PUBLIC INQUIRY


AND IN THE MATTER OF:

THE M4 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) TO WEST OF JUNCTION 29 (CASTLETON) AND CONNECTING ROADS) AND THE M48 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) CONNECTING ROAD) AND THE LONDON TO FISHGUARD TRUNK ROAD (EAST OF MAGOR TO CASTLETON)) COMPULSORY PURCHASE ORDER 201

-and-

THE M4 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) TO WEST OF JUNCTION 29 (CASTLETON) AND CONNECTING ROADS) AND THE M48 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) CONNECTING ROAD) SCHEME 201

-and-

THE M4 MOTORWAY (WEST OF MAGOR TO EAST OF CASTLETON) AND THE A48(M) MOTORWAY (WEST OF CASTLETON TO ST MELLONS) (VARIATION OF VARIOUS SCHEMES) SCHEME 201

-and-

THE LONDON TO FISHGUARD TRUNK ROAD (EAST OF MAGOR TO CASTLETON) ORDER 201

-and-

THE M4 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) TO WEST OF JUNCTION 29 (CASTLETON) AND CONNECTING ROADS) AND THE M48 MOTORWAY (JUNCTION 23 (EAST OF MAGOR) CONNECTING ROAD) AND THE LONDON TO FISHGUARD TRUNK ROAD (EAST OF MAGOR TO CASTLETON) (SIDE ROADS) ORDER 201


SUMMARY PROOF OF EVIDENCE ON DORMICE

OF

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1. **INTRODUCTION**

1.1. I am Dr. Elisabeth Clare Halliwell. I am the Mammal Ecologist (Farmland and Woodland Mammals) in the Evidence Analysis Group of the Natural Resources Body for Wales (NRW). I have over 15 years' experience giving specialist advice on dormouse conservation in Wales.

1.2. In my main proof I set out my experience and qualifications relevant to my evidence.

1.3. This proof has been prepared on the basis of the Welsh Government (WG)'s evidence as presented in the original Environmental Statement (ES), the first Environmental Statement Supplement (ESS) and the second ESS published in December 2016 including the ‘Draft Hazel Dormouse Mitigation Strategy’ (“the draft MS”, SS10.4). I have also considered the Proof of Evidence of Jon Davies¹ (“the dormouse proof”, WG 1.19.1).

2. **BACKGROUND**

2.1. The hazel dormouse is a European Protected Species under European Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended) (‘the Habitats Directive’). The Habitats Directive is transposed into UK law by the Conservation of Habitats and Species Regulations 2010 (as amended) (‘the Habitats Regulations’). The dormouse is a European protected species by regulation 40 of and Schedule 2 to the Habitats Regulations. NRW is the relevant licensing body in Wales for the purposes of issuing a derogation to the offences of regulation 41.

2.2. In my main proof I set out the relevant legislative and policy context.

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2.3. Background to dormouse populations

2.4. The dormouse is a small nocturnal mammal traditionally considered to be most closely associated with ancient woodland, particularly hazel coppice but is also found in other habitats such as hedgerows, scrub and some conifer woodlands. Dormice require a well-structured habitat with a range of plant species from which to forage to support their specialised diet. ²

2.5. Dormice have low population densities and slow breeding rates, making populations vulnerable to adverse events such as disturbance, habitat loss and poor weather conditions.³

2.6. Monitoring data has shown that dormouse populations have declined substantially in recent years.⁴ Factors considered to be causing the decline in dormouse populations include changes in woodland and hedgerow management, loss and fragmentation of woodlands, loss of hedgerows and climate change.²

2.7. There is significant and justified concern regarding the status of the dormouse in Wales.

3. SPECIES AND SITE CONTEXT

3.1. Vegetation occupied by dormice will be removed at three locations as a result of the construction of the proposed M4 Corridor around Newport (“the scheme”):

- around junction 29 at Castleton and New Park Farm;
- at the eastern end around north and east of Magor; and,
- south of Tata Steel [ES, 10.4.242; WG 1.19.1, 3.2.4-3.2.6].

3.2. The potential scale of the impact of the scheme in respect of dormice is larger than any other development scheme previously licensed in Wales. In so far as I am aware, no other scheme in the UK has required the removal of such a large area of dormouse habitat, proposed to translocate such a large number of dormice or proposed to hold dormice in captivity prior to release into an alternative receptor site.

4. **ISSUES**

4.1. The construction of the M4CaN would result in the removal of around 35-40 ha of woodland and scrub and over 5km of hedgerow at locations where evidence of dormice has been found [WG 1.19.1 Table 1; SS10.4, D.2.4.5].

