

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Table 19.9: Likely significant effects resulting from operation and decommissioning, considered for each Important Ecological Feature

IEF: Deciduous woodland (includes Priority Habitat)

Potential effect:

1. Habitat loss/damage
 2. Habitat degradation
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Proposed development activity:

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to prevent erosion by wind or surface water. Construction of storage areas and access routes or tracks through the extraction site will also be necessary, for example between extraction cells and storage and processing areas/CMRF. In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Removal of c.1.5ha of high-quality deciduous woodland (Priority Habitat) habitat during the operation phase represents a moderate magnitude negative impact resulting in an overall reduction in permanent reduction in the available extent of deciduous woodland habitat during the medium to long term (3 to 32 years). The impact is irreversible and is of significance at the Local level.

The following boundary features will be retained and protected during the medium to long term (3 to 33 years) for the duration of development as part of the embedded mitigation which will provide some continuity of habitat resource availability: deciduous woodland at the north, west, and east boundaries. Potential damage to and degradation of these retained features or deciduous woodland adjoining the extraction site and proposed access route, as a result of mechanical damage to tree and shrub root systems, pollution, soil compaction and local alterations to hydrology, will be avoided through implementation of a 10m buffer zone and by best practice techniques within the CEMP, including:

- Tree protection fencing
-

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

- Restrictions on the operation of heavy plant required for construction to within the footprint of the proposed new access track into the development site

The ES Water Chapter¹⁰ (Caulmert, 2020, p17) states: “No groundwater has been identified within the upper 4.6m of the Weald Clay which would suggest that the adjacent woodland is not sustained by a shallow groundwater body. Therefore, the potential impact from the site on groundwater levels is considered to be negligible due to the absence of a water table. Due to the nature of the deposits, it is unlikely that a significant groundwater body would be encountered during the extraction operations to a maximum of 10m depth.” Significant hydrological impacts are not therefore expected.

Scale of effect:

Moderate negative effect at the Local level.

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site’s deciduous woodland.

Additional mitigation required, including means of securing implementation:

A habitat mitigation and enhancement strategy will be prepared with the objective of translocating or re-creating deciduous woodland habitat features of greatest potential value to locations outside of active extraction cells. The main elements of the mitigation strategy during the operation/decommissioning phase will include:

- Field layer vegetation, soils and smaller trees and shrubs from deciduous woodland in cells 15 to 27 will be translocated to a receptor area within cells 1 to 10, in two phases (years 10 and 22), once extraction in cells 1 to 10 is completed and the ground has been suitably prepared.
- Approximately 5.1ha of deciduous woodland habitat will be created within the extraction site. This habitat will be created progressively in tandem with the operation and subsequent restoration of cells 11 to 30.
- Within this area 30-40% will be formed of open successional habitat comprised of a mosaic of dense scrub, coarse grassland and individual trees which are left to mature.
- The deciduous woodland habitat will be created by using natural regeneration from seed sources in retained adjoining woodland, supplemented with additional native species planting where necessary and appropriate.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

¹⁰ Caulmert Ltd (2020): *Loxwood Clay Pit Development: Chapter 10: Water.*

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Long term to permanent Minor negative effect within the Site on habitat structure and species composition of importance at the Local level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Minor positive effect on habitat extent and function at the Local level

IEF: Deciduous plantation (includes Ancient Replanted Woodland)

Potential effect:

1. Habitat loss/damage
 2. Habitat degradation
-

Proposed development activity:

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to prevent erosion by wind or surface water. Construction of storage areas and access routes or tracks through the extraction site will also be necessary, for example between extraction cells and storage and processing areas/CMRF. In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Partial removal of moderate-quality deciduous plantation during the operation phase represents a minor magnitude (relative to the construction phase) negative impact resulting in a permanent reduction in the available extent of deciduous plantation habitat during the medium to long term (3 to 32 years). None of the Ancient Replanted Woodland will be directly affected. The impact is of significance at the Local level.

