



Appendix 6.3

Groundwater Dependent Terrestrial Ecosystems

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6 Groundwater Dependent Terrestrial Ecosystems (GWDTE)

6.1 Introduction

6.1.1 Scope of Work and Purpose

1. This report forms an appendix to **Chapter 6: Hydrology, Hydrogeology, Geology and Soils** of the Environmental Impact Assessment Report (EIAR) and should be read with reference to this chapter and associated figures.
 2. The purpose of this report is to undertake a detailed risk assessment for each groundwater dependent terrestrial ecosystem (GWDTE) habitat with a potential groundwater dependency of Moderate or High. The groundwater dependency for each community is then qualitatively assessed and revised where appropriate. This baseline assessment considers the likely contribution of rainfall, groundwater and surface water flows to each habitat, based on site walkover observations, target notes, aerial imagery, topographic survey data, floodplain mapping, geological and soils mapping.
 3. For the screened in habitats, the following impacts on each GWDTE are assessed:
 - direct loss of GWDTE under the footprint of the Development;
 - indirect loss of GWDTE where groundwater levels may change as a result of dewatering from cuttings; and
 - GWDTE located adjacent to new infrastructure such as cuttings and embankments where subsurface flows may change. Impacts on these areas are discussed qualitatively.
 4. Where significant impacts from indirect losses as a result of dewatering and changes to sub-surface flows are identified, outline mitigation measures are provided. It should be recognised that there is no practical mitigation for direct loss under the footprint of the scheme.
- ### 6.1.2 Methodology
5. SEPA LUPS Guidance Note 31 (LUPS-GU31) (SEPA, 2017) sets out the method for identification of GWDTE, based on National Vegetation Classification (NVC) communities. As per LUPS-GU31 (SEPA, 2017), the NVC with potential 'High' or 'Moderate' groundwater dependency GWDTE have been assessed and shown on **Figures 6.6a-c of the EIAR**. Locations have been assessed where they are:
 - within 100m radius of all excavations less than 1m in depth; and
 - within 250m of all excavations deeper than 1m.
 6. GWDTE have been clustered where they have:
 - similar composition of NVC communities;
 - located within the same geographical and topographical area; and
 - similar hydrological conditions.
 7. This results in a total of six areas being clustered geographically, generally from east to west. The clustered groups are shown on **Figure 6.6 GWDTE – Overview** of the EIAR.
 8. The information within this appendix is for habitats categorised via the National Vegetation Communities (NVC) Surveys, with full details provided in **Chapter 7: Ecology and Biodiversity** and **Appendix 7.2 Habitat Baseline Report** of the EIAR. This report presents a hydrological assessment of the potential GWDTE identified.

9. The following assessment considers the additional information derived from desktop studies and information gathered from site visits:
 - hydrogeological setting;
 - topography; and
 - drainage or local features that may alter groundwater levels.
10. From this information, the individual areas of habitat have been assessed, providing a revised groundwater dependency classification.

6.2 Baseline

11. Based on Guidance LUPS-GU31 (SEPA, 2017), the following NVC communities are present and considered to potentially be Highly groundwater dependent: M23, M23a, M23b, M6d. The following NVC communities are present and considered to potentially be Moderately groundwater dependent: M15, M25, M25a, MG10a, and MG9.
12. Further details of each primary community are detailed below:
 - M15 *Trichophorum-Erica* wet heath is widespread in the north and west of Great Britain. It is most common in the western Highlands. It is a community of shallow, wet or intermittently waterlogged, acid peat or peaty mineral soils on hillsides, over moraines, and within tracts of blanket mire (JNCC, 2004).
 - M23 *Juncus effuses / acutiflorus-Galium palustre* rush-pasture community and sub-communities (M23a and M23b), occur over a variety of moist, moderately acid to neutral, peaty and mineral soils in the cool and rainy lowlands of western Britain. It is a community of gently-sloping ground around the margins of soligenous flushes, as a zone around topogenous mires and wet heaths, and especially widespread in ill-drained, comparatively unimproved or reverted pasture (JNCC, 2001).
 - M25 *Molinia caerulea-Potentilla erecta* mire and sub-community M25a, is a community of moist, but well aerated, acid to neutral peats and peaty mineral soils in the wet and cool western lowlands of Britain. It occurs over gently-sloping ground, marking out seepage zones and flushed margins of sluggish streams, water-tracks and topogenous mires, but also extends onto the fringes of ombrogenous mires (JNCC, 2004).
 - M6 *Carex echinate-Sphagnum fallax/denticulatum* mire and M6d sub-community are common throughout the uplands from Cornwall north to Shetland. They are the most widespread soligenous mires in the British uplands. These mires appear in wet hollows, gullies and along streams (JNCC, 2004).
 - MG10 *Holcus lanatus-Juncus effusus* rush-pasture is a vegetation type of damp acid to neutral soils on level to gently sloping ground in enclosed pastures, and in neglected situations such as ditches, pond sides and roadside verges. This community is widespread in lowland Great Britain, and it also occurs at low altitudes in most upland areas (JNCC, 2004).
13. In **Table 6.3.1**, the 'High' initial groundwater dependency class represents vegetation that was dominant (over 50% coverage) within the cluster of NVC surveyed polygons, which is potentially of high groundwater dependency. The 'Moderate' status represents vegetation that was dominant, which is potentially of moderate groundwater dependency. The sub-dominant categories identify where these NVC were present but with less than 50% coverage.