4.2. Impacts of the scheme on the local dormouse population will arise from, for example, loss of habitat to support the local population, risk of injury and killing of dormice during clearance of habitat, severance of connectivity of remaining habitats and increased risk of mortality post construction.

4.3. In its response to the publication of the Environmental Statement (ES) and the second ES supplement (ESS), NRW objected to the scheme in the context of dormice advising of significant concerns regarding the proposed dormouse strategy and requested further information. NRW stated that based on the information presented in the ES and second ESS, NRW would not be able to conclude there would be no detriment to the maintenance of the Favourable Conservation Status (FCS) of dormice as required prior to the granting of a derogation under regulation 53(9) of the Habitats Regulations.

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5 NRW letter to Welsh Government ‘Natural Resources Wales response to: Draft orders under the Highways Act 1980 concerning the proposed M4 Corridor Around Newport’ dated 4 May 2016.

6 NRW letter to Welsh Government ‘Natural Resources Wales response to: The M4 Motorway (junction 23 east of Magor to west of Junction 29 Castleton and connecting roads) and the M48 Motorway (junction 23 east of Magor connecting road – December 2016 Environmental Statement Supplement’ dated 31 January 2017.
4.4. Our concerns particularly relate to understanding the extent of habitat utilised by
dormice that will be lost to the scheme, the proposed clearance strategy, the
proposed dormouse receptor site and replacement dormouse habitat.

4.5. **Understanding the extent and size of the affected dormouse habitat and
population estimates**

4.5.1. NRW is concerned that not all of the potential dormouse habitat loss arising
from the scheme and the number of dormice likely to be affected has been fully
assessed and documented.

4.5.2. Table 5 of the draft MS and Table 1 of the dormouse proof summarise
dormouse habitat loss and estimate dormouse population sizes in the affected
areas. However, the specific blocks of vegetation that will be treated as
‘dormouse habitat’ for the purposes of the mitigation strategy have not been
clearly identified. Without this information it is not possible to determine
whether the full extent of potential loss of dormouse habitat arising from the scheme has
been included in the impact assessment and mitigation proposals.

4.5.3. NRW is also concerned that the number of dormice affected by the scheme
has not been adequately estimated. Using an average density of 1 to 5
adults/ha, the dormouse proof suggests that the likely figure will be around 100
individuals. Experience from previous schemes shows that dormouse densities
in road verge habitat can be higher. The A2/M2 scheme in Kent found an
average of 10 dormice per hectare and locally up to 30 per hectare.\(^7\) Densities
in late summer/autumn will be higher due to the presence of young animals.

4.5.4. It is therefore possible that higher numbers of dormice will be encountered
during habitat clearance, particularly during the later stages with clearance due
to be completed by October/November. This has implications for the impact
assessment and translocation proposals and NRW considers that the draft MS

\(^7\) Cresswell W, Wray S (2005) Mitigation for dormice and their ancient woodland habitat alongside a
http://www.icoet.net/ICOET_2005/proceedings/06IPCh7-250-259.pdf
has not set out adequate contingencies should higher numbers of animals be captured.

4.6. Dormouse habitat clearance strategy

4.6.1. The removal of vegetation occupied by dormice risks killing or causing injury to individual dormice and section D.1 of the draft MS describes site clearance using either displacement or translocation techniques. NRW is concerned that it has not been demonstrated that displacement is possible in all of the proposed locations and the site clearance strategy lacks clarity over the approaches to be taken.

4.7. Dormouse translocation and release into a receptor site

4.7.1. The capture and translocation of dormice from affected habitats to a receptor site as mitigation for a development scheme is the least preferred method of mitigation due to the associated risks and impacts with removing animals and establishing them at a new site.

4.7.2. The draft MS proposes a number of options for the release of captured dormice including immediate translocation into adjacent habitat or a receptor site (Coed Mawr), or captive breeding prior to release into Coed Mawr or the scheme planting [SS10.4, D.1.79-D.1.86]. The dormouse proof suggests that direct translocation into a receptor site would be preferable to captive breeding.

4.7.3. Coed Mawr is a 90 ha predominately conifer NRW woodland and 40% of the woodland is due to be felled in the next five years. It is NRW’s view that it has not been demonstrated that Coed Mawr has, or will have within the required timescales, a sufficient quantity of good quality habitat to support a successful dormouse translocation.

4.7.4. NRW is also concerned regarding the risks associated with attempting to establish a dormouse population at a site such as Coed Mawr. A review of the
dormouse reintroduction programme in England\textsuperscript{8} found that in the long term (over 10 years) only two of nine sites were judged to have succeeded and nearly half had either failed or populations were declining.

