



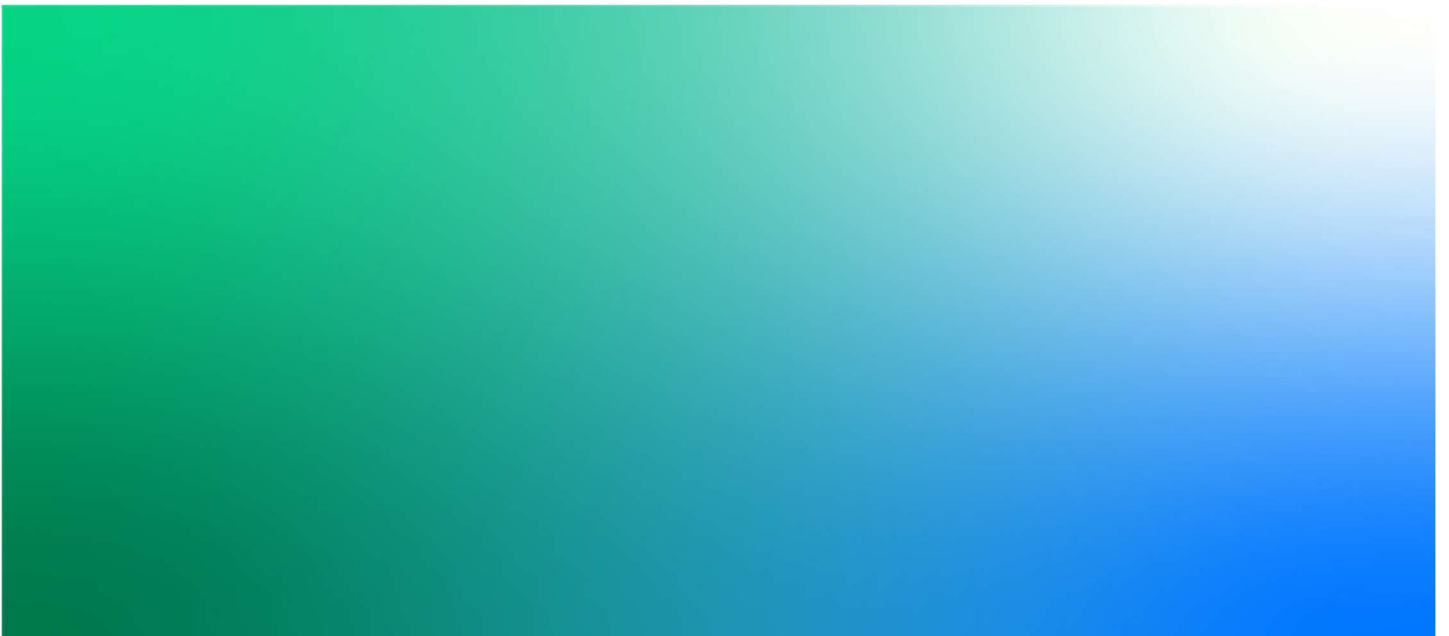
Oxford Flood Alleviation Scheme
Appendix R Flora and Fauna legal compliance

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Jacobs U.K. Limited
The West Wing
1 Glass Wharf
Bristol, BS2 0EL
United Kingdom
T +44 (0)117 457 2500

www.jacobs.com

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Acronyms and Abbreviations

ECoW	Ecological Clerk of Works
TVERC	Thames Valley Environmental Records Centre

1. Introduction

1.1 Purpose of this report

- 1.1.1 This technical report identifies the legislation that must be complied with to ensure that protected species are preserved from harm and controlled species are isolated or removed during the construction of the Proposed Scheme. The following legal measures are considered:
- Conservation of Habitats and Species Regulations 2017 (as amended);
 - Wildlife and Countryside Act 1981 (as amended);
 - Protection of Badgers Act 1992;
 - Salmon and Freshwater Fisheries Act 1975 (as amended by the Marine and Coastal Access Act 2009); and
 - Environmental Protection Act 1990 (in relation to the disposal of controlled plant species only).
- 1.1.2 The Eels (England and Wales) Regulations 2009 (as amended) are not considered as the Proposed Scheme is promoted by the Environment Agency meaning these regulations are not relevant.
- 1.1.3 There is no risk of any offences under this suite of legislation being committed during the operation of the Proposed Scheme.
- 1.1.4 This report considers species that are protected or controlled by UK law, but it does not constitute legal advice.

1.2 Background

- 1.2.1 The Proposed Scheme is described in Chapter 3 of the Environmental Statement (ES). The surveys for protected species are in Appendix D of the ES and the invasive plant species survey is in Appendix E.
- 1.2.2 There would be a team of ecologists working on the Scheme during construction and during preparatory activities such as vegetation clearance. The job title Ecological Clerk of Works (ECoW) refers to any member of this team. The lead ECoW would be responsible for ensuring the works complied with the legislation and planning conditions which applied to the works.

