

# London Gateway Logistics Park Local Development Order 1.5

## Appendix 4 Ecological Mitigation and Management Plan



February 2024

## **London Gateway Park Local Development Order 1.5**

### **Ecological Mitigation and Management Plan**

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## **London Gateway Local Development Order Ecological Mitigation and Management Plan**

### **Chapter 1: Introduction**

- 1.1 The London Gateway Ecological Mitigation and Management Plan (EMMP) forms part of the London Gateway Local Development Order 1.5 and must be read in conjunction with it.
- 1.2 This document provides a framework for compliance identifying mitigation, management, surveillance, and monitoring protocols for terrestrial ecology in the off-site habitat creation areas (refer to Figure 1). The management protocols shall apply also to any on-site habitat creation areas.
- 1.3 The majority of the Logistics Park has been cleared of ecological interest and species present on the site translocated to various receptor sites as the site has been developed.
- 1.4 There remains an on-going requirement to ensure that the receptor sites and habitat enhancement areas are monitored and managed appropriately in accordance with the terms of the licenses. This EMMP is a compilation of all of the Natural England license method statements held by London Gateway.
- 1.5 The Code of Construction Practice (CoCP) sets out procedures that shall be followed if species are encountered during the construction phase.
- 1.6 The EMMP does not avoid the need to obtain any necessary environmental permit.

### **Environmental Advisory Group**

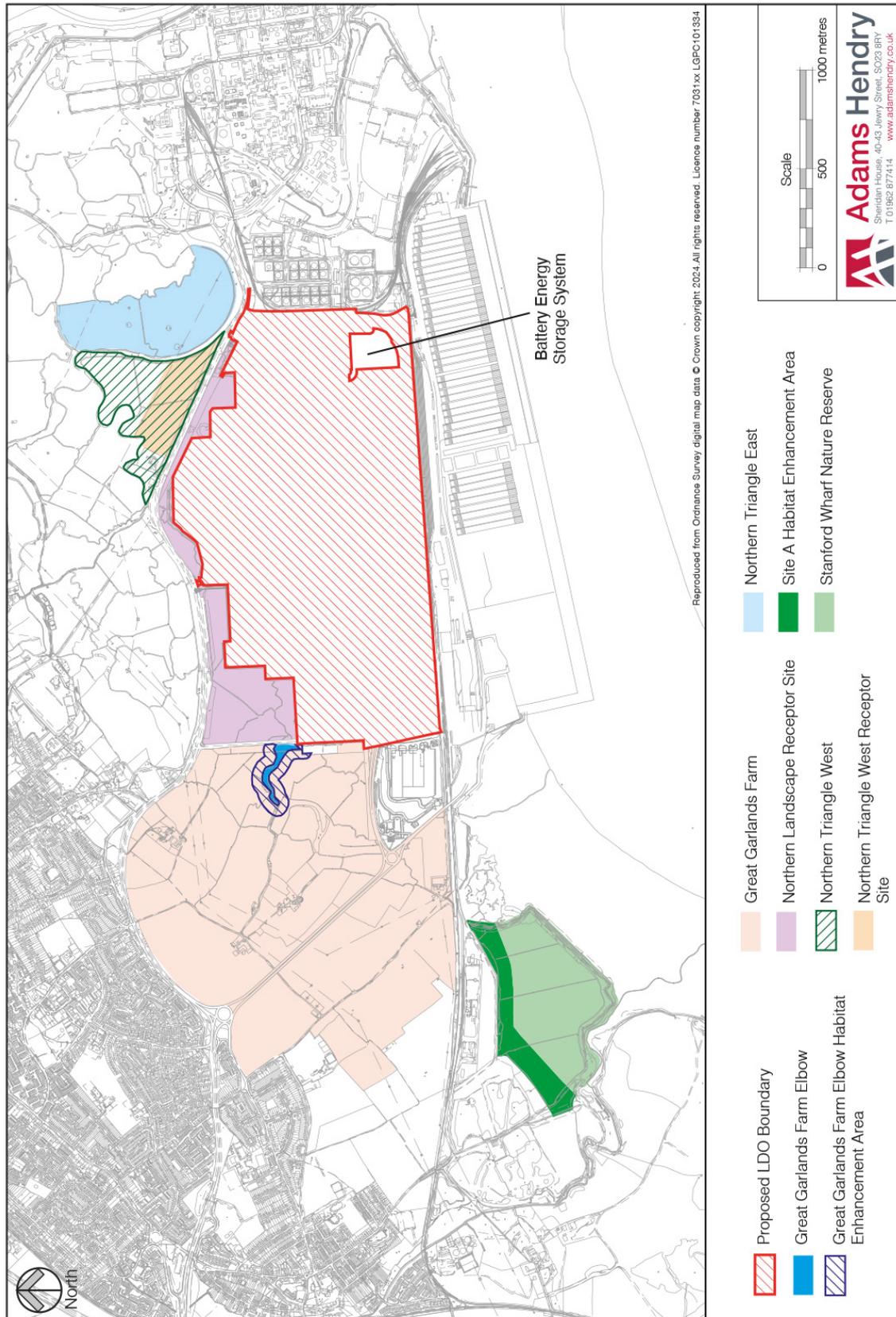
- 1.7 The Environmental Advisory Group (EAG) (formerly known as the Ecological Advisory Group) established by London Gateway Park Development Ltd (LGPDL) has been meeting since 2008. The EAG shall continue to operate for the duration of the LDO.
- 1.8 The EAG consists of representatives from statutory and non-statutory groups including the Environment Agency, Natural England, the Port of London Authority, the Marine Management Organisation, Thurrock Council, RSPB, Essex and Kent Wildlife Trusts and the LGPDL Environmental Assurance Team.
- 1.9 The EAG shall act in accordance with the terms of reference set out in the constitution included at Appendix 4.

### **Content of this Document**

- 1.10 This document includes a section on each of the following species group:
  - Wintering Birds
  - Breeding Birds

- Invertebrates
- Great crested newts
- Water Voles
- Bats
- Brown hares
- Reptiles
- Scarce Plants

Figure 1: Off-site Habitat Creation Areas



## **Chapter 2 - Wintering Birds**

- 2.1 The mitigation, management, monitoring and surveillance measures set out in this section are relevant to all winter bird species present on the site.

### **Habitat Creation and Management**

#### *Park*

- 2.2 The strip of habitat around the perimeter of the commercial development shall continue to act as a buffer to disturbance.

#### *Great Garlands Farm*

- 2.3 Great Garlands Farm Elbow receptor site and Great Garlands Farm Elbow Habitat Enhancement Area comprise two ponds and 5.4ha of grassland that shall be grazed at a low intensity and managed in accordance with the management regime set in tables A3.10a and A3.10b in Appendix 2. The measures for the management of ponds set out in Appendix 2 shall be implemented for the benefit of wintering birds.

- 2.4 The Western Grazing Marshes located within Great Garlands Farm shall be subject to the following management measures to ensure that:

- The area is maintained as permanent grassland;
- Stocking levels are limited to 0.75 Livestock Units (LU) per hectare during the period 1st April to 15th May;
- Fertilizers and pesticides shall only be used in low quantities at specific times of the year; and
- Water levels in the ditches and dykes shall be managed to ensure they do not dry out.

#### *Northern Triangle East*

- 2.5 The management and maintenance measures for ponds and grassland in Appendix 2 shall be implemented in the Northern Triangle East to benefit wintering wildfowl.

#### *Northern Triangle West*

- 2.6 In the south of the area, 5ha of land has been enhanced for the benefit of great crested newts and shall be managed in accordance with the measures set out in Appendix 2.

- 2.7 Small plots within the Northern Triangle West shall be stripped to create shallow wader scrapes (including the surrounding habitat) and managed in accordance with the measures set out in Appendix 1.

- 2.8 The scrapes shall be constructed to the following specification where possible
- They shall be dug out in early spring to allow grass species to re-colonise the area before the onset of winter;
  - The top 10cm of surface layer (including the turf) shall be scraped back and retained;
  - The scrape shall then be dug to a maximum depth of 45cm with gently sloping edges and an uneven finish;
  - The retained top 10cm of soil/turf shall be rolled back into the scrape and compacted down to help facilitate the colonisation of the scrape by grass species;
  - The water level in the scrape shall aim to be managed so that it remains dry from the end of March to October, becoming inundated in November and rising to a maximum depth of 25cm in January/February and then drying out by the end of March.
- 2.9 The scrapes and surrounding habitat shall continue to be managed to ensure it is a suitable habitat for Wintering/Breeding Birds by ensuring that grass levels are kept short.

*Northern Landscape Receptor Site*

- 2.10 Stocking density in the 23.7ha of grassland on the Northern Landscape Receptor Site shall not exceed 0.25 animals per hectare over a period of 300 days to allow a sward height of 100mm to be maintained over at least 75% of the area.
- 2.11 The management and maintenance measures for ponds and scrub in Appendix 2 shall be implemented in the Northern Landscape Receptor Site to benefit wintering birds.

*Stanford Wharf Nature Reserve (include Site A Habitat Enhancement Area)*

- 2.12 A concrete/beach area has been provided on the margins of the balancing pond located at the eastern end of the Site A Habitat Enhancement Area to provide a suitable foraging habitat for green sandpiper.
- 2.13 The management and maintenance measures for ponds set out in Appendix 2 shall be implemented in the Northern Landscape Receptor Site to benefit wintering birds.

**Surveillance and Monitoring of the 'off' site habitat creation areas**

- 2.14 The following surveillance and monitoring methods shall be employed:
- The grazing marshes in DPW ownership shall be visited twice a month to coincide with a high and low tide cycle. On each occasion, an experienced ornithologist equipped with binoculars and a telescope of appropriate magnification, shall walk over the survey area ensuring that a good view is obtained of each area.

- Surveys shall take place twice a month between October and March inclusive and reported to the EAG.
- Waterfowl, primarily waders and ducks shall be counted, though all notable species and large numbers shall be logged.
- At the end of the survey, tables of data detailing the results from each visit shall be submitted to the EAG. This shall include date of visit, tide cycle, weather condition, and bird species and numbers.
- The scrapes in the Northern Triangle West Receptor Site (once they are in place and the habitat is considered established) shall be monitored, specifically recording the extent to which they are continuously wet and whether birds were present.
- Upon completion of the development, a winter bird survey shall be repeated once the new habitat (within the Park and receptor sites) has matured and again 3 - 5 years later, in consultation with the EAG.

*Timings and Frequency of surveillance and monitoring*

- 2.15 Grazing marsh winter bird surveys shall take place between October and March inclusive to encompass the winter season for various species of bird. Poor weather conditions (e.g. very wet or windy days) shall be avoided as far as possible as this can limit bird activity.
- 2.16 The results of these surveys together with any interpretation or recommendations considered necessary shall be reported and presented to the EAG as appropriate.

### **Chapter 3: Breeding Birds**

- 3.1 The mitigation, management, monitoring and surveillance measures set out in this section are relevant to breeding birds listed in the Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), UK BAP, Essex BAP and Red Listed bird species.