The following boundary features will be retained and protected for the duration of development as part of the embedded mitigation which will provide some continuity of habitat resource availability: Ancient Replanted Woodland at the north-west corner. Potential damage to and degradation of the retained feature or deciduous plantation adjoining the extraction site and proposed access route, as a result of mechanical damage to tree and shrub root systems,

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

pollution, soil compaction and local alterations to hydrology, will be avoided through implementation of the 15m and 50m buffer zones and by best practice techniques within the CEMP, including:

- Tree protection fencing
- Restrictions on the operation of heavy plant required for construction to within the footprint of the proposed new access track into the development site

The ES Water Chapter¹¹ (Caulmert, 2020, p17) states: “No groundwater has been identified within the upper 4.6m of the Weald Clay which would suggest that the adjacent woodland is not sustained by a shallow groundwater body. Therefore, the potential impact from the site on groundwater levels is considered to be negligible due to the absence of a water table. Due to the nature of the deposits, it is unlikely that a significant groundwater body would be encountered during the extraction operations to a maximum of 10m depth.” Significant hydrological impacts are not therefore expected.

Scale of effect:

Minor negative effect at the Local level.

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site’s deciduous woodland.

Additional mitigation required, including means of securing implementation:

A habitat mitigation and enhancement strategy will be prepared with the objective of translocating or re-creating deciduous woodland habitat features of greatest potential value to locations outside of active extraction cells but on land within the applicant’s control. The main elements of the mitigation strategy during the operation/decommissioning phase will include:

- Approximately 5.1ha of deciduous woodland habitat will be created within the extraction site. This habitat will be created progressively in tandem with the operation and subsequent restoration of each clay extraction cell.
- Within this area at least 40% will be formed of open successional habitat comprised of a mosaic of dense scrub, coarse grassland and individual trees which are left to mature i.e. similar in character to existing young plantation.
- The deciduous woodland habitat will be created by using natural regeneration from seed sources in retained adjoining woodland, supplemented with additional native species planting where necessary and appropriate.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

¹¹ Caulmert Ltd (2020): *Loxwood Clay Pit Development: Chapter 10: Water.*

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Negligible negative effect at the Local level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Minor positive effect on habitat extent, structure and function at the Local level

IEF: Stream

Potential effect:

Habitat degradation: pollution

Proposed development activity:

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to stabilise the soil surface and prevent erosion by wind or surface water.

Characterisation of impact, taking account of embedded mitigation:

As noted during the construction phase impact assessment, two water discharge points from the extraction site are present. The first is a culvert beneath the track to the south of the site which was dry at the time of survey and discharges into a channel through the woodland to the south before eventually connecting with the stream upstream (east) of its crossing of the access route. The second is a culvert on the western boundary which discharges into a channel, also mainly dry during the survey and flowing south-west. It eventually joins the stream at a confluence located approximately 535m downstream to the south-west of the site. Although this is a direct hydrological connection between the site and the stream, the distance from the site and influence of overland flows and other drains also discharging into the stream dilutes the connection.

During the operation/decommissioning phase there is a medium- to long-duration moderate risk of sedimentation or pollutants reaching the extraction site's southern or western discharge, potentially resulting in toxic effects to plants and aquatic organisms within the stream. The increased magnitude is more likely to significantly affect biophysical conditions within the stream due to the duration and nature of works when compared to the construction phase, although the relatively long distance hydrological connection, especially via the western discharge, moderates the risk. However, the medium- to long-duration moderate risk will be prevented through the implementation of embedded mitigation including the CEMP and surface water storage and silt settling lagoon.

Scale of effect:

No significant effect

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Cumulative effects:

n/a

Additional mitigation required, including means of securing implementation:

n/a

Significance of residual effect:

No significant effect

IEF: Species-poor hedgerows H1/H2 (Priority Habitat, Hedgerow Regulations Important)

Potential effect:

Habitat degradation: pollution

Proposed development activity:

Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out).

Characterisation of impact, taking account of embedded mitigation:

During the operational phase there is a medium- to long-duration risk of dust pollution smothering the vegetation adjacent to the track caused by up to 42 daily traffic movements. This is likely to have a greater effect on the associated ground flora of the grassland verge than on the hedgerows themselves, however, the ground flora is species-poor and dominated by common and widespread species of low conservation significance. The woody vegetation of the hedgerows is likely to be more resilient to dust pollution, both inherently and due to its slightly greater distance and elevation from the track surface, and deposited dust is at least to some extent likely to be reversed by precipitation. Despite their Priority Habitat status, the hedgerows are also species-poor and do not contain species of individual conservation significance. Overall a low magnitude impact is predicted but this is considered to be adequately mitigated by best practice techniques implemented through the CEMP and wheel washing.

