BLOCH WIND FARM:
TECHNICAL APPENDIX 7.6
OUTLINE HABITAT MANAGEMENT PLAN

Report to Renewable Energy Systems Ltd

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Figure 1 – Proposed HMP Areas

Background

1. The ecological, hydrological and peatland assessments for the proposed Bloch Wind Farm (the proposed development) have identified potential impacts on peatland habitats and breeding bird communities. This includes the loss of 3.0ha of wet modified bog, 0.8ha of blanket bog, 1.9ha of wet heath and 7.4ha of marshy grassland/rush pasture.

2. The primary ornithological impact was identified for breeding curlew and other breeding waders, which are likely to be displaced from a zone of about 500m around the development (Pearce-Higgins *et al.* 2012).

3. This Outline Habitat Management Plan (HMP) will be implemented to mitigate these impacts. This HMP sets out an initial outline as to how this will be delivered. The HMP is being developed in collaboration with stakeholders to deliver the required ecological benefits but also fit with the ongoing management/use of the site.

4. The purpose of the HMP is to implement measures that will improve the condition of the existing habitat, including heather, and produce a mosaic of habitats (and heather structure) within this area for the benefit of ground-nesting upland birds, particularly curlew.

5. At this stage the HMP presents outline proposals and will be updated through consultation with stakeholders including the landowner, tenants, the Galloway Fisheries Trust, NatureScot and RSPB.

HMP Search Areas

6. Potential areas where the required HMP measures could be delivered were identified using the following criteria:

   - Located on deeper peat (>1m);
   - Located in areas that have extensive grip drains;
   - For ornithological benefits, located >500m from wind turbine locations.

7. Using these criteria, and following initial discussions with the landowner and tenants, five areas have been identified within the site as potential HMP areas (see Figure 1).

Existing Environment and Management

8. The site is currently used primarily for raising sheep and is a mix of wet modified bog (dominated by purple moor grass *Molinia*), marshy grassland (*Molinia* on shallower peat), rush pasture, blanket bog and wet heath. Grazing densities are currently relatively high over the area, and it is grazed throughout the year. Much of the deeper peatland has been extensively drained in the past, with a network of grip drains over much of the area. As a result, the dwarf shrubs (including heather) are sparse and *Sphagnum* bog moss cover is low.

9. Curlew breed over most of the open ground within the site, with seven breeding territories recorded in 2021 and in 2022, of which four pairs were within the potential displacement zone in each year. They prefer a mosaic of habitats including open moorland, rough and damp pastures with rushes, unimproved hay meadows, and boggy ground (Pearce-Higgins and Grant 2006). A mixed ground vegetation structure provides suitable cover but visibility of potential predators. They prefer dry nesting sites close to wet areas for feeding (RSPB 2018).

Habitat Management Plan: Management Objectives

10. The HMP would be targeted to deliver benefits to the peatland habitats and to the breeding bird community (particularly curlew). It will include enhancement of at least 50ha of peatland. The overall aims of this HMP would be to:

    - improve the overall quality of the wet modified bog and blanket bog habitat;

- increase the suitability of the moorland habitats for breeding curlew and other breeding waders including snipe and lapwing, thus providing enhanced breeding habitat over 500m from the proposed wind turbines:
    - Enhancement of heather moorland mosaic suitable for foraging and nesting. Reduced stock grazing will also reduce the loss of nests through trampling.
    - Improvement of wetter habitats for chick-rearing: restoration of wet areas by blocking drains where feasible to improve the habitat for feeding. Wet flushes, boggy areas and damp grassland are important invertebrate-rich feeding areas, particularly for chicks.

Proposed Management Prescriptions

11. The three main management measures that would be implemented on the HMP areas would be as follows, though their suitability for each of the areas specifically is discussed below. The areas are shown in Figure 1 (though they are at this stage still proposed areas for discussion with stakeholders and have not yet been finalised):

- Blocking of grip drains in areas affected by past drainage to encourage re-wetting. This could include use of marine ply boards or plastic piling to dam the drains (Brooks and Stoneman 1997) (to avoid the need for any digging machinery to access the area, as this would likely damage the surface vegetation). This would enhance peatland habitats and provide an improved source of invertebrate food for breeding waders and other ground-nesting birds.
- Management of grazing levels to facilitate heather regeneration and the development of a mosaic of vegetation structure and improved nesting and foraging habitat for a range of upland bird species.
- Cessation of muir burn.

