Summary of Written Submissions for The Royal Society for the Protection of Birds

7 February 2017

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-

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) (Supplementary) Scheme 201-

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-

The London to Fishguard Trunk Road (East of Magor to Castleton) Order 201-

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-

The Welsh Ministers (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-

The Welsh Ministers (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)) Supplementary Compulsory Purchase Order 201-

Objector Number: OBJ0030



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1. Introduction

- 1. This document expands upon various areas set out in the RSPB's objection letter to the draft orders of 4 May 2016. For the avoidance of doubt, the RSPB maintains its objection to the M4 Corridor around Newport (M4CaN).
- 2. The RSPB has long standing concerns about the ongoing, progressive damage and loss of habitat on the Gwent Levels.
- 3. The RSPB has opposed proposals to route the M4 through the Gwent Levels since they were first raised in the early 1990s.
- 4. The RSPB has managed the visitor and education centre at the Newport Wetlands since it opened in 2008.
- 5. This written submission focuses upon the impacts of the M4 Corridor around Newport (M4CaN) on four Sites of Special Scientific Interest (SSSI) that lie within the Gwent Levels:
 - Gwent Levels Nash & Goldcliff
 - Gwent Levels Whitson
 - Gwent Levels St Brides
 - Gwent Levels Redwick & Llandevenny
- The RSPB is are disappointed that the Environmental Statement (ES) does not describe the current condition assessment of these or any other designated sites considered in the ES. Natural Resources Wales (NRW) has yet to provide a formal condition assessment of the Gwent Levels SSSIs.
- 7. The ES fails to acknowledge the apparent unfavourable condition of the various Gwent Levels SSSIs, the remedy to which is identified as a key challenge in the Natural Resources Policy Statement published by the Welsh Government in autumn 2015. A formal condition assessment of all impacted designated sites should be obtained from NRW as this is a key element in understanding the baseline condition of those sites *without* the proposed M4CaN and the current need, regardless of the M4CaN, for the implementation of appropriate management to remedy their unfavourable condition. This would enable such remedies to be distinguished from the "mitigation" measures.

2. Law and Policy

The Wildlife and Countryside Act 1981 (as amended)

- 8. SSSIs are designated under the Wildlife and Countryside Act to safeguard, for present and future generations, the quality, diversity and geographic range of habitats, species, geological features throughout Wales. Under section 28G of the Act, authorities including the Welsh Government are required to take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest.
- 9. Granting permission for the M4CaN would be directly contrary to this duty as it would involve direct land take from 4 SSSIs, permanently damaging them and their notified features. Despite the "mitigation"¹ proposed, the sites would experience permanent severance of their northern and southern parts.

The Conservation of Habitats and Species Regulations 2010 (as amended)

10. Birds listed in Annex I of the Birds Directive (2009/147/EC) are to "be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution."² Outside of designated protection areas "Member States shall also strive to avoid pollution or deterioration of habitats."³. Common crane (*Grus grus*) is an Annex I species which bred on the Gwent Levels in 2016, and whose habitat would be destroyed by the proposed route.

The Well-being of Future Generations (Wales) Act 2015

- 11. The Well-being of Future Generations Act (the WFG Act) places a duty on the Welsh Government to carry out sustainable development, defined as "the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals". This means "[acting] in a manner which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs" (section 5 of the Act). It includes balancing short term needs with the need to safeguard the ability to meet long term needs, and deploying resources to prevent problems occurring or getting worse.
- 12. The seven well-being goals include "A Resilient Wales a nation that maintains and enhances a biodiverse natural environment with healthy, functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change)". This goal reflects the critical underpinning role of biodiversity and ecosystems to society and the economy. The damage and destruction the M4CaN proposal would inflict on the Gwent Levels SSSIs runs directly counter to achieving it; a Government committed to this goal would be seeking to enhance and restore, rather than deplete and destroy. In further

¹ The RSPB disagrees with the description of these measures as "mitigation", considering that they are more properly understood and termed as "compensation". We made this point in our May 2016 objection letter at paras 77 to 79, and return to this point at para 2.88 in our written submission.

² Article 4(1) of the Birds Directive.

³ Article 4(4), final sentence.

fragmenting the Gwent Levels, the M4CaN would diminish their biodiversity, scale and connectivity, reducing ecosystem resilience and, in turn, the ability of the ecosystem to support wider socio-economic resilience and provide benefits for future generations.

- 13. They also include the goal of a *Prosperous Wales*, which starts:" An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change);" The Government's documents associated with the M4CaN proposal indicate that it would, at best, have a minimal impact on Carbon emissions. This does not accord with the ambition of this goal.
- 14. The M4CaN proposal is inconsistent with the application of the sustainable development principle, in particular the requirement to balance short term needs with safeguarding the ability to meet long term needs. In seeking to address the immediate problem of congestion on the current route, it places in jeopardy the health of the ecosystem, thereby undermining ecological, social and economic resilience for the longer term. It also compromises Wales' ability to deliver its ambitious carbon emission reduction commitments.
- 15. We reject the arguments put forward in the Sustainable Development Report for the Scheme, that the proposal is compatible with the WFG Act (see paras 2.21-2.35 in our full response). The WFG Act provides a new lens through which the Government should consider the problem of congestion on the M4 around Newport. Rather than seeking to justify a solution that was identified over 25 years ago it should show leadership by withdrawing the proposal, and using the WFG Act to ensure it identifies a truly sustainable solution to the congestion problem.

The Environment (Wales) Act 2016 – Part 1

- 16. The Act creates a new framework for the 'sustainable management of natural resources' (SMNR), based on the ecosystem approach in the UN Convention on Biological Diversity. This recognises the benefits humans derive from ecosystems (often called ecosystem services), as well as the intrinsic value of natural resources (including biodiversity) and ecosystems. The objective of SMNR is 'to maintain and enhance the resilience of ecosystems and the benefits they provide and, in so doing, meet the needs of present generations of people without compromising the ability of future generations to meet their needs; and contribute to the achievement of the well-being goals in section 4 of the WFG Act'. SMNR and delivery of the WFG Act.
- 17. The SMNR framework includes a State of Natural Resources Report (SoNaRR), a National Natural Resources Policy (NNRP) and Area Statements (to be developed by NRW in order to implement the national policy). The first SoNaRR report, published in September 2016, reported severe biodiversity declines, and found that none of Wales' ecosystems is resilient. It emphasised the need to protect important areas for biodiversity, and restore habitats to expand and reconnect them, enabling species populations to recover. This approach is endorsed in the current consultation to develop Wales' first NNRP. (It also accords with the objectives of Wales' Nature Recovery Plan and the CBD).