6.3 Conclusion

14. Following review all areas were considered to have 'Low' groundwater dependency and are not considered sensitive to groundwater alterations as a result of the Proposed Development.
15. Taking account of **Table 6.3.1**, with revised groundwater dependency values of 'Low' based on the evaluation of local characteristics, plus the adoption of appropriate drainage embedded mitigation measures.

6.4 References

JNCC (2001). National Vegetation Classification: Field guide to mires and heaths. [online]. Available at: http://jncc.defra.gov.uk/PDF/Mires_Heaths.pdf [Accessed October 2021]

JNCC (2004). An Illustrated Guide to British Upland Vegetation. [online]. Available at: [http://jncc.defra.gov.uk/PDF/British_Upland_Vegetation_\(2014_reprint\)Low_Res.pdf](http://jncc.defra.gov.uk/PDF/British_Upland_Vegetation_(2014_reprint)Low_Res.pdf) [Accessed October 2021]

SEPA (2017). Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems. Land Use Planning System SEPA Guidance Note 31. LUPS-GU31. [online]. Available at: <https://www.sepa.org.uk/media/144266/lups-gu31-guidance-on-assessing-the-impacts-of-development-proposals-on-groundwater-abstractions-and-groundwater-dependent-terrestrial-ecosystems.pdf> [Accessed October 2021]

