

BRIEF OF EVIDENCE

DR EVELYN MOORKENS

Independent malacological expert

Re: N4 Collooney to Castlebaldwin Proposed Road Development

1. QUALIFICATIONS AND EXPERIENCE

1.1 Qualifications

1.1.1 My name is Evelyn Moorkens. I hold an honours degree in Natural Sciences, a higher diploma in Education, a Master of Science degree in Environmental Sciences and a Doctor of Philosophy degree, all from Trinity College, University of Dublin. My masters and doctorate theses specialised in Molluscan conservation. I am a member of the Chartered Institute of Ecology and Environmental Management and I am a Chartered Environmentalist.

1.2 Experience

1.2.1 I have twenty four years national and international experience in consultancy on molluscan species, specialising in those species protected under Annex II of the EU Habitat's Directive, for both the public and private sector, including ecological surveys for potential SAC sites, environmental impact assessment, planning compliance, baseline surveys, monitoring programme design and implementation, research into the biology of individual species, mapping of species distributions and captive breeding.

1.2.2 I have published widely on a range of mollusc species, habitats and management requirements and lectured on the topic in universities across Europe and in the USA. I have recently drafted the first CEN European Standard for an individual species (the freshwater pearl mussel). I am in regular contact with my international expert colleagues to exchange recent research and monitoring results. I organised an international conference for *Vertigo* experts in April 2002 and for *Margaritifera* experts in February 2013.

2. ROLE IN EIS

- 2.1.1 I was contracted by Sligo County Council in 2012 for the Provision of Ecological Services for the purposes of the N4 Collooney to Castlebaldwin Proposed Road Development.
- 2.1.2 As a sub-consultant I conducted a *Vertigo* snail survey within an area of the N4 Collooney to Castlebaldwin Proposed Road Development.
- 2.1.3 County Sligo is an important area for the wetland *Vertigo* snail species, with both *Vertigo geyeri* and *Vertigo angustior* known to be present in a number of sites in the county. The combination of calcareous limestone influence with high quality flushing wetland provides pockets of habitat that are ideal for *Vertigo* species.
- 2.1.4 Two areas of fen habitat with potential to support Annex II *Vertigo* species were identified as part of wider habitat surveys for the proposed scheme. These two sites, Lackagh Fen in the townland of Doorly and Ardloy and Aghalenane Loughs, in the townland of Aghalenane were surveyed on 16th November 2012 *Vertigo* and associated spring snail species.
- 2.1.5 The general area of both sites were walked over and potential habitat for *Vertigo* species was established, sampled in the field, and vegetation was removed from amalgamating appropriate damp litter from these areas. Standard net mollusc collection bag was filled with the litter (approx. 2 litres), air dried in the laboratory and then sieved through two mesh sizes, 3mm and 0.5mm. The contents of each sieve were examined for snails. An Olympus 40X binocular microscope was used to examine the smaller species.
- 2.1.6 A total of 134 individuals from 12 different species were found at Lackagh Fen. A total of approximately 400 individuals from 20 different species were found at the Ardloy and Aghalenane Loughs site. *Vertigo geyeri* was found to be present in good numbers at the Ardloy and Aghalenane Loughs site. The good habitat present at the site and the spread and abundance of *Vertigo geyeri* drew the conclusion that this was an important new site for the species.
- 2.1.7 In April 2013 I was informed that the habitat area of the Ardloy and Aghalenane Loughs site had had a fire.
- 2.1.8 In May 2013 I reviewed the Wetlands Environmental Report produced by Sligo County Council, including mitigation by avoidance through horizontal realignment of the proposed route close to the Ardloy and Aghalenane Loughs site. I also reviewed

the Hydrological and Hydrogeological impact summary table. My review included a series of requirements needed in order to demonstrate beyond scientific doubt that the new alignment would result in no adverse affect to the *Vertigo geyeri* population and its habitat.

2.1.9 This was followed by an onsite meeting on Friday the 7th of June to discuss Source-Pathway-Receptor, potential impacts and geotechnical mitigation measures.

2.1.10 At the field meeting of 7th June 2013, it was confirmed that the burning of the site had not damaged the spring habitat of the *Vertigo geyeri* population. The ecologists, engineers and hydrogeologist agreed a mitigation alignment that could provide scientific certainty of a route that was protective of the *Vertigo geyeri* population. Revised drawings were produced by Sligo County Council and a conceptual model of the hydrogeological regime driving the habitat area was produced by Conor Quinlan.

3. IMPACTS OF THE PROPOSED DEVELOPMENT

3.1.1 The Ardloy and Aghalenane Loughs site was the only area of the proposed N4 Collooney to Castlebaldwin development with the potential to impact *Vertigo geyeri*.

3.1.2 The realignment of the proposed road in the vicinity of the Ardloy and Aghalenane Loughs site, together with the robust investigations from the hydrogeological team, have resulted in the conclusion that the proposed scheme has mitigated by avoidance any potential for a negative impact on this *Vertigo* site.

3.1.3 It can be concluded that there will be no residual impacts from the proposed scheme on this species.