2. Scope

2.1 Scope of this report

- 2.1.1 The scope of this report is limited to the areas where construction activities would be carried out for the Proposed Scheme.
- 2.1.2 Offences considered in this report are only those that could occur as a result of the construction of the Proposed Scheme. Offences relating to cruelty, possession, transport, sale and certain methods for capturing/taking and killing have not been considered, as such activities are not required for the Proposed Scheme.
- 2.1.3 Table 2.1 sets out the relevant legislation and potential offences that could occur as a result of the Proposed Scheme.

2.2 Licences

- 2.2.1 Within the proposed strategy sections of this report (see Sections 5 to 13) licences have been referred to and, depending on the protected species in question, are defined as set out in the following paragraphs.
- 2.2.2 Some activities, if not carried out under licence from Natural England, could give rise to offences under the Conservation of Habitats and Species Regulations 2017, as amended (as listed in Table 2.1). Where appropriate, such licences will be obtained from Natural England in accordance with Regulation 55 of those Regulations so that the Proposed Scheme will be implemented within the law.
- 2.2.3 There are certain offences under the Wildlife and Countryside Act 1981, as amended (also listed in Table 2.1) to which a developer may have a defence in law under Sections 10(3)(c), 4(2A)(a) and 14(3) of that Act. These defences apply where, in the case of Section 10(3)(c), the person concerned can show that the unlawful act was the incidental result of a lawful operation and could not reasonably have been avoided; in the case of Section 4(2A)(a) where the unlawful act was the incidental result of a lawful operation or other activity; and, in the case of Section 14(3), where the person took all reasonable steps and exercised due diligence to avoid committing the offence.
- 2.2.4 Where works would interfere with a badger *Meles meles* sett, a licence may be obtained in accordance with Section 10 of the Protection of Badgers Act 1992 for the purpose of any development as defined in Section 55(1) of the Town and Country Planning Act 1990. This will permit the interference with a badger sett within an area specified in the licence by any means so specified and means that no offence is committed.
- 2.2.5 The process of obtaining a licence under the above regulations includes committing to mitigation measures which prevent harm being caused to the protected species.

General descriptor	Conservation of Habitats and Species Regulations 2017 (as amended)	Wildlife and Countryside Act 1981 (as amended)	Protection of Badgers Act 1992	Salmon and Freshwater Fisheries Act 1975 (as amended)
Capturing, killing, and injuring	To deliberately capture, injure or kill any wild animal of a European Protected Species (EPS) (Reg 43(1)(a)).	To intentionally kill, injure or take any wild bird (s1(1)). To intentionally kill, injure or take any wild animal included in Schedule 5 (s9(1)).	To wilfully kill, injure or take, or attempt to kill, injure or take a badger (s1(1)).	-
Disturbing (affecting ability to survive, breed or rear young)	To deliberately disturb wild animals of an EPS [note wherever they are occurring] (Reg 43(1)(b)). Reg 43(2)(a)(i) For the purposes of Reg 43(1)(b), disturbance of animals includes, in particular, any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young.	-	-	-
Disturbing (impairing ability to migrate or hibernate)	To deliberately disturb wild animals of an EPS [note wherever they are occurring] (Reg43(1)(b)). Reg 43(2)(a)(ii) For the purposes of Reg 43(1)(b), disturbance of animals includes, in particular, any disturbance which is likely to impair their ability, in the case of animals of a hibernating or migratory species, to hibernate or migrate.	-	-	

General descriptor	Conservation of Habitats and Species Regulations 2017 (as amended)	Wildlife and Countryside Act 1981 (as amended)	Protection of Badgers Act 1992	Salmon and Freshwater Fisheries Act 1975 (as amended)
Disturbing (affecting local distribution or abundance)	To deliberately disturb wild animals of an EPS [note wherever they are occurring] (Reg43(1)(b)). Reg 43(2)(b) For the purposes of Reg 43(1)(b), disturbance of animals includes, in particular, any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong.	-	-	-
Disturbing (whilst occupying a structure or place used for shelter or protection)	-	To intentionally or recklessly disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturbs dependent young of such a bird (s1(5)). To intentionally or recklessly disturb any wild Schedule 5 animal while it is occupying a structure or place which it uses for shelter or protection (s9(4)(b)).	To disturb a badger when it is occupying a badger sett (s3(e)).	-
Taking eggs	To deliberately take or destroy the eggs of an EPS (Reg 43(1)(c)).	To intentionally take or destroy an egg of any wild bird (s1(1)(c)).	-	-