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
1	0.03	M23 M25a	Highly Sub-Dominant	<p>Area 1 is a cluster of habitats located on both sides of the forestry track to be upgraded and the C46W.</p> <p>The forestry track to be upgraded passes through this area.</p> <p>Within the Site, habitats are located both upslope and downslope of the forestry track to be upgraded from the site entry.</p> <p>A number of these habitats are located outside the Site on the lower slopes of Linnshalloch Hill, south and upslope of the C46W.</p> <p>See Figure 6.6c: GWDTE Eastern of the EIAR</p>	<p>Area 1 is a small region composed of blanket bog mosaic habitats at the eastern extent of the Site. These habitats are immediately adjacent to the existing track and forestry rides and located within clear-felled areas in the vicinity of the Tairlaw Burn.</p> <p>The bedrock geology consists of, from east to west, the Kirkcolm (Wacke), Greywacke (Conglomerate) and Duneaton Volcanic (Basaltic-andesite) Formations. These formations are categorised as low productivity aquifers, with the exception of the Greywacke formation, which is classified as moderately productivity aquifers. Superficial deposits within Area 1 are, from east to west, alluvium, Devensian Till and peat. Peat records are held in the vicinity of this area, with peat depths recorded locally ranging from 0.10m to 0.80m. Slope angles range from gentle to moderate; 1° to 13°.</p> <p>M18-M19 communities are noted in association with M25a in this location. M18-M19 are not categorised as potentially groundwater dependent, these mires are typical of blanket bog vegetation which are rainfall-fed.</p> <p>These habitats are closely associated with forestry drainage, the C46W corridor and the valley of the Tairlaw Burn. To the south, surface water flows downslope from Linnshalloch Hill to the Tairlaw Burn.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 1 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 1 are located partially within the forestry track to be upgraded. As a result, a small proportion of the area would be directly lost under the upgrade works.</p> <p>The majority of the habitats within Area 1 are located downslope of the proposed track to be upgraded. The proposed infrastructure would involve minor earthworks for the widening and/or upgrade, and associated drainage improvements, as a result negligible changes to the local subsurface and groundwater flows are expected.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works:</p> <ul style="list-style-type: none"> inclusion of cross-formation drains to maintain groundwater flows, where practicable. consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
2	0.07	M23 M25	Highly Sub-Dominant	<p>Area 2 is a cluster of habitats located to the south of the Substation Compound and north of the forestry track to be upgraded.</p> <p>A proportion of the habitats are located on the lower slopes of the Linnshalloch Hill, which is located upslope of the proposed works. The remaining habitats are located upslope and downslope of the proposed Substation Compound and its associated new track.</p> <p>The Substation Compound, its associated new track and forestry track to be upgraded passes through this area.</p>	<p>Area 2 is a small region composed of blanket bog mosaic habitats at the south eastern extent of the Site. Some of these habitats are located within an extensive recently clear-felled area, with others located immediately adjacent to the Tairlaw Burn and its tributary.</p> <p>The bedrock geology consists of, from north to south, the Greywacke (Conglomerate), the Dalreoch (Wacke) and the Kirkcolm (Wacke) Formations. These formations are categorised as low productivity aquifers, with the exception of the Greywacke formation, which is classified as moderately productivity aquifers. Superficial deposits within Area 2 are Devensian Till, with peat on the western extents of Area 2. Peat records are held within these communities, with peat depths recorded locally ranging from 0.00m to 3.69m. Slope angles range from gentle to steep; 1° to 20°. The steepest slopes within Area 2 are associated to the incised valley of the Tairlaw Burn.</p> <p>M18-M19 communities are noted in association with M25 in this location. M18-M19 are not categorised as potentially groundwater dependent, these mires are typical of blanket bog vegetation which are rainfall-fed.</p> <p>These habitats are closely associated with forestry and track drainage and the C46W corridor, with surface water channels flowing downslope to eventually join the Tairlaw Burn.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 2 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 2 are located partially within the Substation Compound, its associated new track and the forestry track to be upgraded. As a result, a small proportion of the area would be directly lost under the upgrade works.</p> <p>The majority of the habitats within Area 2 are located adjacent to the Substation Compounds, its associated new track and proposed access track to be upgraded. The proposed infrastructure would involve earthworks and associated drainage. As a result, some changes to the subsurface flows and groundwater levels are expected. The proposed infrastructure may act as a partial barrier to these flows, altering the natural drainage patterns.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works:</p> <ul style="list-style-type: none"> development and implementation of a drainage system encouraging the infiltration of surface water runoff arising from the existing track upgrade and substation, via SuDS. inclusion of cross-formation drains to maintain groundwater flows, where practicable. consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
3	0.04	M23 M25	Highly Sub-Dominant	<p>Area 3 is located on the eastern slopes of Eldrick Hill. Two habitats within Area 3 are situated alongside the River Stinchar within the Balloch Plantation.</p> <p>Wind Turbine 13 and its associated infrastructure are located on the upper margins of this area.</p> <p>The temporary construction compound is located on one GWDTE habitat area and is located upslope of a number of other habitats within Area 3.</p> <p>The existing access track, planned for upgrade, passes through this area.</p>	<p>Area 3 is a small region composed of blanket bog mosaic habitats. A number of these habitats are immediately adjacent to the River Stinchar, with other habitats within forestry rides and adjacent to existing tracks.</p> <p>The bedrock geology consists of, from north to south, the Duneaton Volcanic (Basaltic-andesite), Greywacke (Conglomerate), Dalreoch (Wacke), Kirkcolm (Wacke) Formations and two North Britain Siluro-Devonian dykes. These formations are categorised as low productivity aquifers, with the exception of the Greywacke formation, which is classified as moderately productivity aquifers. The area is overlain by Devensian Till, with peat present within the northern section of Area 3. Peat depths recorded locally range from 0.10m to 3.27m. Slope angles range from gentle to steep; 2° to 35°. The steepest slopes in Area 3 are associated to the incised valley of the River Stinchar.