷.

Habitat summary: Thus we ascertain that the broadleaved habitats covering $\frac{1}{3}$ of the site are of high ecological significance and that there will be ecologically significant adverse impact of local significance during extraction. The ecological potential for the plantation areas which cover $\frac{1}{6}$ of the site to revert to heathland, and for the Mansby field for the field cricket without quarrying, is high. With quarrying plus restoration, we would expect to see some new habitats established in the long term, but we believe the impact on the botany of the site would still be adverse.

It is noted that the ecological mitigation of the quarry proposes significant areas of new planting using native species, and relies heavily on the presumption that this planting will not only mitigate the ecological impacts of the development, but will result in the site being of higher ecological value than is presently the case. Unfortunately, planting into sand presents problems due to the dry conditions, low fertility, poor root development and poor anchorage, and much of the ground substrate left on site after quarrying is likely to be loose and unstable. For these reasons the establishment rate and growth rates of new planting within the quarry area is likely to be very low, and for *'planting on freely-drained, drought-prone sites there is a high risk of failure'*⁸. That is not to say that it will be impossible to create better habitats, but to emphasise that this is likely to be over optimistic.

The large block of mixed deciduous planting on Horncroft Common (which interestingly will include Scots pine, possibly as a 'nurse'), will be more successful as this will be on reasonably fertile arable land and easy to maintain. While establishing acid grassland and heath, particularly on Mansby would be appropriate on the existing field should the pigs be permanently removed, it is likely that these habitats will be much slower to establish in the bare compacted pit left by quarrying; even in favourable conditions, heathland is notoriously difficult to establish in the short term.

Finally, new planting will be vulnerable to browsing and, due to the extreme conditions in the quarry, will require on-going management input; it is notable that birch scrub invasion

⁶ Practice Guide: The Management of Semi Natural Woodlands 1. Lowland Acid Beech and Oak Woods. Forestry Commission 2003.

⁷ Practice Guide: The Management of Semi Natural Woodlands 1. Lowland Acid Beech and Oak Woods. Forestry Commission 2003

⁸ Practice Guide: The Management of Semi Natural Woodlands 1. Lowland Acid Beech and Oak Woods. Forestry Commission 2003

of Lord's Piece presents a problem for the management of this area (although this may be due to a seed bank present in the cleared soil). The ENC report states that rabbit protection will be employed but deer protection seems to have been overlooked; this will be essential in this location and carries with it its own landscape impact.

As such, we agree that there will be *significant adverse impact of local significance in the short term*, but we believe that there will also be *major adverse in the long term*.

Aquatics

Horncroft stream is intermittently dry, but appears to always retain pools of water even during the driest weather. As such, it forms an interesting ecological feature in this otherwise dry site. The Applicant proposes to retain the stream and its margin as a raised strip through the centre of the quarry site. Being sand, the banks of the stream are vulnerable, yet they support ferns and other plants particularly on the side away from the pigs. Stream water originates from a spring and seepage and runoff from Horncroft Warren. The ENC report notes that the changes in site topography due to quarrying may affect the local water table and, presumably, also reduce the surface runoff from Horncroft Warren into the stream. While the ecological richness and number of species of conservation interest are low, the presence of water – even sporadic – is of importance in this dry sandy area. The stream feeds the River Rother which is an SNCI and possibly water vole and otter habitat, and after joining the Arun some water is extracted at Hardham. With the proposed bridge and traffic manoeuvring on the quarry floor, there is a high likelihood of some disturbance and pollution to this stream which may have some effects downstream.

Also significant, but not mentioned in the ENC report, is the SNCI at Horncroft Pasture⁹. The South Downs Joint Committee has noted: *'However, not far from the site there are two fields belonging to Horncroft Farm and it could affect the water table levels, especially the field with the pond in it. The specialised geology that this pond is situated within is very rare and very unusual. The average year situation is that the field becomes water-logged in the winter and then dries out considerably in the summer. If the pond is wet in the summer then it is full of the rare Floating Crystalwort and if it is dry then it has the largest colony of Lesser Marshwort anywhere in West Sussex. At present there are only two other known sites for it in the County. These fields are full of rare species of plant and could be seriously affected if the water levels go too low'*.

