



# **Technical Appendix 5-7 Marsh Fritillary Survey report**

**EIAR – Volume 3**

**Muingmore Wind Farm**

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**Muingmore Windfarm, Co. Mayo**

**Marsh Fritillary Survey**



**Report for *RWE Renewables***

***FitzGerald Ecology***

**September 2023**



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## 1. Introduction

FitzGerald Ecology was commissioned in 2023 to carry out a Marsh Fritillary (*Euphydryas aurinia*) survey at the Muingmore proposed windfarm site in Co. Mayo. The site encompasses a large tract of open land dominated by wet/dry heath surrounded by extensive conifer plantations.

The Marsh Fritillary butterfly is the only insect species protected under Annex II of the EU Habitats Directive [92/43/EEC]. It is on Ireland's red list of butterflies and is considered to be vulnerable and under threat from extinction (Regan *et al.*, 2010). The Overall Status of this species in Ireland is "Inadequate but improving" (NPWS, 2019). Once widespread, this species has shown steep declines and regional extinction in some areas. The causes of these declines have been attributed to a reduction in habitat quality, fragmentation, and lack of habitat connectivity and corridors. Its strongholds are often in areas of marginal land where changes in management practices threaten this species, for example, afforestation and inappropriate grazing regimes.

Adults fly in May and June and lay their eggs on the underside of the leaves of their foodplant Devil's Bit Scabious (*Succisa pratensis*). Between August and October — in advance of hibernation — the larvae live communally in silken webs attached to the leaves of their food plant. Hence, the timing of these surveys was designed to coincide with this stage of their life cycle when they are most conspicuous.

## 2. Methodology

FitzGerald Ecology was commissioned to survey a 50m buffer around each of the 11 proposed turbine locations scattered throughout the site (Figure 1). In advance of surveying, each of these study areas were labelled as subsites 1 – 11 (Figure 2). Surveys took place on the 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> of September 2023. The methodology was designed with guidance from *Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes* (NRA, 2009). An initial walkover of each of the subsites determined if suitable habitat was present. Where it occurred, detailed habitat condition assessments were carried out following the methods developed by the NBDC (2021a). This involved making a number of assessment stops; at each, the abundance of *Succisa pratensis* and sward height was recorded; the presence of structured vegetation, low invading scrub, and stock grazing were also noted. Walked transects across the suitable subsites determined the presence/absence of larval webs, again following the methods designed by the NBDC (2021b). If found, the locations of larval webs were to be recorded on Qfield GIS software in the field.

An additional aspect of the survey involved a number of adult butterfly transect surveys in areas representative of the habitats present at the proposed wind turbine locations. The methods for these surveys followed those of the Irish Butterfly Monitoring Scheme, designed by the NBDC (2021c). Three 1 km long transects were chosen within the site (Figure 3). Casual butterfly records were also noted if seen en route to the subsites.