#### **Habitat Creation and Management**

##### *Park*

- 3.2 Habitat enhancement to benefit breeding birds included the creation of 6km of habitat corridors including swales and balancing ponds.
- 3.3 The swales now colonised with reeds shall be maintained for the benefit of bearded tits, ensuring that some areas of open water are always present. Cutting back of reeds shall only take place outside the breeding bird season (March – September inclusive) and shall be included in the Park maintenance plan. Annual cutting shall be undertaken on a rotational basis where deemed required, and cutting shall not take place throughout the whole site in any one year.

##### *General - Off-site habitat creation*

- 3.4 The habitat surrounding the development (including the Northern Landscape buffer) shall continue to be used to provide nesting habitat for UKBAP and Red Listed species.

##### *Great Garland Farm*

- 3.5 Great Garlands Farm Elbow receptor site and Great Garlands Farm Elbow Habitat Enhancement Area comprise two ponds and 5.4ha of grassland that shall be grazed at a low intensity and managed in accordance with the measures set out in Appendix 2.
- 3.6 The Western Grazing Marshes located within Great Garlands Farm and immediately west of the development site shall be managed to ensure that:
- The area is maintained as permanent grassland that shall not be cut for hay or silage before 1st July;
  - Stocking levels are limited to 0.75 Livestock Units (LU) per unit during the period 1st April to 15th May;
  - Fertilizers and pesticides shall only be used in low quantities at specific times of the year;
  - Mechanical operations shall not be carried out in the period 1st April to 30th July; and
  - Water levels in the ditches and dykes shall be managed to assist in the prevention of these features drying out.
- 3.7 The management measures shall ensure that the grassland areas of the Western Grazing Marshes shall not be overgrazed and shall benefit breeding birds. Seasonal restrictions on hay and silage cutting shall allow the majority

of ground nesting birds to raise broods before the habitat is cleared and the restricted application of mechanical operations during the period 1st April to 30th June shall also help to minimise disturbance to breeding birds.

- 3.8 Six kilometres of selected hedgerows on Great Garlands Farm have been restored by supplementary planting with the aim of creating a variety of dense continuous hedgerows between 2–4m high, 2–3m wide at the base and 1.5m at the top to provide suitable nesting habitat for a variety of birds. Hedgerows located in proximity to areas favoured by wintering waders and waterfowl in the grazing marsh have not be selected for restoration, as these species prefer open habitats.
- 3.9 The hedgerows and their understorey have been restored with species of various sizes and longevity, in order that a wide variety of invertebrates are able to populate the habitat. Flowering species have been selected to blossom and set seed/berry at different times during the season providing food for birds at important times of the year.
- 3.10 Hedges shall be trimmed in January – February, before breeding birds start nesting (trimming shall be avoided between March – August inclusive) and after wintering birds have fed on the berry crop. No hedgerow standard tree shall be felled unless it is a health and safety requirement. Hedge trimming shall be done on a 2 – 3 year rotation and the trimming of all hedges in the same year shall be avoided.

#### *Northern Triangle East*

- 3.11 The management and monitoring regime set out in Appendix 2 for the Northern Triangle East receptor site shall be implemented.
- 3.12 The 20ha of coarse tussocky grassland was not subject to any management for the first three years and thereafter the cutting of specific areas shall only be undertaken by machine in late summer, once every three years. In addition to the grassland species, this shall allow a variety of herbaceous species to become established that would not typically be able to set seed in grazed areas, such as thistles (*Cirsium* sp) and teasel (*Dipsacus fullonum*). This shall benefit breeding birds by:
  - Providing a different variety of seeds to the grazed areas that shall form a food source for a variety of farmland species such as linnet, yellowhammer and corn bunting;
  - Supporting a wide range of invertebrate species that shall provide a food source for insectivorous species such as Cetti’s warbler and skylark;
  - The additional cover provided by the taller vegetation shall support a large population of small mammals such as short-tailed voles (*Microtus agrestis*) that are important prey items for barn owls and kestrels (*Falco tinnunclulus*); and
  - Providing suitable nesting habitat for species such as grasshopper warbler and skylark.

*Northern Triangle West*

- 3.13 The 5ha of land in the south of this area has been enhanced to create 4 ponds, 3.5ha of coarse grassland and 1.4ha of scrub and shall be managed in accordance with the measures set out in Appendix 2.
- 3.14 The remaining area (13ha) of Northern Triangle West shall be managed to ensure it is a suitable habitat for Wintering/Breeding Birds.
- 3.15 Following assessment of final design an area within the Northern Triangle West shall be stripped to create scrapes and bare substrates for the benefit of Winter Wildfowl but which could also benefit ground nesting waders such as lapwing and redshank.

*Northern Landscape Receptor Site*

- 3.16 The Northern Landscape Receptor Site includes 22 ponds that shall be managed and maintained in accordance with the measures set out in Appendix 2 to benefit breeding birds.
- 3.17 Stocking density on 23.71ha of the grassland in the Northern Landscape Receptor Site shall not exceed 0.25 animals per hectare over a period of 300 days to allow sward height of 100mm to maintain over at least 75% of the area.
- 3.18 The planting of scrub and trees over 6.2ha benefits breeding birds by providing suitable nesting and foraging habitat for a variety of farmland birds. The inclusion of tree species in the planting scheme also provides further nesting opportunities for breeding birds that prefer to nest at higher elevations such as hobby.

*Stanford Wharf Nature Reserve*

- 3.19 Site A Habitat Enhancement Area is 10ha in size and includes two ponds and 7ha of coarse grassland and shall be managed in accordance with the measures set out in Appendix 2 to benefit breeding birds.

**Surveillance and monitoring**

- 3.20 The following surveillance and monitoring methods shall be employed:
- 3.21 Surveys shall be carried out around working areas to locate nest-sites of Schedule 1 species and ground-nesting birds for protection, where required.
- 3.22 The survey methodology to be employed is the territory (registration) mapping techniques as detailed in 'Bird Census Techniques (Bibby, C.J., Hill, D.A., Burgess, N.D. and Mustoe, S. (2000)).
- 3.23 A species shall be assumed to be breeding if one or more of the following activities are recorded:

- territorial/alarm;
  - song;
  - aggressive encounter;
  - occupied nest/nest box/sitting on nest;
  - carrying nest material; and
  - carrying food.
- 3.24 Observations of birds made in the field shall be recorded directly on to maps to aid the accurate location and recording of the bird's breeding territories. Upon completion of the surveys, the data shall be used to create specific species maps (Master Maps).
- 3.25 The conservation status of the species recorded as breeding shall be measured against the following criteria:
- Annex 1 of the EU Birds Directive (Directive 79/409/EEC);
  - Schedule 1 of the Wildlife and Countryside Act 1981, (as amended);
  - Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act, 2006;
  - Birds of Conservation Concern 5 (BoCC5) Red List (Stanbury et al., 2021; and
  - Essex local BAP species.
- 3.26 Species Master Map production and territory assessment shall only be undertaken for those species that are covered by one or more of the above criteria.

*Timings and frequency*

- 3.27 Prior to and during the construction period breeding bird surveys shall take place between March and June inclusive to encompass the breeding season for various species of birds. The results shall be used to identify the areas favoured by important species and the approximate numbers of each species.
- 3.28 More frequent specific surveys shall be carried out as required around working areas to locate nest sites of Schedule 1 and ground nesting birds. A Natural England Schedule 1 bird disturbance license may be required for this activity.
- 3.29 A post construction breeding bird survey shall be carried out once the new habitat has matured and again 3 - 5 years later, in consultation with the Environmental Advisory Group.
- 3.30 The results of these surveys shall be reported and presented to the EAG as appropriate.

## **Chapter 4: Invertebrates**

- 4.1 This chapter sets out mitigation, management, monitoring and surveillance measures for fresh water and terrestrial invertebrates.

### **Habitat Creation and Management**

#### *Park*

- 4.2 'Bee banks' have been incorporated into the habitat creation works within on-site habitat corridors. The south-facing banks shall be kept weed-free and free from chemical treatment. They will be valuable to solitary bee and wasp species to create tunnels for breeding in the exposed earth.
- 4.3 The following list of plant species which are valuable to invertebrates have been included in habitat creation in the Park:
- Gorse (*Ulex europaeus*);
  - Guelder rose (*Viburnum opulus*);
  - Dogwood (*Cornus sanguinea*);
  - Broom (*Cytisus scoparius*);
  - Blackthorn (*Prunus spinosa*);
  - Hawthorn (*Crataegus monogyna*); and
  - Elder (*Sambucus nigra*).
- 4.4 Approximately 6km of habitat corridors created in the Park for landscaping, drainage and general biodiversity enhancement, which will also be beneficial to invertebrates. The on-site habitat corridors consist of approximately:
- 3.4km of ditches;
  - 6.5ha of grassland;
  - 3.0ha of shrubs;
  - 3.0ha of woodland;
  - 13 log piles; and
  - 13 artificial hibernacula.
- 4.5 The management and monitoring regime set out in Appendix 2 for ditches, grassland, shrubs, log piles and hibernacula shall be implemented.

#### *General*

- 4.6 Areas of specific habitat for significant invertebrate species such as sparsely vegetated shingle, rough grassland around bushes and scrub and species-rich wildflower grassland, has been incorporated into the boundary habitat areas. The habitat designed for reptiles and birds such as black redstart and certain ground-nesting species will also benefit invertebrates.
- 4.7 Around the boundary of the site and along the road network, areas of scrub and shingle have been incorporated which will provide valuable foraging and nesting habitats to many populations of invertebrates. In addition, green landscaped areas have been seeded with nectar-rich plant species and tall grassland mosaics. Where embankments or mounds are constructed bare

ground and 'bee banks' have been incorporated and bare surfaces shall provide further burrowing habitat.

- 4.8 Management of the swales, the reptile and amphibian refuges and the boundary habitat areas have been designed to provide suitable conditions for invertebrates.
- 4.9 The use of weed killers on gravelled areas along roads etc. shall be reduced to a minimum. Where this management is considered essential, it shall be carried out on rotation throughout the site so that colonisation can take place from adjacent areas;
- 4.10 The use of insecticides on the service and landscaping areas shall be avoided where possible.

#### *Receptor Sites*

- 4.11 A total of 6km of habitat corridors consisting of ditches, grassland, shrubs, woodland, log piles and artificial hibernacula have been created in the receptor sites.