General descriptor	Conservation of Habitats and Species Regulations 2017 (as amended)	Wildlife and Countryside Act 1981 (as amended)	Protection of Badgers Act 1992	Salmon and Freshwater Fisheries Act 1975 (as amended)
Obstructing access	-	To intentionally or recklessly obstruct access to any structure or place which any Schedule 5 animal uses for shelter or protection (s9(4)(c)).	To obstruct access to, or any entrance of, a badger sett (s3(c)).	-
Damage or destruction of a breeding site or resting place	To damage or destroy a breeding site or resting place of an EPS (Reg 43(1)(d)).	To intentionally take, damage or destroy the nest of a wild bird included in Schedule ZA1 (s1(1)(aa)). To intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built (s1(1)(b)). To intentionally or recklessly damage or destroy any structure or place which any wild animal specified in Schedule 5 uses for shelter or protection (s9(4)(a)).	To damage a badger sett or any part of it or to destroy a badger sett (s3(a) and (b)).	Causes or knowingly permits to flow, or puts or knowingly permits to be put, into any waters containing fish or into any tributaries of waters containing fish, any liquid or solid matter to such an extent as to cause the waters to be poisonous or injurious to fish or the spawning grounds, spawn or food of fish, shall be guilty of an offence (s4(1)).
Introducing new species	-	To plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9 (s14(2)). Waste produced from management of some species would be “controlled waste” and managed accordingly under the Environmental Protection Act (s33(1a) and (1b)).	-	-

General descriptor	Conservation of Habitats and Species Regulations 2017 (as amended)	Wildlife and Countryside Act 1981 (as amended)	Protection of Badgers Act 1992	Salmon and Freshwater Fisheries Act 1975 (as amended)
Picking, cutting etc. plants	-	An unauthorised person, intentionally uproots any wild plant (s13(1)(b)).	-	-

Table 2.1: Potential offences under UK legislation

3. European Protected Species Licence Tests

- 3.1.1 A European Protected Species (EPS) licence can only be granted by Natural England if the following three tests can be met:
- Test 1: The purpose of the work meets one of those listed (see below) in the Conservation of Habitats and Species Regulations 2017 (as amended).
 - Test 2: That there is no satisfactory alternative.
 - Test 3: That the action authorised would not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 3.1.2 Under Test 1, the specific set of purposes includes:
- preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
 - scientific and educational purposes;
 - ringing or marking;
 - conserving wild animals or wild plants;
 - protecting any zoological or botanical collection;
 - preventing the spread of disease; and/or
 - preventing serious damage.
- 3.1.3 A review of the Scheme against the three tests concluded the following:
- Test 1: The purpose of the Scheme relates to ‘preserving public health or public safety or other imperative reasons of over-riding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment’, in that the Scheme is designed to reduce flooding in Oxford.
 - Test 2: There is no satisfactory alternative to the Scheme. The requirement for the Scheme and non-suitability of alternatives is discussed in the Environmental Statement, section 2.3.
 - Test 3: This test would be met via the various measures discussed in the following individual chapters relating to EPS so that species concerned would be maintained at a favourable conservation status in their natural range.

4. Methodology

- 4.1.1 The legislation under which species are protected or controlled (see Table 2.1) has been reviewed to identify the potential for the Scheme to result in an offence.
- 4.1.2 The review identified whether or not a protected or controlled species was present within an area that would be affected by the construction of the Scheme.
- 4.1.3 If a protected or controlled species was present, the potential for legislation to be contravened was based on the activities likely to occur. These are set out in detail within the 'potential for an offence' sections in Chapters 5 to 13 of this appendix.
- 4.1.4 Depending on the potential offences, a proposed strategy was described to indicate how these offences would be avoided or a licence would be obtained where appropriate (see Sections 2 and 3 above).
- 4.1.5 The protected and controlled species that are relevant to the Scheme have been determined through the ecological baseline information collated for the Scheme.
- 4.1.6 The ecological baseline information was derived from desk-based study and ecological field survey. For each protected species, one or more reports summarising both the desk study information obtained and the surveys carried out were produced. A table of ecology reports included in the ES is found in Chapter 4 of the ES, with reports contained in Appendix D of the ES.
- 4.1.7 The baseline data collection has recorded evidence of the following taxa to which the legislation listed in Table 2.1 applies:
- Protected species:
 - Badger
 - Bats
 - Breeding Birds
 - Fish and other aquatic species
 - Otter *Lutra lutra*
 - Reptiles
 - Water Vole *Arvicola amphibius*
 - Controlled species:
 - American mink *Neovison vison*
 - Asian clam *Corbicula fluminea*
 - Demon shrimp *Dikerogammarus haemobaphes*
 - Red-eared terrapin *Trachemys scripta elegans*
 - Signal crayfish *Pacifastacus leniusculus*
 - Giant hogweed *Heracleum mantegazzianum*
 - Himalayan balsam *Impatiens glandulifera*
 - Himalayan cotoneaster *simonsii*
 - Japanese knotweed *Fallopia japonica*
 - Montbretia *Crocsmia x crocosmiiflora*

- Nuttall's waterweed *Elodea nuttallii*
- Variegated yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*
- Canadian pondweed *Elodea canadensis*
- New Zealand pigmyweed *Crassula helmsii*

5. Badger

5.1 Relevant legislation

5.1.1 The Protection of Badgers Act 1992.

5.2 Baseline information

5.2.1 Badger surveys are in Appendices D-7 and D-8 of the ES. Due to the risk of persecution of badgers, it is Environment Agency policy to avoid publishing details of where setts are located, therefore these survey reports have been provided to the County Council on a confidential basis.