Scale of effect:

No significant effect

Cumulative effects:

n/a

Additional mitigation required, including means of securing implementation:

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

n/a

Significance of residual effect:

No significant effect

IEF: Ponds P13, P14, P14a, P15

Potential effect:

Habitat degradation: pollution

Proposed development activity:

Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out).

Characterisation of impact, taking account of embedded mitigation:

During the operational phase there is a medium- to long-duration risk of dust or pollutants reaching ponds P13/P14/P14a/P15, potentially resulting in toxic effects to plants and aquatic organisms, caused by up to 42 daily traffic movements. The increased length of exposure is more likely to significantly affect biophysical conditions within the ponds when compared to the construction phase. Nevertheless, none of the ponds presently supports a rich flora and although they support amphibian populations these are common and widespread species which are not of significant conservation concern (smooth and palmate newt are protected under the WCA against trade only). A medium- to long-duration low magnitude impact is predicted but this will be adequately mitigated by best practice techniques implemented through the CEMP including wheel washing.

Scale of effect:

No significant effect

Cumulative effects:

n/a

Additional mitigation required, including means of securing implementation:

n/a

Significance of residual effect:

No significant effect

IEF: Breeding birds (including six Red/Amber list species and four species of principal importance)

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Potential effect:

1. Habitat damage
 2. Habitat degradation
 3. Displacement of animals, including disturbance to active nests
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Proposed development activity:

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to prevent erosion by wind or surface water. Construction of storage areas and access routes or tracks through the extraction site will also be necessary, for example between extraction cells and storage and processing areas/CMRF. In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Phased removal of c.1.3ha of deciduous woodland and c.1.6ha of broadleaved plantation habitats will reduce the availability of both habitats for breeding birds within the extraction site, which will reduce the number of breeding territories during the medium to long term (3 to 31 years). The effect on breeding birds of the loss of deciduous woodland is irreversible and is of significance at the Local level. The effect on breeding birds of the loss of broadleaved plantation is reversible in the medium term and is also of significance at the Local level.

Potential damage to and degradation of adjacent retained features as a result of mechanical damage to tree and shrub root systems, pollution, dust, soil compaction and local alterations to hydrology, will be avoided through implementation of best practice techniques within the CEMP.

Risk of killing and injuring birds and of damaging or disturbing active nests (which is unlawful under the WCA) will be avoided by removing vegetation outside the bird breeding season of March to August inclusive, which will be specified in the CEMP.

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Disturbance to breeding birds from construction activities, including people and vehicle movements, noise and vibration, within the extraction site and along the proposed access route has the potential to cause reductions in breeding bird territory occupancy and density in adjacent areas and loss of some breeding species.

The combined effects of habitat loss and disturbance will result in a reduction in breeding territories, and potential loss of some breeding species, including Red Listed species such as nightingale, particularly from within the extraction site. However, the site's progressive restoration will enable woodland habitats to be re-established which will to some extent provide replacement breeding opportunities as the new habitat develops.

Scale of effect:

Moderate negative effect at the Local level. The effect on breeding birds of loss of deciduous woodland habitat would be permanent. The effect on breeding birds of loss of broadleaved plantation is reversible in the medium to long term. Disturbance effects would be temporary and limited to the operational period.

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site's breeding bird assemblage.

Additional mitigation required, including means of securing implementation:

Measures proposed through the habitat mitigation and enhancement strategy will also contribute towards mitigating the negative effect of development on breeding birds, including progressively creating c.6.3ha of new or translocated deciduous woodland habitat within the extraction site as extraction cells become available for restoration. In addition the following measures will be implemented specifically to mitigate the impacts on breeding birds:

- Approximately 2.8ha of conifer plantation within compartments 29 and 37, which are outside the Proposed Development Site boundary but within the applicant's control, will be converted to semi-natural deciduous woodland to provide additional breeding habitat for affected bird species.
- For the duration of the development, selective thinning and subsequent rotational coppicing will be implemented within existing deciduous woodland in compartment 34, which is outside the Proposed Development Site but within the applicant's control, to provide additional breeding habitat for impacted species, including nightingale.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

Minor negative effect at the Local level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Neutral net effect at the Local level.