- 18. The Act also sets out a new 'biodiversity and resilience of ecosystems duty' requiring all public authorities (including the Welsh Government) to maintain and enhance biodiversity and in so doing promote the resilience of ecosystems (section 6). Welsh authorities must have regard to the SoNaRR and the list of priority species and habitats for Wales. Welsh Ministers must have regard to the CBD.
- 19. Section 7 requires the Welsh Ministers to publish a list of the living organisms (species) and types of habitat of principal importance for the purpose of maintaining and enhancing biodiversity in Wales, and to take all reasonable steps to maintain and enhance them, and in undertaking their duties under this section, to apply the principles of SMNR. The principles include taking account of the benefits and intrinsic value of natural resources and ecosystems; taking account of the short, medium and long term consequences of actions; taking action to prevent significant damage to ecosystems; and taking account of the resilience of ecosystems.
- 20. The M4CaN proposal does not gives appropriate consideration to the intrinsic value of biodiversity or the benefits provided by the floodplain/wetland ecosystem of the Gwent Levels. It does not represent "action to prevent significant damage to ecosystems", nor consider their resilience particularly pertinent given the conclusions of the first SoNaRR that none of Wales' ecosystems is resilient. Furthermore, it fails to take proper account of the short, medium and long term consequences, including damage to biodiversity and ecosystems and failure to reduce carbon emissions from transport, and the impacts these will have on future generations.
- 21. The Scheme would also impact on a number of species currently listed under section 7, including lapwing, shrill carder bee, brown banded carder bee, red shanked carder bee and moss carder bee. It also features coastal and floodplain grazing marsh, which would be impacted by the Scheme, as a priority habitat type. The scheme will threaten the medium and long term future of the shrill-carder bee both in Wales and in the UK clearly a situation that should not be permitted to arise, if the Welsh Government takes its biodiversity duties (sections 6 and 7 of the Environment (Wales) Act seriously). We therefore argue that this duty requires Welsh Ministers to reconsider their approach to the problem of congestion around Newport.

The Environment (Wales) Act - Part 2 and the Paris Agreement under the UN Convention on Climate Change

- 22. Under the Act Welsh Ministers must ensure that the net Welsh emissions account for the year 2050 is at least 80% lower than the baseline.
- 23. The Paris Agreement strengthens the existing United Nations Framework Convention on Climate Change by aiming to hold "the increases in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change;". This is going to be incredibly difficult to achieve, and, will require emissions reductions of much greater speed and scale than envisaged under the Environment Act (Glynn and Anderson (2015)).

24. At the UK level transport is one of two areas of the economy where emissions reductions have not been sufficiently delivered⁴. This has contributed to the UK being off course to meet its fourth and fifth carbon budgets under the UK Climate Change Act⁵, jeopardising the UK's ability to fulfil its international climate change commitments under the Paris Agreement. To put the UK back on track, and to enable Wales to do the same, decarbonising the transport sector will be vital. One of the best ways to reduce transport emissions is to reduce demand – constructing a new section of motorway runs directly counter to this.

Planning Policy Wales (9th Edition, November 2016)

- 25. Planning Policy Wales (PPW) emphasises the Welsh Government's commitment to sustainable development and to biodiversity, including its commitment to the CBD. Para 5.1.2 of PPW sets out the Welsh Government's objectives for the conservation and improvement of natural heritage, which include:
 - "promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
 - ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
 - ensure that statutorily designated sites are properly protected and managed;
 - safeguard protected species;"

26. The M4 CaN proposal fails on all these counts.

TAN 5: Nature Conservation and Planning (September 2009)

- 27. TAN 5 emphasises the centrality of biodiversity conservation in planning for sustainable development, and the importance of protecting designated sites (such as SSSIs).
- 28. The TAN seeks "to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation". It states "where there may be significant harmful effects local authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered". We commonly refer to this approach as the "avoid mitigate compensate hierarchy".
- 29. We consider that insufficient effort has been put into *avoiding* the damage to the Gwent Levels SSSIs, particularly given the new context of the WFG Act. The Welsh Government's consideration of alternative solutions to the congestion problems along the M4 corridor around Newport should be broader than the consideration of different motorway route options. The approach taken to "mitigation" (more properly termed compensation) in the proposal is woefully inadequate notwithstanding very real concerns over whether it is indeed possible to compensate for damage at this scale to the habitats and species concerned.
- 30. Without prejudice to our strong opposition to the proposal, we assert that the new legislative framework (the WFG Act and the Environment Act) requires the Government to look beyond

⁴ <u>https://www.publications.parliament.uk/pa/cm201617/cmselect/cmenergy/173/173.pdf</u>

⁵ https://www.theccc.org.uk/publication/meeting-carbon-budgets-2016-progress-report-to-parliament/

simply compensating for direct losses caused by the road, and invest in wider measures to build resilience.

TAN 18: Transport (March 2007)

31. TAN18 makes it clear that "Adverse impacts associated with transport infrastructure projects, on the natural, historic and built environment should be minimised." (paragraph 9.10). The heavy reliance by the M4CaN on compensatory measures is a clear indication that this important provision has not been adhered to.

Law and Policy Conclusions

32. The Welsh Government's own policy and legislation proscribe against proceeding with the M4CaN proposal. The Welsh Government should reconsider its approach to the congestion around Newport, in light of the new framework of the WFG Act and the Environment Act.

3. The impact of the M4 on birds

Bird surveys

- 33. The RSPB's objection letter highlighted concerns about the adequacy of the survey work. The RSPB has considered the further information that was supplied at the beginning of September as part of the Environmental Statement Supplement ("the September ES Supplement") and December ("the December ES Supplement").
- 34. Much of the M4 route has not been covered in the surveys reported in the ES Supplements, in particular in the breeding season surveys.
- 35. The RSPB has carefully considered the Wintering Bird Survey work produced as part of the ES Supplement (Volume 3: Appendix S10.4). Although it has covered the whole of the winter season the reduction from 7 to 5 survey transects to focus on the Gwent Levels has implications on the surveying of the more widespread species (including SPA species such as mallard) possibly being slightly under-recorded compared to the previous winter surveys.
- 36. The Breeding Bird Surveys are focussed on identifying representative bird communities of the survey areas chosen, rather than properly assessing the bird populations affected along the M4CaN route. The transects that have been undertaken are likely to have covered less than 50% of the area enclosed by the survey areas. The whole route of the M4CaN should have been surveyed. Without such an assessment sound conclusions cannot be reached about the likely ornithological impacts of the route or to devise an appropriate mitigation and compensation package in the event that the scheme is approved.
- 37. The RSPB is disappointed that no Breeding Wader Survey has been undertaken across an entire breeding season.