#### *Great Garlands Farm Elbow*

- 4.12 Management of the two ponds shall include the removal of accumulated silt and the cutting back of marginal vegetation to ensure minimal shading.
- 4.13 Aquatic vegetation removal shall be undertaken every few years or when required. The target for management shall be to create a mosaic of densely vegetated areas with intervening areas of open water. The vegetation that is removed shall be taken away from the pond margins to avoid damaging marginal communities of plants and invertebrates.
- 4.14 The marginal vegetation shall be managed in order to develop a more varied sward and mosaic of habitats. The cutting of the vegetation shall not occur between the months of May and August inclusive.
- 4.15 Grass cutting shall be varied across the site and different parts of the grassland shall be cut annually. The cutting of different areas at different times shall ensure a varied structure that is important for invertebrates. Areas shall be left uncut to provide a patchwork of small areas of tall, tussocky grass, offering valuable havens for communities of invertebrates which would be harmed by cutting elsewhere.
- 4.16 The eight log piles that have been constructed shall be managed by replacing logs that become displaced from the main pile and adding new logs if piles become significantly reduced in size due to rotting.
- 4.17 The eight hibernacula that have been constructed shall be examined annually and maintained including the replacement or addition of stone if required.

- 4.18 The use of weed killers and insecticides shall be avoided where possible or otherwise kept to a minimum. Where it is required, it shall be applied by spot treatment only around the base of newly planted shrubs.
- 4.19 The management measures in Appendix 2 shall be implemented in the Great Garlands Farm Elbow to benefit invertebrates.

*Northern Triangle East Receptor Site*

- 4.20 The habitat creation that has been undertaken on the eastern section of the Northern Triangle shall be beneficial to invertebrates. The enhancements at the Northern Triangle East Receptor Site include:
- The creation of 24 ponds;
  - Use of the spoil from pond creation to create uncompacted mounds of soil close to the new pond;
  - Encouraging the development of coarse, tussocky grassland over 80% of the site;
  - Planting of native shrub species over 20% of the north of the site;
  - Provision of 24 log piles; and
  - Provision of 24 artificial hibernacula.

- 4.21 The management of the ponds and terrestrial habitat shall be as for Great Garlands Farm Elbow. Grazing within the Northern Triangle East ceased at the end of April 2008. Control of scrub shall be undertaken when necessary to maintain scrub cover at no more than 70% of the total area of Northern Triangle East.
- 4.22 As with Great Garlands Farm Elbow, the use of weed killers and insecticides shall be kept to a minimum and be avoided where possible. Where it is required, it shall be applied by spot treatment only around the base of newly planted shrubs.

*Northern Triangle West Receptor Site*

- 4.23 'Bee banks' have been created to a similar design as those incorporated into the Park Area.
- 4.24 Wader scrapes shall be incorporated into Northern Triangle West to the north of the receptor site for the benefit of breeding birds and to provide additional habitat for invertebrates.
- 4.25 The habitat creation that has been undertaken in this area for great crested newts and reptiles will also benefit invertebrates. The habitat enhancements include:
- The creation of four ponds;
  - Planting of 1.4ha of scrub;

- Creation of 8.5ha of coarse grassland;
- The construction of 12 log piles; and
- The construction of eight hibernacula.

4.26 The management and monitoring regime set out in Appendix 2 for the ponds, scrub, grassland, log piles and hibernacula shall be implemented.

*Northern Landscape Receptor Area*

4.27 The Northern Landscape Receptor Site has been created as a receptor site for great crested newts and reptiles. Habitat creation in this area shall benefit a range of species including invertebrates. The enhancements include:

- The creation of 22 ponds;
- Development of lightly grazed tussocky grassland over approximately 23ha;
- The construction of 22 log piles and hibernacula; and
- Tree and shrub planting over an area of approximately 6.2ha.

4.28 Coarse tussocky grassland habitat shall be allowed to develop on a rotational basis by removing grazing animals for a period of 12 months and subsequent management by grazing at a low stock density, or annual cutting. The height of grass cutting, if undertaken, shall be varied across the site and different areas shall be cut at different times to ensure a varied structure that is important for invertebrates.

4.29 The management and monitoring regime set out in Appendix 2 for the ponds, shrubs, log piles and hibernacula shall be implemented.

*Stanford Wharf Nature Reserve (Site A) Habitat Enhancement Area*

4.30 The site has been flooded and converted to mudflats specifically to enhance the area for waterfowl (particularly wading birds) and invertebrates. Habitat enhancements include:

- The construction of a new seawall;
- The creation of two ponds;
- The creation of brownfield habitat (created by importing brownfield substrate for a “clean” source);
- Development of tussocky grassland over approximately 7ha; and
- The construction of two log piles and two hibernacula.

4.31 The management and monitoring regime set out in Appendix 2 for the ponds, grassland, log piles and hibernacula shall be implemented.

## Chapter 5: Great Crested Newts

- 5.1 This chapter sets out management, monitoring and surveillance measures for great crested newts.

### Management and Maintenance

- 5.2 The management and maintenance measures for aquatic and terrestrial habitats in the habitat creation areas set out in Appendix 2 of this document shall be implemented to benefit great crested newts.

#### *Great Crested Newt Tunnels*

- 5.3 The management and monitoring of the existing Great Crested Newt (GCN) tunnels shall be implemented in accordance with protocols set out in table 5.1. Management and maintenance shall be carried out until such time as the EAG consider it unnecessary. Further detail on the monitoring of great crested newt tunnels is provided in paragraphs 5.7 - 5.8.

**Table 5.1: Great Crested Newt Tunnels**

<b>Location</b>	<b>Manorway Road and Access Road newt Tunnels</b>
<b>Objective</b>	<ol style="list-style-type: none"> <li>1. Maintain tunnels free of debris to facilitate the passage of newts.</li> <li>2. Ensure tunnel base is not completely flooded for more than 10 days between 1st February and 31st October each year.</li> <li>3. Maintain permanent amphibian fencing in sound condition either side of each tunnel entrance.</li> <li>4. Maintain high quality terrestrial habitat of scrub and coarse grassland for a radius of 5 metres at tunnel entrances.</li> </ol>
<b>Management</b>	<ol style="list-style-type: none"> <li>1. Any blockages shall be cleared and jet cleaned with water to remove contaminants (Prefabricated “ACO” tunnels only) prior to breeding and hibernation migrations, in early January and late August.</li> <li>2. The Manorway ACO type tunnels shall be jet washed twice annually at the same time as they are examined to remove contaminants.</li> <li>2. The drainage system shall be maintained to prevent tunnel flooding.</li> <li>3. Permanent amphibian fencing shall be repaired as required.</li> <li>4. Management of terrestrial habitat at tunnel entrances if required.</li> </ol>
<b>Monitoring</b>	Monitoring shall take place twice annually in early January, prior to breeding migration, and late August, prior to hibernation migration.
<b>Remedial Action</b>	Replacement or reconstruction.

### *Great Crested Newt Monitoring*

- 5.4 Great crested newts shall be monitored to ensure the creation of a viable population in accordance with the procedures set out in Appendix 2 and the protocols set out below.
- 5.5 Starting in the year following creation, all water bodies created for great crested newts shall be surveyed every year, for ten years or until 3 years after the total development is complete and operational, whichever is the longer period.
- 5.6 The survey methodology shall follow that in the English Nature Great Crested Newt Mitigation Guidelines. Six visits shall be conducted each year using the range of standard survey techniques, as appropriate to each water body to provide population size class data for each water body, with annual results collected for at least ten years and until three years after the total development is completed.
- 5.7 Monitoring of the use of the access road newt tunnels and connectivity across roadways was undertaken until 2021 and newt movements were confirmed on eight out of the nine tunnels. On this basis it has been agreed with the EAG that the monitoring of the use of these tunnels will cease. The monitoring of tunnel one for useage shall continue until agreed that it can cease by the EAG.
- 5.8 The newt tunnels shall also be monitored for physical condition, blockages and environmental factors such as flooding, as set out in table 5.1. Results of this monitoring shall be considered together with the results of great crested newt monitoring and any shortfalls shall be addressed with changes in management or remedial actions as appropriate.
- 5.9 A report on all monitoring work shall be submitted to Natural England and the results of all surveys shall be made available to the Environmental Advisory Group. A final report of the whole scheme shall be published by the EAG. Interim results shall be described in an annual ecology report. LGPDL shall be responsible for ensuring that all monitoring is carried out and reported as required. All monitoring work shall take place on land owned by LGPDL or on land to which LGPDL has access rights.

### **Habitat Monitoring**

- 5.10 Habitats shall be monitored in accordance with the protocols set out in Appendix 2. Information shall be carefully recorded before, during and after any work.
- 5.11 Information collected shall include the location, date and extent of management activities, observations made while management activities are being carried out and recommendations for future management.
- 5.12 A monitoring visit shall be made to all sites in late summer every year. Terrestrial habitat grassland sward height shall also be monitored during GCN survey visits in April/May and on a monthly basis during periods of management by grazing at NLRS and GGFE Habitat Enhancement Area.

Results of the monitoring visit and recommendations for management shall be recorded on a habitat monitoring recording sheet (see Appendix 3). All fields on the recording sheet shall be completed.

- 5.13 Habitat monitoring and management shall be the responsibility of LGPDL and shall be carried out in until such time as the EAG consider it unnecessary. Action shall be undertaken as appropriate in the event of any negative or sub-optimal results.

## **Chapter 6: Bats**

- 6.1 This chapter sets out mitigation, management, monitoring and surveillance measures for all species of bats.

### **Habitat Creation and Management**

- 6.2 No new commuting or foraging habitat shall be created specifically for bats. However, water bodies provided for amphibians, boundary ditches and fleets and additional new native tree planting shall all provide habitats for the prey items of bats and sheltered corridors for movement.

#### *Park*

- 6.3 Bat boxes were installed onto drainage crossings gabions walls across the park.

#### *Off-site habitat creation areas*

- 6.4 No habitat management has been undertaken specifically for bats. However, management of habitat areas created for other species shall provide improved feeding and commuting opportunities for bats. The management and maintenance of terrestrial and aquatic habitats set out in Appendix 2 shall be implemented to provide improved feeding and commuting opportunities for bats by maintaining sufficient ground cover and abundant invertebrate prey. The planting and maintenance of hedges and scrub shall also provide habitat for insects and sheltered commuting corridors for bats.

#### *General*

- 6.5 The use of weed killers along roadside verges shall be kept to a minimum. If this is required, it shall be carried out on a rotational basis.

## **Chapter 7: Water Vole**

- 7.1 This chapter sets out mitigation, management, monitoring and surveillance measures for water voles.

### **Habitat creation and management**

#### *Park*

- 7.2 At least 6km of suitable water vole habitat within the development site has been created. A large proportion of comprises the boundary ditch and habitat corridors.

#### *General*

- 7.3 Habitat management shall aim to maintain between 1 metre and 300mm of stand water in all new fleets. A linear strip of at least 2 – 3m of tall grassland along both sides of watercourses shall be maintained. Cutting of such vegetation shall occur annually in late autumn to no shorter than 100mm. Aquatic vegetation shall be dredged between October and March, with no more than half to be removed in any annual cycle.
- 7.4 A minimum of 6km of fleet has been created for water voles. The construction of the outer boundary ditch surrounding the Park, the drainage swales and new fleets created within the Western Marshes and Northern Triangle have fulfilled this target.
- 7.5 In line with good practice, mink and brown rats shall be controlled until such point as the EAG consider it no longer necessary.