The above suggests that the aquatic impact should be considered to be of potentially County Importance rather than Local Importance, and that the impact would be *significantly adverse in the short term and adverse or neutral in the long term*.

⁹ The SNCI was formalised in April 2010, but information was previously available relating to the 'proposed SNCI' here.

Invertebrates

The ENC reports that '*during the course of the surveys three Red Data Book 3 species and nine Nationally Scarce were recorded along with the field cricket and hornet robberfly which are UK BAP Priority Species*'. Because of its endangered status the field cricket was included in English Nature's Species Recovery Project in 1991. This alone would suggest that land use management in favour of these species would be important while noise, vibration, habitat clearance and the potential to disturb surrounding habitats would be frowned upon. Although field crickets are found throughout most of southern Europe, they may never have been common in the UK. The SSSI at Coates Castle is the only naturally occurring population of field crickets, but positive land use management by the Applicant has increased their numbers and range so that they occur on Lord's Piece adjacent to the Site and, more variably, on the Mansby field. These fascinating insects with their delightful trilling in early summer, need close-cropped turf and open ground on warm, dry, sandy soil. It is thought that the presence of the pigs at Mansby, although keeping the ground open, does not allow the insects to settle permanently (though we note that the Applicant has tried low intensity pig grazing for bracken control on Coates Castle SSSI). However, if the Mansby pigs are taken off permanently we might find the crickets starting to settle permanently. In spite of the national importance of this species, we note that the ENC reports it as only County Importance, but we agree that in the short term the quarry would result in an *ecologically significant adverse impact*. We also agree that there may be a *long term benefit* to invertebrates of note.