Cranes (Grus grus)

38. In 2016, a pair of common cranes bred at an undisturbed, sensitive location on the Gwent Levels (Site X), where they fledged a single chick. This was the first successful breeding by cranes in Wales since at least the 1600s (Lovegrove *et al* 1994; Boisseau & Yalden 1998).

- 39. The M4CaN is likely to result in the permanent displacement of breeding cranes from Site X. Common cranes have Annex I status under EU Directive (2009/147/EC) on the Conservation of Wild Birds, which requires Member States including the UK, "to take special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution". This includes taking appropriate steps to avoid deterioration of habitats or any disturbances affecting the birds. *In situ* conservation of the breeding crane habitat is the best way to achieve this objective i.e. the M4CaN should not be consented. If the M4CaN is constructed the creation and management of replacement breeding and foraging habitat for cranes at a suitable receptor site is likely to provide the best way of retaining breeding cranes on the Gwent Levels and in South Wales.
- 40. The cranes successfully fledged a chick at their first attempt, despite being inexperienced parents. This indicates that the site has all the critical habitat elements of a favourable breeding location. The site looks very similar to many breeding territories elsewhere in the UK. Cranes are site faithful and will return to the same nesting site year after year, so it is anticipated that the site will be used again. Cranes do not necessarily use the same nest location within a site every year, but if options are limited, as they seem to be at Site X, they are likely to use the same nesting site again. The following habitat elements were likely to have been particularly important in 2016:
 - <u>A secure nesting site</u>: this open location provides a typical nesting site for cranes, providing some nest seclusion and protection from predators such as foxes, a major predator of crane chicks (Leito 2005).
 - <u>Productive foraging areas adjacent to the nest site</u>: grassland close to the nesting site was used over a ten day period post-hatching, probably for longer. The foraging area is estimated to be up to c. 3.5 ha, although not all this area is likely to have been utilised. Young cranes are fed by their parents on a range of prey items, notably invertebrates taken from surrounding vegetation, including beetles, grasshoppers and caterpillars as well as grass seed (Nowald, 2003).
 - <u>Productive wider foraging area</u>: crane parents select foraging habitats with highest food availability (Nowald 2003). As crane chicks get older and stronger, adults take chicks to larger foraging areas further from the nest. There were no observations of the adults and chicks east of the nesting site, suggesting that foraging opportunities were limited there. It is significant that the adults chose to take the chick(s) to invertebrate-rich fields away from the nesting site, despite the apparent difficulties of getting through dense vegetation. The invertebrate-rich fields consist of dry unimproved or semi-improved grassland, sheltered within hawthorn hedges. The fields were closed up for hay throughout most of the chick rearing period, so the habitat would have remained productive for foraging until at least mid-August. Pylons do not seem to have deterred the cranes from foraging in this area, where the risk to a juvenile crane prior to fledging is minimal.
 - <u>A safe roosting pool close to the invertebrate-rich fields</u>: adult cranes and their chicks roost at night at the nesting site or a similar pool elsewhere. Pools near the invertebrate-

rich fields may have provided this function, keeping the birds secure at night from ground predators, especially foxes. Since the cranes are likely to have roosted in this area, the inference is that human disturbance must have been low.

- <u>Limited human disturbance at the nest site and immediate foraging area</u>: there is no public access, so disturbance would have been minimal when the adult cranes set up their breeding territory, during incubation and the first few weeks of foraging with the two chicks in the immediate vicinity of the nesting site. It is particularly important that cranes are not disturbed by people during this period. Leito *et al* 2005 found that human activity had a significantly negative effect on the breeding success of cranes, where mean brood size was significantly smaller in nests that were located closer to sources of human disturbance.
- <u>Limited human disturbance in the foraging area</u>: it is important that cranes are not disturbed when they have unfledged chicks.
- 41. We estimate the territory size at Site X was up to c. 22 ha, including the nesting site, the immediate foraging area and the invertebrate-rich fields used by the chick in six weeks pre-fledging. The crane family was seen in fields totalling c. 10 ha, but the cluster as a whole is c. 16 ha, and it is likely that some or all of this would have been used during this period. The figure does not include the roosting site near the invertebrate-rich fields which was used by the cranes during the six weeks pre-fledging. This area, which includes other potential feeding habitat could add another c. 5-10 ha to the overall territory size, giving a larger territory size estimate of up to c. 32 ha, although this roosting site may have been used only because of the difficulty in returning regularly to the nesting site to roost. It is important to note that crane territories can vary considerably, depending on factors such as habitat quality and levels of disturbance.
- 42. The spatial relationship between the Site X crane breeding territory and invertebrate-rich fields and the proposed M4CaN route corridor is critical:
 - i. The proposed route corridor would lie close to the nesting site. The nesting site and part of the adjacent foraging habitat would be severely impacted or destroyed by the proposed route corridor.
 - ii. c. 50% of the hay meadow foraging habitat lies close to the proposed route corridor, and would be very vulnerable to disturbance effects during construction and operation of the proposed road.
 - iii. The route corridor would permanently separate the nesting site from the invertebraterich fields, effectively removing the main source of food for crane chicks.
- 43. The breeding cranes at Site X would be very vulnerable to disturbance impacts from the proposed M4 extension. Site preparation and motorway construction is likely to expose the cranes to many irregular disturbance events over a long time period. Although cranes may habituate to regular low-impact human activity in some circumstances, they are much less tolerant of irregular activity and noise. Cranes are unlikely to tolerate disturbance during site preparation and road construction, when the presence of construction personnel and machinery is likely to have an adverse impact at distances up to 500 m.