IEF: Wintering birds (including eight Red/Amber list species, four species of principal importance and two WCA schedule 1 birds)

Potential effect:

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

1. Habitat damage
 2. Habitat degradation
 3. Displacement of animals
-

Proposed development activity:

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to prevent erosion by wind or surface water. Construction of storage areas and access routes or tracks through the extraction site will also be necessary, for example between extraction cells and storage and processing areas/CMRF. In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Phased removal of c.1.3ha of deciduous woodland and c.1.6ha of broadleaved plantation habitats will reduce the availability of both habitats for wintering birds within the extraction site during the medium to long term (3 to 31 years). The effect on wintering birds of the loss of deciduous woodland is irreversible and is of significance at the Local level. The effect on wintering birds of the loss of broadleaved plantation is reversible in the medium term and is also of significance at the Local level.

Potential damage to and degradation of adjacent retained features as a result of mechanical damage to tree and shrub root systems, pollution, soil compaction and local alterations to hydrology, will be avoided through implementation of best practice techniques within the CEMP.

Disturbance to wintering birds from construction activities, including people and vehicle movements, noise and vibration, within the extraction site and along the proposed access route has the potential to reduce use of available habitats and resources in adjacent areas and consequently reduce the abundance and diversity of wintering birds.

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

The combined effects of habitat loss and disturbance will result in a reduction in the number and diversity of wintering birds, including Red/Amber Listed species, particularly from within the extraction site. However, the site's progressive restoration will enable woodland habitats to be re-established which will to some extent provide replacement foraging opportunities as the new habitat develops.

Scale of effect:

Moderate negative effect at the Local level. The effect on wintering birds of loss of deciduous woodland habitat would be permanent. The effect on wintering birds of loss of broadleaved plantation is reversible in the medium to long term. Disturbance effects would be temporary and limited to the operational period.

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site's wintering bird assemblage

Additional mitigation required, including means of securing implementation:

Measures proposed through the habitat mitigation and enhancement strategy will also contribute towards mitigating the negative effect of development on wintering birds, including progressively creating c.6.3ha of new or translocated deciduous woodland habitat within the extraction site as extraction cells become available for restoration. In addition the following measures will be implemented specifically to mitigate the impacts on wintering birds:

- Approximately 2.8ha of conifer plantation within compartments 29 and 37, which are outside the Proposed Development Site boundary but within the applicant's control, will be converted to semi-natural deciduous woodland to provide additional winter habitats and resources for affected species.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

Minor negative effect at the Local level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Neutral net effect at the Local level.

IEF: Invertebrates (including three species of principal importance and one WCA schedule 5 species)***Potential effect:***

1. Habitat damage
 2. Habitat degradation
 3. Habitat fragmentation
 4. Displacement of animals
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Proposed development activity:

