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Ms Regena Coult



Dear Sirs,

M25 junction 10/A3 Wisley interchange improvement scheme Targeted non-statutory consultation -  
Deadline 6, April 04 2020, Post hearing submissions including written submissions of oral case

As the hearings of March 24 to 26 have been postponed but not the deadline for the post hearing comments, please allow me to voice my concerns.

I am very worried to have been told that HE intend to NOT increase the number of amphibian tunnels in Old Lane, nor to install toad tunnels in the new Elm Lane. I do very much hope that this is not final and that HE will do more to mitigate for toad mortality.

Toads are a priority species and Great Crested Newts, which are proven to exist on site, are a European protected species.

The new planning directive states that biodiversity must be improved as a result of a new development.

I feel that the full impact of the scheme on the local amphibian population has not been properly assessed.

There are five areas requiring mitigation as far as I can see:

- 1) The animals destroyed during the ground investigation and construction phase.
- 2) The widening of the A3 has three negative effects: a) habitat loss, b) road kill and c) as the road extends into the lake there is increased risk of run-off of contaminants into lake Boldermere. b) can be seen as, the toads that would up to now have moved into the area of the additional lane would continue to live safely; once the road will have expanded onto their territory they will be killed even without trying to cross it.
- 3) The increased traffic of Old Lane, resulting in increased road kill
- 4) The effect of the new Elm Lane, resulting in a) habitat loss b) habitat fragmentation c) road kill
- 5) The effect of the Wisley bypass, within the toad catchment area, resulting in a) habitat loss, b) habitat fragmentation c) road kill

I feel that only point 3) of the above is currently being addressed by Change 2 to the dDCO.

More needs to be done to ensure that all the above impacts are properly assessed and adequately mitigated for.

Just one scientific study is used as the basis for justifying the neglect of mitigation for all the other points above.

The paper in question is:

Hels T. and Buchwald E. The effect of road kills on amphibian populations, p. 331-340, Copyright 2001.

In this paper, the authors create a model to simulate road deaths of amphibians.

The formula presented is of the type

$$P = \exp(-k/x),$$

where  $k$  and  $x$  are a combination of constants and variables, such as road width, car width, traffic density, amphibian velocity and so on.

But although the authors counted road casualties and assessed amphibian populations to create estimates of road deaths as a percentage of total populations they did not attempt to validate their mathematical model with any real data. Instead they simply present it alongside their other observations. They also claim that their model is portable and can be applied in any situation.

My view of the model is that it is useful as an indicator of relative relationships but it lacks rigorous validation with empirical data and therefore should not be used to calculate absolute quantities.

**It should not be used as the exclusive authoritative reference for assessing the mitigation requirements in the Boldermere area.**

For instance, just to demonstrate how flawed this approach is in terms of absolute numbers, I quote: "Up to a traffic intensity of 625 vehicles/ hour (15,000 vehicles/ day), corresponding to a busy road, the velocity of the animals has a large influence on the probability of getting killed. Above that traffic intensity, the probability of getting killed during a road crossing is very close to 1 for all amphibian species investigated, whatever their velocity (within the range investigated)." pg 30. In other words, below the threshold of 625 vehicles/ hour the faster amphibians allegedly have a reasonable chance of surviving the road crossing.

The width of the road used in the model is 8m. The maximum amphibian velocity quoted by the study is 2.54m/ min, for a European frog species. Common toads in comparison are recorded as moving at a maximum velocity of 1.01m/ min.

Assuming 312 vehicles/ hour, which is half the above threshold, there would be 5 vehicles/ min, or one every 12 seconds.

The fastest frog studied takes  $8/2.54 = 3$  min to cross the road. During that time it will have to negotiate  $3 \times 5 = 15$  vehicles! According to the model it is likely to get across alive.

The mitigation assessment for the Boldermere area should have taken into account other studies, for instance:

Effects of Road Mortality and Mitigation Measures on Amphibian Populations

Trevor J. C. Beebee, Amphibian and Reptile Conservation, 655A Christchurch Road, Boscombe, Bournemouth, Dorset BH1 4AP, United Kingdom, pg 657 - 666

This is a much more comprehensive work, investigating and collating the various studies that have been done on the subject. It examines long-term effects of road mortality on populations.

Incidentally the paper by Hels and Buchwald is also referred to.

Beebee concludes:

"Roads destroy high-quality habitat and have a disproportionately large negative effect relative to the area of development involved. Amphibians constitute the highest proportion of wildlife casualties on roads because of their limited behavioural responses and in many cases a need to migrate for reproduction. In the United Kingdom, European common toads declined recently in

much of England (...) Roads are likely to most strongly affect species that regularly migrate long distances (...), a characteristic of European common toads (...)

None of the available mitigation measures have a proven track record (...) Tunnels are probably the best method, but (...) they are expensive to create after road construction (...) Perhaps the best hope is to focus mitigation on hotspots where road mortality is most acute. Such hotspots often correspond to amphibian migration routes and can be identified empirically and by model predictions that are based on wetland and road proximities (...)” pg 665.

A case has surfaced recently, in a new estate that was built last year. The estate has an access road through ancient woodland, and is located in the vicinity of several ponds. Whilst care was taken during the development phase to use fencing to prevent amphibians from entering the site, nobody considered that once completed, the access road could cause a problem to the toad migration.

But this is exactly what happened.

The road is quite short (<100m) and only serves as access to and from the estate. Traffic volume is low and the proximity to human dwellings prevents vehicles from going fast. The estate is not fully populated yet, I would say the current level of occupation is comparable to the number of households in Elm Lane. Amphibians were already getting killed during this year’s spring migration. Apart from being bad news for an already declining amphibian population it is also a distressing sight for the new residents.

Please consider this last point. Most people in their right minds don’t enjoy seeing squashed wildlife. I also believe that most people in this country would rather have a healthy ecosystem and thriving wildlife than an ailing ecosystem and declining wildlife.

I marvel how ecological and wildlife concerns are given the lowest priority when it comes to spending money. Do we not yet understand that without an ecosystem, humans cannot survive either? Hence it should be our highest priority.

Thank you for your consideration.

Kind regards,

Regena Coult