12. Monitoring of the vegetation condition across the HMP area (see following section) would be used to inform future management, and, in particular, the need for any additional dwarf shrub management such as refinement of grazing levels.

AREA 1: COLLIN BOG

13. This area (14ha.) is located on the lower ground on the northern edge of the site. It is currently wet modified bog, grazed by stock. The HMP proposal would ensure that cattle grazing is excluded for the lifetime of the proposed development (to improve habitat quality and reduce nest trampling), and there would be no muir burn. This area is already very wet and would not therefore be likely to benefit from any further drain blocking.

AREA 2: BLOCH FLOW

14. This area (26ha.) is located on the higher ground in the central part of the site (Figure 1). It is currently wet modified bog used for stock grazing, with some higher quality blanket bog in the southern part. The HMP proposal would be to fence this area to enable specific stock (sheep) management to be implemented to deliver improved habitat quality. Drains would be blocked to encourage re-wetting of the bog and improved *Sphagnum* cover, and there would be no muir burn over the lifetime of the proposed development (with dwarf shrub management achieved through sheep grazing and/or swiping/cutting as required.

AREA 3: THE FLOSH, BLOCH FARM

15. This area (4ha.) of wet modified bog supports a range of breeding waders including lapwing, curlew and oystercatcher. The main aim of the HMP in this area would be to maintain its attractiveness to breeding waders. There would be no cattle grazing for the lifetime of the proposed develpoment, and grazing would not be increased above current levels, and there would be no burning of this area through the lifetime of the proposed development. Drain blocking would not be implemented in this area as this could have an adverse hydrological impact on the adjacent farmland.

AREA 4: AULDHOUSE

16. This area (13ha.) is currently an ungrazed mosaic of wet modified bog, blanket bog and wet heath. It forms part of a management unit that is not currently let out by the landowner and is no longer stockproof. The area selected for the HMP is on deeper peat which would benefit from drain blocking to re-wet this peatland. Under the HMP proposal, the whole of this management unit would be fenced, so that management can be optimised to deliver the best habitat quality improvements. Drains would be blocked within the area identified, and there would be no muirburn. Grazing levels/sward management would be determined from the results of the monitoring programme but would initially be left ungrazed.

AREA 5: WAUCHOPE WATER

17. This smaller area (0.2ha) has been selected to deliver the Galloway Fisheries Trust recommendation for riverine tree planting. The aim would be to extend the existing W7 Alder woodland and fill gaps in woodland cover alongside the watercourse.

HMP Monitoring Programme

18. The HMP will be monitored to assess the effects of the measures implemented and inform on-going management, such that management prescriptions can be fine-tuned to deliver the optimal outcomes. Monitoring will include National Vegetation Classification (NVC) surveys and the Common Standards Monitoring (CSM) Guidance for Upland Habitats.

    - Monitoring of habitats and vegetation: vegetation and peatland condition will be measured by regular survey of the vegetation communities. The cover of *Sphagnum* bog mosses, together with other appropriate indicator species, will be used as an indicator of bog quality. The vegetation communities in the area will be mapped and sample quadrats taken to quantify *Sphagnum* and other key indicator species in the year after commissioning of the proposed development and then at 5-yearly intervals through the lifetime of the proposed development.
    - Breeding bird surveys to assess the effect of the proposed development and the HMP on their populations: a breeding bird survey will be carried out for three years after construction. The surveys will use the standard Brown and Shepherd method with four visits per year for all species within the study area, and additional surveys for key species (hen harrier, black grouse and short-eared owl) following the methods of Gilbert *et al*. (1998) and Hardey *et al*. (2013). This monitoring would be undertaken at years 1,2,3,5,10 and 15 following construction (following current SNH guidance; SNH 2009). If any of the following species were found breeding within the HMP area in any one year, then a programme of vantage point watches will be undertaken to determine their use of the site and the potential collision risk: hen harrier, merlin and short-eared owl.

19. Results of the monitoring programme would be reported annually to Dumfries & Galloway Council and made publicly available if requested.

20. The management prescriptions detailed above will be an adaptive process according to existing site conditions and developments over time. Details of the prescriptions will be modified as the HMP develops to adjust to any changes in environmental conditions as highlighted by the monitoring programme.