### **Monitoring and Surveillance**

- 7.6 Monitoring of receptor sites shall be undertaken in line with any mitigation licences granted by Natural England.
- 7.7 Action shall be dependent upon the receptor site in question and detailed survey results. It will be essential to identify and address the cause of population failure prior to any further reintroductions.
- 7.8 The receptor sites shall be subject to management plans implemented by the site owner, the RSPB, Essex Wildlife Trust or LGPDL. Management plans shall aim to ensure the long-term survival and viability of the released water vole populations.

#### *Responsive Water Level Management*

- 7.9 Water levels shall be managed where appropriate to ensure that excessive flooding or drying out of water bodies on the receptor sites does not occur. The objective of management of this type shall be to create stable water levels for the majority of the water bodies in the receptor area.

*Long-term Water Level Management*

- 7.10 Where appropriate, management shall include de-silting of water bodies every 3-5 years. The objective of clearance shall be to maintain the drainage function of attenuation pools and drainage ditches and prevent channels becoming choked with vegetation. Detailed de-silting plans shall be informed by up to date water vole survey information to allow lengths containing active water vole burrows to be avoided.
- 7.11 De-silting shall be conducted between November and January to avoid the water vole breeding season, and machinery shall be selected that is appropriate to the task. Works shall be undertaken from one bank only, and efforts shall be made to minimise impacts upon bankside vegetation by confining dredging activity to the central section of the channels where possible.
- 7.12 To provide short-term refuges for voles during the works, regular sections approximately 10-20m in length, shall be left untouched. To ensure longer term habitat availability at least a third of the total length of each water body shall remain untouched each year. If appropriate, work shall proceed upstream to allow any dislodged plant propagules or invertebrates to float downstream onto the disturbed substrate and colonise such areas.

*Bankside Vegetation Management*

- 7.13 Bankside vegetation management in receptor sites shall be undertaken specifically to ensure the continued availability of suitable habitat for water voles. To avoid the water vole breeding season, bankside vegetation management shall occur in the autumn (September – October). This shall also facilitate the emergence of a rich grass sward prior to the winter months.
- 7.14 Management shall aim to maintain marginal vegetation and a 2 metre strip at the top of the bank, in order that cover and food resources are maintained.

*Mink Control Measures*

- 7.15 Measures to control American mink shall be implemented at all receptor sites in line with good practice, until such time as the EAG consider it no longer necessary.
- 7.16 Mink control shall be in line with best practice guidelines; Game Conservancy Trust mink rafts shall be employed in order to facilitate this action. Where necessary trapping of mink shall occur year round. However, it is anticipated that efforts shall be concentrated in early spring (February – April) prior to the mink breeding season when mink are known to particularly target over wintering water voles. Any such programme of control shall be included as part of the management strategy for the receptor site concerned.

### **Translocation Methodology**

- 7.17 Water voles will be trapped and translocated in accordance with the guidance in the Water Vole Mitigation Handbook for Development and Other Construction Activities (Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016); The Water Vole Mitigation Handbook for Development and Other Construction Activities. Eds. Fiona Mathews & Paul Chanin.), unless guidance is superseded, in addition to guidance from Natural England.

## **Chapter 8: Brown Hare**

- 8.1 This chapter sets out the management, monitoring and surveillance measures for Brown Hares.

### **Habitat creation and management**

- 8.2 No habitat has been specifically provided for brown hares. However, habitat created for other protected species, especially tall grassland shall benefit brown hares. Arable and grazing marsh management undertaken for other species shall also improve habitat provision for brown hares.
- 8.3 The grassland habitat creation areas at Northern Triangle East, Northern Triangle West, Northern Landscape Receptor Site, Site A habitat enhancement area and Great Garlands Farm Elbow Receptor Site and habitat enhancement area provide suitable brown hare habitat. The grassland shall be managed, maintained and monitored in accordance with measures set out in Appendix 2. In total an area of 67.5ha of coarse grassland habitat suitable for hares has been created.
- 8.4 The area of Great Garlands Farm is already under an Environmentally Sensitive Area scheme, and LGPDL shall encourage the tenant farmer (Dr Flood) to continue this and implement measures to encourage brown hares where possible.

### **Surveillance and Monitoring**

- 8.5 Sightings of Brown Hare shall be recorded and mapped during other protected species survey visits that shall take place during the operational phase of the development in order that breeding numbers and preferred areas can be determined.

## **Chapter 9: Reptiles**

- 9.1 The mitigation, management, monitoring and surveillance measures set out in this chapter are relevant to the following reptiles that are protected under the Wildlife and Countryside Act 1981 (as amended):
- Common lizard;
  - Slow worm;
  - Adder;
  - Grass snake.

### **Habitat creation and management**

#### *Park*

- 9.2 Habitat corridors have been provided throughout all areas of the development. At least 6km of boundary ditch and habitat corridors including a linear strip of between 2 - 3 metres of tall grassland has been provided along all bank sides, the cutting of which shall take place annually in late autumn, to no shorter than 100mm. These corridors also provide suitable habitat for reptiles which may re-colonise the site following completion of the development.
- 9.3 No deadwood shall be removed from the site rather it shall be transferred to rot down in refuge areas.
- 9.4 Refugia suitable for basking have been provided in all refuge areas and vegetation shall be cleared back from them annually.
- 9.5 Reptile habitat creation has been incorporated into parts of the drainage swale network, providing new hibernation sites in areas distant from the railway. Rough grassland provided for water voles and scrub for breeding birds shall also provide good reptile habitat.
- 9.6 The management measures set out in Appendix 2 for on-site habitat corridors shall also be implemented for the benefit of reptiles.

#### *Off-site receptor sites*

- 9.7 Specific reptile habitat has been created in a 10m buffer strip on the perimeter of the Park (Northern Landscape Receptor Site). The receptor area has been fenced off to prevent reptiles re-entering the development site.
- 9.8 Other receptor sites, also primarily established as mitigation areas for great crested newts, include: Great Garlands Farm Elbow Receptor Site, Northern Triangle East Receptor Site and Northern Triangle West Receptor Site.
- 9.9 The Northern Triangle East, Northern Triangle West, Northern Landscape receptor sites shall be managed in accordance with the measures set out in Appendix 2.

## **Protection Measures**

### *Installation of Reptile Exclusion Fencing around the Exclusion Zones*

- 9.10 The exclusion fence which forms the perimeter of the Park shall be maintained to prevent reptiles re-colonising the Park until Natural England deem it is no longer necessary through the relevant licences.
- 9.11 Removal of the exclusion fencing shall be done under the supervision of an ecologist and outside the reptile hibernation period, i.e. between the months of April to September inclusive. An ecologist shall also be present during site clearance in case any reptiles are found.

## Chapter 10: Scarce Plants

10.1 This chapter sets out mitigation, management, monitoring and surveillance measures for nationally scarce plants:

- Divided sedge (*Carex divisa*);
- Dittander (*Lepidium latifolium*);
- Stiff saltmarsh-grass (*Puccinellia rupestris*);
- Broad-leaved spurge (*Euphorbia platyphyllos*);
- Annual beard-grass (*Polypogon monspeliensis*).

### Protection Measures

#### *Park*

10.2 Habitat corridors have been created across the Park that shall allow movement of great crested newts and other wildlife through the site. The inclusion of habitat suitable for breeding and foraging great crested newts within these corridors has provided the opportunity for planting of divided sedge grown in the plant nursery, at suitable locations next to ditches and water bodies. In conjunction with the creation of the habitat corridors, approximately 200 divided sedge has been planted out in suitable habitat, in clumps of 20-30 plants across the site. The habitat corridors are also be subject to management plans to be agreed with the EAG that consider Locally Important plants.

#### *Northern Triangle West*

10.3 Wader scrapes shall be incorporated into Northern Triangle West, which shall offer additional habitat for the divided sedge and dittander.

### Surveillance and Monitoring

10.4 In 2011, scarce plants (including divided sedge, dittander, stiff saltmarsh-grass and annual beard-grass) were translocated from the London Gateway site to the following off-site receptor sites:

- Northern Triangle East Receptor Area;
- Northern Triangle West Receptor Site;
- Northern Landscape Receptor Site;
- Stanford Wharf Nature Reserve.

10.5 The following measures shall be undertaken:

- Translocated plants shall be monitored at the receptor sites for a period of two years following each translocation. If the survival rate of translocated plants of each species is less than 50% at each of the receptor sites, the reason for the poor survival rate shall be investigated and if appropriate further translocations shall be conducted where possible from remaining populations within the Park and the scarce plant nursery.

- Monitoring of the off-site receptor sites shall be carried out at an interval of 3 and 5 years following completion of the development to assess the long-term success of the translocation programme. This shall also include marking out and control of invasive species. The translocations and monitoring shall be documented in a report that shall be made available to the County Biological Recorder following completion.

Appendix 1:  
RSPB Information and Advice Note, 2003

# Information and advice note

Version 1 –  
June 2003

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## Creating wader scrapes and flashes on farmland.

### Summary

Several species of wading bird of conservation concern use farmland on which to breed. They may nest in spring crops and tillage on arable land, in wet grassland or in-bye pasture. However, drainage and improvement of grassland to provide better grazing and forage has greatly reduced suitable areas for feeding and nesting. An opportunity to offset some of the declines in breeding waders on farmland is possible through the creation of scrapes and wet flashes with sparse marginal vegetation. These can provide important feeding areas for adult and young birds alike, and can help a range of other important species of bird throughout the year. Table 1 lists the birds likely to benefit by the creation of scrapes and flashes.

**Table 1: Birds of conservation concern likely to benefit from the creation of a scrape.**

Species	BoCC status	Requirements for nesting	Requirements for feeding
Curlew	Amber	Tussocky damp grassland or heathland.	Pastures, damp fields, particularly with wet flushes
Lapwing	Amber	Short grass (0- 12cm) with some tussocks, spring tillage or bare ground	Short vegetation and wet mud in damp grassland and water margins,
Redshank	Amber	Short (5-15 cm) damp grassland with tussocks, close to standing water.	Damp grassland, marginal vegetation, mud and shallow water.
Snipe	Amber	Wet pastures and boggy heaths with a tussocky sward of 10-30 cm.	Soft damp ground, or shallow muddy bottomed pools. Close to cover.
Oystercatcher	Amber	Short grassland, bare ground or shingle banks, all with open views.	Short grassland, and marginal vegetation with soft damp ground to probe for food.
Ringed Plover	Amber	Bare stony ground including spring tillage	Soft damp mud or dry muddy areas.
Teal	Amber	Tussocky marsh vegetation near shallow water.	Aquatic invertebrates and weed seeds.
Shoveler	Amber	Tussocky marsh vegetation near shallow water.	Aquatic invertebrates and weed seeds
Water Rail	Amber	Tall dense clumps of marsh vegetation in shallow standing water.	Invertebrates
Turtle Dove	Red	Dense scrub and thick tall hedges often in climbers.	Weed seeds especially around short sparse vegetation.
Yellow Wagtail	Amber	Damp meadows or cereal fields	Insects from grazed pasture and short, sparse marginal vegetation around pools.
Song Thrush	Red	Trees, hedges or scrub.	Invertebrates, especially earthworms and snails, and, in autumn, fruit.
Starling	Red	Trees, buildings or nest boxes	Insects and seeds from grazed pasture and short, sparse marginal vegetation around pools.
House Sparrow	Red	Buildings or nest boxes, hedges or scrub	Insects and weed seeds.
Tree Sparrow	Red	Trees, buildings or nest boxes	Insects and weed seeds.
Linnet	Red	Thick thorny hedges. Also, scrub and brambles on grassland and waste ground.	Insects and weed seeds.
Yellowhammer	Red	Thickets and tall thick grass.	Insects and weed seeds.
Reed Bunting	Red	Ditch edges, crops and set-aside. Occasionally in hedges.	Insects and weed seeds.
Corn Bunting	Red	Crops, set-aside and field margins.	Insects and weed seeds.