- 44. It is unlikely that any *in situ* mitigation could prevent breeding cranes from abandoning Site X because of the proximity and likely scale and duration of disturbance either during the construction phase or during the operation phase of the M4CaN.
- 45. We have discussed the suitability of the Maerdy Farm, Tatton Farm and Caldicott Moor replacement habitat sites for breeding cranes with RPS. We have not had the opportunity to visit any of the sites, so can only comment on the information provided in the draft Mitigation Strategy. Critical factors such as topography, elevation, soil type, water budget, water management infrastructure and human disturbance, all have an important bearing on the viability of these sites to support breeding cranes. Detailed consideration is set out in paragraphs 3.50 to 3.67 of our Written Submission. Given the apparent constraints at each of the sites the RSPB has concluded that none of the sites would be suitable as compensation for the loss of the Site X breeding site.
- 46. We strongly recommend that a more systematic review of alternative sites across the Gwent Levels and adjacent areas is carried out. This should focus on areas of existing and former wetland habitats, and in particular unimproved areas of coastal and floodplain grazing marsh away from major roads, built development and pylons

Cetti's warbler (Cettia cetti)

47. It is important to note that the 49 singing males mentioned in para 4.2.4 of the 2016 Breeding Season Ornithological Surveys report represents a substantial population of birds. On the basis that there are an estimated 222 singing males in the whole of Wales (Holling *et al.*, 2016) this population represents 22% of the entire Welsh population, indicating that this is probably the most important site for Cetti's warblers in Wales.

4. The impact of the M4 on bumblebees

48. The text below has been prepared by Dr. Richard Comont of the Bumblebee Conservation Trust on behalf of the RSPB.

Bumblebees on the Gwent Levels

49. The Gwent Levels as a whole are home to a good diversity of bumblebee species: with four bumblebee species of principal conservation importance, the Gwent Levels are one of the most important bumblebee areas in the UK. Both the M4CaN 2015 terrestrial invertebrate survey report (ES Volume 1, Chapter 10: *Ecology and Nature Conservation*) and a 2011 bumblebee survey⁶ for CCW found 12 bumblebee species on the Levels. To place this in context, the mean number of species found per year on each of the sites monitored through BBCT's BeeWalk citizen-science monitoring scheme⁷ across the UK is just five, and only seven species are thought to remain both widespread and abundant in the UK.

⁶ Smith, M.N. 2011. The status and distribution of the shrill carder bee *Bombus sylvarum* on the eastern Gwent Levels and within the Caerwent and Caldicot areas of Gwent in 2010. CCW Contract Science Report No. 972. Countryside Council for Wales, Bangor.

⁷ BeeWalk is a standardised bumblebee monitoring scheme where volunteers walk a fixed route (a transect) on a monthly basis between March and October, counting and identifying the bumblebees that they see. For full details see <u>www.beewalk.org.uk</u>.

Moss Carder (Bombus muscorum)

50. The species has a patchy distribution around the coast of Wales, virtually all west of the projected work area. It has been recorded only once within five km of the proposed route, although a population is known just outside the western edge of this affected area.

Red-shanked carder (Bombus ruderarius)

51. Within Wales, the Red-shanked Carder has mostly been found along the South Wales coast from St Davids to Caldicot, with a handful of scattered records elsewhere. There are just seven Welsh records held by the national recording body BWARS for the period 2000-2015. Two of these records were from the vicinity of the proposed route during CCW surveying during 2010⁴, almost 30% of the total Welsh records.

Brown-banded carder (Bombus humilis)

52. Like the closely-related Moss Carder, it has declined significantly in recent years, and is now largely restricted to scattered populations spread around the south coast from Anglesey to East Anglia. In Wales, the southern coast is a particular hotspot for the Brown-banded Carder and a third of the 21st-Century British records of the species have been from Wales. A third of the Welsh records (and 12% of the UK total) have been made less than five km from the proposed route.



Figure 1 - Post-2000 recorded distribution of the Brown-banded Carder bumblebee (*Bombus humilis*) relative to the proposed new M4 route (black) and the Gwent Levels SSSIs (pink).

Shrill carder (Bombus sylvarum)

53. The figures are even starker for the Shrill Carder, Britain's most endangered bumblebee, which has declined catastrophically over the past 50 years. The species has been lost from 79.5% of its former distribution, and there are records from just 64 10km grid squares since 2000 (Figure 2). Formerly widespread across lowland England and Wales, by 2000 it was reduced to seven populations, four in England and three in south Wales. Two English populations have since gone extinct (Salisbury Plain and Dungeness). Of the remaining five populations, two (Castlemartin)

Peninsula and Somerset Levels) have undergone significant post-2000 declines, one (Kenfig) appears to be geographically limited with low recent counts, and only two (Thames Estuary and Gwent Levels) are thought to be large enough to be genetically sustainable in the long term⁸. The Gwent Levels are the most important area in Wales for the species, and the joint most important area (level with the Thames Estuary) in Britain. Reasons for this decline are not known for certain, but habitat fragmentation from loss of flower-rich grassland and agricultural intensification are thought to have been key factors.



Figure 2- Post-2000 recorded distribution of the Shrill Carder bumblebee (Bombus sylvarum)

- 54. The suggestions in the M4CaN environmental report that Shrill Carder 'seems to be doing very well in South Wales with strong populations from Pembrokeshire to the Gwent Levels (NBN)' and that the 'population in the Gwent Levels is one of seven remaining populations in the UK' are incorrect, misleading and around a decade out of date.
- 55. The only strong population quite possibly the only genetically sustainable population in South Wales is on the Gwent Levels.

⁸ Ellis et al 2006. Extremely low effective population sizes, genetic structuring and reduced genetic diversity in a threatened bumblebee species, *Bombus sylvarum* (Hymenoptera: Apidae). Molecular Ecology 15, pp. 4375-4386



Figure 3 - Post-2000 recorded distribution of the Shrill Carder bumblebee (*Bombus sylvarum*) relative to the proposed new M4 route (black) and the Gwent Levels SSSIs (pink).

Requirements of the conservation priority bumblebee species

- 56. The Gwent Levels (in a broad sense) are **the major stronghold** for the Shrill Carder bumblebee in the UK, with 30% of the post-2000 sightings of the species (Figure 2). The species is a Qualifying Feature of six of the eight SSSIs on the Levels (Nash & Goldcliff, Newport Wetlands, Redwick & Llandevenny, Rumney & Peterstone, St. Brides and Whitson)^{9,10}. It is also present on two more SSSIs (Magor Marsh and Magor & Undy), where it should also be listed as a qualifying feature as the species forms a landscape-scale metapopulation across the Levels. This metapopulation also extends beyond the SSSI boundaries onto the surrounding brownfield areas such as the TATA Steel land, Llanwern Steelworks, and the Associated British Ports land at Newport. Brownfield sites such as these are often flower-rich and very good forage areas for rare bumblebees such as the Shrill Carder: indeed, the Thames Estuary population is almost entirely found on brownfield sites.
- 57. The new motorway (and other large roads built as part of the development) are likely to represent significant barriers to the Shrill Carder and other bumblebee species. Bumblebees treat transport links such as roads and railways as barriers in the landscape, and rarely cross them¹¹. Tall hedges and lines of trees are also significant barriers to flying insects^{12,13} although