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Excavation of extraction cells is expected to reach a depth of approximately 6m to 8m and will take place in a series of phases with each pair of cells being worked sequentially, starting with cells 1 and 2 and ending with 29 and 30 as shown in the clay pit design. Each cell is expected to occupy approximately 2,000m², and at any one time two cells are expected to be operational, one being extracted and the other being restored. Restoration will comprise infilling with inert waste, compaction and levelling, initially seeded with a wildflower grass mix to prevent erosion by wind or surface water. Construction of storage areas and access routes or tracks through the extraction site will also be necessary, for example between extraction cells and storage and processing areas/CMRF. In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Over the 31-year duration of the operation/decommissioning phase approximately 1.3ha of deciduous woodland and c.1.6ha of broadleaved plantation will be removed in two phases (years 10 and 22), including their component scrub fringe, openings and deadwood habitats and the invertebrate fauna they support. The following boundary features will, however, be retained and protected for the duration of development as part of the embedded mitigation which will provide some continuity of habitat resource availability for invertebrates: deciduous woodland at the north, west and east boundaries, and Ancient Replanted Woodland at the north-west corner. In addition, following infill each excavation cell will be planted, initially wildflower grass mix, and subsequently with native species trees and shrubs to enable the site's restoration to woodland. Within a period of approximately 10-15yrs restored cells are likely to be structurally similar to the existing broadleaved plantation within the Site, and will hence provide a habitat resource to invertebrates of scrub fringe habitats in particular. Nevertheless, flower rich woodland rides and openings and deadwood habitats (bark and sapwood decay) will take much longer to re-establish meaning that invertebrates associated with these resources may be permanently lost from the Site. The extent of deciduous woodland and plantation proposed to be removed during the operation phase represents a moderate magnitude negative impact of medium- to long-duration. The effect will be a permanent reduction in the diversity and abundance of invertebrate fauna in these locations, and likely displacement of invertebrates from adjacent habitats. During the operational phase there is a medium- to long-duration risk of dust pollution smothering the vegetation on land adjacent to the working area caused by excavations and vehicle movements within the extraction site. This is likely to have a greater effect on the ground flora and its associated invertebrate fauna than on trees and woodland which are more resilient to dust pollution, and deposited dust is at least to some extent likely to be reversed by precipitation. The consequent deterioration in habitat quality and food availability on land adjacent to the working area may result in a medium- to long-duration displacement of invertebrates in these locations. Invertebrate fauna associated with the retained Ancient Replanted Woodland at the north-west

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

corner of the site will, however, be protected from the impacts of dust via both the 15m and 50m buffer zone during the operational phase and the internal handling of materials inside the CMRF. The impact of dust pollution on invertebrates adjacent to the extraction site is predicted to be of low magnitude but this is considered likely to be adequately mitigated by best practice techniques implemented through the mist system, CEMP and wheel washing.

As noted during the construction phase impact assessment, there is also a medium- to long-duration risk of dust pollution smothering the vegetation adjacent to the track caused by up to 42 daily traffic movements. Again this is likely to have a greater effect on the ground flora and associated invertebrate fauna than on trees and woodland which are more resilient. However, wood white (WCA schedule 5 (protected against trade) and species of principal importance) and white admiral (species of principal importance) in particular were noted as using access tracks and adjacent habitats and are particularly vulnerable to the effects of dust as well as killing/injury or displacement and habitat fragmentation as a result of the increase in traffic movements. The wood white population appears to be centred along the existing access track and into adjacent open clear-felled areas (particularly around Great Birchfield where the track bends north towards the extraction site, and between Caddick copse and Hurst wood). The white admiral similarly can be found, sometimes in abundance, along the tracks and also small glade areas along the eastern edge of the extraction site.

The rate of operational traffic movements equates to 4.2 movements per hour between 08.00 and 18.00, and artificial lighting will not be used within the extraction site outside of these hours. There are no plans to artificially light the access route. Impacts on wood white associated with vehicle movements during the operational phase are predicted to be of moderate magnitude over a medium- to long-duration. Additional mitigation is required to adequately reduce the displacement and fragmentation effects, as well as impacts on individuals and population abundance. As noted during the construction phase impact assessment, to account for a potentially lengthy process of establishment of mitigation measures for wood white, implementation will be front-loaded to the construction stage to maximise its effectiveness.

Overall the effect of Proposed Development on the invertebrate assemblage recorded in the survey area is likely to be a permanent reduction in the diversity and abundance of invertebrate fauna within the extraction site and using the access track, likely displacement of invertebrates from adjacent habitats, and possible fragmentation of habitats used by butterflies, in particular wood white and white admiral.

Scale of effect:

Moderate negative effect at the County level

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site’s invertebrate fauna

Additional mitigation required, including means of securing implementation:

An invertebrate mitigation strategy will be prepared with the objective of translocating or re-creating habitat resources of greatest potential value to the Site’s invertebrate fauna to locations outside of the Proposed Development Site boundary but on land within the applicant’s control. For the wood white population in particular, the mitigation strategy will aim to deliver an increase in the amount and connectivity of suitable habitat through ride widening. It will provide

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

enhanced management of plantations adjoining the access track to increase the availability of larval foodplants and draw the species further away from the track, to reduce killing/injury risk from vehicle movements. These measures are further described at Appendix B.