BoCC= Birds of Conservation Concern: 2002-2007 (RSPB) Red = high concern, Amber = medium concern

The Countryside Stewardship Scheme, operated in England by DEFRA, provides payments to farmers to improve and extend wildlife habitats, including scrapes. This Information and advice note provides guidance on how to create and manage shallow scrapes and wet flashes for wetland birds on farmland. The landscape feature likely to be most appropriate to scrapes within the Countryside Stewardship Scheme is waterside land. Where there are no conflicts with other priorities, scrapes could also be considered for arable land, low lying coastal land, degraded old meadows and pasture, and for upland.

## Assessing the habitat

Scrape creation should only be attempted in suitable areas. These are often in low-lying poorly drained areas of fields, where as a result, crop yield and productivity is low. It is important to consider all the issues before proceeding, and where necessary, specialist advice should be sought. Table 2 identifies the key issues needed to be assessed.

**Table 2 Key issues to be considered in scrape creation**

Issue	Rationale	Points to consider
Geographic location	Breeding waders have been lost from large areas of the country. Newly created habitat may be only slowly colonised by target species.	<ul style="list-style-type: none"> <li>• Target species should ideally be present in the locality to enable colonisation.</li> </ul>
Site suitability	Waders generally require unenclosed habitats with an open and tussocky vegetation structure.	<ul style="list-style-type: none"> <li>• The site should be unenclosed, being relatively free of hedgerows, trees and other screening.</li> <li>• Is the site accessible for grazing or cutting management required to maintain the habitat structure.</li> </ul>
Hydrology and soils	Adult waders and their chicks feed in damp soil and shallow water with muddy margins	<ul style="list-style-type: none"> <li>• Can shallow water be maintained throughout the spring and early summer? (water control structures will be needed to manage water levels in some cases).</li> <li>• Are the soils suitable? Free draining soils are generally unsuitable unless the water table is close to the surface.</li> <li>• Have the water flows entering or leaving the area been identified and quantified.</li> <li>• Consult with appropriate authorities to ensure there is no conflict when altering drainage.</li> </ul>
Potential conflict with other features:	A scrape should NOT be created in areas where there is a conflict of interest, for instance where there is: <ul style="list-style-type: none"> <li>• Environmental</li> <li>• Historic and archaeological, or</li> <li>• Cultural landscape interest.</li> </ul>	<ul style="list-style-type: none"> <li>• Does the land have existing conservation value; eg a wet marsh or species rich flower meadow?</li> <li>• Is the land a Scheduled Ancient Monument, other archaeological site, or ridge and furrow field system?</li> <li>• Are there existing public rights of way?</li> </ul>

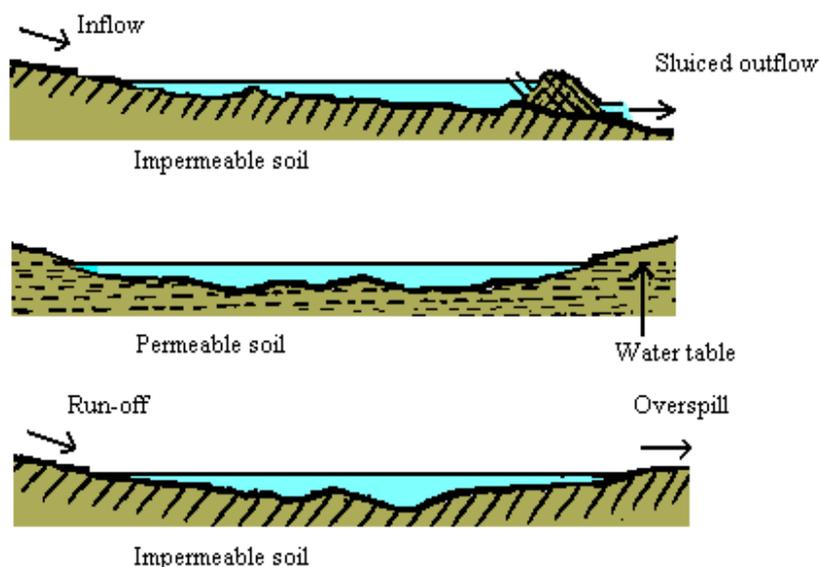
## Creating the scrape

Scrapes may be located in a range of soil and hydrological conditions (see Figure 1) but most frequently will be on relatively level open land, preferably seeking a known damp area where water lies naturally on impermeable soils. Creating a scrape is often simply a case of reversing or reducing the function of drainage in a particular area, in others water may be directed to a chosen location. Assess the soils and drainage patterns for the site and if necessary, block any drains that take water away from the scrape area or redirect others to drain into it. Consider any likely impacts created up-stream by blocking or diverting drainage and consult with the necessary statutory agency (eg The Environment Agency in England and Wales) for further advice. In potentially difficult situations, it may be necessary to assess rainfall against evapo-transpiration and volumes of water flow throughout the critical spring period, using local climate data from the Meteorological Office. Expert assistance may be required at this stage.

- There is no minimum size of scrape but 1 hectare will provide an adequate amount of feeding habitat.
- Several small flashes could be created instead of one larger one, and will provide more marginal habitat, but may also require more maintenance.
- Sculpting a convoluted, or sinuous, edge to the scrape will increase available feeding area and is likely to provide shelter in windy weather.
- Water depths in the scrape in early spring should typically be between 0–25 cm over half of the area and the remainder 25–50 cm.
- Ideally locate in a natural depression; otherwise, earthmoving, undertaken during a dry period, may be required to achieve the correct depth.
- A very gentle slope with an uneven finish will allow shallow wet pools to remain longer within the scrape and allow a gradual exposure of the feeding surface.

Any spoil material that is the by-product of excavating the scrape should ideally be removed away from the area. Alternatively, the spoil could be used to construct a bund around the downstream edge of the scrape. Note that this may limit the openness of the scrape and reduce its attractiveness to birds. Bunds need to be carefully engineered so that they are stable and impervious. It is very important to consult with the appropriate authorities to ensure that designs are appropriate and storage capacities are not exceeded, as there are serious safety considerations<sup>1</sup>.

**Figure 1 Types of scrape**



Type A: Dry area with impermeable soil. Water is retained by bunds and a control structure

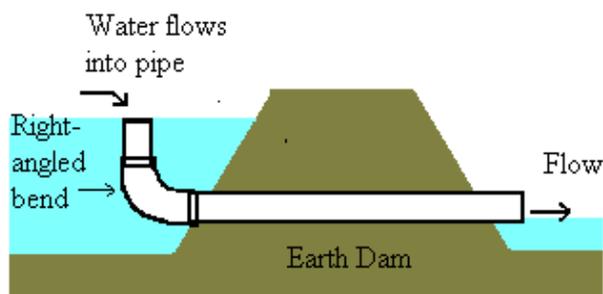
Type B: Permeable soil with high groundwater. Surface flooding occurs in a depression as a result of a high water table.

Type C: Wet area with impermeable soil. Water retained in low-lying wet areas.

### Managing water levels

The provision of shallow water and muddy margins are important to feeding waders, and ideally, the water levels in a scrape should be controllable. Without the ability to control the inflow or outflow of water, the scrape may dry out too soon in early dry weather, while a wet spring may result in levels remaining too high. A simple water control device, or sluice, can be installed to help manage levels.

**Figure 2: Diagram of a pipe sluice.**



The most cost effective sluice is likely to be constructed with a length of plastic piping, either rigid pipe with a swivel end or flexipipe, laid through an earth dam in the outflow ditch or bund (Figure 2). Each end extends beyond the dam, and the upstream end is held at the desired level. Flexipipe will normally need weighting to keep the lip submerged and require a length of rope to hold the upstream end at the desired level. Adjusting the upstream end (by swivelling the pipe or raising or lowering the rope) will set the desired water levels.

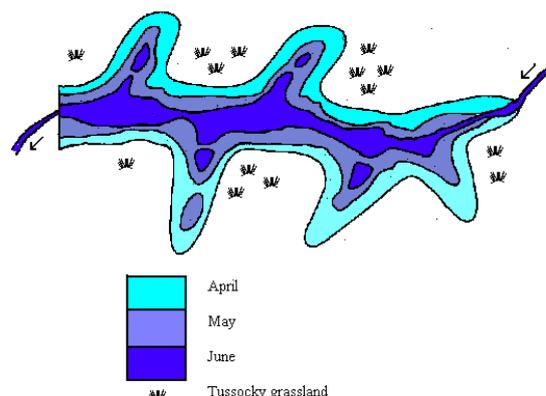
Other options are available, for example: drop-board sluices. These are more costly in time and resource to install. Details of these can be found in Reedbed Management for commercial and wildlife interests (see further reading).

<sup>1</sup> Note: Impounding volumes of water in excess of 25,000m<sup>3</sup> above ground falls under 1975 Reservoir Safety Provisions Act. Design and construction under control of DEFRA Panel Engineer and inspected annually. (A bunded scrape with an average depth of 25cm would need to be bigger than 10 ha to exceed this)

The scrape should naturally reduce in depth slowly during the spring through evaporation. Alternatively, depending on weather, let water out of the scrape slowly (1cm depth at a time) to create a muddy fringe. If the sluice is not connected to an existing watercourse, a soak away will need to be created behind the dam to take the water drawn off through the sluice.

In Figure 3 the outer line represents the extent of the open water in early April, ideally surrounded by short grassland with up to 20% tussocky grassland. The middle line represents the shrinking area of water by the end of May and the inner by the end of June. Annual weeds will have grown on the mud and set seed. By August the scrape should be all but dry and ready for management.

**Figure 3: Hypothetical scrape, showing receding area of water throughout spring and early summer.**



### Feeding requirements

Waders and their chicks require a constant supply of high protein invertebrate food throughout the breeding season. A rich supply of insects will also help other birds such as Reed Bunting and Yellow Wagtail, which rely heavily on insect food for their chicks. The conditions created by the periodic flooding and drying of ephemeral water bodies attract a limited but specialised range of invertebrates. These often occur in very high numbers because of reduced competition and few predators. The water body is often nutrient rich because of the levels of organic matter, which encourages high rates of invertebrate reproduction, particularly of midge larvae, which are a valuable food source for waders and their chicks.