⁹ M4CaN Environmental Statement Supplement vol 3 appendix S10.3. Howe, 2012. The distribution of the Shrill Carder bee *Bombus sylvarum* on the Gwent Levels, 1998-2010

¹⁰ M4CaN Environmental Statement Supplement vol 3 appendix S10.2

¹¹ Bhattacharya, M., Primack, R, & Gerwein, J. (2003). Are roads and railroads barriers to bumblebee movement in a temperate suburban conservation area? Biological Conservation 109(1) p. 37-45

¹² Wratten et al (2003). Field boundaries as barriers to movement of hover flies (Diptera: Syrphidae) in cultivated land. Oecologia 134 (4) p. 605-611

¹³ Dover, F.G. & Fry, G. (2001). Experimental simulation of some visual and physical components of a hedge and the effects of butterfly behaviours in an agricultural landscape. Entomologia Experimentalis et Applicata 100 (2) p. 221-233

they can also provide foraging and nesting resources. This, combined with the removal (or forcing underground) of ditches and reens across the new route of the motorway and the addition of screening banks and trees on either side of the road footprint, make it highly likely that the development will present a near-impenetrable barrier to bumblebees. This is contrary to the overly-optimistic judgement of the M4CaN Statement of Case Part 2 & 3 that the road "would not be likely to prevent exchange of individuals between sites"



Figure 4 - All post-2000 records of Section 7 Priority Species for Conservation bumblebees in the affected area. The two loci around the proposed M4 black route are 1km and 5km from the motorway route. Sightings within the black would be within the 250m footprint of the motorway itself, those within the inner locus would potentially have foraging disrupted, and within the outer locus would potentially have queen dispersal affected.

Suitability of the survey work to date with respect to bumblebees

- 58. The timing and methodology of the environmental survey work leaves much to be desired. It was not done over a long enough period and there was no repeat surveying of areas. Invertebrate survey guidance states that several visits should be undertaken between March and October in order to capture the full diversity of such areas. Surveys were only carried out between July and September, completely neglecting the invertebrates of spring, autumn and early summer.
- 59. The Shrill Carder bumblebee is reliant on a mosaic of sites across the landscape for forage at different times of the year. Areas used in one month may not be suitable in another, and the bees will be foraging somewhere completely different with different forage plants. The

different management regimes in place at different sites (e.g. mowing, grazing) will further affect the timing and availability of forage plants. This means that a series of single visits to sites, particularly in less than ideal weather, as these were, provides only a partial snapshot of how bees happen to be using sites over the three surveyed days during their five-month flight season.

- 60. The survey was also worryingly limited geographically, covering only the directly-impacted 250m-wide buffer zone and road footprint. The direct impacts of the new road will be felt much more widely, not least in the areas north of the road which will be used for storage of materials during construction, and should have been surveyed. The environmental surveys also did not pursue access to several areas within the designated area.
- 61. Both the environmental survey and the scoping report (desk study) appear to be unaware of the Shrill Carder surveys of the area commissioned by CCW in 2009¹⁴, 2010¹⁵ and 2012¹⁶. Although a CCW summary of the Gwent Levels status of the species is included as Appendix 10.3, this dates from 2010 and only includes the 2009 survey (Magor & Undy and Whitson SSSIs). Possibly related to this, the M4CaN paperwork completely misses the presence of a Section 7 bumblebee with very few recent Welsh records (*B. ruderarius*) on both the Whitson and Redwick & Landevenny SSSIs.
- 62. The combination of limited surveying and missing existing survey reports means that it is impossible to have confidence in the conclusions reached. The potential for harming the Gwent Levels Shrill Carder population a nationally-important area for a nationally rare species has been considerably underestimated.

Likely impact of the scheme on populations of conservation priority species

Direct habitat loss

- 63. The SSSI sites are primarily designated for the Shrill Carder and the reen and ditch habitat which supports the bee and many other rare invertebrate species. Even where the reens and ditches remain connected beneath the road, they will not be on the surface and so the vegetation, which is the value of the network for Shrill Carder, will be permanently lost.
- 64. Habitat lost across these sites will include woodland, hedgerows, saltmarsh, grazing marsh, and brownfield open mosaic habitats. Loss of the last two in particular will threaten the Shrill Carder population in the short, medium and long term across the Gwent Levels region, not just within the SSSI areas. Some 77.6ha of SSSI grassland, a major area of habitat for the Shrill Carder, is within the direct footprint of the road and would be destroyed. Hedgerows and woodland edges are likely to be important nesting and overwintering sites for the bees, and their

 ¹⁴ Smith, M.N. (2010). The status and distribution of the Shrill Carder bee *Bombus sylvarum* on Magor & Undy SSSI and Whitson SSSI on the Gwent Levels and on Newport Wetlands National Nature Reserve in 2009. CCW Contract Science Report No. 919. Countryside Council for Wales, Bangor.
¹⁵ Smith, M.N. 2011. The status and distribution of the shrill carder bee *Bombus sylvarum* on the eastern

¹⁵ Smith, M.N. 2011. The status and distribution of the shrill carder bee *Bombus sylvarum* on the eastern Gwent Levels and within the Caerwent and Caldicot areas of Gwent in 2010. CCW Contract Science Report No. 972. Countryside Council for Wales, Bangor.

¹⁶ Smith, M.N. 2013. The status and distribution of the shrill carder bee *Bombus sylvarum* on Gwent Levels – Rumney and Peterstone SSSI and Gwent Levels – Nash and Goldcliff SSSI in 2012. CCW Contract Science Report No. 1030. Countryside Council for Wales, Bangor.

destruction would represent a significant loss to the species. This is particularly true if these were to be destroyed during the winter, as this is when bumblebee populations are at their lowest ebb (only queens overwinter), and these overwintering queens will be in hibernation sites around the bases of hedgerows, etc.