5.3 Potential for an Offence

5.3.1 Latest field survey information suggests that there are active badger setts which coincide with the area needed for construction, including one main sett which would need to be closed to avoid badgers being harmed by the works.

5.4 Proposed Approach

5.4.1 The following steps would be taken before construction to ensure legislation set out in Paragraph 5.1.1 would not be contravened:

Pre-construction surveys

5.4.2 A pre-construction survey of the site red line boundary and all areas within 30m of it would be carried out before the start of any site clearance and fencing activities in order to:

- Identify whether new badger setts have been excavated in the area; and
- Assess whether existing sett structures or their levels of use have changed.

5.4.3 The survey timing would be such that, if new badger setts were recorded, enough time would be available to allow for the licence application and sett closures to be completed before site clearance was scheduled to start.

Sett closure

5.4.4 Any active setts within the works area would need to be closed before works likely to affect them start. A badger licence would be sought from Natural England in advance of the works.

5.4.5 The following method would be followed for the closure of the badger setts:

- All active sett entrances would be fitted with badger gates, using the designs shown in Design Manual for Roads and Bridges (Highways Agency, 2007), as well as wire mesh across the surrounding area to prevent digging;
- Fitted badger gates would initially be set to swing freely for a period of seven days in order to accustom any animals to the gate and allow them to leave. After this period, the gates would be set in a one-way position to start the exclusion;
- Exclusion would be carried out over a minimum period of 21 days between 1 July and 30 November. The sett and gate would be monitored at least every three days to determine if badgers are still active in the sett (Natural England, 2011). This would be achieved by using remote static cameras supported by field techniques, such as placing small sticks in front of the

one-way gates at the sett entrance to record any displacement or smoothing sand out over the entrance to record badger footprints;

- Sett monitoring would also confirm that the gates are functioning properly by manually testing them and to ensure that they are still intact. If at any point the gates or wire mesh is breached, these would be repaired and a further 21-day period observed before works begin;
- Once it has been ascertained that all animals have been excluded, the exclusion gate would be set in a permanent closed position which would not allow any badger access in or out; and
- The sett would then be excavated under the supervision of the licensed ecologist. The excavation would be conducted to avoid collapsing any chambers within the sett because of the possibility of badgers remaining undetected. If any badger were disturbed, all work would cease to allow any badger to leave the area without interference.

5.4.6 Any active sett identified would be monitored throughout the exclusion process and considered empty only when the one-way gates are in place and there have been no indications of badger activity within the fence for two weeks.

5.4.7 One sett close enough to the works to require closure has been identified as a main sett. A replacement sett within the territory of the badgers which use this sett will be provided as part of the Scheme and will be completed at least six months before closure of the main sett. Prior to this, surveys will confirm whether the sett in question is still in use as a main sett; this additional mitigation will only be carried out if required.

Minimising disturbance/damage

5.4.8 A review of working methods, such as reducing machinery sizes or working with hand tools, to ensure that any risk of disturbance or damage to badger setts are avoided. Any excavation will be fenced off or have an escape ramp fitted if left open overnight.

5.5 Conclusion

5.5.1 The proposed approach explained above will ensure that badgers will be excluded from the working area, precautions implemented should they enter the working area and, if necessary, setts closed under licence. There is therefore no risk of any offence being committed.

6. Bats

6.1 Relevant legislation

- 6.1.1 All species of bats and their breeding or resting sites (roosts) are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) which makes each a European Protected Species (EPS). The combined effect of this legislation makes it an offence to intentionally or deliberately kill, injure or capture a bat, to possess a bat (whether live or dead) or any part of a bat, or sell or offer for sale without a licence. It is also an offence to damage or destroy any place used by bats for shelter, whether they are present or not, and to intentionally or recklessly disturb a bat in its roost (in such a way that is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young or hibernate) or obstruct access to a bat roost.

6.2 Baseline information

- 6.2.1 Bat surveys are reported in Appendices D-9 to D-12 of the ES. Desk study information is included in Appendix D-9.

6.3 Potential for an Offence

- 6.3.1 The trees to be felled for the Scheme include a small number in which summer roosts have been identified. Several structures affected by the Scheme, mainly bridges, have also had roost sites identified within them. One lekking site was also identified. Some of the roost sites identified by the survey reports are in trees which will not be felled for the Scheme, or structures which will not be worked on, in which case it is sufficient to protect these trees and structures from disturbance. In other cases, licences will be required.

