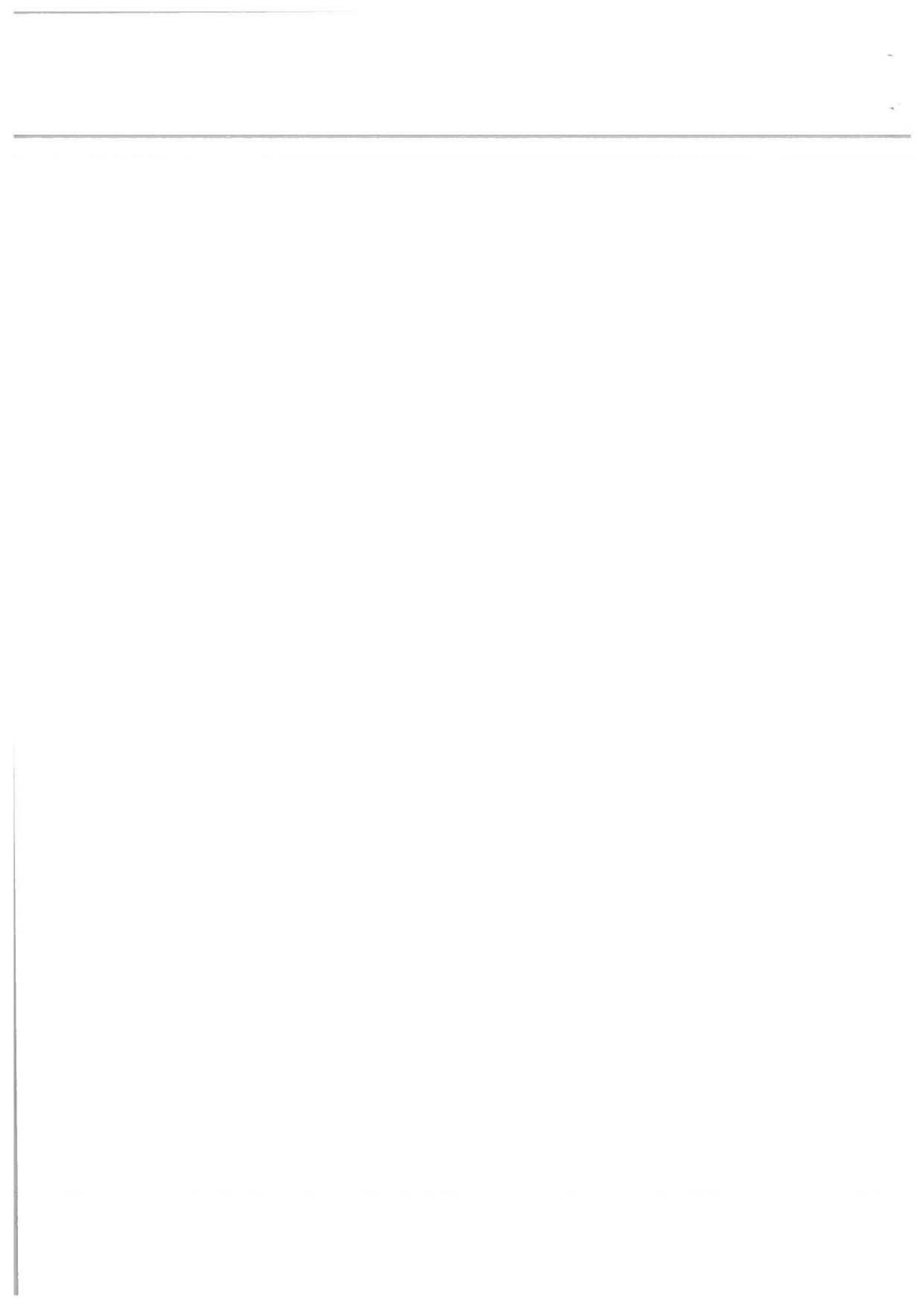


WITNESS STATEMENT FOR ORAL HEARING

Dr. Micheline Sheehy Skeffington.

January 2015

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## Introduction

### Name and qualifications

I am Dr Micheline Sheehy Skeffington and I am a plant ecologist in Botany & Plant Science, NUI Galway. I have a specialist interest in terrestrial ecosystems, especially wetlands including turloughs, peatlands, heathlands, river flood-meadows and salt marshes. I have a PhD in salt marsh ecology. I also carry out research on sustainable farming for conservation, with special focus on grassland management for conservation. My interests also include sustainable agriculture in the tropics, with publications on Indonesian and Cuban sustainable forest and agricultural management.

### Experience

I have over 40 publications, the majority on wetland habitats and their species. I have supervised 10 PhDs and 5 MScs to completion relating to these topics. I am a very good field botanist and have trained undergraduate and graduate students in field survey skills and classification of plant communities, such that most are now employed in the area of field ecology. I have carried out field habitat surveys *inter alia* in north Dublin, on Inishbofin and also for the proposed path along the coast, west of Galway city. As a field botanist, I am familiar with the shingle ridge at Renmore Lough and have visited it on many occasions to record plant species since the 1980s.