4.7.5. The draft MS [SS10.4 D.1.86] also proposes that dormice could be held in captivity until landscape planting associated with the scheme has reached a suitable condition to support a dormouse population. As far as NRW is aware, this approach has never previously been attempted in the UK. In NRW’s experience, newly planted habitat can take at least ten years to reach a condition where it might be suitable to support a dormouse population.

4.7.6. NRW considers that the proposal to utilise Coed Mawr as a receptor site for dormice, or to release dormice into the scheme new planting once suitable, has not adequately considered the associated risks and uncertainties and that this does not currently represent a viable component of the mitigation strategy.

4.8. Replacement planting for loss of dormouse habitat

4.8.1. The establishment of replacement habitat at the earliest opportunity is key to successfully mitigating the impacts of habitat loss on dormouse populations. Transplanting shrub material from cleared habitat into mitigation areas can significantly reduce the time for new habitat to become suitable for use by dormice. The draft MS and Pre-Construction Environmental Management Plan (Pre-CEMP) refer to the reuse of uprooted trees and scrub ‘where practical’ and the possibility of early planting in some locations. However, there is no certainty around the extent or even whether this will be possible.

4.8.2. It seems likely that the majority of replacement planting will not take place until after the completion of construction [SS10.4, D.2.3.10]. During the interval between habitat clearance and replacement habitat being in a suitable condition to support a dormouse population, a substantial part of the local dormouse population would be absent and the remaining population would be

more isolated. This would increase the risk of local extinctions and the likelihood that dormice would not re-populate the new habitats created.

4.8.3. Some sections of landscape planting identified as replacement dormouse habitat are separated from remaining dormouse habitat in the wider landscape by the new road. The draft MS notes that dry culverts would provide safe road crossing points but no evidence is provided that dormice would be likely to utilise such culverts. As such, NRW considers that not all of the scheme planting identified in the draft MS as being of value to dormice would be directly accessible and so its value as replacement dormouse habitat cannot be assessed.

4.8.4. NRW also has concerns regarding the extent of habitat replacement in the Tata Steelworks area when compared to the area to be lost.

4.9. It is NRW’s opinion that insufficient consideration has been given to alternative mitigation strategies, such as off line habitat improvement of woodland and hedgerows and advance planting.

4.10. Assessment of ‘no detriment to the maintenance of the population at a favourable conservation status’

4.11. As a European protected species, regulation 53(9) of the Habitats Regulations requires that a derogation for any action arising from the construction of the M4CaN which may commit an offence against dormice under regulation 41 may only be granted if it can be demonstrated that:

‘the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range’

4.12. It is NRW’s opinion that the ES and draft MS have so far failed to demonstrate that there would be no detriment to the maintenance of dormice at a favourable conservation status arising from the construction of the M4CaN. In my main
proof I explain the reasons for this including the prolonged and sustained reduction in the size of the local dormouse population following habitat removal and the risk of a reduction in range resulting from habitat loss, habitat fragmentation and the delay in the availability of suitable replacement habitat.

5. ALTERNATIVES

5.1. NRW has focussed on assessing the impact of the proposal on the dormouse population and advances no view in relation to dormouse on alternative routes for the proposed scheme.

6. CONCLUSIONS

6.1. The information provided in the ES and draft MS is not adequate to demonstrate that the proposed approach will mitigate the impacts on dormouse populations arising from the construction of the M4 Corridor around Newport. Insufficient consideration has been given to the risks and uncertainties and the mitigation proposed would be insufficient to meet the FCS test as required under Regulation 53 of the Habitats Regulations for the following reasons:

6.1.1. It is not clear that the habitat clearance methodology will be adequate to reduce the risk of killing or causing injury to dormice.

6.1.2. There could be an interval of at least 13 years after clearance before replacement habitat is suitable to support a dormouse population.

6.1.3. The ES has not adequately considered the impact of habitat loss together with the absence of any advance planting or offline habitat management, on the remaining dormouse population at the affected sites.

6.1.4. The proposal to relocate captured dormice to a receptor site has not considered the risks and uncertainties associated with dormouse reintroductions and insufficient information has been provided to
demonstrate that the proposed site, Coed Mawr, is suitable for the establishment of the translocated dormice.

6.1.5. The alternative approach, to hold dormice in captivity until they can be returned to the replacement habitat once suitable, has never previously been attempted in the UK.

DECLARATION

I confirm that the facts and matters referred to in this proof of evidence are true to the best of my knowledge and belief. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

Signed:

Dated: 7th February 2017