6.4 Proposed Approach

- 6.4.1 A specific mitigation strategy for bats has been prepared and is appended to the ES as Appendix D-13. The mitigation measures proposed in this strategy must be agreed with Natural England before licences can be obtained. The measures will ensure bats are not using roosts at the time they are destroyed, and that roosts which are not due to be destroyed are protected from disturbance at times when they may be occupied.

6.5 Conclusion

- 6.5.1 The proposed approach explained in Appendix D-13 would ensure that legislation relating to the protection of bats is complied with. There is therefore no risk of any offence being committed.

7. Breeding Birds

7.1 Relevant legislation

- 7.1.1 All species of nesting birds in the UK are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird, or take or destroy their eggs or nest, or damage a nest, while that nest is in use or being built. It is also an offence to deliberately block access to a nest which is in use.
- 7.1.2 The Wildlife and Countryside Act 1981 (as amended) protects all wild birds, their nests and eggs from intentional harm. Schedule 1 of the Act also protects listed species from intentional or reckless disturbance of nest building, birds and eggs at nests or of dependent young.

7.2 Baseline information

- 7.2.1 The breeding bird survey is contained in Appendix D-5 and the wintering bird survey in Appendix D-6 of the ES.

7.3 Potential for an Offence

- 7.3.1 The vegetation clearance phase of the Scheme could result in an offence in relation to breeding birds through destruction of nests, as could works to existing river channels in the case of bank-nesting species such as kingfisher. Works near vegetation or river banks could result in an offence through disturbing Schedule 1 birds, which include kingfisher and red kite.

7.4 Proposed Approach

- 7.4.1 The following paragraphs set out the steps that would be taken before the construction of the Scheme to ensure the legislation set out in Table 7.1 would not be contravened.

Avoiding damage or destruction of eggs and nests or killing or injuring wild birds

Timing of vegetation clearance and building demolition

- 7.4.2 So far as reasonably practicable, vegetation suitable to support breeding birds would not be cleared during the bird breeding season (March to August, inclusive). Clearance during nesting season would take place only in exceptional circumstances and in a minority of the working area.

Supervision of vegetation clearance and building demolition

- 7.4.3 If vegetation clearance is unavoidable between March to August inclusive, pre-site clearance checks would be carried out within all areas of vegetation for clearance to determine the presence of active bird nests. This would involve an ECoW checking vegetation for signs of nesting activity prior to works.
- 7.4.4 Should a nest be identified during vegetation clearance, works would stop and the ECoW would determine a suitable buffer zone around the nest within which no further clearance or other works would occur. The buffer zone would depend on the type and density of vegetation surrounding the nest or the entry/access to the building, and the species present.
- 7.4.5 Generally, a minimum buffer zone would be 5m from a nest but may be extended on advice from the ECoW. The buffer zone would be clearly marked using demarcation tape or fencing to ensure no works took place within the area. These would also be marked on an environmental constraints map and displayed in the site office as well as being issued to all contractors on site.

- 7.4.6 If a Schedule 1 species, of which Kingfisher is the most likely within the Scheme area, is found to be nesting, a significantly larger buffer zone will be required, to avoid disturbance of the birds. This would apply to all works near river banks during nesting season, not only to vegetation clearance. Much of the river bank within the Scheme area is not suitable for nesting, but some suitable areas do exist.
- 7.4.7 The ECoW would monitor activity at each nest to determine when it is no longer active so that works could continue and the buffer zone be removed.

Reducing and compensating for habitat damage

- 7.4.8 Areas of retained vegetation would be clearly demarcated to ensure no accidental incursion by construction works.

7.5 Conclusion

- 7.5.1 The proposed approach explained above would ensure that legislation relating to the protection of wild birds is complied with. There is therefore no risk of any offence being committed, as summarised in Table 7.1

Wildlife and Countryside Act 1981 (as amended)	Why no offence would be committed
To intentionally kill, injure or take any wild bird (s1(1))	Breeding birds could be present in vegetation to be cleared. The majority of clearance of such vegetation would be done outside the nesting season. Pre-works checks and measures, detailed above, would be implemented to prevent destruction of active nests during vegetation clearance.
To take or destroy an egg of any wild bird (s1(1)(c))	
To intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built	No birds listed on Schedule 1 have been recorded as likely to have been breeding within the areas where vegetation and building clearance is required. A further check for kingfisher nests will be carried out before work near existing river banks, if such work commences during nesting season.
To intentionally or recklessly disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturbs dependent young of such a bird (s1(5)(a)(b))	
To intentionally take, damage or destroy the nest of a wild bird included in Schedule ZA1	No species listed on this schedule recorded nesting in this area.