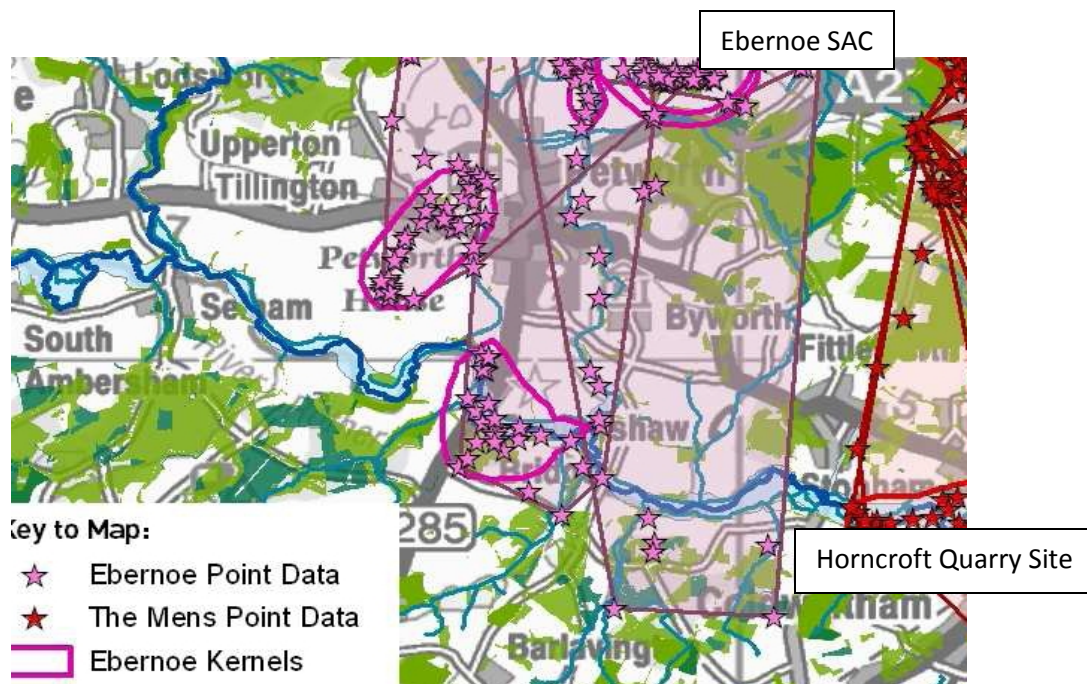
Reptiles and Amphibians

The report gives little consideration to amphibians, yet local people know of Greater Crested Newts occurring close to the quarry site, and newts, frogs and toads are all commonly found nearby. Reptiles including adders, grass snakes and slow worms are abundant in this area, although it is possible that with the clearing of the adjacent heath, there are fewer natural shelter and hibernation areas. If this is the case, then we would expect the Horncroft site to have added importance in this respect. The ENC report rightly considers the site to be of County Importance for reptiles and recognises that the proposals will cause *significant adverse impact in the short and medium term* and that in the *long term there may be some benefit* to this group.

Bats, Badgers and Dormice

These are ‘flagship’ species that are protected by legislation. There are apparent discrepancies in the ENC report with regard to the impact of the quarrying on bats. The report identifies that 39 trees with roosting potential to be lost, yet it is clear on site that there are many more likely roosting sites. It also seems that the bat surveys were undertaken rather lightly; the Bat Conservation Trust recommends 4 rather than 2 surveyors for a site such as this, to be carried out at both dawn and dusk; the ENC report notes that they were only carried out at dusk, with other surveys being automated ones. Another shortfall of the survey is that it does not acknowledge the locally known roosts in buildings situated close by and the importance that this site is likely to have for foraging. Also, the recent possible loss of roosts and foraging resulting from tree felling on Lord’s Piece and Coates Castle SSSI may mean that Horncroft will have increased importance for bats, particularly for rare barbastelle bats travelling from the Special Area of Conservation (SAC) of Ebernoe Forest (see below). *‘The energy used in this commuting is staggering so the rewards in terms of time spent foraging must be high to compensate. It is this sort of factor that makes bats, and barbastelles in particular, ideal indicators of forage habitat quality’*¹⁰. It seems, therefore, that the proposals to erect some bat boxes and to planting young trees will not be close to compensating for the impact of this quarry on bats.

Section of Barbastelle tracking map¹¹



Badgers are also known to use the site and are well known to be creatures of habit in so far as their foraging routes. The Applicant reports the existence of a substantial badger sett north of the application site, with outlying setts within the site. Because the setts on site are

¹⁰ Barbastelle Bats in the Sussex West Weald 1997 – 2008, Greenaway F. 2008

¹¹ Barbastelle Bats in the Sussex West Weald 1997 – 2008, Greenaway F. 2008

thought to be annexes the Applicant states that 'the potential loss of two outlying badger setts is not considered significant'. The report does not mention that it is highly likely that there will be major disturbance to the main sett just outside the boundary, and does not consider badgers to be worthy of registering in its impact assessment conclusions or table. In our opinion this is ill-judged.

Dormice are thought to be indicators of stable habitats that are home to many other species and are sensitive to habitat disturbance. The survey identifies that there are a number of areas on site that had dormouse potential yet did not survey all of them. As elsewhere in the report, the mature pine plantations were dismissed as not relevant yet the Dormouse Conservation Handbook¹² states that they can sometimes be found in coniferous plantations. The Applicant proposes to remove the dormice from site yet the same book¹³ advises that moving dormice is disruptive and suitable release sites may not be available. Relocation will probably be to the adjacent area of ancient woodland, however it is likely that the constant disturbance of the area emanating from the quarry will make this adjacent area less acceptable to the animal. The Applicant states the new planting on the arable field of Horncroft Common will provide dormouse habitat yet this new block will be fairly isolated and, as already stated, will take a very long time to mature or diversify to the point where it will be suitable for the dormouse, and will require long term management thereafter.

We consider, therefore, that the bat and dormouse numbers on site are quite likely to be higher than the survey indicates and that the impact on these animals due to habitat loss will be significant. We believe that the badgers will be so disturbed by the quarrying that they will abandon their main sett, and that new planting will not compensate for the short and medium term impact on the bats and dormice. Furthermore it is surprising that the Applicant regards these of only Local or Neighbourhood Importance. We believe that there will be a *significant adverse impact of County Significance for bats, badgers and dormice* in the short and long term.

