

## Ecology Factsheet

### Background

Cambridgeshire is home to a diverse array of wildlife, and many of the species of plants, animals, and habitats present are protected by law.

Ecology was an important factor in the site selection for the new facility. In 2020, ecologists undertook a Preliminary Ecological Appraisal (PEA), which involved mapping habitats and assessing their potential to support protected and notable species. Anglian Water is now carrying out more detailed ecology surveys to identify and understand potential ecological constraints in and around the relocation site. This will further inform our decision-making process and help us in providing avoidance measures, making sure our impact on biodiversity is as minimal as possible. Additionally, we are committed to delivering an ambitious scheme of habitat creation, restoration, and enhancement, delivering a “biodiversity net gain” (BNG). Our surveys and analysis will also help us to understand the best way to do this.

This factsheet provides a background to our ecological surveys. We have worked with stakeholders such as Natural England to inform and agree on the scope of these surveys. We will provide further ecological information during our third phase of consultation when we publish our Preliminary Environmental Information Report (PEIR).

### Key ecological features

We have collected a range of information through available habitat data, our preliminary surveys, and discussions with stakeholders. The area of the proposed site is generally of low ecological value. However, there is a County Wildlife Site (CWS) to the south-east of the proposed facility, known as Low Fen Drove Grasslands and Hedges CWS.

The CWS is likely to be a key foraging/commuting link for birds and bats, as well as supporting various invertebrates (such as insects, beetles, and spiders) and other species. Although there are no other designations within the site, it is recognised that sites and features of high biodiversity up and downstream of the proposed connection with the River Cam and within 10km of the site also need to be considered in our assessments. This includes the Stow-cum-Quy Site of Special Scientific Interest (SSSI), Wilbraham Fens SSSI, other SSSIs, and statutory designated sites (e.g. Wicken Fen Ramsar, Fenland Species Area of Conservation (SAC) and Devil’s Dyke SAC). Our assessments will be based on the outcome of the range of surveys completed in 2020 – 21 used to develop the baseline understanding of the ecological features of the Cambridge Waste Water Treatment Plant (CWWTP) site.

### What surveys are we undertaking?

Our experienced ecology experts are in the process of completing surveys of different species, such as great crested newt and reptiles, as well as general habitat surveys which cover large areas of grassland, farmland, hedgerows, watercourses, and woodland. The timing of surveys is matched to appropriate times and seasons depending on the species or habitat. Our ecologists are appropriately licensed in respect of protected species and will be carrying out work throughout this year, at

different times of the day and night. Our survey programme has been developed in consultation with stakeholders. More details about the different surveys we will be completing are given overleaf.

**Table 1: Survey Types**

Survey type	Summary details
Vegetation	Several vegetation surveys are being undertaken across the site. These general and specialist non-intrusive (not damaging) surveys help identify and record plant species that are either common or scarce and also where these plants are located. Examples of some of the vegetation surveys to be undertaken are general habitat site surveys, hedgerow surveys, river habitat surveys (RHS), and the national vegetation classification (NVC) surveys.
Terrestrial invertebrates	Surveys for terrestrial invertebrates (land-living animals that lack a backbone such as bees, butterflies, moths, snails, slugs, and spiders) will be completed at various locations across the site identified as being of high invertebrate interest. Surveys started in May and will continue through to September, using a range of survey techniques such as pitfall trapping, vane trapping, beating, sweeping and blossom sampling as appropriate to the habitat at that site.
Bats	Different types of surveys will be completed to understand the presence or absence of bats within the site <sup>1</sup> , including how they use the site. These surveys include preliminary work to assess the potential presence of bat roosts in structures, buildings, and trees. Additional surveys will be completed such as dusk emergence and dawn re-entry surveys of potential roost features, and bat activity transects. The bat activity transect surveys will also be supported using static bat detectors <sup>2</sup> which were deployed at four locations in May, and will be deployed again in July and September. These will be left for one week at a time to record bat activity across the site. Habitats that provide continuous high-quality habitat that is well connected to the wider landscape can be used by commuting and foraging bats. These include habitats such as rivers, streams, hedgerows, lines of trees, and woodland edge.
Great crested newts	Suitable ponds and ditches within 250m of the site were surveyed for great crested newts (GCN) between March and mid-June 2021. These surveys incorporated presence/absence surveys (including environmental DNA (eDNA) surveys – see Fact Box below)). To date, no GCN have been found. Where GCN are confirmed during the presence/absence surveys, six population size class assessment surveys will inform a European Protected Species (EPS) mitigation licence, if required.
Badgers	Surveys to identify sett types and locations have been completed for the site plus 100m during spring. These assessment surveys involve walking along field boundaries and hedgerows looking for signs of badgers such as dung pits, scratching posts, hair evidence around setts and under fences, badger paths between setts and foraging signs.
Otters and water voles	Combined otter and water vole surveys will be completed 100m on either side of the part of the site for the proposed treated effluent transfer pipeline and associated discharge location on the River Cam. Surveys will also be completed along all other suitable (i.e. wet) watercourses, ditches, and ponds within the site and 50m outside of the site boundary. Surveys will comprise four visits with two visits between mid-