Significance of residual effect:

Minor negative effect at the County level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Negligible negative effect at the County level.

IEF: Roosting bats***Potential effect:***

1. Habitat damage
 2. Habitat degradation
 3. Displacement of animals
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Proposed development activity:

In year 10, once extraction in cells 1 to 10 is complete, approximately 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approximately 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Trees with roosting bat potential on the northern and eastern boundaries of the extraction site will be retained and protected via embedded mitigation, but within the extraction site the following will be directly or indirectly affected over the medium to long term (3—33yrs):

- Moderate suitability trees T6, T7, T9 and T12, and low suitability trees T8, T10, T11 and T23 which, if still standing, will be felled as part of vegetation removal in year 10 to enable extraction of cells 11 to 22; and
 - Moderate suitability tree T25 and low suitability trees T14, T16, T20, T22 and T24 which, if still standing, will either be felled or exposed as a result of felling as part of vegetation removal in year 22 to enable extraction of cells 23 to 30.
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Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Felling or arboricultural works to these trees could result in destruction of a bat roost or present a risk of killing, injury or disturbance if bats are present during the works, which would constitute an offence under the WCA and Habitats Regulations. None of the four moderate suitability trees or three low suitability trees alongside the access route is currently expected to be directly affected. The rate of operational traffic movements equates to 4.2 movements per hour between 08.00 and 18.00, and artificial lighting will not be used within the Proposed Development Site outside of these hours. There are no plans to artificially light the access route.

Subject to the findings of tree climbing and aerial inspection surveys in 2021, further assessment of the site's potential to support tree roosting bats will be undertaken prior to tree felling phases which are planned for years 10 and 22. Low suitability trees are not required to undergo further surveys. Arboricultural works to low suitability trees will be undertaken in accordance with a Non-Licensed Method Statement to reduce the risk of killing/injury to bats, which will be specified in the CEMP.

Scale of effect:

Uncertain but potentially up to a Minor negative effect at the Site level. The impact (loss of mature trees with potential roost features) is irreversible over the medium to long term, however, the effect (loss of available roosting habitat) is capable of mitigation.

Cumulative effects:

None – no other approved or potential developments are expected to affect roosting bats at the Site.

Additional mitigation required, including means of securing implementation:

Additional mitigation will need to be designed and specified according to the species of roosting bats recorded (if any), roost type and status, and abundance of individual roosting bats. Mitigation may include careful removal and translocation of roost features to retained trees in suitable habitat outside of the site on land within the applicant's control, provision of artificial roost boxes, and/or exclusion of bats from their roosts prior to works.

Additional mitigation, if required, will be specified and secured in a mitigation licence to be obtained from Natural England prior to commencement. This is anticipated to include measures for the prevention of killing/injury/disturbance to individual bats and creation of replacement roost sites proportionate to the conservation significance of bat roosts affected during the construction phase (if any).

Significance of residual effect:

Uncertain but likely capable of being reduced to a Negligible negative effect at the Site level.

IEF: Foraging and commuting bats (including at least four species of principal importance and nine Habitats Regulations schedule 2 species)

Potential effect:

1. Habitat damage
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ProTreat Ltd

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Environmental Statement
Ecology

2. Habitat degradation
 3. Habitat fragmentation
 4. Displacement of animals
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Proposed development activity:

In year 10, once extraction in cells 1 to 10 is complete, approx. 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approx. 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

The CMRF will be located in the north-west corner of the extraction site within the 50m buffer around the Ancient Replanted Woodland (but outside the 15m buffer) and will house all waste processing, materials recovery and handling of fine sediments to minimise noise, light and dust pollution. Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Over the 31-year duration of the operation/decommissioning phase approximately 1.3ha of deciduous woodland and c.1.6ha of broadleaved plantation will be removed in two phases (years 10 and 22), including their component scrub fringe, openings and deadwood habitats. The reduced availability of both habitats for foraging and commuting bats within the extraction site, with a consequent reduction in cover and the abundance of invertebrate prey, is likely to displace foraging and commuting bats from the site and adjoining land. The effect on foraging and commuting bats of the loss of deciduous woodland is irreversible and is of significance at the Local to County level. The effect on foraging and commuting bats of the loss of broadleaved plantation will continue over the medium to long term and is also of significance at the Local to County level, but is reversible during restoration. The following boundary features will, however, be retained and protected for the duration of development as part of the embedded mitigation which will provide some continuity of habitat resource availability: deciduous woodland at the north, west and east boundaries, and Ancient Replanted Woodland at the north-west corner.