Bumblebee population fragmentation and isolation

- 65. The new motorway (and other large roads built as part of the development) are likely to represent significant barriers to the Shrill Carder and other bumblebee species. Bumblebees treat transport links such as roads and railways as barriers in the landscape, and rarely cross them¹⁷. Tall hedges and lines of trees are also significant barriers to flying insects^{18,19} although they can also provide foraging and nesting resources. This, combined with the removal (or forcing underground) of ditches and reens across the new route of the motorway and the addition of screening banks and trees on either side of the road footprint, make it highly likely that the development will present a near-impenetrable barrier to bumblebee, contrary to the overly-optimistic M4CaN Statement of Case Part 2 & 3 that the road "would not be likely to prevent exchange of individuals between sites".
- 66. This severance is likely to split the existing Shrill Carder metapopulation on the Levels into at least two (north and south of the new route). It may even fragment the population into three (one north of the route, and one either side of the River Usk south of the new route) (Figure 3).
- 67. Bumblebees need large areas of suitable habitat to survive in the long term and it is very unlikely that the population north of the road will survive, let alone thrive. However, there are no plans for compensation north of the route. Bees which did attempt to cross the new motorway would be at severe risk of becoming roadkill. Road mortality tends to be proportionally lower amongst rare bees than common species²⁰, but only because rare species have a tendency to forage closer to the nest, increasing the severance effect of the road in dividing what is currently a single large, healthy population into three smaller, less-viable populations.

Habitat degradation

68. One of the main reasons that bumblebees such as the Shrill Carder are thought to have become rare is that they exhibit preferences for flowers such as those of family *Fabaceae*, many of which are predominantly found in comparatively low-nutrient-input areas such as hay meadows. A diffuse impact of the relocation of the motorway will be the greatly increased emission of nitrogenous exhaust fumes through the Gwent Levels. Nutrient fertilisation from road traffic emissions on even small roads is known to change the species composition of

¹⁷ Bhattacharya, M., Primack, R, & Gerwein, J. (2003). Are roads and railroads barriers to bumblebee movement in a temperate suburban conservation area? Biological Conservation 109(1) p. 37-45

¹⁸ Wratten et al (2003). Field boundaries as barriers to movement of hover flies (Diptera: Syrphidae) in cultivated land. Oecologia 134 (4) p. 605-611

¹⁹ Dover, F.G. & Fry, G. (2001). Experimental simulation of some visual and physical components of a hedge and the effects of butterfly behaviours in an agricultural landscape. Entomologia Experimentalis et Applicata 100 (2) p. 221-233

²⁰ Williams, P. & Osborne, J. (2009). Bumblebee vulnerability and conservation world-wide. Apidologie 40 p. 367-387

vegetation assemblages up to hundreds of metres from the road footprint itself²¹. The change is towards more-nitrogen-tolerant species such as coarse grasses and away from less-nitrogen-tolerant species such as the preferred forage plants of the Shrill Carder and other rare species. This will produce a zone of degraded habitat of little to no use for bumblebees on either side of the new road, as well as widening the effective barrier width of the new motorway and increasing the severance effect of the project.

Suitability of existing "mitigation" proposals for bumblebees

- 69. The 1:1 habitat replacement ratio is too low for a site of this quality. Habitat compensation should attempt to replace the habitat destroyed by the project and repair the damage inflicted by the severance effect of the road. Therefore compensation for bumblebees should take place on both sides of the proposed route, not just in the south with the largest remaining population. On both sides of the new road, enough suitable habitat should be provided that each population is able to remain stable at the very least. This will require much more than the approximately 1:1 reen & ditch replacement ratio, and the approximately 1:3 recreated:destroyed ratio for grassland.
- 70. The three "mitigation" areas are of reasonable size (Tatton Farm 17ha, Maerdy Farm 24ha, Caldicot Moor 113 ha) but it is unclear how much of each would be used in compensation in general, let alone to provide Shrill Carder habitat ("the actual extent of land within these areas which would be required to provide compensation is to be agreed with NRW."²⁴). All three sites are south of the proposed M4 route: although this population will be reduced in size and will require support, the 10% of the population north of the proposed route is by far the most likely to be forced to extinction. The proposals do not address this, and support for this northern population beyond reversion of the Tata Steel construction site to mosaic habitat is imperative to include within the compensation scheme. A starting point might be the temporary compensation of the 'temporary' construction land take at the time when the land is unavailable for bumblebees, rather than once the road is finished and the construction sites are reverted to open mosaic habitats.
- 71. For the compensation strategy to effectively compensate for the loss and fragmentation of habitat and Shrill Carder populations, the fine-scale microhabitat of the lost habitat must be replicated in the replacement areas. For bumblebees, this is particularly important with nesting habitat.

Conclusion

- 72. There are serious concerns that the proposed M4CaN using the Black Route would have considerable adverse impacts on the rare bumblebee populations on and around the Gwent Levels SSSIs. In particular, the detrimental effect on the Shrill Carder bumblebee *Bombus sylvarum* could significantly weaken the species' status in the UK as a whole.
- 73. The M4CaN will divide the nationally-important site of the largest Shrill Carder population in Wales into either two or three smaller populations. This will at best have significant detrimental effects on the viability of the population north of the new route (10% current population), and

²¹ Angnold, P.G. (1997). The impact of a road upon adjacent heathland vegetation: effects on plant species composition. Journal of Applied Ecology 34 p. 409-417

is likely to eradicate this population completely by cutting it off from the larger population(s) south of the road.

- 74. The section of the current population west of the River Usk and south of the proposed route (35% current population) is also likely to be cut off from the main extent of the current population, with negative effects. It is likely to remain viable in at least the medium term, but far more vulnerable to extinction through random events (eg flooding, a very wet summer, etc). The main area of the current population is likely to remain viable but at a fraction of its former size (around 53% of the current population), as the loss of the northern (and possibly western) areas will weaken the population correspondingly. This will in turn make any and all of the smaller remaining populations more susceptible to extinction through external pressures, as well as far closer to the threshold of genetic unsustainability. With the Kenfig and Castlemartin populations showing apparent declines in recent years, this development could sound the death knell for the Shrill Carder as a Welsh species.
- 75. It is far from clear that the "mitigation" strategy will fully mitigate for the loss of SSSI area, let alone the extra effects of fragmenting a nationally-important population of Shrill Carder, one of just two large, healthy metapopulations in the UK. It is particularly unclear how the project will meet the statutory duty to maintain and enhance biodiversity imposed on the Welsh government by the new Environment (Wales) Act 2016 in the context of the probable diminution of the Shrill Carder population in the affected area.
- 76. If the road is to be built in the proposed location, a large enough area of suitable habitat must be created north of the route to allow the northern population to become self-sustaining, in addition to compensation south of the motorway. The compensation package must be made clear: currently the proposals are far too vague for any real scrutiny. Secondly, the package will need to cover more areas and thus is likely to need to be made larger.
- 77. The proposed M4 relief road will actively harm rare bumblebee species directly and indirectly, and that the proposed compensation measures are not yet fit for their stated purpose of preventing this.