</p> <p>M18-M19 communities are noted in association with M25 in this location. M18-M19 are not categorised as potentially groundwater dependent, these mires are typical of blanket bog vegetation which are rainfall-fed.</p> <p>There is a close association with forestry and track drainage, with surface water flowing downslope from Eldrick Hill to join the River Stinchar.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 3 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 3 are located in the vicinity of the proposed wind turbine 13 hardstanding, and partially below the proposed track to be upgraded and site compound. As a result, a small proportion of the area would be directly lost under the scheme footprint.</p> <p>The majority of the habitats within Area 3 are located downslope of the proposed wind turbine 13 access track. The proposed infrastructure would involve earthworks and associated drainage. As a result, some changes to the subsurface flows and groundwater levels are expected. The proposed infrastructure may act as a partial barrier to these flows, altering the natural drainage patterns.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works:</p> <ul style="list-style-type: none"> • development and implementation of a drainage system encouraging the infiltration of surface water runoff arising from the track and hardstanding infrastructure via SuDS. • inclusion of cross-formation drains to maintain groundwater flows, where practicable. • consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
4	0.18	M25a M15 M23a M25 M23a M23b MG10a	Highly Sub-Dominant, Moderately Sub-Dominant, Moderately Dominant	<p>Area 4 is a group of habitats on the slopes of Stob Hill, Eldrick Hill and surrounding slopes.</p> <p>These habitats are located across the central area, where wind turbines 8, 9, 10, 11, 12 and their associated infrastructure are generally located on higher ground, upslope of a number of these habitats.</p> <p>BP01 and BP02 are also located within Area 4.</p> <p>The existing forestry tracks, to be upgraded, and new access tracks cross these habitats.</p> <p>See Figure 6.6c: GWDTE Eastern of the EIAR</p>	<p>Area 4 is an extensive region, with the habitats identified coincident with forestry rides, composed of blanket bog, wet heath and mire habitats, in the central area of the Site.</p> <p>The bedrock geology consists of, from north west to south east, the Southern Midland Valley Felsite Sills (Andesitic), Greywacke (Conglomerate), Benan (Conglomerate), Unnamed Igneous Intrusion (Microgabbro) and Duneaton Volcanic (Basaltic-andesite) Formations. These formations are categorised as low productivity aquifers, with the exception of the Greywacke formation, which is classified as moderately productivity aquifers. The area is overlain by peat, with Devensian Till present on the lower slopes of Stob Hill. Peat records are held within these communities, with peat depths recorded locally ranging from 0.00m to 5.00m. Slope angles range from level to steep; 1° to 20°.</p> <p>The potential groundwater dependency of habitats in this area, as initially identified from SEPA LUPS-31 (SEPA, 2017), are generalised as sub-dominated by potentially high groundwater dependency communities.</p> <p>These lower gradient habitats are closely associated with forestry and existing track drainage corridors, with surface water moving downslope across the central area of the Site, forming a number of the tributaries of the Pulreoch Burn, Tairlaw Burn and Palmullan Burn.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 4 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 4 are located partially within the scheme footprint. As a result, a small proportion of the area would be directly lost under the scheme footprint.</p> <p>The remainder of these habitats are located downslope of wind turbines 8, 9, 10, 11, 12 and their associated infrastructure, and BP01 and BP02. The proposed infrastructure would involve earthworks and associated drainage. As a result, some changes to the subsurface flows and groundwater levels are expected. The proposed infrastructure may act as a partial barrier to these flows altering the natural drainage patterns.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works:</p> <ul style="list-style-type: none"> development and implementation of a drainage system encouraging the infiltration of surface water runoff arising from the track, borrow pit and hardstanding infrastructure via SuDS. inclusion of cross-formation drains to maintain groundwater flows, where practicable. consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
5	0.02	M23 M25	Highly Sub-Dominant	<p>Area 5 is a habitat located on the north eastern margins of Linfern Loch.</p> <p>This habitat is generally below the planned infrastructure, with BP02 planned within this area, adjacent to the existing borrow pit.</p> <p>See Figure 6.6c: GWDTE Eastern of the EIAR</p>	<p>Area 5 is a small region composed of blanket bog mosaic habitats in the central part of the Site. These habitats are located within a clear-felled area and immediately adjacent to the Linfern Loch.</p> <p>The geology consists of, from west to east, the Southern Midland Valley Felsite Sills (Andesitic) and the Greywacke (Conglomerate) Formations bedrock (low and moderately productivity aquifers respectively). The area is overlain by Peat and Devensian Till superficial deposits. Peat records are held within these communities, with peat depths recorded locally ranging from 0.10m to 2.60m. Slope angles range from gentle to steep; 2° to 22°. The steepest slopes are recorded on the banksides adjacent to Linfern Loch.</p> <p>These habitats are closely associated with the waterside habitats of the Linfern Loch, with forestry drainage and surface water flowing downslope towards the loch, furthermore local groundwater is likely to be already modified by the existing borrow pit. Seasonal ponding is likely adjacent to Linfern Loch, based on aerial photography, indicating the local area is likely to be dominated by surface water input.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 5 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 5 are located below the BP02 footprint. As a result, a small proportion of the area would be directly lost under the scheme footprint.</p> <p>The habitats within Area 5 are located downslope of the proposed BP02. The proposed infrastructure would involve earthworks and associated drainage. As a result, some changes to the subsurface flows and groundwater levels are expected but local modification is already likely due to the existing borrow pit. The proposed infrastructure may act as a partial barrier to these flows, altering the natural drainage patterns.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works:</p> <ul style="list-style-type: none"> • development and implementation of a drainage system encouraging the infiltration of surface water runoff arising from borrow pit via SuDS. • inclusion of cross-formation drains to maintain groundwater flows, where practicable. • consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