As the water levels in the scrape are lowered, or dry naturally, annual plants will germinate on the margins; these provide additional food and cover for chicks. The seeds they produce will accumulate around the edges of the pool and will provide winter food for waterfowl as well as a variety of finches and buntings that come to the shallow margins to drink and bathe.

### Maintenance

It will be necessary to manage colonising plants, such as rushes or grasses, to prevent them from choking the whole area. Patchy cover of marginal plants will provide cover for young chicks, but if this exceeds more than 25% of the scrape, then management should be considered. Grazing with livestock at a moderate intensity is ideal as it a) creates a mosaic of tussocks and short turf used for nesting by a range of wader species, b) augments the invertebrate population of the margin through dunging. If grazing is not possible, cutting or cultivation could be used. Cutting should be timed for suitably dry periods after the end of the breeding season, usually between August and October. It is not necessary to remove the cuttings, as they will initially provide a source of seed food and later, as it decomposes, a source of insect food for birds.

Following summer/autumn management, re-flooding in winter will kill colonising perennial vegetation such as grass. Annual weeds, which germinate each year on the muddy margins as the water retreats, are important as they provide a large supply of seeds for dabbling duck as well as number of passerines such as Yellowhammer, Reed Bunting and Linnet.

## Further reading<sup>2</sup>

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<sup>2</sup> A complimentary set of Information and Advice Notes on the Ecology and Conservation for tree sparrow, yellowhammer, corn bunting, turtle dove, linnet, lapwing and yellow wagtail, all listed in Table 1, can be obtained from RSPB Conservation Management Advice. There are also available, leaflets for lowland and upland farmland habitats and species. Contact: [richard.winspear@rspb.org.uk](mailto:richard.winspear@rspb.org.uk) or telephone: 01767 680551

## Case study sites

### Old Hall Marshes, RSPB reserve

Old Hall Marshes nature reserve was acquired by the RSPB in 1984 and is run as a working farm as well as a nature reserve composed of several habitat types, including 70ha of improved grassland. The primary management of the reserve is as a traditional grazing marsh, providing sheep and cattle grazing to a number of local graziers.

The current 'improved' grassland is primarily managed for wintering Brent Geese by tightly grazing with sheep and cattle. A low-lying 'creek' feature, a remnant of the old saltmarsh grassland, retained water throughout the winter months but quickly dried out in the spring, minimising any benefit for breeding waders. By controlling water levels, this feature has been enhanced and maintained as a shallow scrape throughout the spring to provide feeding opportunities for breeding waders.

A windpump was installed in 2000 to lift water 2.0 m from the adjacent ditch and circulate through the scrape. Installation costs amounted to £9,000, while ongoing maintenance costs are negligible. Water can be let out of the scrape through a simple sluice mechanism of a 300 mm plastic pipe with a 90 degree 'turner' joint on the upward end. This enable precise water level control on the scrape by turning the joint to the required angle.

Breeding waders have increased from one or two pairs to 15 pairs of Lapwing and eight pairs of Redshank in 2002.



**The wader scrape at high winter level, showing shallow pools and long shorelines**

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### Newsham Hall Farm, North Yorkshire

This 330 ha farm supports a diverse range of lowland farmland habitats, including a newly created 31ha wetland complex of open water, fen and grassland.

After discussions with relevant agencies, the landowner was able to reinstate the wetland with a Countryside Stewardship grant to support the capital and revenue costs (£280 per ha for arable reversion to grassland and an annual re-wetting payment of £60 per ha for raised water levels)

Restoration was relatively simple, with the existing drainage infrastructure (an Archimedes Screw sub-soil system) switched off. This allowed ground water to rise, creating an area of shallow water (0.2 – 0.5m deep), surrounded by newly established wet grassland and hay meadows.

This attracts several hundred wintering waders (eg lapwing and golden plover), wildfowl and passage birds. Once the water management and new grasslands are established, breeding wader densities are expected to be high. Breeding reed buntings, sedge warblers and snipe have quickly colonised the wetland fringes.

**Water level control** – in the first year, water levels remained very high all year, with no lowering of levels during the breeding season to create good wader habitat. A newly installed flexi pipe system on the main ditch should now give the appropriate level of water level control

**Grazing management** – During the first year, there was no grazing in the wetland compartments. Agreements are now in place to deliver low-intensity cattle grazing year round, possibly using native hardy cattle breeds.

**Condition monitoring** –regular site visits from DEFRA and bird monitoring from a local volunteer should ensure site management continues to evolve to maximise the site’s biodiversity delivery.

Another CSS agreement is now in place, to convert an adjacent 40ha of arable land, into fenland and wet grassland. A bird hide overlooking the existing wet grassland area is proposed and the farm may be used as a demonstration farm in the future.

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### **Great Bridgeford Hall Farm, Staffordshire.**

Under the Countryside Stewardship Scheme, 10ha of floodplain grassland along the River Sow is being managed as extensively grazed damp pasture. Through the RSPB Waders of Wet Meadows project, CSS has been actively promoted and targeted at floodplain sites in Staffordshire, Shropshire and Cheshire. Great Bridgeford Hall Farm came under CS management because of this project.

To introduce in-field wet features and raised water levels, sub surface drains on the site have been exposed, creating shallow, well-profiled, linear scrapes/ditches.

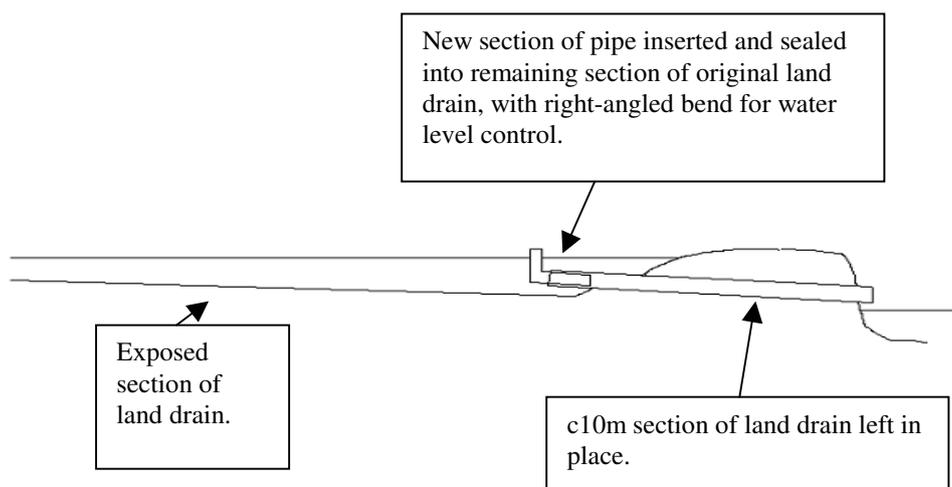
The final 10m of the drain, before they enter the River Sow, have been left intact. Where the remaining length of drain enters the exposed section, a right-angled-bend section of pipe has been inserted and sealed with the remaining land drain, to provide a system of control on water levels held in the exposed sections.

All exposed sections have been kept as shallow as possible, with gentle profiles. The result has been a network of linear, shallow scrapes/ditches across the site, providing plenty of shallow, muddy, margins. The right-angled bend arrangement provides water level control.

As well as creating the in-field wet features, the system has also resulted in raised water levels and some splash flooding across the field surface, away from the scrapes/ditches themselves.

Elsewhere on the site, land drains have been left in place, but blocked using commercially available pipe test plugs.

**Longitudinal cross section of new ditch/scrape arrangement.**



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Appendix 2:  
Great Crested Newt Ecological Habitat Management  
and Maintenance Plan (Amendment 012).  
Thomson Ecology (September 2011)

## Creation of favourable habitat features

- A3.1 Terrestrial and aquatic habitat enhancement for great crested newts at the receptor sites and habitat enhancement areas has included the creation of coarse grassland areas, scrub areas, dry ditch features, log piles, stone pile hibernacula and ponds. The extent (numbers and areas) of habitat creation works are shown in table A3.1.

**Table A3.1: Extent of habitat creation works for great crested newts at London Gateway receptor sites and habitat enhancement areas**

Receptor Site	Habitat	Approximate No. or Area
Great Garlands Farm Elbow Receptor Site (1.35ha)	Ponds	2 (0.05ha)
	Grassland	1.0ha
	Scrub	0.3ha
	Log Piles	8
	Artificial Hibernacula	8
Great Garlands Farm Elbow Habitat Enhancement Area (4.4ha)	Grassland	4.4ha
	Log Piles	4
Northern Triangle East GCN Receptor Site (27ha)	Ponds	24 (0.65ha)
	Grassland	20ha
	Dry Ditches	27
	Scrub	5.5ha
	Log Piles	24
	Artificial Hibernacula	24
Northern Triangle West GCN Receptor Site (~5ha)	Ponds	4 (0.1ha)
	Grassland	3.5ha
	Scrub	1.4ha
	Log Piles	8
	Artificial Hibernacula	8
Northern Landscape Receptor Site (30.5ha)	Ponds	22 (0.59ha)
	Grassland	23.71ha
	Scrub and Trees	6.2ha
	Log Piles	22
	Artificial Hibernacula	22
Stanford Wharf Nature Reserve Enhancement Area (10ha)	Ponds	2 (0.1ha)
	Grassland/Brownfield	9.9ha
	Woodland edge	500m
	Log Piles	2
	Hibernacula	2

## Management and maintenance of aquatic and terrestrial Habitats

A3.2 The management and maintenance measures set out below shall be implemented in the off-site receptor sites and habitat enhancement areas where applicable according to table A3.1. Habitat management measures for the on-site habitat corridors shall be implemented.

### **Management and Maintenance of Aquatic Habitat**

#### *Management of water levels*

A3.3 The measures set out in table A3.2 to control pond water levels shall be implemented.

**Table A3.2: Management of water levels**

<b>Objective</b>	Minimum summer water level for ponds shall not be below 50% of maximum planned depth.
<b>Management</b>	Ponds shall be topped up as necessary using mains water supply outlets currently available close to the ponds. Mains water is preferred since it is free from fish and fish eggs.
<b>Monitoring</b>	The water level in ponds shall be monitored annually in June.
<b>Remedial Action</b>	Top up water levels. Put liners into currently unlined ponds if necessary.

#### *Removal of excess aquatic vegetation*

A3.4 Aquatic vegetation shall not be removed from more than 60% of the pond area. The measures set out in tables A3.3a to manage aquatic vegetation for a variety of pond types and table A3.3b to manage aquatic vegetation within the on-site habitat corridor ditches shall be implemented.

