

The Sizewell C Project

6.6 Volume 6 Two Village Bypass
Chapter 7 Terrestrial Ecology and Ornithology
Appendix 7A.5B: Water Vole Licence Method Statement

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1 WATER VOLE LICENCE METHOD STATEMENT

1.1 Introduction

- a) Purpose
- 1.1.1 Sizewell CC Co. (SZC Co.) is proposing to build a new nuclear power station at Sizewell in East Suffolk, known as Sizewell C. Located to the north of the existing Sizewell B power station, the Sizewell C main development site is located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft; to the north-east of the town of Leiston. The project has been submitted as a component Nationally Significant Infrastructure Project (NSIP) and will be determined through the Development Control Order Process (DCO).
- 1.1.2 The proposed Sizewell C nuclear power station would comprise two UK EPR™ units with an expected net electrical output of approximately 1,670 megawatts (MW) per unit, giving a total site capacity of approximately 3,340MW. The design of the UK EPR™ units is based on technology used successfully and safely around the world for many years, which has been enhanced by innovations to improve performance and safety. The UK EPR™ design has passed the Generic Design Assessment process undertaken by UK regulators (Office for Nuclear Regulation and Environment Agency), and has been licenced and permitted at Hinkley Point C. Once operational, Sizewell C would be able to generate enough electricity to supply approximately six million homes in the UK.
- 1.1.3 In addition to the key operational elements of the UK EPR™ units, the Sizewell C Project comprises other permanent and temporary development to support the construction and operation of the Sizewell C nuclear power station. The key elements are the main development site, comprising the Sizewell C nuclear power station itself, offshore works, land used temporarily to support construction and a series of off-site associated development sites in the local area including:
 - Two temporary park and ride sites; one to the north-west of Sizewell C at Darsham (the 'northern park and ride'), and one to the south-west at Wickham Market (the 'southern park and ride') to reduce the amount of traffic generated by the construction workforce on local roads and through local villages;
 - A permanent road to bypass Stratford St Andrew and Farnham (referred to as the 'two village bypass') to alleviate traffic on the A12 through the villages;



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- A permanent road linking the A12 to the Sizewell C main development site (referred to as 'Sizewell link road') to alleviate traffic from the B1122 through Theberton and Middleton Moor;
- Permanent highway improvements at the junction of the A12 and B1122 east of Yoxford (referred to as the 'Yoxford roundabout') and other road junctions to accommodate Sizewell C construction traffic;
- A temporary freight management facility at Seven Hills on land to the south-east of the A12/A14 junction to manage the flow of freight to the main development site;
- A temporary extension of the existing Saxmundham to Leiston branch line into the main development site ('the green rail route') and other permanent rail improvements on the Saxmundham to Leiston branch line, to transport freight by rail in order to remove large numbers of HGVs from the regional and local road network; and
- Green rail route extension and rail improvements to the Saxmundham to Leiston branch line.
- 1.1.4 The components of the Project listed above are referred to collectively as the 'Sizewell C Project'. This draft water vole licence method statement is compiled in relation to the works related to the two village bypass only. Where required, mitigation and avoidance measures proposed in relation to the other aspects of the project are outlined in the Sizewell C Project Environmental Statement Chapters related to those components of the project.
- 1.1.5 This Draft Water Vole Licence Method Statement presents methods to mitigate potential impacts on water vole (*Arvicola amphibius*) populations present within the two village bypass site. The purpose of this document is to provide a method statement for water vole displacement that can be used, to facilitate discussion with the licensing Regulator, Natural England, and to support of the detailed site design and procurement of specialist Contractors for the project. See **Figure 1**, in **Appendix A** for construction areas and site layout respectively.
 - b) Description of the Proposed Works
- 1.1.6 The two village bypass site is located to the south and south-east of Stratford St. Andrew, and to the south-west to south-east of Farnham (presented in **Figure 1**).
- 1.1.7 The two village bypass would comprise a new permanent two-lane single carriageway road that would depart the A12, creating a new route around



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the south of Farnham and Stratford St Andrew, before re-joining the A12 east of Farnham.