GWDTE Area	Area (km ²)	NVC Classes (SEPA, 2017)	Initial Groundwater Dependency (SEPA, 2017)	Location Relative to Proposed Infrastructure	Baseline	Potential Effects
6	0.33	M23 M25 M25a M23b M15 M23a MG10a M6d	Highly Dominant, Highly Sub-Dominant, Moderately Dominant, Moderately Sub-Dominant	<p>Area 6 is a cluster located on the slopes of Garleffin Fell, Glester Cairn, Back Hill of Garleffin and surrounding slopes.</p> <p>Wind turbines 1, 2, 3, 4, 5, 6 and 7, and associated infrastructure are located on higher ground, upslope of a number of habitats within Area 6.</p> <p>BP03 and BP04 are also located in this area, upslope of a number of potential GWDTE habitats.</p> <p>The forestry track to be upgraded and the new access track cross this area.</p> <p>See Figure 6.6b: GWDTE Western of the EIAR</p>	<p>Area 6 is a large region, with the habitats identified coincident with forestry rides, including mires, blanket bog, marshy grassland, wet heath, semi-improved natural grassland and acid/neutral flush habitats. The majority of these habitats are closely associated with forestry ride locations and in corridors adjacent to headwaters and tributaries flowing to the Palmullan Burn, Dalquhairn Burn and Linfern Loch.</p> <p>The bedrock geology consists predominantly of the Southern Midland Valley Felsite Sills (Andesitic), with the Inverclyde Group (Sandstone) and Duneaton Volcanic (Basaltic-Andesite) present on the north east extents of Area 6. These formations are categorised as low productivity aquifers. Higher ground within Area 1 does not have any superficial deposits, with peat present on the south western slopes of Garleffin Fell. Devensian Till accounts for the rest of the superficial deposits within Area 6. Peat records are held within these communities, with peat depths ranging from 0.00m to 3.25m. Slope angles range from gentle to steep; 1° to 30°. The steepest slopes are noted within the valley of the unnamed tributary of the Palmullan Burn to the north east of Garleffin Fell.</p> <p>M17 communities are noted in association with M6d in this location. M17 is not categorised as potentially groundwater dependent, this mire is typical of blanket bog vegetation which are rainfall-fed.</p> <p>The potential groundwater dependency of habitats in this area, as initially identified from SEPA LUPS-31 (SEPA, 2017), are generalised as dominated by potentially high groundwater dependency communities.</p> <p>These communities are closely associated with surface water flowing downslope from the upper slopes of Garleffin Fell, Black Hill of Garleffin and Glester Cairn to eventually form or join surface water channels. These slopes are likely to be subject to overland flow conditions during and following rainfall events, with runoff into the local channels.</p> <p>Surface water and precipitation are likely to be the primary water sources. As a result, the revised groundwater dependency of this area is deemed to be Low, with equivalent level of sensitivity.</p>	<p>Habitats within Area 6 would be impacted by a combination of direct and indirect effects.</p> <p>The habitats within Area 6 are located partially below the proposed wind turbines 1, 2, 3, 4, 5 and 6 footprints, BP03, BP04, the forestry track to be upgraded, and the new access track. As a result, a small proportion of the area would be directly lost under the scheme footprint.</p> <p>A proportion of the habitats within Area 6 are located downslope of wind turbines 1, 2, 3, 4, 5, 6 and their associated infrastructure. The proposed infrastructure would involve earthworks and associated drainage. As a result, some changes to the subsurface flows and groundwater levels are expected. The proposed infrastructure may act as a partial barrier to these flows, altering the natural drainage patterns.</p> <p>A number of embedded mitigation measures, as listed in Chapter 6: Hydrology, Hydrogeology, Geology and Soils of the EIAR, are proposed to reduce potential alterations to sub-surface flows and groundwater levels by the works.</p> <ul style="list-style-type: none"> development and implementation of a drainage system encouraging the infiltration of surface water runoff arising from tracks, hardstandings and borrow pits via SuDS. inclusion of cross-formation drains to maintain groundwater flows, where practicable. consideration shall be given to peat storage and reuse in areas of GWDTE, to avoid causing long-term alterations in local hydrological conditions.

Table 6.3.1: GWDTE Assessment

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