5. The mitigation/compensation package for the M4CaN

78. The RSPB has evaluated the mitigation/compensation package from a bird and bumblebee perspective only. The RSPB considers that the package is wholly inadequate and requires fundamental changes to make it fit for purpose. We set out our reasons, and the changes that are needed, below.

What is needed overall

Common crane

- 79. Replacement habitat would need to be of sufficient size and quality to encourage the cranes to establish a breeding territory. The following elements would need to be provided at a compensation site:
 - A wetland area of c. 1.7 ha, including a vegetated island surrounded by a 3 m ditch to a depth of 1 m throughout the breeding season. The island and ditch edge should

support dense reed to provide cover for nesting cranes. Cranes may not start to use a new breeding pool for three to four years, after which vegetation cover may be sufficiently mature to provide the necessary level of concealment.

- Up to 19 ha of invertebrate-rich grassland, accessible to foraging adults with chicks. This includes:
 - 2-3 ha of invertebrate-rich hay meadow adjacent to a breeding pool for foraging in the first two weeks after hatching, including some uncut, very lightly managed (or unmanaged) blocks adjacent to the breeding pool areas where an invertebrate-rich sward is provided within an area of cover for newly-hatched chicks.
 - $\circ~$ Up to 16 ha of additional invertebrate-rich hay meadow within the breeding territory.
- Given the modest size of the foraging area, it is likely that the habitat quality was very high.
- Reliable field data on the quality of foraging habitat at Site X and the compensation sites would help determine how much replacement foraging habitat would be required to meet the needs of breeding cranes, and how quickly this might be achieved.
- In the absence of empirical data, we should assume that the current foraging value of habitats within the three proposed replacement sites is low. It is unlikely that conversion to high value foraging habitat would occur in less than five years. The area of replacement foraging habitat would therefore need to be significantly larger than the area available at Site X. A replacement ratio of 2:1 is not unreasonable in our view, suggesting an area of replacement foraging habitat of up to c. 38 ha plus a breeding pool, giving a total replacement area of c. 40 ha. This is comfortably within the range of estimated territory size for cranes elsewhere in the UK.
- Replacement habitat may need to be buffered by up to 500m against specific disturbance features, depending on e.g. the amount of intervening cover and accessibility. This would include public rights of way.²²
- There should be no housing or industrial development within 500m of a crane territory. This would minimise impacts from both human disturbance and cat predation.
- The site should be free from overhead pylons to minimise the risk of collision or the birds avoiding the site.

²² This suggests that a disturbance-free area of up to 128ha may be required. This would incorporate a breeding pool and foraging habitat of up to 40ha, depending on the foraging value of grassland at a compensation site. The site could be smaller if the site is well screened – for instance with lots of hedgerows in areas where human access is clearly restricted (e.g. the absence of Public Rights of Way). Ordinary farming operations are probably okay.

80. It is essential that sufficient replacement habitat for cranes is available **before** M4CaN impacts at Site X occur. The RSPB note the tight timescale for construction currently proposed by the Welsh Government, and consider that it is unlikely to get the necessary compensation measures in place in order to meet that timing.

Cetti's warbler

- 81. The RSPB anticipates that Cetti's warblers would use any reens which are fringed by a mixture of reeds and/or mixed scrub. However, we are aware that NRW would like more open reens with some reed and limited scrub in order to maximise the value for the aquatic flora and fauna of the reens²³. Until the vegetation along the replacement reens has been agreed it is consequently not possible for the RSPB to be confident that they would provide suitable habitat for the Cetti's warblers.
- 82. The Cetti's warblers would be likely to use habitat provided for cranes. To help facilitate this, the provision of small willow bushes on the edges of the ditches would provide suitable habitat for the warblers without causing any problems for the cranes.

Other birds

- 83. The RSPB considers that compensation for lapwing will need to be secured, but due to the issues with the surveys highlighted above it is not possible at present to be clear how large an area will be required for this purpose.
- 84. The RSPB considers that there is enough impact or potential impact on wintering birds that specific compensation should be included that extends beyond the small scale compensation proposals associated with the M4CaN.

Bumblebees

- 85. More land is needed than is currently offered. The lost: destroyed 1:1 reen and 1:3 grassland ratios are far too low. This should largely be provided in the form of flower rich hay meadows. It has been suggested that 2ha of highly-concentrated wildflower strips and 1km of flowering hedges in every 100ha of land can sustain populations of common generalist bumblebees (Dicks *et al* 2015). For rare species, which exhibit greater foraging preferences and shorter foraging ranges, these figures should be doubled.
- 86. Provision of some brownfield mosaic habitat to replace that lost to construction is required, during the construction phase rather than afterwards. These should be situated as close to construction storage areas as possible to minimise disruption to foraging bumblebees.
- 87. Compensatory habitat needs to be provided on both the north and south sides of the motorway. It is currently only proposed to the south and that decision imperils the part of the population north of the motorway as the area that is left is too small for it to remain as a viable population.

²³ A specified in Annex 3 NRW Comment on Environmental Information of NRWs written response to the Draft Orders dated 4th May 2016.

- 88. The replacement habitat will need sympathetic management in perpetuity, particularly as regards to the mowing and grazing regimes and seed mixes used, in order to replace the fine-scale habitat variability which are crucial for bumblebees.
- 89. The severance effect of the road is a particular problem for the bees, and it is likely that it cannot be overcome. Trees planted along the verge are likely to be a further barrier to bee passage. We recommend that the lower part of any embankment is planted with flower-rich vegetation and that the upper slopes are planted with scrub rather than trees. This will help reduce the collision risk to foraging bees whilst ensuring a sufficiently open area for post-breeding queen and male bee dispersal. However, this will not overcome the severance risk. To ensure the viability of the shrill-carder populations to the north of the motorway significant habitat creation works must be undertaken to ensure that this northern population can be self-sufficient with a much reduced genetic exchange with the southern population (probably down to an occasional dispersing queen).
- 90. In addition, to ensure that the metapopulation is kept intact it will be important to incorporate flower-rich habitat "stepping stones" for genetic exchange along the route. Ideally these should be no more than 1km from each other.