**Table A3.3a: Management of aquatic vegetation**

<b>Location</b>	<b>Habitat creation sites</b>
<b>Objective</b>	10% to 50% open water
<b>Management</b>	Removal of excess vegetation shall take place annually in January to give 10% to 50% open water. Vegetation shall be search for newts, placed on the pond edge for 1-2 days and then removed from the vicinity of the pond.
<b>Monitoring</b>	The percentage cover of aquatic vegetation in ponds shall be recorded annually in June.
<b>Remedial Action</b>	If vegetation is excessive it shall be removed to give 35% to 60% open water. If vegetation is insufficient appropriate aquatic species shall be planted.

**Table A3.3b: Management of aquatic vegetation**

<b>Location</b>	<b>On site habitat corridor ditches</b>
<b>Objective</b>	10% to 25% open water
<b>Management</b>	Removal of excess vegetation shall take place annually in January to give 10% to 25% open water. Vegetation shall be searched for newts, placed on the pond edge for 1-2 days and then removed from the vicinity of the pond.
<b>Monitoring</b>	The percentage cover of aquatic vegetation in ponds shall be recorded annually in June.
<b>Remedial Action</b>	If vegetation is excessive it shall be removed to give 35% open water. If vegetation is insufficient appropriate aquatic species shall be planted.

*Removal of excess marginal vegetation*

- A3.5 The measures set out in table A3.4a to manage marginal vegetation for different pond types and the measures in table A3.4b to manage marginal vegetation within the on-site habitat corridor ditches shall be implemented.

**Table A3.4a: Management of marginal vegetation**

<b>Location</b>	<b>Habitat creation sites</b>
<b>Objective</b>	Unmanaged marginal vegetation over 25% to 50% of pond margin. Managed marginal vegetation over 50% to 75% of pond margin. No encroachment of marginal vegetation beyond 3 metres inward of plotted or original pond edge.
<b>Management</b>	Marginal vegetation shall be cut and removed annually in January for 55% to 75% of the pond margin. Planting of marginal vegetation shall take place if insufficient establishment has been achieved three years after construction.
<b>Monitoring</b>	Species diversity and percentage of encroachment shall be recorded through the receptor site management plan.
<b>Remedial Action</b>	Cutting and removal of marginal vegetation

**Table A3.4b: Management of marginal vegetation**

<b>Location</b>	<b>On site habitat corridor ditches</b>
<b>Objective</b>	Maintain marginal vegetation and a 2 metre strip at the top of the bank with optimal cover to benefit water voles and GCN.
<b>Management</b>	An annual cut and rake shall take place in September and October.
<b>Monitoring</b>	Monitor status of vegetation annually in June.
<b>Remedial Action</b>	Alteration of management regime.

### *Invasive Non-Native Plant Species*

- A3.6 The measures set out in table A3.5 to manage invasive non-native plant species in all pond types at all habitat creation sites and within the on-site habitat corridor ditches shall be implemented.

**Table A3.5: Management of invasive non-native plant species**

<b>Location</b>	<b>All Pond types at all habitat creation sites and on site habitat corridor ditches</b>
<b>Objective</b>	Unmanaged marginal vegetation over 50% of pond margin. Managed marginal vegetation over 50% of pond margin. No encroachment of marginal vegetation beyond 3 metres inward of plotted or original pond edge.
<b>Management</b>	If detected, non-native plant species shall be removed from ponds as soon as possible. The main invasive species likely to be encountered are Australian swamp stonecrop ( <i>Crassula helmsii</i> ), parrot's feather ( <i>Myriophyllum aquaticum</i> ) and floating pennywort ( <i>Hydrocotyle ranunculoides</i> ). The removed vegetation shall be searched for newts, placed on pond/ditch edge for 1-2 days and then removed from the vicinity of the pond or ditch.
<b>Monitoring</b>	Monitoring shall take place annually in June for the presence of invasive non-native plant species.
<b>Remedial Action</b>	Immediate removal of non-native species.

### *Shading scrub*

- A3.7 The measures set out in table A3.6 to manage shading scrub in all pond types at all habitat creation sites and within the on-site habitat corridor ditches shall be implemented.

**Table A3.6: Management of shading scrub**

<b>Location</b>	<b>All Pond types at all habitat creation sites and on site habitat corridor ditches.</b>
<b>Objective</b>	0% to 25% scrub shade
<b>Management</b>	Removal of scrub around pond/ditch margins to 25% or less in January each year shall take place.
<b>Monitoring</b>	The amount of shading scrub in ponds shall be monitored annually in June.
<b>Remedial Action</b>	Scrub shall be removed if shading is more than 25% of the pond/ditch margin.

### *Removal of Fish*

- A3.8 The measures set out in table A3.7 to manage fish in all pond types at all habitat creation sites shall be implemented.

**Table A3.7: Management of fish**

<b>Location</b>	<b>All Pond types at all habitat creation sites</b>
<b>Objective</b>	Absence of fish
<b>Management</b>	Ponds shall be checked for the continued hydrological isolation of water bodies and for potential sources of fish colonisation.
<b>Monitoring</b>	Monitoring for the presence of fish shall be carried out annually in June. Monitoring shall be carried out by visual search of the shallow pond margins and by netting.
<b>Remedial Action</b>	If fish are found to be present then action shall be take to remove them. Temporary draining and drying of ponds during winter months. Subject to approval by the EAG, it is proposed that pond draining and drying shall only be carried out if the presence of fish has been confirmed.

*Accumulation of silt*

- A3.9 The measures set out in table A3.8 to manage silt in all pond types at all habitat creation sites and within the on-site habitat corridor ditches shall be implemented.

**Table A3.8: Silt Management**

<b>Location</b>	<b>All Pond types at all habitat creation sites and on site habitat corridor ditches.</b>
<b>Objective</b>	Sediment layer no greater than 0.5 metres above original pond/ditch base.
<b>Management</b>	Vegetation (including roots) shall be removed from ponds as described in Table 3a-3d or the remedial actions shall be reverted to.
<b>Monitoring</b>	Ponds shall be annually monitored in June.
<b>Remedial Action</b>	Excavation of the existing pond/ditch or the creation of a new neighbouring pond if possible

*Control of pollution*

- A3.10 The measures set out in table A3.9 to manage pollution in all pond types at all habitat creation sites and within the on-site habitat corridor ditches shall be implemented.

**Table A3.9: Pollution Management**

<b>Location</b>	<b>All Pond types at all habitat creation sites and on site habitat corridor ditches.</b>
<b>Objective</b>	Absence of pollution
<b>Management</b>	Check for pollution sources and stop if possible.
<b>Monitoring</b>	The monitoring for the presence of obvious signs of pollution shall take place annually in June. pH and salinity levels shall be recorded.
<b>Remedial Action</b>	Terminate or divert pollution at source.

## Management and Maintenance of Terrestrial Habitat

### *Grassland Habitat*

A3.11 The measures set out in table A3.10a-A3.10e to manage grassland in the receptor sites and habitat enhancement areas shall be implemented. The measures set out in table A3.10f to manage grassland in the onsite habitat corridors shall be implemented.

**Table A3.10a: Grassland Management**

<b>Location</b>	<b>Northern Triangle East receptor site, Great Garlands Farm Elbow receptor site and Northern Triangle West receptor site</b>
<b>Objective</b>	Rank coarse grassland terrestrial habitat coverage over minimum 65% of site.
<b>Management</b>	The area shall be cut no more frequently than once every three years. Cutting shall be carried out by machine in the late summer* to minimum of 100mm and raked.
<b>Monitoring</b>	The Grassland shall be monitored annually in June and during GCN survey visits in April/May. Sward height and scrub invasion shall be recorded.
<b>Remedial Action</b>	Removal of natural scrub regeneration to <10% coverage in grassland area.

**Table A3.10b: Grassland Management**

<b>Location</b>	<b>Northern Landscape receptor site main grassland areas, Great Garlands Farm Elbow Habitat Enhancement Area</b>
<b>Objective</b>	Tussocky grassland with sward height in excess of 100mm over minimum 75% of site.
<b>Management</b>	The area shall be cut annually or cattle-grazed at low stocking density (see table A3.11 for stock density)
<b>Monitoring</b>	The Grassland shall be monitored annually in June and during GCN survey visits in April/May by an ecologist. Sward height and scrub invasion shall be recorded. Sward height shall be measured at least once per month by an ecologist if managed by grazing.
<b>Remedial Action</b>	If sward height is less than 100mm over more than 25% of the area then stocking density shall be reduced. Removal of natural scrub regeneration to <10% coverage in the grassland area.

**Table A3.10c: Grassland Management**

<b>Location</b>	<b>Stanford Wharf Nature Reserve Habitat Enhancement Area</b>
<b>Objective</b>	Hay meadow coverage at least 80% of the site.
<b>Management</b>	The hay meadow (covering at least 80% of the site) shall be cut annually in late summer*. Cutting shall be by machine and no lower than 100mm. Cuttings shall be raked and piled within the site.
<b>Monitoring</b>	The hay meadow shall be monitored annually in June. Sward height and scrub invasion shall be recorded.
<b>Remedial Action</b>	Annual cuts shall cease if the habitat created is deemed to be unsuitable for newts. Removal of natural scrub regeneration to <10% coverage in the grassland area.

**Table A3.10d: Grassland Management**

<b>Location</b>	<b>Receptor sites grassland areas within pond stock fences.</b>
<b>Objective</b>	Rank coarse grassland terrestrial habitat coverage over 100% of area within fences not occupied by hibernacula and log piles
<b>Management</b>	Grassland shall not be cut. Scrub shall be removed if causing die back of grass.
<b>Monitoring</b>	The grassland area shall be monitored annually in June and during GCN survey visits in April/May. Sward height and scrub invasion shall be recorded.
<b>Remedial Action</b>	Scrub shall be removed if shading causes die back of grassland or causes pond shading (refer to table 3.5).

**Table A3.10e: Grassland Management**

<b>Location</b>	<b>Stanford Warren and Marshes SINC</b>
<b>Objective</b>	Maintain existing suitable terrestrial habitat for great crested newts.
<b>Management</b>	Minimal intervention management.
<b>Monitoring</b>	Monitored annually in June. Sward height and scrub invasion shall be recorded.
<b>Remedial Action</b>	If habitats are found to be unsuitable for great crested newts, Thurrock Borough Council shall be informed and appropriate management shall be prescribed and implemented.

**Table A3.10f: Grassland Management**

<b>Location</b>	<b>Onsite habitat corridors</b>
<b>Objective</b>	Hay meadow along habitat corridor verges
<b>Management</b>	Annual cut in late summer by machine no lower than 100mm. Cuttings shall be raked and removed.
<b>Monitoring</b>	Monitored annually in June. Sward height and scrub invasion shall be recorded.
<b>Remedial Action</b>	Annual cuts shall be ceased if habitat created is deemed to be unsuitable for newts.