Table 7.1: Breeding Birds – relevant legislation and potential for committing an offence

8. Fish and other aquatic species

8.1 Relevant legislation

- 8.1.1 Freshwater fish species are protected under Salmon and Freshwater Fisheries Act 1975 (as amended). It is an offence to affect a watercourse to the extent that it becomes poisonous or injurious to fish or their spawning grounds.

8.2 Baseline information

- 8.2.1 The fish survey is Appendix D-21 of the ES.

8.3 Potential for an Offence

- 8.3.1 An offence could be caused due to pollution entering watercourses; however such pollution would also be an offence under other legislation and will be prevented by measures set out in Chapter 9 of the ES. The potential for an offence specific to fish would arise from obstruction of Bulstake Stream, which is currently accessible to migratory fish and will be severed by the Scheme.

8.4 Proposed Approach

- 8.4.1 The existing Towles Mill weir, which obstructs fish migration in Hinksey Stream, will be removed before the severing of Bulstake stream, which will be one of the last construction activities. An alternative migration route via Hinksey Stream and Seacourt Stream will allow fish to migrate significantly further upstream than they can at present. Residual impacts on migratory fish, which will not constitute offences under legislation, are discussed in Chapter 8 of the ES.

8.5 Conclusion

- 8.5.1 The implementation of the proposed strategy set out above means that no offence would be committed.

9. Great Crested Newt

9.1 Relevant legislation

9.1.1 Great crested newt (GCN) and their breeding or resting sites are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) which makes each a European Protected Species (EPS). The combined effect of this legislation makes it an offence to intentionally or deliberately kill, injure or capture a GCN, to possess a GCN (whether live or dead) or any part of a GCN, or sell or offer for sale without a licence. It is also an offence to damage or destroy any place used by GCN for shelter, and to intentionally or recklessly disturb a GCN (in such a way that is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young or hibernate) or obstruct access to habitat.

9.2 Baseline information

9.2.1 The Great Crested Newt survey is reported in Appendix D-15. No evidence of this species was found, although it is known to be present to the west of the A34, away from the Scheme area.

9.3 Potential for an Offence

9.3.1 The project and works area contains aquatic and terrestrial habitat that could be used by GCN. There is no evidence that the species is present, however this should be re-confirmed before construction commences.

9.4 Proposed Approach

9.4.1 Currently no EPS licence is required and there is no risk of an offence being committed. In the event that a pre-construction survey were to find GCN in a pond close enough to the Scheme area for newts to be affected, mitigation would be designed at the time and an EPS licence would be obtained. As this is currently a hypothetical situation and mitigation needs to be specific to the situation, it is not possible to specify in advance what measures would be taken. Measures would be agreed with Natural England as part of obtaining the licence.

9.5 Conclusion

9.5.1 The proposed approach explained above would ensure that legislation relating to the protection of GCN is complied with. There is therefore no risk of any offence being committed.

10. Otter

10.1 Relevant legislation

- 10.1.1 Otters are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) which makes otter an EPS. It is an offence to intentionally kill, injure, capture or disturb an otter. It is also an offence to intentionally damage or destroy any place used by otters for shelter, whether they are present or not and to intentionally or recklessly disturb an otter in its shelter or obstruct access to any structure an otter uses for shelter.
- 10.1.2 Licences can be granted by Natural England (the licensing authority) to allow illegal activities, including development, to take place if carried out in accordance with the provisions of the licence.

10.2 Baseline information

- 10.2.1 An initial survey for both otter and water vole was carried out in 2016 and is reported in Appendix D-16. Further otter surveys are in Appendices D-19 and D-20.

10.3 Potential for an Offence

- 10.3.1 Otters are known to use the watercourse that would be affected by the Scheme. There is a risk that a breeding site or resting place could be created within the river before the start of construction, constituting an offence if it were damaged or destroyed while occupied during the works.

10.4 Proposed Approach

- 10.4.1 The following steps would be taken to prevent the risk of harm to otters arising from the construction of the Scheme:

Avoiding Killing or Injury

Pre-construction Survey

- 10.4.2 Otter survey would be carried out in advance of any site clearance works, to determine if a lying up or holt site had become established within the construction working area of the Scheme. If any were recorded, they would be assessed to consider whether an EPS licence would be needed from Natural England. To reduce risks to the construction programme, the surveys would be scheduled at least 12 weeks in advance of site clearance works to enable an EPS derogation licence to be secured, if required.
- 10.4.3 In the unlikely event that a maternity (breeding) holt were to be identified, the EPS derogation licence would not permit the holt to be removed until the otters had completed breeding and had moved on. In this case, work within an exclusion zone, which would be a minimum of 150m radius depending on local circumstances, will need to be delayed until the holt is not in use.