What is currently offered and what changes must be made to improve it

- 91. The Gwent Levels St Brides SSSI and Gwent Levels Nash and Goldcliff SSSI must be restored to a favourable condition **before** the delivery of compensation at Maerdy Farm and Tatton Farm can be considered. The construction of the M4CaN through these SSSIs will make it all the more difficult to achieve the favourable condition that is a necessary precursor to the compensation packages. At present the RSPB considers that two of the three compensation sites proposed are consequently **undeliverable** and cannot be taken into consideration when evaluating the overall impact of the M4CaN.
- 92. We have outlined the minimum requirements to directly compensate for specific features that would be lost or *impacted* should the scheme go ahead. However, the WFG Act and the Environment Act (and the international obligations they reflect in Welsh law) require the Welsh Government to maintain and enhance the resilience of ecosystems. The SoNaRR has highlighted that no ecosystems are currently resilient, and the M4 scheme would further impact on the condition, connectedness, diversity and scale of the Gwent Levels wetlands. The Welsh Government should look to invest in the management of the Gwent Levels SSSIs to bring them into favourable condition, and to create or restore large areas of wetland habitat above and beyond that needed to directly compensate for damage caused by the scheme.

Conclusions

93. The RSPB strongly recommend looking at all of the existing SNCI network as a starting place to look for the various features that will be required for potential crane breeding sites, and in particular exploring whether there are any such sites on the Gwent Levels. The site will need to offer secure nesting, probably on a reedbed island, productive foraging areas adjacent to the nest site, coupled with productive wider foraging areas, a safe roosting pool close to the foraging areas, limited human disturbance at the nest site and the foraging areas.

- 94. A critical issue for the crane compensation will be how long it would take to generate new invertebrate-rich haymeadow. This is particularly important given the need for the compensation package to be in place before the damage caused by the construction works for the motorway.
- 95. For bumblebees it will be essential to overcome the severance effect of the motorway route. Further loss of connectivity through loss or re-routing of reens and ditches must be avoided. Careful attention will need to be given to the management of compensation sites and verges to avoid indirect degradation of habitat.

6. Overall conclusions

- 96. In light of the severe ecological impacts of the scheme and its likely negative impact on the Welsh Government's ability to deliver on its international climate change commitments, the M4CaN proposal cannot be considered a 'sustainable solution'. This is particularly the case considering Welsh legislation passed in recent years the Well-being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016.
- 97. The Well-being of Future Generations (Wales) Act calls for transformational change in the way public bodies make decisions, placing them under a duty to carry out sustainable development. The M4CaN is wholly incompatible with the Welsh Government's sustainable development duty; this reflects the fact that the proposal for a new motorway first appeared over 25 years ago. The Government should show leadership in the implementation of the WFG Act and reconsider the problem of congestion around Newport, seeking the most sustainable solution.
- 98. The Environment (Wales) Act establishes a new framework for the 'sustainable management of natural resources', which recognises the important benefits people derive from ecosystems. The objective of SMNR is "to maintain and enhance the resilience of ecosystems and the benefits they provide", and so contribute to sustainable development.
- 99. Evidence published in the first State of Natural Resources Report (SoNaRR) shows that biodiversity is declining and none of Wales' ecosystems is resilient, and emerging Government Policy (as shown in the current consultation to develop a Natural Resources Policy) identifies the need to restore habitats so that designated sites become the core of wider ecologically resilient networks (drawing on the findings of the 2010 Lawton Review).
- 100. The Environment (Wales) Act places two biodiversity duties on the Welsh Government the 'biodiversity and resilience of ecosystems duty' (section 6), and the duty to prepare a list of priority habitats and species, and take steps to further their conservation (section 7). The M4CaN proposal is in direct contravention of these duties, with serious implications for the shrill carder bee.
- 101. The Environment Act, as well as Wales' Nature Recovery Plan draw heavily on the UN Convention for Biological Diversity; recognition of the intrinsic value of biodiversity is a key shared theme. Planning Policy Wales, including Technical Advice Note 5 (nature conservation) reinforce the importance of biodiversity to society and the economy, and underline the

importance of respecting nature conservation designations (such as SSSIs). Again, the M4CaN proposal largely disregards this body of law, policy and advice.

- 102. Climate change is the greatest threat faced by nature and people alike, and failure to address emissions from transport is currently causing the UK to fail to meet its carbon budgets. The Welsh Government has shown its commitment to tackling climate change by creating a statutory emissions reduction target (80% by 2020) in the Environment (Wales) Act. The M4CaN proposal will lock in an unsustainable approach to transport, and is not compatible with the Welsh Government's commitments.
- 103. The Wildlife and Countryside Act 1981 (as amended) requires the Welsh Government (and other public authorities including NRW) to conserve and enhance SSSIs; it is highly disappointing that the Gwent Levels SSSIs have been allowed to fall into unfavourable condition, making this duty even more pressing.
- 104. The Conservation of Habitats and Species Regulations (2010) require the Welsh Government to take measures for the conservation of Annex I species; the common crane is one such species.
- 105. The scheme will result in the loss of the breeding ground of the first (and only) Welsh breeding cranes in more than 400 years.
- 106. The scheme will threaten the medium and long term future of the shrill-carder bee both in Wales and in the UK, representing a serious failure of the Government in undertaking its biodiversity duties at sections 6 and 7 of the Environment Act.
- 107. The scheme will result in a substantial loss of SSSI land. The proposed "mitigation" measures are actually compensation (i.e. measures to offset losses), and should be properly considered as such. Compensation measures cannot be considered to cancel out the scheme's negative impacts (making it sustainable), and, in any case those proposed are extremely inadequate. An entirely new breeding site will be needed for the cranes, and new sites north of the M4CaN for bumblebees in order to attempt to maintain the northern parts of the bumblebee populations severed from the rest of the Gwent Levels populations. This is particularly important for the shrill carder bumblebee.
- 108. It will not be possible to implement the necessary "mitigation" measures within the M4CaN construction timeframe intended by the Welsh Government.
- 109. In addition, Wales' new legislation (the WFG Act and the Environment Act) emphasises the need to enhance the resilience of ecosystems; the evidence (particularly the first State of Natural Resources Report SoNaRR produced under the requirements of the Environment Act) is that Wales' ecosystems are not resilient, with floodplains failing in relation to all aspects of resilience. Therefore the Welsh Government should not limit its approach to compensating for direct losses, should the scheme go ahead; it should look to undertake wetland restoration and creation at a large scale, with a view to building ecological, social and economic resilience.
- 110. The extent of the issues highlighted above lead the RSPB to conclude that the M4CaN scheme should be rejected.