### Purpose of this witness statement

I was commissioned to undertake a survey and to prepare a report on the impact of storms in late 2013/early 2014 on the shingle and salt marsh plant communities at Renmore Lough. A site visit was made to the upper strandline, shingle area and habitat immediately north of this ridge in July 2014.

### Results

The shingle bank, formerly *ca* 1m in height, was observed to have been completely altered. Most of the shingle has been moved inland, forming a spit immediately to the south of Renmore Lough (site number 1 in Fig. 1 and Fig. 2, outlined in blue). More shingle had spread along the inner edge of the grassy bank that used to form the inner (northern) edge of the shingle. It is likely that there were two sources of shingle : 1) that present on the shore-line and 2) material thrown up from the sea floor to the south of Renmore Lough. The shingle has been moved to such an extent that the seaward edge now forms part of the strandline and vegetation comprises species tolerant of tidal submergence such as spear-leaved orache, sea rocket, sea mayweed and sea radish. On the higher ground, the vegetation and its soil was broken up, but still formed a band of grassy vegetation with creeping bent grass, perennial ryegrass, red fescue and false oatgrass forming the grass layer and a mixture of ruderal (weed) species such as colt's foot, nettle, ragwort, perennial sow-thistle and smooth sow-thistle, along with calcareous coastal grassland species such as ribwort plantain, field medick, bird's foot trefoil and kidney vetch.

The shingle, between sections of grassland, supports sea radish, spear-leaved orache and curled dock.

Notable on the strandline and shingle was the rare blue lettuce, once abundant on the shingle, but which had disappeared in recent years. This is the only known site for this alien species in Ireland. The disturbance of the storms has exposed the seed-bank and this and the rare native black mustard, have appeared, the latter occurring sporadically on the inner edge of the shingle. This is the first time that black mustard (*Brassica nigra*) has been recorded here, or in all of east county Galway (map Fig. 3), though it has been recorded on Inishbofin and on Inishmore, Aran Islands in the past. Another rare transient coastal species that used to be common on this shingle bar is henbane.

It has disappeared since the 1980s, but the recent storm-induced re-working of the shingle and exposure of dormant seed banks may yet bring about a return of the species. This illustrates the conservation interest of such naturally disturbed habitats as shingle. Such intermittent disturbance is essential to maintain this habitat. The proposed development is likely to significantly reduce this disturbance and therefore will reduce the extent and occurrence of the habitat and its constituent species.

Though the former shingle ridge has largely now been flattened and the shingle is close to the strand-line, observations indicate that the current High Water Spring Tide (HWST) does not encroach on this shingle. In other words, it is not low enough to be susceptible to regular inundation by the sea from the south. Thus, the effect of the proposed development, by decreasing exposure to storms, will stabilise the shingle, resulting in it being colonised by species from the adjacent grassland. The proposed development will not affect the frequency and extent of tidal inundation and the source of saline water will continue to be from the north, via L. Atalia. Only storm surges (extreme high tides) will wash over the shingle, but these, if regular enough, *i.e. ca* at least every 10 years, will prevent the spread and establishment of scrub with bramble sycamore and ash –all noted sporadically on this ridge. The complex of shingle and strandline vegetation comprises a mosaic of grassland and EU Habitats Directive Annex I habitats: 1210 Annual vegetation of drift lines and 1220 Perennial vegetation of stony banks. This area is depicted in Fig. 2, which also indicates the relevant extent of the cSAC in the area. The total area of this complex inside the blue boundary is 0.31ha, of which 0.18ha lies within the cSAC.

The southwest edge of the shingle merges into an eroded salt marsh. It is not clear to what extent it was intact before the storms, but it probably has been fragmentary for some time. Upper marsh species are present such as red fescue, sea milkwort, sea arrow-grass, salt marsh rush, scurvy grass and sea aster. The shelter provided by the proposed development may stabilise this salt marsh and result in it becoming less fragmented, though not significantly greater in extent.

Most of the vegetation at Renmore Lough landward of the shingle bar comprises marsh and wet grassland. A small, probably brackish, pond has abundant reedmace (area 2 on map Fig. 1) and areas possibly intermittently flooded support extensive creeping bent grass with a fringe of sea rush. The edge of the inlet south of the railway line is bordered by some sea rush and salt marsh rush as well as sea club-rush and all three species indicate that this is largely a lagoonal type salt marsh. All of this area is mapped as brackish saltmarsh in Fig. 1. The drier –more elevated– parts of this area support bracken and some hawthorn bushes (disturbed grassland/hedgerow on Fig. 1). Some reed also occurs nearer the railway line.

