

Appendix F.9 Summary of Ecological Impact Assessment for Ecology and Nature Conservation

Summary of Ecological Impact Assessment for Ecology and Nature Conservation

| Important Ecological Feature | Geographic Importance of Ecological Feature | Description of effect (including extent / magnitude) | Effects in the Absence of Mitigation | | Mitigation/Avoidance Measures to be included | Residual Effect | | | Enhancement Measures |
|--|---|--|--|----------------------|---|---|----------------------------------|---------------------------------|--|
| | | | Characterisation of Effect | Confidence of effect | | Characterisation and description of Residual Effect | Confidence of residual of effect | Residual significance of effect | |
| Upper Nene Valley Gravel Pits SPA, SSSI, Ramsar, LNRs and LWSs | International | Changes in hydrology resulting in reduced water levels on the protected sites. | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Unlikely | Mitigation: Water management will include temporary storage of extracted groundwater followed by discharge to surface watercourse, having 5-15m buffer zones between operational areas and sensitive habitats and the creation of ditches. | No residual effect | n/a | n/a | |
| | | Contamination of ground water leading to effect on the wetland | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Probable | Mitigation: Mitigation as described in chapter 13 will be put in place in order to protect surface water and minerals extraction will be carried out through dewatering to prevent mixing of soil and ground water. | No residual effect | n/a | n/a | |
| | | Loss of habitat supporting overwintering birds outside of the protected sites | Negative Indirect Long-term Reversible | Certain | Mitigation: Phasing of the scheme and restoration following the completion of each phase will mean that there will be areas available for foraging throughout the scheme. | Temporary loss of arable habitat within each phase. Long-term loss of arable as grassland and wetlands are created. Negative Direct Long- term - 20 years, throughout the extraction period Reversible | Certain | Not significant | The enhancement scheme has been developed to provide better quality habitat for birds. Following completion of the restoration at the site there will be larger areas of habitat suitable for wintering birds at the site. |
| Ecton Gravel Pits LWS | County | Loss of approximately 2700m ² of habitat within the designated site boundary that does not meet designation criteria (tall ruderal habitat) | Negative Direct Long-term Reversible | Certain | Mitigation: Natural habitat that should meet designation criteria will be created within this area following extraction. | Short-term loss of tall ruderal habitat is not significant since this area does not meet LWS criteria, therefore there will be no residual effect | n/a | n/a | Enhancement: Habitats to be included within the restoration scheme include wetland which is the reason for the designation of this site. |
| | | Contamination of ground water leading to effect on the wetland | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Probable | Mitigation: Mitigation as described in chapter 13 will be put in place in order to protect surface water and minerals extraction will be carried out through dewatering to prevent mixing of soil and ground water. | No residual effect | n/a | n/a | |
| | | Changes in hydrology resulting in reduced water levels on site | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | unlikely | Mitigation: Water management will include temporary storage of extracted groundwater followed by discharge to surface watercourse, having 5-15m buffer zones between operational areas and sensitive habitats and the creation of ditches. | No residual effect | n/a | n/a | |

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| Billing Scrub PWS | Local | Damage to habitats on site due to water contamination and dust. | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Unlikely | Mitigation: Mitigation as described in chapter 13 will be put in place in order to protect surface water and minerals extraction will be carried out through dewatering to prevent mixing of soil and ground water. To minimise the dust levels on and adjacent to the site: trucks will be covered, top soil stripping will be done progressively rather than all at once and tracks will be swept and watered | No residual effect | n/a | n/a | |
| | | Changes in hydrology resulting in reduced water levels on site. | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Unlikely | Mitigation: Water management will include temporary storage of extracted groundwater followed by discharge to surface watercourse, having 5-15m buffer zones between operational areas and sensitive habitats and the creation of ditches. | No residual effect | n/a | n/a | |
| Wind spinney Unnamed PWS | Local | Loss of entire woodland area. | Negative Direct Long-term Reversible | Certain | Avoidance: The woodland is to be retained with a 15 m buffer on all sides. Mitigation: The 15 m buffer will prevent any effects on root protection zones and/or water loss to the area due to the draw down effect. | No residual effect | n/a | n/a | |
| | | Changes in hydrology resulting in reduced water levels within the woodland. | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Unlikely | Mitigation: Water management will include temporary storage of extracted groundwater followed by discharge to surface watercourse, having 5-15m buffer zones between operational areas and sensitive habitats and the creation of ditches. | No residual effect | n/a | n/a | |
| Other LWS and PWS sites connected to the River Nene | Local | Contamination of ground water leading to effect on the wetland | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | Probable | Mitigation: Mitigation as described in chapter 13 will be put in place in order to protect surface water and minerals extraction will be carried out through dewatering to prevent mixing of soil and ground water. | No residual effect | n/a | n/a | |
| | | Changes in hydrology resulting in reduced water levels on site | Negative Indirect Long- term - 20 years throughout the extraction period Reversible | unlikely | Mitigation: Water management will include temporary storage of extracted groundwater followed by discharge to surface watercourse, having 5-15m buffer zones between operational areas and sensitive habitats and the creation of ditches. | No residual effect | n/a | n/a | |
| Hedgerows | Local | Loss of 1250m of hedgerow including 220 m of ecological important hedgerow. | Negative Direct Long-term Reversible | Certain | Avoidance: All hedgerows will be retained during the works with a 5-10 m buffer. | No residual effect | n/a | n/a | |