<sup>1</sup> These surveys will cover the proposed WWTP site facility, the existing WWTP works at Milton, pipeline, and tunnel areas and where necessary and will be undertaken within the project's indicative boundary beyond the site by plus 100m.

<sup>2</sup> a machine that records and converts the echolocation made by bats, to audible frequencies, so that they can be analysed afterward.

	April and September 2021 and two further visits through the autumn/winter 2021/2022.
Breeding birds	All birds are protected during their breeding season, and surveys will be completed to identify breeding locations. These surveys include identification of suitable habitat for nesting and foraging birds, such as the River Cam and with its adjacent floodplain grazing marsh, as well as other waterbodies including standing water, arable farmland with fields separated by hedgerows, small copses of woodland, scrub, and scattered trees. Specialist species surveys will also be completed for priority species such as turtle dove, grasshopper warbler, barn owl, kingfisher, and Cetti's warbler in suitable river, hedgerow, scrub, woodland habitats. Surveys started in April and will continue through to August 2021.
Aquatic macrophytes	Surveys for aquatic plants (macrophytes) will be completed on the River Cam using 100m transects within the project's indicative boundary. Surveys will be undertaken by boat between June and September 2021. Macrophyte surveys will be taken on the ditches within 100m of the project's indicative boundary following Buglife Guidance <sup>3</sup> , which proportionality samples the ditch network based on the number of ditches and size of the survey area. Each ditch will be surveyed once between June and September 2021.
Aquatic macroinvertebrates	A macroinvertebrate survey will be completed at two points upstream and downstream of the current discharge location on the River Cam. Two survey visits were completed in Spring and will be undertaken again in Autumn 2021 to account for seasonality and understand the current macroinvertebrate community in the river. Macroinvertebrate samples will be taken on ditches within 100m of the project's indicative boundary following Buglife Guidance which proportionality samples the ditch network based on the number of ditches and size of the survey area. Each ditch will be surveyed once between June and September 2021.
Fish	Surveys for fish will be completed on the River Cam at two locations – up and downstream of the current Waste Water Treatment Works outfall location. Survey methods will be a combination of electro-fishing <sup>4</sup> or seine netting and eDNA. A physical survey will be completed between June and October 2021, and samples collected for eDNA in spring (April to June) and autumn (September to November).
Reptiles	Surveys for reptiles (lizards and snakes) will include all suitable habitats within the site plus any contiguous habitat within 50m. This includes the existing facility at Milton, the Low Fen Drove Grasslands and Hedges CWS, and grasslands adjacent to the River Cam associated with the treated effluent pipeline and shaft works. Seven survey visits in each area started in April and will continue to September 2021, avoiding the warmest months of July and August where possible (as reptiles will seek

**Fact Box: About environmental DNA (eDNA):**

eDNA analysis uses a non-invasive technique to understand the presence (or absence) of species and their distribution. eDNA consists of small parts of genetic material left in the environment (water, sediment or soil) by animals. Our surveys collect samples which are then sent for analysis. The sample is sequenced and compared with DNA sequences available in open global genetic databases through a process called metabarcoding. Using eDNA alongside established monitoring methods can help with faster and regular monitoring of species and their distribution, and help identify changes in habitat quality through repeat surveys.

<sup>3</sup> Buglife is a NGO which specialises in the conservation of terrestrial and aquatic invertebrates, as part of their work in conservation they have published a variety of guidance on invertebrates species and their management.

<sup>4</sup> Electrofishing - this is a scientific approach used to sample fish populations by passing a controlled electrical current into the water. This shocks the fish, allowing them to be caught without harming them with hooks. The fish are collected by a small hand net and temporarily placed in a holding tank where they recover and be observed for data collection before being returned to the river.

The data collected from the ecological surveys will be used to form a baseline of information for the Environmental Impact Assessment (EIA). This body of information will be used to support our ongoing assessment of the new facility and help us to understand how we can avoid negative impacts to the natural habitats, plan our works to avoid and mitigate against disturbance to ecological features during construction, and inform the design so that there are mitigation, compensation, and enhancement features embedded into the project that seeks to benefit biodiversity.