In summary, there is now a low area of cobbles on the sand below High Water Spring Tide (HWST) with strand-line species here, as well as on the higher bank behind this. The higher bank comprises mixed shingle and grassland on soil. This bank would only be overtopped by a storm surge. The proposed construction will attenuate the wave force and therefore it is less likely that the shingle bank will be structurally altered to any extent in the future, let alone to the extent it was in January 2014. The proposed construction will not affect the flooding of Renmore Lough, via the inlet from Lough Atalia to the north, and therefore the salinity of the lagoonal salt marsh and grassland will not alter significantly. The vegetation, already a mosaic of species tolerant of brackish or saline water (lagoonal marsh) is thus unlikely to alter to any great extent.

The area to the east of Renmore Lough, which comprises a narrow shingle bank above a rocky shore as far as Ballyloughan Beach will be afforded the same level of protection from the proposed development, *i.e.* reducing its exposure to and disturbance from storms. However, this shingle shore

is narrower and does not support a wide assemblage of shingle species, aside from the ubiquitous sea radish and therefore its habitat quality will not be significantly altered. There is no significant area of shingle along Ballyloughan Beach itself. Further to the east, the promontory opposite Hare Island has been protected from storm action by rock revetment and is of little to no conservation value.

To conclude, I consider that the significant effect of the proposed Galway Harbour extension development will be to stabilise the shingle habitat and thus to permanently alter its nature and plant species composition. The other important factor of salinity, on the other hand, is not likely to alter to any extent as a result of the proposed development and therefore the plant communities that are affected by this are not likely to significantly change.



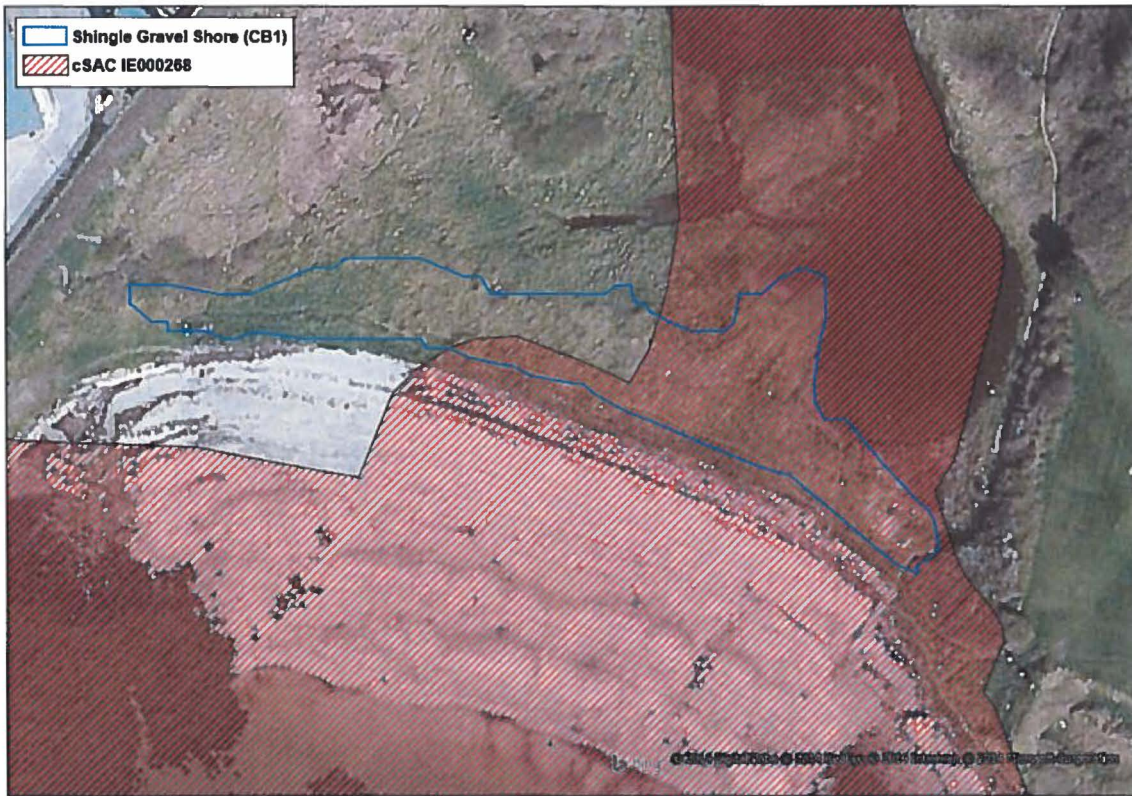


Figure 2. Extended area of shingle outlined in blue and boundary of cSAC in striped red.

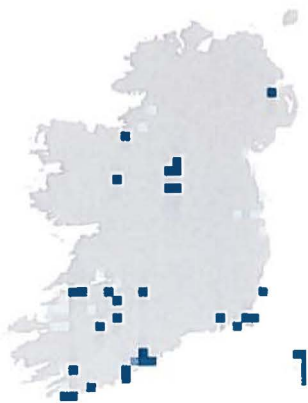


Fig. 3. BSBI map of 10 x 10km squares where Black mustard (*Brassica nigra*) was recorded in Atlas 2000 (Preston et al 2001). Lighter squares represent pre-1970 records. Note its complete absence from mainland County Galway and from inner Galway Bay specifically.