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| Badger | Not important at the local level | Destruction of setts within the red line boundary- two main setts, six annex setts, one subsidiary sett and one outlier sett. | Negative Direct Single event Reversible | Probable | Avoidance: Majority of setts to be avoided with 15 m buffer around the setts within the woodland. Mitigation: Badger surveys to be undertaken throughout the scheme to monitor for new setts. Sett L to be monitored for activity and closed prior to works in that area. | No residual effect | n/a | n/a | |
| | | Death of badgers. | Negative Direct Single event Irreversible | Unlikely | Mitigation: Any holes left open overnight to ensure they have a ramp installed or an edge with a shallow gradient to allow badgers to escape. Work hours will be 7am to 6pm so will avoid vehicle collisions with badgers. | No residual effect | n/a | n/a | |
| | | Partial destruction of setts outside the red line boundary. | Negative Direct Single event Reversible | Probable | Avoidance: Buffer zone of 5 – 15 m to be included around extraction areas. | No residual effect | n/a | n/a | |
| | | Removal of foraging habitat accessible to badger during works. | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Probable | Avoidance: Areas of good foraging habitat to be retained. Mitigation: Phasing of works and restoration being undertaken as extraction moves phases will result in habitat being available at all times. | Negligible – some habitat loss temporary | n/a | n/a | Grassland habitat within the restoration strategy will provide further foraging habitat. |
| | | New ditches to be constructed through the centre of the site preventing access to foraging habitat. | Negative Direct Long-term Reversible | Certain | Mitigation: Ditches have been designed with badgers in mind, with a shallow gradient. | No residual effect | n/a | n/a | |
| Bats | Local | Destruction and disturbance of bats roosts resulting in negative effect on populations. | Negative Direct Long-term Reversible | Probable | Avoidance: The hedgerows and woodland will be avoided with a 5-15 m buffer zone around them. No potential bat roosts will be illuminated. | No residual effect | n/a | n/a | |
| | | Loss of 2.7 ha suitable foraging and commuting habitat within the red line boundary | Negative Direct Long-term Reversible | Probable | Avoidance: The hedgerows and woodland will be avoided so all corridors and commuting routes will be retained. | No residual effect | n/a | n/a | The additional areas of wetland and grassland will provide further areas of high quality foraging habitat for bats. This will likely have a positive effect on the local bat population. |
| | | Increased levels of lighting on site during the works affecting the suitability of foraging routes and impairing bats ability to forage. | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Probable | Avoidance: Lighting to be used within the plant area with no light spill reaching the hedgerows. Lighting to only be used during operational hours. | No residual effect | n/a | n/a | |