- 1.1.8 Once operational, the two village bypass would be open to construction traffic associated with the construction of the Sizewell C project as well as to the general public. The two village bypass would reduce the volume of construction traffic traveling through Farnham and Stratford St Andrew. Once construction of Sizewell C is completed, it will remain open for general use by the public and would provide legacy benefit to the residents of Farnham and Stratford St Andrew.
- 1.1.9 Two components of the bypass construction have the potential to impact upon water vole, the River Alde overbridge and flood mitigation areas. These are detailed below.
 - Proposed River Alde overbridge:
 - The crossing of the River Alde would comprise an overbridge, 60m in length, and 7.5m in height. This would preserve the natural integrity of the banks of the river, bed and bankside and minimise shading effects and is of sufficient size and capacity to enable passage for water vole and otter to be maintained during construction and operation. The layout of the overbridge is presented in Figure 3.
 - Flood arches would be within the embankment. Where these flood arches channel a water course, an otter ledge would be installed, if required, to allow passage at times of high flows.
 Fencing would be incorporated to guide otters to the crossing point.
 - Existing drains from the adjacent fields would be culverted so that their use would continue unchanged. Field drains located at the western end of the bypass, either side of the proposed River Alde embankment, would be diverted along the base of the embankment to the River Alde where possible.
 - Flood mitigation areas
 - Any required flood compensation areas would comprise reprofiled topography within or at the edge of the River Alde floodplain; in defining their exact location and design, SZC Co would seek to minimise impacts to ditches and watercourses and so avoid interfering with suitable water vole habitats. A buffer distance of 10m would be maintained during construction and

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- operation with the toe¹ of the bank of the River Alde and ditches, where feasible, to protect the integrity of the banks as well as the associated ecological features.
- There may also be the requirement to clear vegetation around the River Alde and install new or divert existing field drains in relation to the flood compensation areas.
- c) Purpose of the License
- 1.1.10 During targeted surveys in 2019, numerous water vole field signs, including burrows, droppings, latrines and feeding signs were found along the River Alde (referred to as Ditch 1) in areas that would be affected by the two village bypass. It is considered likely that the population present is a low population (survey results presented in Figure 2). Water voles are protected under Schedule 5 of the W&CA (Ref 1), and are included under Section 41 of the NERC Act (Ref 2).
- 1.1.11 Water vole habitat has the potential to be impacted due to the construction of a bridge across the river and creation of flood compensation areas.
- 1.1.12 As a result, this licence is required to permit the Sizewell C Project to proceed without triggering an offence under wildlife legislation.
 - d) Proposed Licensable Activities
- 1.1.13 Displacement activities are proposed under this draft method statement for water vole to mitigate potential impacts on water vole in relation to the proposal to build the two village bypass.
 - e) Planning Status
- 1.1.14 The Sizewell C project has been submitted as a component NSIP and will be determined through the DCO.
 - f) Compliance with Best Practice
- 1.1.15 Survey methodology, displacement techniques and monitoring requirements all comply with the guidance as set out in the latest Water Vole Mitigation Handbook by Dean et al. 2016 (Ref 3).
- 1.1.16 The appointed Ecological Clerk of Works (ECoW) should be members of the Chartered Institute of Ecology and Environmental Management

¹ The toe of the bank is defined as the area of the bank at, and immediately above, water level.

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(CIEEM) at the appropriate level and follow their code of professional conduct when undertaking ecological work.

g) Structure of Report

- 1.1.17 This Draft Water Vole Method Statement has been set out as follows:
 - Section 1: Background Information.
 - Section 2: Site Information and Survey: provides a description of the results of the water vole surveys conducted on the application site
 - Section 3: Impact Assessment before mitigation or compensation: likely impacts of the development: provides an assessment of the impacts of the works at the application site on water vole in the absence of any mitigation.
 - Section 4: Mitigation Strategy: presents a methodology and timing schedule of the proposed mitigation for water vole on the application site.
 - Section 5: Compensation
 - Section 6: Monitoring and Management provides a description of the proposed monitoring of the impacted water vole population and maintenance of any associated ecological features; and.
 - Section 7: Timetable.
 - Section 8: Project Plan for Conservation Gain
 - Appendices:
 - Appendix A: Figures.
 - References.
- 1.1.18 The layout of the two village bypass site is shown in **Figure 1**.
- 1.2 Site Information and Survey Results
 - a) Introduction
- 1.2.1 This section briefly outlines the results of surveys conducted on the two village bypass site in 2019 (**Figure 2**).