**Table A3.11: Example of maximum stock density for different durations of cattle grazing.**

<b>Grazing duration (days per year)</b>	<b>75</b>	<b>100</b>	<b>150</b>	<b>300</b>
No. animals per hectare	1	0.75	0.5	0.25
No. animals on Northern Landscape receptor site (~25ha of grassland)	25	18	12	6
No. animals on Great Garlands Farm Elbow Habitat Enhancement Area (~4.4ha of grassland)	4	3	2	1

Note: Figures have been rounded to create whole numbers.

*Dry ditch landscape features*

- A3.12 The measures set out in table A3.12 to manage dry ditch features that have been built between the ponds on the Northern Triangle East receptor site shall be implemented.

**Table A3.12: Management of dry ditch features**

<b>Location</b>	<b>Northern Triangle East</b>
<b>Objective</b>	Linear habitat of rank coarse grassland with up to 25% natural scrub regeneration forming habitat corridors linking ponds.
<b>Management</b>	The grass shall not be cut and natural scrub regeneration in excess of 25% area coverage shall

	be removed by hand cutting.
<b>Monitoring</b>	Monitoring shall take place annually in June and the percentage of scrub cover shall be recorded.
<b>Remedial Action</b>	Scrub removal

*Scrub*

A3.13 The measures set out in table A3.13 to manage planted scrub areas shall be implemented.

**Table A3.13: Management of planted scrub areas**

<b>Location</b>	<b>All areas of planted scrub</b>
<b>Objective</b>	Maintain scrub cover over designated areas (20% of GGFE, NTE & NTW, 7% of the NLRs as part of the structural landscape zone 1A & 1B and 2.08ha on the off site rail bend) with understorey of high value as terrestrial habitat for newts.
<b>Management</b>	No management of the scrub vegetation shall take place in the first five years. If necessary weed growth at the base of young plants shall be cut by strimming to reduce competition. After five years scrub areas shall be assessed and following assessment, management shall be implemented to improve the value of these areas for the species. Management at this stage may include coppicing, piling of coppice brush and additional log piles.
<b>Monitoring</b>	Monitoring shall take place annually in June. Any loss (%) of planted scrub shall be mapped and recorded.
<b>Remedial Action</b>	Replacement of dead scrub plating. Enhancement of understorey layer with deadwood.

*Log Piles*

A3.14 The measures set out in table A3.14 to manage log piles at all receptor and habitat enhancement areas shall be implemented.

**Table A3.14: Management of log piles**

<b>Location</b>	<b>All receptor and habitat enhancement areas</b>
<b>Objective</b>	Partially rotted, intact, log piles.
<b>Management</b>	The log piles shall be replaced or additional logs deposited to maintain the pile at a minimum of 75% of the original dimensions.

<b>Monitoring</b>	Monitoring shall take place annually in June.
<b>Remedial Action</b>	Reconstruction or replacement.

*Artificial Hibernacula*

A3.15 The measures set out in table A3.15 to manage artificial hibernacula shall be implemented.

**Table A3.15: Management of artificial hibernacula**

<b>Location</b>	<b>All receptor and habitat enhancement areas</b>
<b>Objective</b>	Intact stone piles of no less than 90% of original dimension.
<b>Management</b>	The artificial hibernacula shall be managed by replacing or depositing additional stones to maintain the original dimensions.
<b>Monitoring</b>	The artificial hibernacula shall be checked annually in June.
<b>Remedial Action</b>	Replacement or reconstruction.

Appendix 3:  
GCN Monitoring Recording Sheet



Appendix 4:  
Environmental Advisory Group Constitution

## **Environmental Advisory Group Constitution**

1. Formation and Operation of the Advisory Group
  - 1.1 The Environmental Advisory Group (**EAG**) (formerly known as the Ecological Advisory Group) was established in 2008 by London Gateway Park Development Ltd (**LGPDL**).
  - 1.2 The EAG Committee (**Committee**), consisting of DP World London Gateway staff, was established by London Gateway Park Development Ltd for the purpose of implementing this constitution and the roles described therein.
  - 1.3 The EAG consists of up to two nominated representatives (or their delegates) of each Party, set out in Schedule 1 (together the **Parties**) as notified by each Party to all the other Parties from time to time in writing. Other representatives from statutory and non-statutory groups may be invited to attend the EAG from time to time but will not have voting rights.
  - 1.4 Each Party shall have one vote whether it nominates one or two representatives, and may vote by proxy.
  - 1.5 The representatives (or delegates) of each Party may be accompanied by one or more additional representatives upon the EAG's approval in each case.
  - 1.6 The EAG will be chaired by a representative of the EAG Committee and will;
  - 1.7 Meet periodically (at least once every 12 months). Meetings shall be convened by the Chairman with at least 20 working days prior written notice with an agenda. Any of the Parties may request the Chairman to call a meeting;
  - 1.8 Hold such meetings at a convenient location to be provided by the Committee; and
  - 1.9 Appoint a secretary who shall be responsible for sending draft minutes of each meeting to the Parties within 10 working days of the meeting. The Committee shall provide the secretarial services unless otherwise agreed.
  - 1.10 One representative of all Parties shall sign the minutes within 20 working days (or as agreed) of their receipt. Any Party wishing to propose amendments to such draft minutes shall notify the Parties within 20 working days of receipt. Comments by any Party on proposed amendments shall be made within 10 working days of receipt. If after 10 working days no proposed amendments have been notified, the minutes will be taken as agreed and will be duly signed; otherwise agreement of the minutes will be subject to discussion between the Parties.

## 2. Expenses

- 2.1 The administrative expenses of the EAG (including office and secretarial expenses) shall be borne by the Committee but the ordinary expenses of individual representatives or delegates in attending the meetings of the EAG shall be borne in each case by the Party nominating them as being a part of the exercise of their respective statutory duties.

## 3. Terms of Reference

- 3.1 The EAG shall:
- 3.2 Advise the Committee on environmental management issues arising out of the development implemented under the London Gateway Local Development Order (**LDO**).
- 3.3 Review environmental monitoring and other information collected by London Gateway Services Limited (**LGSL**) for the purpose of the implementation of the LDO and conformity with associated existing and new Environmental Permits and Licences;
- 3.4 Consult relevant parties (such to be agreed by the EAG) and consider if it sees fit any relevant representations made by them;
- 3.5 Consider any relevant questions raised by the Parties in connection with operation of the LDO.
- 3.6 Make suggestions to the Committee on any relevant matter connected with the administration of the Ecological Mitigation and Management Plan (**EMMP**) or this constitution which could further the interests of achieving the objectives set out and agreed in the EMMP or this constitution.
- 3.7 Shall stimulate interest and the voluntary engagement of the occupiers of the Logistics Park as the case may be in the achievements of the EMMP, Code of Construction Practice, Design Code or this constitution. The EAG acting in concert, may invite representatives from relevant public organisations or user groups, to attend a part of meetings in the context of any relevant agenda item. Such strangers will not be entitled to vote or to take part in any formal part of the meeting and will be required to leave the meeting during any confidential discussion or any discussion involving financial matters or management of the EAG;
- 3.8 Produce and make publicly available an Annual Report which will comprise in the form of an Executive Summary a review of the progress to date in respect of the LDO or this constitution;
- 3.9 In light of the review of the progress mentioned above to make recommendations to the Committee for any modifications considered necessary by the EAG to ensure the measures in the EMMP or this constitution are met.

#### 4. Decisions and Dead-Lock

- 4.1 Decisions of the EAG (including recommendations to the Committee and EAG's annual report) require unanimous consent. No approval, consent, or agreement required from or by any party under this constitution shall be unreasonably withheld or delayed. If any issue is unresolved after formal consideration by the EAG, each Party may by written notice to the other Parties, who shall in good faith negotiate to resolve that issue within 30 (thirty) calendar days, or for such other period as the EAG may agree, subject to paragraph 4.2 of this constitution, refer the dispute to binding arbitration pursuant to paragraph 10 of this constitution. In matters of scientific opinion any Party may make use of an Expert to aid in the resolution of dead-lock.
- 4.2 If the Committee exercises its vote in opposition to all other voting parties of the EAG then the Parties shall (after having followed the procedure in paragraph 4.1 above) follow the procedure in this paragraph 4.2. The Committee's decision to so vote will be reviewed by its Lawyer within 28 working days of the failure by the senior officers to reach agreement, such review to be circulated to voting members of the EAG. Recipients of the review will have 14 days in which to respond and such response will set out whether or not that member intends to refer the matter to arbitration pursuant to paragraph 10 below against the Committee and if so on what grounds. The Committee shall respond to any intention of a member to refer the matter to arbitration within a further 28 days. Thereafter the Party intending to take such action shall either take such action or shall either confirm to the EAG that its concerns have been satisfied by the Committee or that it requires further time in which to consider the matter.

#### 5. Annual Meeting and Annual Report

- 5.1 The Committee will constitute a formal meeting of the parties (plus others) which shall report once annually as to progress made against the Terms of Reference in this constitution, and the LDO, including monitoring outcomes required in the Code of Construction Practice, Design Code and EMMP. Annual Reports will be published on the London Gateway website and submitted to Thurrock Borough Council for the duration of the life of the EAG. The Committee agrees to consider properly the advice of the EAG of which it is a party and to proceed according to that advice where that advice is based on sound scientific knowledge and judgement and where it is so agreed by all parties to the EAG acting unanimously (or subject to the dispute resolution procedure as set out at paragraph 9 below) provided that all such required actions of the Committee are lawful for it, and fall within its statutory remit and are within its control.

#### 6. Informal dialogue

- 6.1 In addition to formal EAG meetings, the Parties intend, but are not required so to do, to maintain an informal, interactive dialogue throughout the course of the implementation of the LDO.

7. Dissolution of the Advisory Group

7.1 The EAG shall continue in operation for the duration of the LDO and for any longer period as needed by a monitoring regime under the EMMP. Thereafter it may only be dissolved irrevocably by unanimous agreement of the Parties

8. Statutory Remit of the Parties

8.1 No Party will exceed its statutory duties when considering issues before it as the EAG. The EAG will inform the relevant statutory remit of each party but will not take the place of statutory duties of the relevant parties (if any).

8.2 Nothing in this constitution shall be taken to prejudice or otherwise fetter the exercise by Natural England or the Environment Agency of their respective statutory functions.

9. Arbitration

9.1 Subject to paragraph 4 of this EAG constitution, any dispute or difference arising out of or in connection with this EAG constitution (including without limitation any question regarding its existence, validity, interpretation, performance or termination) shall be referred to and finally resolved by arbitration under the Rules of the London Court of International Arbitration (“the Rules”), which Rules are deemed to be incorporated by reference into this paragraph. It is agreed that:

9.2 The number of arbitrators shall be one;

9.3 The appointing authority for the purpose of the Rules shall be the London Court of International Arbitration;

9.4 The seat, or legal place, of arbitration shall be London;

9.5 The language to be used in the arbitration shall be English;

9.6 The governing law of the agreement shall be the substantive law of England and Wales.

Schedule 1

The Parties to the EAG are:-

- DP World;
- Natural England (“NE”);
- Environment Agency (“EA”);
- Thurrock Borough Council.