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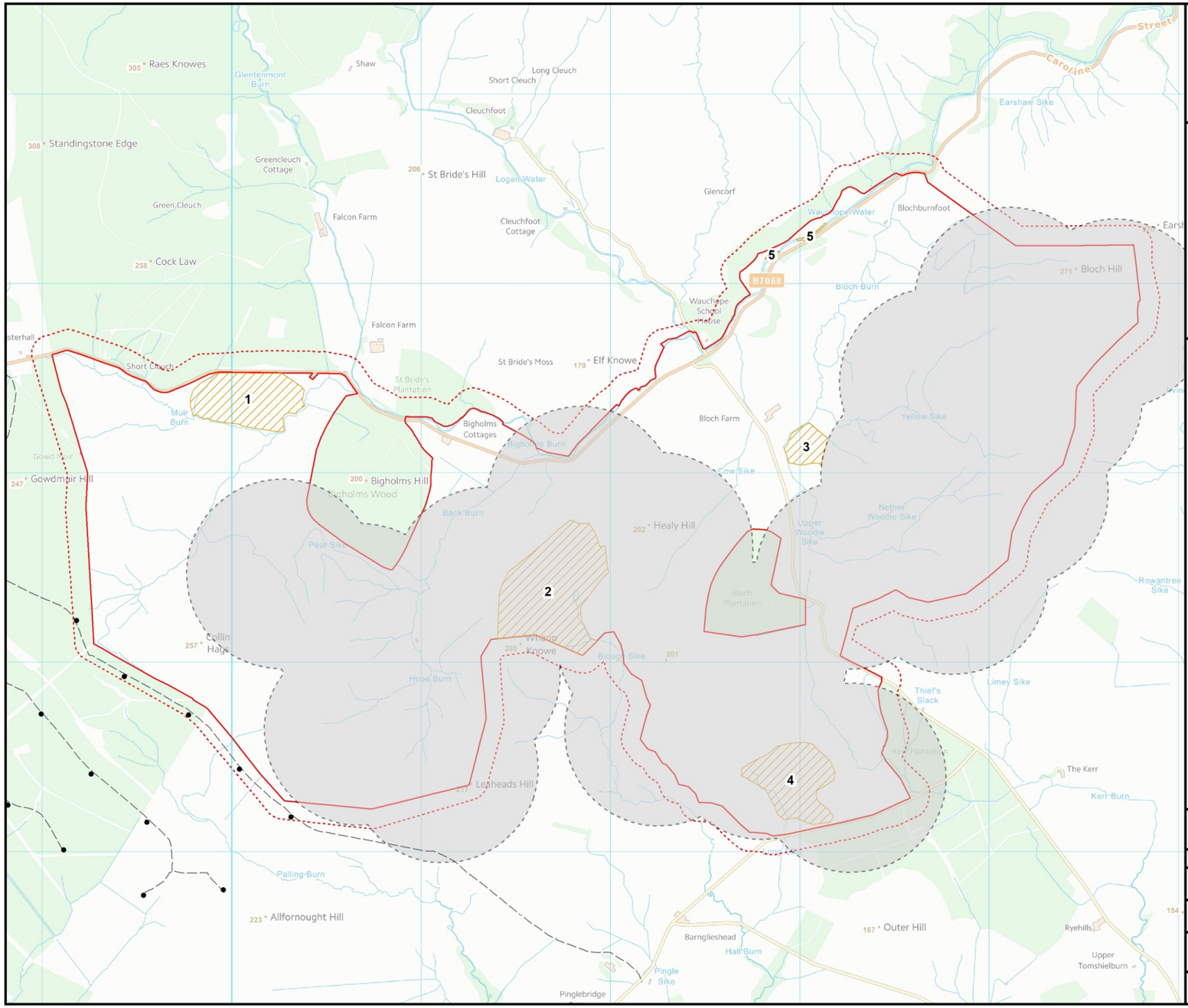

Bloch Wind Farm: Ecology

FIGURE 1

Habitat Management Potential Areas

KEY:

- Site Boundary
- Habitat Survey Area 2022
- Turbine Buffer 500m
- Potential HMP Areas
- Solwaybank wind farm tracks
- Solwaybank turbines (operational)

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