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| | | Potential to reduce insect prey as a result of increased dust pollution | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Unlikely | Mitigation: To minimise the dust levels on and adjacent to the site: trucks will be covered, top soil stripping will be done progressively rather than all at once and tracks will be swept and watered | No residual effect | n/a | n/a | |
| Otter | Local | Loss of suitable foraging habitat along the Ecton Brook resulting in an effect on the local population. | Negative Direct Long-term Reversible | Probable | Avoidance: Ecton brook and a ??m buffer will be unaffected by the works. | No residual effect | n/a | n/a | |
| | | Increased levels of lighting on site during the works affecting the suitability of foraging areas. | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Probable | Avoidance: Lighting to be used within the plant area with no light spill reaching the hedgerows. Lighting to only be used during operational hours. | No residual effect | n/a | n/a | |
| Wintering Birds | Local | Loss of approximately 110 ha of habitat suitable for wintering birds consisting of arable, grassland and ruderal. | Negative Direct Long-term Reversible | Certain | Mitigation: Phasing of the scheme and restoration following the completion of each phase will mean that there will be areas available for foraging throughout the scheme. | Temporary loss of arable habitat within each phase. Long-term loss of arable as grassland and wetlands are created. Negative Direct Long- term - 20 years throughout the extraction period Reversible | Certain | Not significant – area of habitat available during extraction works sufficient to support recorded populations and arable habitat to be replaced with habitats with a higher suitability. | The enhancement scheme has been developed to provide better quality habitat for birds. Following completion of the restoration at the site there will be larger areas of habitat suitable for wintering birds at the site. |
| | | Noise disturbance to birds using the site and nearby habitats causing birds to be displaced. | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Probable | Avoidance: Buffer zones will reduce the effect on birds using the habitat to the south. Mitigation: Soil bounds will be created around the compound and extraction areas. Plant will be turned off when not in use and maintained to control noise emissions. | Low levels of noise disturbance. Negative Direct Long- term - 20 years throughout the extraction period Reversible | Unlikely | Not significant | |
| Breeding birds | Local | Loss of 2.7 ha suitable habitat. | Negative Direct Long-term Reversible | Certain | Avoidance: Hedgerows and woodland to be avoided with a 5-15 m buffer. Mitigation: Scattered trees to be lost will be replaced with further tree planting. | Temporary loss of scattered trees in SW corner Negative Direct Long- term - 20 years throughout the extraction period Reversible | Certain | Not significant | Grassland and wetland areas to be added with a high suitability for ground nesting birds. |

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| | | Destruction of active nests. | Negative Direct Long- term - 20 years throughout the extraction period During March to August only Irreversible | Probable | Mitigation: Scattered trees in the SE corner of the site to removed outside the breeding bird season. Crops not be sown in fields to be excavated in that breeding season. Arable land to be checked for breeding birds prior to extraction in that area and any active nest found to be avoided until chicks have fledged. | No residual effect | n/a | n/a | |
| | | Noise disturbance to birds breeding birds within and outside the site boundary | Negative Direct Long- term - 20 years throughout the extraction period Reversible | Probable | Avoidance: Buffer zones will reduce the effect on birds using the habitat to the south. Mitigation: Soil bounds will be created around the compound and extraction areas. Plant will be turned off when not in use and maintained to control noise emissions. | Low levels of noise disturbance. Negative Direct Long- term - 20 years throughout the extraction period Reversible | Unlikely | Not significant | |
| Amphibians – common toad, common frog and smooth newt | Not important at the local level | Loss of suitable terrestrial habitat. | Negative Direct Long-term Reversible | Probable | Avoidance: Hedgerows and woodland areas to be avoided during the works. Mitigation: The phasing of the scheme means that although small areas of grassland strips will be lost habitats suitable for amphibians will also be created during the works and so a reduction in available habitat is not anticipated. | No residual impact | n/a | n/a | New wetland and grassland habitat to be created as part of the enhancement scheme will result in additional terrestrial and breeding habitat for amphibians. |
| | | Killing/injury of amphibians during site clearance and when water management areas drained | Negative Direct Single event Irreversible | | Mitigation: Areas of suitable habitat to be destructively searched prior to excavation in these areas. Any amphibians found to be moved to suitable habitat outside the works area. Any suitable hibernation features to be removed prior to the hibernation season. When the water management areas are drained, mesh is to be used to ensure pumps do not take in any amphibians. Any vegetation present is to be removed from the pond and left on the side for 24 hours to allow any amphibians to escape. | No residual impact | n/a | n/a | |

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| Grass snake | Local | Killing/injury of grass snake during extraction | Negative Direct Single event Irreversible | Probable | Mitigation: Areas of suitable habitat to be destructively searched prior to excavation in these areas. Any snakes found to be moved to suitable habitat outside the works area. Any suitable hibernation features to be removed prior to the hibernation season. | No residual effect | n/a | n/a | |
| | | Loss of 13.7 ha of suboptimal suitable habitat | Negative Direct Long-term Reversible | Certain | Avoidance: Habitat along hedgerows and the Ecton Brook will be retained as buffer zones. Phasing of the scheme will ensure that grassland habitat is available at all times. Grassland habitat and grassland buffers along field boundaries to be included within the restoration scheme. | Temporary loss of small sections of grassland field boundaries. Negative Direct Long- term - 20 years throughout the extraction period Reversible | Certain | Not significant | New waterbodies and reedbed areas to be included within the restoration scheme which will provide additional habitat for grass snake. |