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b) Previous Survey Effort

- 1.2.2 Habitat suitable to support water vole is present within the site boundary. Surveys for water vole were completed in June, August and September 2019. The results of these surveys are presented in **Annex 7A3** of the two village bypass **Environmental Statement**. A total of 19 ditches were surveyed within the site boundary and surrounding areas.
 - c) Previous Survey Results
- 1.2.3 Numerous water vole signs were recorded within the site boundary including burrows, latrines and feeding signs. These signs were found within Ditch 1 (the River Alde, centred on TM 358 593) and Ditch 12 (a drainage ditch centred on TM 358 598). Ditch 12 would not be impacted by the proposed works.
- 1.2.4 Within Ditch 1, five latrines were observed within a 350m stretch of the river. This is indicative of a small water vole population.
- 1.3 Impact Assessment (Before Mitigation or Compensation)
 - a) Introduction
- 1.3.1 This Section describes potential impacts of the two village bypass on water voles.
- 1.3.2 The surveys conducted at the site showed that the works could have an impact upon water vole and their habitats, namely the low population associated with Ditch 1 (the Rive Alde).
 - b) Habitat Loss (Permanent)
- 1.3.3 Once the construction of the bypass is completed, any impacted areas will be reinstated. There will be no significant loss of habitat in Ditch 1 once the works are completed and vegetation has recolonised the site. The protection and reinstatement of these areas is outlined in more detail in **Volume 5 Chapter 7** of the Sizewell C Project Environmental Statement and the two village bypass Outline Landscape and Ecology Management Plan.
 - c) Habitat Impacts (Temporary)
- 1.3.4 The water vole population within Ditch 1 would could potentially experience temporary impacts to foraging habitat and destruction of burrows in areas immediately adjacent to the ditch.

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1.3.5 **Table 1** shows the size (area for reedbeds and ponds, length for ditches) of water vole habitat which is likely to be impacted by the construction footprint. This is a maximum value which will be refined as construction plans are further developed, and further water vole survey work (to support any future Natural England derogation licence) is carried out.

Table 1: Components of water vole habitat to be temporarily impacted

Location	Length / area to be temporarily impacted	Reason for impact
Ditch 1	<50m	Impacts from bridge installation and drainage installation to create flood compensation areas.

- 1.3.6 As impacts from loss of habitat are not permanent or considered significant, no further consideration of this impact pathway is considered necessary.
 - d) Habitat Fragmentation
- 1.3.7 There is not considered to be any significant effect upon the habitat connectivity during either the construction or operational phase of the development. No further consideration of this impact pathway is considered necessary.
 - e) Incidental Mortality and Disturbance of Burrows
- 1.3.8 Water vole use a series of burrows with many entrances and interconnecting tunnels. They also occasionally build woven nests in the bases of sedges and reeds. Outside of their burrows, water vole activity is largely confined to runs in dense vegetation with 2-5m of the water's edge.
- 1.3.9 There is the potential for incidental injury or mortality to water vole from construction plant carrying out vegetation and ground clearance works, necessary to install the river Alde crossing over Ditch 1 and install drainage features associated with the flood compensation areas. Water vole would be particularly vulnerable when they are in their burrows.
- 1.3.10 This licence application is primarily associated with impacts to disturbance of water vole burrows and the potential for indirect mortality to occur.

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1.4 Mitigation Strategy

a) Introduction

- 1.4.1 This section outlines the selected mitigation strategy for water vole on the two village bypass site only, a justification of why this strategy was chosen and an explanation of how this strategy will be implemented at the two village bypass site.
- 1.4.2 In summary, this draft Water Vole Method Statement involves:
 - Preventing incidental mortality through displacement of water voles from the works areas;
 - Displacement techniques and monitoring requirements are proposed with a maximum working area with maximum length of 50m (for watercourse this equates to 50m on each bank).
 - Reinstatement of impacted areas after the works are completed.
 - Improving the conservation status of water voles through habitat creation;
 - Pre works, during works and post-construction monitoring of water vole populations will occur to ensure success of the mitigation approach.
- 1.4.3 All works that have the potential to impact water vole will be undertaken under licence from Natural England following an agreed method statement and would be overseen by an ECoW, which will be either the licence holder or their accredited agent(s).
 - b) Displacement Overview
- 1.4.4 In England, activities aimed at displacing water vole in the context of a development project have previously been routinely undertaken without a licence, with reliance on the 'incidental result' defence. It is now considered that such activities are not covered by this defence, and therefore require a licence. Development projects must deliver a net benefit for water vole because the licence would be issued for the purpose of conservation.
- 1.4.5 Displacement will be used as the method for preventing incidental mortality. It is considered that the likely impacts of the two village bypass fall within the recommended restrictions of the project. According to the

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best practice guidelines (Ref 3) displacement can be employed under the following circumstances (the project response is listed below in italics):

- where there is a working area with a maximum length of 50m (for watercourses this equates to 50m on each bank), although a shorter maximum length would be appropriate in situations where water vole are at high density;
 - The works impacting upon Ditch 1 are each less than 50m in length. The water vole population is low.
- works are conducted between 15 February and 15 April inclusive (although some seasonal variation is accepted depending on weather and geographical location); and
 - The project is proposing to conduct the displacement in this time period
- where there is sufficient available alternative habitat for water vole to move into
 - Extensive areas of water vole habitat are available both upstream and downstream of any areas of impact.
- c) Displacement and Destructive Search Methodology
- 1.4.6 Areas where impacts to water bodies supporting water vole are foreseen, displacement will be conducted followed by a destructive search. The protocol for this displacement and destructive search is presented below (Table 2).
- 1.4.7 The following steps are taken from Dean et al. 2016 (Ref 3).