Provision of Appropriate Mitigation Measures

- 10.4.4 If the pre-construction surveys identified holts or lying up sites, then the following measures may be necessary to allow construction works to progress, notwithstanding the need for an EPS licence. Mitigation would be identified on a case by case basis as part of the licence application process.

Construction practices to avoid disturbance

- 10.4.5 Construction of the Scheme in relation to the river would implement best practice to reduce impacts to otter. The Scheme would:
- minimise in-channel works;
 - avoid direct lighting of watercourses, riparian habitat and adjacent woodland;
 - cover all open excavations overnight, or alternatively provide escape ramps suitable for otters and other mammals;
 - prevent excessive noise and vibration; and
 - implement best practice for pollution prevention.

10.5 Conclusion

- 10.5.1 Although no holts or lying up areas have been identified in surveys to date, otter are present in the Scheme area and are known to forage in the watercourses and use them to move around the wider area. The proposed approach explained above would ensure that legislation relating to the protection of otter is complied with. There is therefore no risk of any offence being committed.

11. Reptiles

11.1 Relevant legislation

11.1.1 All reptile species in the UK (including the four common species common lizard *Zootoca vivipara*; grass snake *Natrix helvetica*; adder *Vipera berus* and slow worm *Anguis fragilis*) are legally protected under the Wildlife and Countryside Act 1981 (as amended) and are specifically listed under Schedule 5 as protected from killing or injury, but not from disturbance.

11.2 Baseline information

11.2.1 The reptile survey is reported in Appendix D-14. Evidence of a low population of grass snakes was found. Historic records from TVERC and an anecdotal report from a local resident suggest that slow worm and common lizard are also present in or near the Scheme area in low numbers.

11.3 Potential for an Offence

11.3.1 If present reptiles could be killed or injured during vegetation clearance or groundworks.

11.4 Proposed Approach

11.4.1 A method statement for vegetation clearance to ensure the protection of reptiles and to specify the actions necessary to avoid killing or injuring them would be produced. The following sections provide a summary of the content.

Avoiding Killing or Injury

Toolbox Talks

11.4.2 A toolbox talk would be given to contractors before vegetation clearance work starts, comprising basic reptile ecology and species identification, and what actions should be taken if reptiles were found within the works area. The talk would be specific to the season – during winter it would focus on what a hibernaculum looks like and the need to have an ecologist check potential hibernacula before they can be removed; in summer it would focus on recognising reptiles.

Protection of Retained Habitats

11.4.3 All retained habitat suitable for reptiles would be safeguarded with standard barrier fencing to prevent incursion by construction vehicles. Reptile fencing (i.e. that which is 600mm high and buried 150mm underground) is not considered necessary due to the low probability of reptiles being present and the retained habitat connectivity.

Habitat Manipulation

11.4.4 The primary approach to reptile mitigation would be displacement during vegetation clearance at an appropriate time of year. Habitat manipulation would be used to displace reptiles from the area subject to clearance, into adjacent undisturbed areas of suitable habitat. This would protect animals from injury and mortality by encouraging natural dispersal of any individuals present by cutting and clearance of vegetation in stages, in the direction of existing retained habitats such as hedgerows, woodland edge, tussocky grassland and scrub. This would only be completed during the active period for reptiles (March to October) when they are not in hibernation, and during suitable weather conditions, i.e. over 10°C and no precipitation.

- 11.4.5 Vegetation to be cleared would first be cut with hand tools (e.g. strimmers/brush cutters and chain saws) down to a height of approximately 150mm, with cut material removed from the site. After a rest period of up to two days (to allow any reptiles present to relocate naturally), the remaining habitat would be cleared with machinery to ground level, under the supervision of an ECoW. In this location it may be possible to clear the habitat immediately after the first cut, if the ECoW approves, due to the sub-optimal nature of the habitat for reptiles.
- 11.4.6 The second stage in removing reptiles would be a destructive search under the supervision of an ECoW. This would comprise the removal of all remaining habitat features (e.g. scrub stumps, concrete waste and other debris), which reptiles could use for shelter. The ECoW would carry out a finger-tip search of these features before the contractors remove them. All reptiles found would be relocated to adjacent suitable habitat.
- 11.4.7 These works would only be carried out during the active period for reptiles (March to October) when they are not in hibernation.

Relocation of Reptiles

- 11.4.8 A translocation of reptiles is not necessary. However, should low numbers of reptiles require removal from the works area, the ECoW would relocate these, by hand, to an area of suitable retained habitat where a hibernaculum would be provided to offer immediate cover.

11.5 Conclusion

- 11.5.1 The proposed approach explained above would ensure that legislation relating to the protection of reptiles is complied with. There is therefore no risk of any offence being committed.

12. Water Vole

12.1 Relevant legislation

- 12.1.1 Water vole are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally kill, injure or take water vole, or damage or destroy their burrows, disturb the animal while in its burrow or obstruct access to its burrow.