Following infill each excavation cell will be planted, initially wildflower grass mix, and subsequently with native species trees and shrubs to enable the site's restoration to woodland. Within a period of approximately 10-15yrs restored cells are likely to be structurally similar to the existing broadleaved plantation within the Site, and will hence provide a habitat resource for foraging bats. However, the effect of lost habitat resources experienced during the construction phase will continue into the medium term and, while this phase will then begin to recover, the effect of lost habitat resources experienced in years 10 and 22 of operation will continue throughout the medium to long term.

Potential damage to and degradation of adjacent retained features as a result of mechanical damage to tree and shrub root systems, pollution, soil compaction and local alterations to hydrology, will be avoided through implementation of best practice techniques within the CEMP.

ProTreat Ltd

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Environmental Statement
Ecology

No direct or indirect effects are predicted for foraging and commuting bats using the access route. The rate of operational traffic movements equates to 4.2 movements per hour between 08.00 and 18.00, and artificial lighting will not be used within the extraction site outside of these hours. There are no plans to artificially light the access route.

Scale of effect:

Moderate negative effect at the Local to County level. The effect on foraging and commuting bats of loss of deciduous woodland habitat would be permanent. The effect on foraging and commuting bats of loss of broadleaved plantation is reversible in the long term.

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site's assemblage of foraging and commuting bats.

Additional mitigation required, including means of securing implementation:

Measures proposed through the habitat mitigation and enhancement strategy will also contribute towards mitigating the negative effect of development on foraging and commuting bats, including progressively creating c.6.3ha of new or translocated deciduous woodland habitat within the site as extraction cells become available for restoration. In addition the following measures will be implemented specifically to mitigate the impacts on foraging and commuting bats:

- Approximately 2.8ha of conifer plantation within compartments 29 and 37, which are outside the Proposed Development Site boundary but within the applicant's control, will be converted to semi-natural deciduous woodland to provide additional foraging habitat for affected species.
- For the duration of the development, selective thinning and subsequent rotational coppicing will be implemented within existing deciduous woodland in compartment 34, which is outside the Proposed Development Site but within the applicant's control, to provide additional foraging habitat for impacted species.
- For commuting bats in particular, the ride network will be extended within retained deciduous woodland within the applicant's control to deliver an increase in the amount and connectivity of suitable habitat through ride widening.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

Minor negative effect at the Local to County level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Minor positive effect at the Local to County level.

IEF: Reptiles (including three species of principal importance and three WCA schedule 5 species)***Potential effect:***

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1. Habitat damage
 2. Habitat fragmentation
 3. Displacement of animals
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Proposed development activity:

In year 10, once extraction in cells 1 to 10 is complete, approx. 0.5ha of deciduous woodland DW1 and 0.8ha of deciduous plantation P5 will be removed to enable extraction of cells 11 to 22. In year 22 approx. 0.8ha of deciduous woodland DW1 will be removed to enable extraction of cells 23 to 30.

Traffic movements associated with the development are not expected to exceed 42 daily movements (21 in and 21 out), however, movement of vehicles, including heavy plant, within the Proposed Development Site may be more frequent.

Characterisation of impact, taking account of embedded mitigation:

Over the 31-year duration of the operation/decommissioning phase approximately 1.3ha of deciduous woodland and c.1.6ha of broadleaved plantation will be removed in two phases (years 10 and 22). The loss of their component scrub fringe and openings will result in reduced availability of shelter and foraging habitats for reptiles within the extraction site, while loss of deciduous woodland will reduce the extent of suitable hibernation habitat. Although the impact will occur in the medium term, its effect will be experienced over the medium to long term, but is reversible during restoration. The impact is of significance at the Local level.

Potential damage to and degradation of retained features adjacent to the extraction site as a result of mechanical damage to tree and shrub root systems, pollution, soil compaction and local alterations to hydrology, will be avoided through implementation of best practice techniques within the CEMP.