Table 2: Destructive search protocol

Step	Action
1	Before vegetation removal, identify and mark the position of all burrows in the working area so that these can be located later to ensure that they are not blocked. Confirm the absence of other constraints to the works, such as nesting birds.
2	Remove vegetation on the bank face within the area subject to development works, plus at least an additional 3m either side of the working area, and on the bank top (i.e. at least 3m back from the bank). This would be achieved using a strimmer until only bare earth remains. If feasible, also cut the emergent aquatic vegetation located along the water margin to below water level.
3	Rake off and remove any arisings from the cleared area.



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Step	Action		
4	Check that burrow entrances have not become blocked and remove any latrines or feeding remains.		
5	If feasible and environmentally acceptable, combine with de-watering of the affected section of watercourse.		
6	Leave the strimmed area intact for five days to allow animals time to relocate.		
7	Re-survey the site for fresh evidence of water vole. If there is no evidence that water vole are still present, undertake a destructive search of the burrows (under the supervision of a suitably experienced ecologist) as follows.		
7	a Excavate burrows to ensure that no animals are present. Hand tools would preferably be used, and excavation would extend as far as possible, bearing in mind practical health and safety constraints.		
7	b Using an excavator with a toothed bucket, rake through the turf and topsoil on the bank face and top on the side that the excavator is positioned. Then with a second or third sweep of the bucket, remove the turf and topsoil to a depth beyond which any burrows would be present.		
7	c Remove in-channel vegetation within 50cm of the toe of the bank to prevent regrowth.		
7	d Smooth the surface of the bank using an excavator with a ditching bucket (or the back of the toothed bucket). Ensure that any lumps of topsoil that might provide a refuge for water vole are removed.		
7	e Repeat the process for the opposite bank (if necessary).		
8	Ensure that water vole do not return prior to the development work commencing by: undertaking the works within five days of completing the destructive search; or		
	in-filling the channel immediately following the destructive search; or		
	 maintaining the works area as bare ground until the works have taker place. This is likely to require a repeat scraping/smoothing of the banks or covering the ground with a suitable matting to ensure that vegetative regeneration cannot occur; or 		
	installing suitable water vole resistant fencing to prevent water vole returning.		

- 1.4.8 The project, if a licence is obtained, will conduct the displacement and destructive search as outlined within this method statement.
- If monitoring after the displacement but prior to the destructive search 1.4.9 finds evidence of water vole, steps 1 - 6 of **Table 2** will be repeated. It is

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- considered extremely unlikely that trapping would be required in relation to the project due to the small areas impacted by the works.
- 1.4.10 During destructive search the excavator will work in the direction that the water vole are being encouraged to move (towards retained habitat of good quality for water vole).
- 1.4.11 It is not foreseen that there will be any necessity to capture water vole by hand as a component of the works.
- 1.4.12 Throughout the construction period there will be monthly monitoring of active works areas along Ditch 1 to ensure that water voles have not recolonised these areas.
 - Works Timetable d)
- 1.4.13 **Table 3** outlines the indicative timescale for the licensable activities.

Table 3: Works timetable

Activity	Timeframe	Notes
Displacement as outlined in Table 1.3	TBC	
Destructive search as outlined in Table 1.3	TBC	To be conducted immediately following displacement
Construction period including installation of Alde River crossing and any Flood Compensation areas	TBC	Monitoring of the impacted areas to ensure that water voles have not recolonised will occur monthly throughout this period
Reinstatement of works areas to allow recolonization of vegetation to occur	TBC	Immediately following construction completion
Creation of new infiltration basins.	TBC	
Check of status of water voles in impacted works areas, status of habitat recolonization and status of habitat created in the infiltration basins	Annually until all targets are met	

1.5 Project Plan for Conservation Gain

- **Net Conservation Gain** a)
- 1.5.1 Macpherson & Bright (Ref 4) considered the landscape approach to water vole conservation. They demonstrated, from population modelling, the

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importance of creating (through habitat creation/restoration of large reedbeds and grazing marsh sites) 'patches' of core water vole habitat which can sustain water vole metapopulations in the surrounding landscape where conditions are less favourable.