### Example survey images



*Examples of linear ditch features that may be used by foraging and commuting bats (left) and tree features (right) that may provide potential bat roost features. (Mott MacDonald)*



*Ecologists look for signs of badgers such as footprints and assess the activity of badger setts. (Mott MacDonald)*



*Reptile surveys are being completed as part of the project. Common lizard has been recorded at Low Fen Drove Grasslands and Hedges CWS. (Mott MacDonald)*

## Potential impacts on biodiversity

We recognise that, without appropriate mitigation, the construction of the new facility and presence of permanent infrastructure has the potential to impact existing ecological features. Based on our assessment of the site so far, it is understood that the construction of the new facility, without mitigation, has the potential to:

- Result in hydrological changes to designated sites.
- Result in disturbance from noise and vibration which could damage habitats and harm wildlife.
- Result in the removal of habitats, resulting in habitat loss, fragmentation and severance. This could result in the loss of CWSs, priority habitats such as coastal and floodplain grazing marsh, deciduous woodland, hedgerows and ponds.
- Contribute to increased collision risk to wildlife from construction vehicle movements.
- Temporarily change local air quality and create dust which could impact sensitive plants and habitats, particularly within designated sites.
- Cause some wildlife to move to new locations, in particular nocturnal animals and other sensitive wildlife.

The operation of the new facility, without mitigation, has the potential to:

- Create a lighting nuisance to retained habitats (such as Low Fen Drove Way Grasslands and Hedgerows CWS) resulting in disturbance to and severance of wildlife corridors, which may impact biodiversity on and adjacent to the Proposed Development.
- Result in changes to the water quality at river discharge locations which may affect aquatic wildlife and plants.

## Opportunities for enhancements and mitigation of impacts

Our proposals will include a range of mitigation measures which will seek to avoid or reduce any potential impacts. This could include planting and habitat creation, for example. Depending on the location, extents and types of planting, the creation of new habitats has the potential to result in a positive impact on biodiversity.

A hierarchy of measures will be applied to limit negative impacts on biodiversity and achieve a biodiversity net gain (BNG). The sequential steps for the mitigation hierarchy include avoidance measures, minimisation of impacts through mitigation, and as a last resort compensation measures for losses that cannot be avoided.

The design, where possible, will seek to embed mitigation features to avoid or minimise impacts. These could include:

- Careful siting of permanent and temporary development to avoid the most sensitive habitats.
- Selecting technology which is more sympathetic (such as types of lighting).
- Designing a connection to the river that does not cause erosion at the river and that includes features that blend more carefully into the environment.
- Devising our construction programme to account for seasonal restrictions and shorten the disturbance.

We will use a Construction Environmental Management Plan (CEMP) or similar document to set out how Anglian Water will control, monitor and manage construction activities. Ecological mitigation required during construction will be detailed within the CEMP and will govern how and when our works are completed. It will also set out how we will monitor our activities to understand how effective our controls are. These plans and monitoring activities will be developed in consultation with our stakeholders including Natural England, National Trust, local planning authorities, Local Wildlife Trust and the Environment Agency. In monitoring our activities, we will be able to adaptively amend and change our management plans. The CEMP and subsequent management plans will form part of the suite of documents submitted as part of the DCO application.

The delivery of compensation measures, such as the reinstatement of habitats following construction, habitat creation, the planting (such as the replacement of species-rich grassland, hedgerows and woodlands), and inclusion of ecological enhancements would seek to achieve a net gain in biodiversity. Furthermore, these measures would be developed to complement existing initiatives to improve local biodiversity as well as improving access to these features through new and extended paths. Examples of enhancements which could be adopted as part of the new facility include: the inclusion of bat and bird boxes; creation of log piles (the movement of any deadwood and mature tree stumps into new areas of woodland habitat creation) to provide habitat for terrestrial invertebrates and reptiles; the creation of mosaic of habitats (patches of open ground, dense woody vegetation, shallow-sided ponds, with species-rich grasslands) for birds such as turtle dove, insects and reptiles.

The new, modern facility also seeks to provide long term benefits to the River Cam through improved performance and water quality benefits with associated benefits to aquatic ecology. We will report on both the baseline and mitigation as part of our next phase of public consultation, when we publish our Preliminary Environmental Information Report (PEIR). The information will also be discussed with specialist stakeholders including Environment Agency, Natural England and the Wildlife Trust for Bedfordshire, Cambridgeshire and Northamptonshire.