Reptiles present within the extraction site will also be at risk of killing and injury during site clearance and construction works, which would constitute an offence under the WCA. The rate of operational traffic movements equates to 4.2 movements per hour between 08.00 and 18.00 which is considered to be a low magnitude impact. Nevertheless, this could result in incidental risk of killing and injury (which would be unlawful under the WCA) and disturbance (not unlawful) to reptiles using trackside habitats, and lead to habitat fragmentation and displacement of animals along the access route, resulting in reduced abundance and distribution of reptiles.

Scale of effect:

Moderate negative effect at the Local level. The effect on reptiles of loss habitats is reversible in the medium to long term. The effect on reptiles of killing/injury, displacement and fragmentation is reversible but would continue over the medium to long term

Cumulative effects:

None – no other approved or potential developments are expected to affect the Site's reptile assemblage.

ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex
Environmental Statement
Ecology

Additional mitigation required, including means of securing implementation:

A Method Statement will be produced for a phased translocation of the site's population of reptiles to a suitable receptor site prior to vegetation clearance or extraction works commencing. The Method Statement and translocation can be secured via an appropriately worded planning condition.

The translocation phasing will be as follows:

- Prior to commencement of vegetation clearance within cells 11 to 21, the land will be enclosed with permanent reptile fencing to prevent reptiles from ranging onto the site during the translocation or subsequent development works. The translocation will then be undertaken in accordance with the agreed Method Statement which will remove the majority of reptiles from this phase. Prior to the removal of habitat within this phase, the site will be destructively searched for any reptiles remaining after the translocation, the methods for which will be specified in the Method Statement. The permanent reptile fencing will be left in situ and regularly checked/repared until this phase is fully restored.

The Method Statement will include reasonable avoidance measures to prevent killing/injury without translocation in the following locations:

- During clearance of woodland habitat with low suitability for reptiles during the active season (but still suitable for hibernation) within the footprint of cells 23 to 27.

The site's population of reptiles will be translocated to c.5.1ha of land in woodland compartments 25a, 25b and 26, which are outside the Proposed Development Site boundary but within the applicant's control. These areas are currently dominated by recent broadleaved plantation with patchy and locally dense scrub and self-seeded trees, with scattered mature or semi-mature trees. They are therefore similar in character to habitats within the extraction site which currently support reptiles. Given the similarities, it is likely that compartments 25a, 25b and 26 already support a population of reptiles, and so the translocation will need to be informed by population estimate surveys within compartments 25a, 25b and 26 to establish their carrying capacity, and to devise appropriate habitat enhancements to increase their carrying capacity. Alternatively or as a supplementary measure, conifer plantation within woodland compartment 40 (outside of the Proposed Development Site but within the applicant's control) will be converted to suitable reptile habitat comprising a mosaic of coarse grassland and dense scrub alongside measures to enhance this area for wood white butterfly.

In addition, measures proposed through the habitat mitigation and enhancement strategy will also contribute towards mitigating the negative effect of development on reptiles, including progressively creating c.6.3ha of new or translocated deciduous woodland habitat within the site as extraction cells become available for restoration. Within a period of approximately 10-15yrs restored cells are likely to be structurally similar to the existing broadleaved plantation within the extraction site, and will be capable of providing foraging and shelter habitat resources for reptiles. In addition the following measures will be implemented specifically to mitigate the impacts on reptiles:

- Enhanced management of plantations adjoining the access track (especially compartments 34 and 40 where many reptile observations were recorded) to increase the availability of suitable habitats and draw reptiles further away from the track edge, to reduce killing/injury risk from vehicle movements.
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ProTreat Ltd

Land north of Loxwood Road, Billingshurst, West Sussex

Environmental Statement

Ecology

- The ride network will be extended within retained deciduous woodland within the applicant's control to deliver an increase in the amount and connectivity of suitable habitat through ride widening.

The mitigation strategy will form part of the LEMP and can be secured via an appropriately worded planning condition.

Significance of residual effect:

Minor negative effect at the Local level as a result of operation of the Proposed Development. On completion of decommissioning and restoration, including implementation of all additional mitigation, Minor positive effect at the Local level.