1.5.2 The River Alde ('Ditch 1') provides an excellent water vole habitat (see Plate 1 below), having varying bank profile suitable for burrowing and dense bankside vegetation. The River Alde ('Ditch 1') is likely to provide a core habitat for the water vole population present in the surrounding area.





1.5.3 Once any works which impact Ditch 1 are completed, these areas will be reinstated in accordance with the two village bypass Outline Landscape and Ecology Management Plan. Due to the close proximity of riparian vegetation, it is considered that the vegetation will recolonise promptly and planting of the impacted areas will not be necessary.

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- 1.5.4 In addition, the project will create new habitats, in accordance with the two village bypass Outline Landscape and Ecology Management Plan, for water vole, providing a conservation gain overall.
- 1.5.5 New swales are being created throughout the new two bypass development area. Although these swales will not be designed specifically to offer habitat for water vole, and will be intermittently wet, these swales will provide corridors for movement for water vole across the landscape. An example of the location of the new swales to be created is presented in **Plate 2**, an excerpt from **Figure 1**.



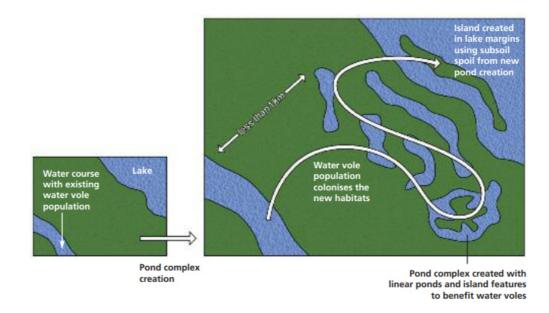
Plate 2: Swales proposed adjacent to the new bypass

- 1.5.6 In addition, the swales will add complexity to the landscape, a key component of achieving successful conservation outcomes for water vole (as illustrated on **Plate 3**). These features would provide the following enhancements for water vole within the landscape (as outlined within the Million Ponds Project Guidance 2010 (Ref 5) and The Water Vole Conservation Handbook (Ref 6).
 - Extend or link existing water vole colonies, helping to encourage spread, increase the size of populations and enhance chance of colony survival.

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- Add complexity to wetland landscapes, helping to confound hunting mink, which can eradicate water vole populations along simple linear features such as river banks.
- Provide a refuge for water vole during flood conditions, in particular ponds not connected to water courses.

Plate 3: Excerpt from Creating Ponds for Water Vole from the Million ponds project 2010 (Ref 5) showing how adding complexity is key to providing habitat for water vole



- 1.5.7 In summary, overall the project will provide a conservation gain for water vole, through minimising impacts from the River Alde crossing and any outflows impacting upon the ditches and providing an increase in water vole habitat in the vicinity of the River Alde.
- 1.5.8 In the event that flood compensation areas are determined to be required, the opportunity would be taken to create additional surface water features of value to water voles within these areas, subject to suitable ground conditions.
- 1.6 Monitoring and Management
- 1.6.1 A regular monitoring programme, both during and after construction, would be required to:
 - assess the effectiveness of the mitigation; and



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- provide early warning of any changes in the population so that appropriate action can be taken.
- 1.6.2 This would ensure sure there is no short- or long-term impact on the water vole populations.
- 1.6.3 Monitoring would be undertaken at areas of impact upon Ditch 1, and 50 metres either side of any impact area.
- 1.6.4 Surveys monitoring water vole signs would provide information on:
 - colonisation of the reinstated areas impacted by the construction;
 - reestablishment of suitable habitat in the impacted areas; and
 - establishment of suitable habitat in the newly created infiltration ponds.
- 1.6.5 All monitoring surveys would be carried out during the breeding season (March to October) and at a time of year when field sign survey results can be compared with pre-construction survey data.
- 1.6.6 A single visit, one year after the completion of the construction will be sufficient to fulfil the monitoring requirements for the impacts associated with the project. However, should any issues be identified during the monitoring visit (i.e. failure of habitats to establish, absence of water vole), additional visits should be conducted to ensure that these issues are addressed. Monitoring can cease once all Key Performance Indicators (KPIs) for the water vole licence have been achieved i.e. the impacted areas have recovered a suitable vegetation community and have been recolonised by water vole and the newly created ponds have a habitat suitable for water vole.
- 1.6.7 Management of the newly created infiltration ponds will continue throughout the operational life of the project.



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APPENDIX A: FIGURES

- Figure 1: Two villages bypass layout overview
- Figure 2: Results From 2019 Surveys
- Figure 3: River Alde Overbridge Drawing