12.2 Baseline information

- 12.2.1 An initial survey for both otter and water vole was carried out in 2016 and is reported in Appendix D-16. Further water vole surveys are in Appendices D-17 and D-18. None of the water vole surveys found any sign of their presence. However, they are known to be present in low numbers in the southern part of the site, through sightings made during other species surveys and through historic records.

12.3 Potential for an Offence

- 12.3.1 The greatest risk of an offence being committed would be if water vole burrows occur within the Proposed Development. Being a mobile species, there is the potential that water vole move into areas within the Proposed Development prior to work starting.

12.4 Proposed Approach

- 12.4.1 The following steps would be taken prior to construction to ensure legislation protecting water vole would not be contravened.

Pre-construction surveys

- 12.4.2 Water vole surveys would be carried out on all watercourses and any other suitable habitat within the Proposed Development prior to site clearance.

Provision of appropriate mitigation measures

- 12.4.3 If water voles are found in the wider scheme footprint during the pre-commencement survey and/or during construction, then on the guidance of Natural England, displacement may be considered a potentially useful technique, along short lengths of an affected water course and where suitable unoccupied habitat is available. Such displacement can be conducted under a Class Licence by a registered person, the displacement of water voles in other circumstances would always require a site-specific licence (as outlined in Section 3.2 above).

Translocation

- 12.4.4 If trapping and translocation are deemed necessary, this would need to take place between 1st March to 15th April and should follow the methodology detailed in Appendix D-18.

- 12.4.5 Suitable receptor sites would need to be provided, with a minimum of 500m or 0.1ha of optimal habitat in total, to provide sufficient habitat for the maximum number of water vole that could be caught and to cater for future population expansion. Receptor sites typically take 9-15 months to establish and may take longer. Iffley Triangle has been identified previously as a potential receptor site, but this would require a re-survey to determine its suitability closer to when water voles are to be translocated. The named ecologist on the licence would determine when the site is suitably established to allow the release of water voles (following guidance in Appendix D-18).

Monitoring and reporting

- 12.4.6 A conservation licence return, which provides details of the actions taken under the licence and any associated monitoring results, would be submitted to Natural England following completion of the works.

12.5 Conclusion

- 12.5.1 Based on the results of the desk study and field survey, the risk of contravening the legislation set out in paragraph 12.1 is considered to be low. However, if water vole were found to be present, the actions and commitments described above would ensure no offence was committed.

13. Controlled Species

13.1 Relevant legislation

- 13.1.1 The Wildlife and Countryside Act 1981 (as amended) lists a number of invasive non-native plant and animal species in Schedule 9. This makes it an offence to release or allow escape into the wild any animal listed in Schedule 9 Part 1, or plant or otherwise cause to grow in the wild any plant which is included in Part II of Schedule 9.
- 13.1.2 The Environmental Protection Act 1990 defines the legal framework for duty of care for waste containing invasive plant species.
- 13.1.3 Additional plant species are considered 'invasive' (although not listed in Schedule 9 of the Wildlife and Countryside Act 1981, as amended), where they are invasive at a site or have the potential to become invasive posing a threat to existing native plant assemblages.

13.2 Baseline information

- 13.2.1 The survey information for invasive plants is in Appendix E of the ES. Signal crayfish is known to be present in the Thames and its tributaries and its presence is assumed. American mink is assumed to be present but is unlikely to be captured during works for the proposed Scheme and is therefore not considered further. Red-eared terrapin was recorded in one location in 2017; this species is also unlikely to be captured during works for the proposed Scheme and not considered further.

13.3 Potential for an Offence

- 13.3.1 The greatest risk of contravening the legislation relating to Schedule 9 plant species is during the vegetation clearance phase of the works. The greatest risk of contravening the legislation relating to Schedule 9 animal species is during installation and removal of in-channel structures, if a coffer dam is required and must be drained. There is also a risk of introducing invasive plants or animals to site on footwear, construction plant and other vehicles.
- 13.3.2 In relation to the offence of introducing non-native species to the wild, the disposal of waste from controlled species such as Japanese knotweed comes under the Environmental Protection Act 1990. No other aspects of this legislation are considered.

13.4 Proposed Approach

- 13.4.1 A separate invasive species strategy has been prepared for the Scheme, see Appendix E-2 of the ES. Compliance with this strategy will ensure invasive plant species are not spread and therefore no offence will be committed.
- 13.4.2 The Environment Agency's procedures for works at coffer dams will be followed in respect of handling invasive species during fish rescues while coffer dams are being drained to allow work to be carried out within a channel. If any crayfish are discovered then an ecologist will identify the species to ensure it is not native white-clawed crayfish *Austropotamobius pallipes*. The native white-clawed crayfish is considered to be not present locally, however small populations are found occasionally. White-clawed crayfish will be returned to the watercourse. Signal crayfish trapped within the coffer dam will be destroyed and not returned to the river.

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