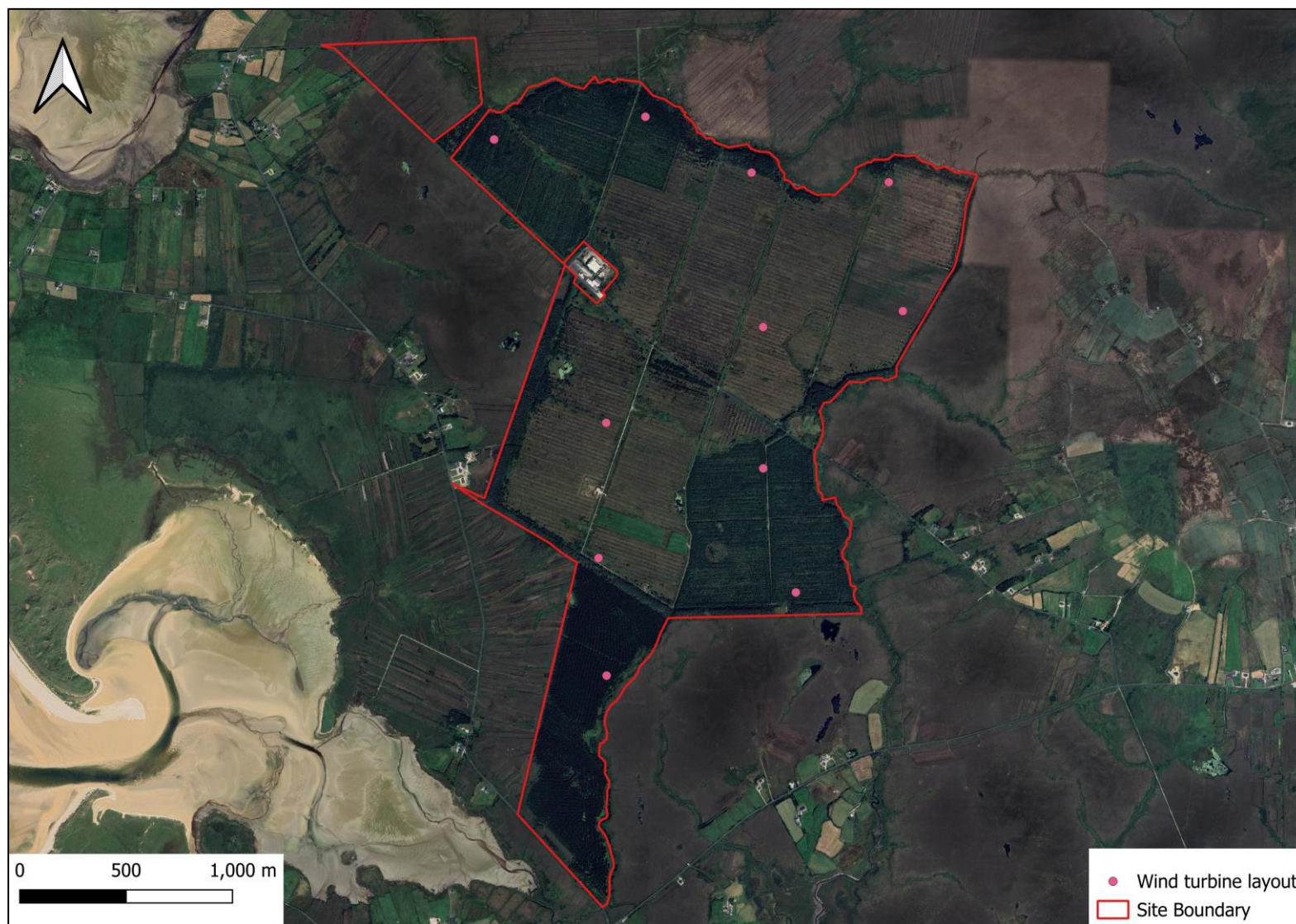


Figure 1. Muingmore site boundary and wind turbine layout



Figure 2. Muingmore subsite study areas (50m buffer around each turbine – buffers in green)



Figure 3. Butterfly transect locations



Figure 4. Noteworthy patches of *Succisa pratensis* within or close to subsites 7 and 9

### 3. Results

No Marsh Fritillary larvae were found during the surveys in September 2023, despite dedicated and thorough searches. Using the habitat assessment criteria of the NBDS, subsites 3 and 4 were deemed as “Suitable (*undergrazed*)”. These subsites contained the most *S. pratensis* and represent the most suitable habitat for Marsh Fritillary within the site.

The remainder of the subsites were deemed as “Unsuitable Habitat”. Subsites 1, 2, 8, 10, and 11 were inside conifer plantations. However, in the case of subsite 1, there were small open patches of heath among the conifers and *S. pratensis* was recorded here. Within subsites 5, 6, 7, and 9, *S. pratensis* was either absent or scarce. Subsite 7 contained one large noteworthy patch of *S. pratensis* and this patch was therefore mapped (Figure 4). Similarly at subsite 9, two large noteworthy patches were mapped, one within the subsite boundary and one just outside it. Subsite 9 has the potential to support more *S. pratensis*; however, scrub and rush cover are too dense in places within the subsite. This could be corrected with suitable management changes.

Butterfly records were poor during the three butterfly transect surveys. An overcast sky and strong winds likely contributed to the poor result at Transect 2. It was also quite late in the year to carry out these surveys. The following butterfly species were recorded during the transect surveys:

- Peacock (*Inachis io*)
- Small Tortoiseshell (*Aglais urticae*)
- Green-veined White (*Pieris napi*)
- Red Admiral (*Vanessa atalanta*)

The following butterfly species were noted as casual sightings:

- Speckled Wood (*Pararge aegeria*)
- Peacock (*Inachis io*)
- Small Tortoiseshell (*Aglais urticae*)
- Red Admiral (*Vanessa atalanta*)
- Dark Green Fritillary (*Argynnis aglaja*)



Plate 1. A patch of *Succisa pratensis* in subsite 9

#### 4. Conclusion

As discussed previously, walkover and transect surveys were carried out at 11 subsites at the Muingmore proposed windfarm site to determine the presence of Marsh Fritillary butterfly larvae. No Marsh Fritillary larvae were found during the surveys. However, suitable habitat was recorded during surveys in subsites 3 and 4, with additional noteworthy patches of the Marsh Fritillary foodplant *S. pratensis* recorded in subsites 7 and 9. It is recommended that additional surveys are carried out prior to construction, with a focus on the subsites mentioned above.

#### 5. References

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