



Supporting document and clarifications for the North wood

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Thank you for your response and for taking the time to thoroughly review our *General Condition Tree Survey for the North Wood, in Merlin Woods*. I will clarify the tree related points from the document created by Friends of Merlin Woods dated the 28th August 2026.

1. Regarding comments made about what the tree survey actually shows on page 3 - From the outset, in the introduction, of the General Tree Condition Survey it states that the survey will not detail individual trees but the 3.5-hectare of commercial forestry consisting of *Picea abies* (Norway Spruce) as a whole. This would exclude any broadleaf trees from being felled. Each of the reference points is a description from that point and not a reference to any individual tree. This is demonstrated by the descriptions, within the comments, of the tree survey schedules, by the photographs provided and supported by the fact the trees are not tagged. This is why there is no risk benefit score applied to individual references but an indicative High, Medium or Low which was used to support the final decision and the overall risk benefit score for the site.
2. With reference to clear felling all of the trees on the 3.5 Hectares – This was never the intention, and the brief of the survey was specifically aimed at the Norway spruce. It is my understanding that any healthy broadleaf trees would remain. In fact, the retention of these trees will maintain wildlife corridors on site.
3. With reference to your specific points regarding the interior cluster (Ref 01, 02, 03, and 05). While we acknowledge that this interior pocket currently exhibits low-to-moderate risk profiles on their own terms, the high-risk windblown points to the north, R04, R15 and R16 are not mentioned, this further supports a fragmented forest canopy. Forestry physics dictates that we cannot evaluate these zones in isolation as these newly exposed trees lack the collective canopy damping provided by their neighbours and are susceptible to windthrow, hence the overall risk benefit score for the site.

<https://www.tandfonline.com/doi/full/10.1080/13416979.2021.1940665>



These are the key points why a targeted approach to tree felling is not recommended.

The basis for the recommendation is grounded in the mechanics of wind damage corridors, which directly applies to the freshly opened boundaries on the south and western aspects (bearing in mind this is our prevailing wind direction), and an additional section to the north. The first section to the southwest from reference point 17 joining into reference point 06 through to 08 and 12. To the south of reference post 52 beyond reference point 14 to reference point 13 and again from reference point 12 to reference point 10 at the bridge. The second section is to the north of the map at R04, R16 and R15 on the Tree Location Map.

The Two-Stage Mechanics of Forest Damage Propagation

Analysis of wind-tree interaction modelling reveals that forest-scale storm damage does not happen linearly; it propagates in two distinct stages once a canopy is breached:

1. **Stage 1 (Incipient windthrow):** This is gradual windthrow that happens over time, it can be on the forest edge or a break in the canopy resulting in the current pockets of snapped and windblown trees across the site.
2. **Stage 2 (Cascade Failure in the future):** This is the mechanism that threatens the interior trees. When the forest is undamaged trees rely on their neighbours to collectively block the wind. The second stage of damage is triggered when a damaged canopy gap leaves standing trees unprotected. These standing trees are not structurally adapted to the higher wind load and experience subsequent uprooting or stem breakage.

<https://forestpathology.org/abiotic/wind-water/>

Application to the Merlin Woods Interior Cluster

The harvesting of the storm damaged trees in the adjacent 17.5 hectares on the south and western aspects of the north wood, combined with the extraction of the high-risk corridors, within the 3.5 Hectares creates significant new exposure and wind corridors.

- **The Edge Tree Vulnerability:** Once a gap opens to this scale, the micro-climate wind accelerates within the newly cleared corridors.
- **Irreversible Progression:** Once Stage 2 damage propagation occurs, tree damage increases.

<https://www.sciencedirect.com/science/article/abs/pii/S0168192315002178>

https://www.coford.ie/media/coford/content/researchprogramme/populararticles-fromcoford/Science_Spin_22.pdf



It is worth emphasising again that this is a busy urban forest, with multiple access points, that is in frequent use and not a secluded area.

The documents referenced are just a few that highlight the potential tree safety considerations when managing fragmented coniferous forest canopies after such severe weather events occurring.

Evergreen trees experience a higher wind load during the winter months due to foliage which creates a large sail area to catch heavy gusts. Furthermore, the delayed mortality of trees damaged by wind events may occur for decades (Harmon and Pabst, 2019) and can strike trees without visible damage and it may take several years for trees to acclimatise to an altered wind environment and regain mechanical stability. Gardiner, 2021 states that vulnerability of the remaining stand to further wind damage generally increases with increasing severity of the initial event.

<https://www.frontiersin.org/journals/forests-and-global-change/articles/10.3389/ffgc.2024.1405430/full>

Keeping the remaining Norway spruce trees poses too high a safety risk for the public. Recent damage in the north wood leaves these newly exposed trees prone to failure, at much lower wind speeds.

Further, evidence could be collected to provide a more detailed approach to the survey, as this was a general condition survey, but this may yield the same result.

The recommendation was made following good industry practice, and the understanding that it is not possible to remove or restrict public access over the area surveyed.

I hope this document has clarified the points in question and emphasised that a significant reduction in 'forest canopy damping' of this section of the north wood is a major safety consideration for the standing trees remaining and the exposure that Galway City Council has to the public and stakeholders using Merlin Woods.