Birds

Five species of Red List of Birds of Conservation Concern are included in the 32 species recorded on site. One of these, the woodlark, is a scarce breeding species in Sussex and is a high priority species found to be breeding here, particularly associated with the scrub fringes. The Nightjar is commonly heard in the summer on the adjacent Open Access Area of Lord's Piece, although there is some concern that clearance of mature pines in this area may have had a detrimental effect and mean that they are more reliant on the habitats at Horncroft. Given the above, it is again surprising that the Applicant considers the birds on

¹² Natural England

¹³ Natural England

Horncroft to be only of Local Importance. The newly formed high sand cliffs are likely to attract sand martins even during the period of working and they are known to nest in the nearby quarries of Coates and Heath End. As such, these birds may not be locally rare, nor are they, in themselves, justification for the extreme loss of habitat that will result from the quarrying. We agree that there will be *significant adverse impact, although this is probably of County Significance*, and that this may become *neutral in the long term* as scrub develops.

Conclusion

With the presence of endangered species, protected species, flora that is associated with a history that indicates a lack of disturbance, and veteran oak trees, we consider that the ecological value of the quarry site is high.

It appears that the surveys were not thorough and local knowledge was not utilised. The proposed creation of new heathland, scrub and woodland, while commendable for an existing quarry or a new one being opened on a suitably low value site, is a very poor substitute for the direct loss of the valuable broadleaved habitats, and the remainder of the site which has high ecological potential.

In general, it is felt that the Applicant has understated the ecological impacts of the development, and over-stated the predicted ecological benefits of the mitigation proposals. In particular the following are noted:

- The stated impacts on the ecology of the site 'without mitigation' are all assessed as 'adverse', and we agree with this. However, we question that by removing established habitats, relocating key species, planting, and setting up nest boxes, that these adverse impacts will establish an environment that has a higher ecological value.
- We would expect that new planting within the harsh environment of the worked out quarry will have a low establishment rate and low growth rate, and we note that the ecological value of new planting like-for-like is much lower than that for established trees and shrubs, particularly mature habitats.
- The ENC report describes the site as having low ecological diversity; this is not unusual for habitats in sandy locations, especially where land use choices include coniferous plantations, pheasant rearing and pig rearing. In reality, the conifers cover only about $\frac{1}{6}$ of the site, and include some ecologically valuable mature Scots pine. Most importantly the report under-emphasises the high ecological value of the veteran oaks and other broadleaves which may cover up to $\frac{1}{3}$ of the site. It is well known that such mature pedunculate oaks have high ecological value, and that of birch and other native broadleaves on site is also good. It is interesting to note

that many of the broadleaved tree species currently occurring on site are selected by the Applicant for the proposed new planting, including Scots pine for one area.

- The report discusses its assessment of impacts according to 'short term' 'medium term' and 'long term' time scales, yet does not define these in actual years. Since it does, however, link 'short term' to the 20 year period of quarrying (also referred to as 'temporary'), we have to deduce that 'medium term' is possibly 30 to 40 years and 'long term' may well mean 50+ years. Even if we deem the Applicant's view to be correct, we might understand that this development may result in only moderate beneficial improvement in ecological value in 50+ years but that nearly all wildlife and habitats will be adversely affected until then.

To conclude, we believe that the proposal to quarry sand at Horncroft will lead to detrimental impacts to the ecology on site during the period of quarrying and for a significant time thereafter. Even if there are eventually some 'long term' benefits to wildlife, these do not justify the removal of the veteran oaks and broadleaved woodland, the fauna and the impacts to hydrology. Moreover, it seems that significant immediate ecological (and landscape, and amenity) benefits would arise without quarrying, by carrying out simple land use management actions such as selective felling of coniferous plantations, keeping Mansby clear of pigs, and encouraging heathland establishment - all very familiar to the Applicant who has done just this in the adjacent Lord's Piece Open Access Area and Coates Castle SSSI.