



TRACKS ECOLOGY
ECO - GIS - UAV

26/010/GCF/R01

VERSION 1.2

29 APRIL 2026



Site at Callop near Glenfinnan

Glenfinnan Community Facilities



Peat Depth Survey

TRACKS ECOLOGY LTD.

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CLIENT

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DOCUMENT DETAILS

Site:	Site at Callop near Glenfinnan
Survey:	Peat Depth Survey
Report Ref:	26/010/GCF/R01
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Lead Surveyor(s):	James Bunyan
Author(s):	James Bunyan
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Client:	Glenfinnan Community Facilities
Agent:	N/A

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EXECUTIVE SUMMARY

- A peat depth survey was undertaken at Site at Callop near Glenfinnan (NM 92617 79339) to inform a proposed car park, campervan aire and associated infrastructure within a wider 6.7 ha Site.
- The Site has been subject to historic forestry operations, including windthrow and harvesting, resulting in disturbed ground conditions and modified peatland.
- A total of 130 probe locations were surveyed on a 25 m grid, supported by two peat cores to assess peat composition and structure.
- Peat is present but highly variable in depth and distribution. Approximately 45% of the Site comprises soils less than 0.5 m in depth, while deep peat (>1.0 m) occurs at around 35% of probe locations, including locally very deep deposits (>2.0 m and >3.0 m).
- Deep peat does not form a continuous blanket and instead occurs in localised clusters, typically associated with flatter, wetter ground in the central and eastern parts of the Site. Western areas are generally characterised by shallow or non-peat soils.
- Peat core data indicates predominantly moderately to strongly decomposed peat, with limited development of weakly decomposed surface layers, consistent with peatland that has been subject to modification, likely due to forestry and drainage influences.
- While peat represents a significant constraint across much of the Site, these constraints are spatially defined and depending on the scale of the proposed development could be avoided through appropriate design. However, topographic and bedrock constraints are also likely to be a major consideration.

1 INTRODUCTION

1.1 TERMS OF REFERENCE

This report presents the findings of a peat depth survey undertaken at *Site at Callop near Glenfinnan* (centred on National Grid Reference NM9261779339). The survey was commissioned to inform a proposed development comprising a car park, campervan aire, and associated infrastructure including toilet and waste disposal facilities (Figure 1).

The purpose of the survey is to establish the presence, depth, and distribution of peat across the Site in order to:

- inform early-stage design and layout;
- identify potential constraints associated with peat soils; and
- support a future planning application in accordance with relevant Scottish planning policy.

1.2 SURVEY AREA DESCRIPTION

The survey area extends to approximately 6.7 hectares and is located within the Scottish Highlands, near Glenfinnan.

The Site comprises a mix of disturbed and recovering ground, reflecting its previous use as commercial forestry land. Approximately two-thirds of the Survey Area (primarily the eastern area) has been subject to forestry operations, including windthrow and subsequent harvesting within the last decade. As a result, ground conditions are variable, with areas of exposed soils, brash, and regenerating wetland habitats.

The western areas are more open and include semi-natural vegetation, higher areas with exposed rock and localised wet ground conditions influenced by topography and drainage.

Only a small portion of the wider survey area is anticipated to be developed as part of the proposed scheme.

2 LEGISLATIVE AND PLANNING CONTEXT

Peat and carbon-rich soils are recognised as nationally important resources due to their role in carbon storage, biodiversity and hydrology. Development proposals affecting such soils are subject to national and local planning policy, supported by NatureScot guidance.

2.1 NATIONAL PLANNING FRAMEWORK 4 (NPF4)

National Planning Framework 4 (NPF4) (Scottish Government, 2023) places significant weight on the protection of carbon-rich soils, peatland and priority peatland habitats under Policy 5: Soils.

All development proposals are required to follow the mitigation hierarchy, whereby impacts on peat and soils are:

- avoided in the first instance;
- minimised where avoidance is not possible; and
- mitigated where residual effects remain.

Policy 5(c) states that development proposals on peatland, carbon-rich soils and priority peatland habitat will only be supported in limited circumstances, including:

- essential infrastructure with a specific locational need;
- renewable energy development;

- small-scale development directly linked to a rural business, farm or croft;
- development supporting fragile rural communities; or
- peatland restoration.

Policy 5(d) requires that where development on peatland or carbon-rich soils is proposed, a detailed site-specific assessment is undertaken. This should identify, among other factors:

- peat depth;
- peatland condition;
- soil quality; and
- stability.

NPF4 also places increased emphasis on:

- the protection and restoration of peatlands; and
- the avoidance of greenhouse gas emissions associated with peat disturbance.

2.2 HIGHLAND-WIDE LOCAL DEVELOPMENT PLAN (HWLDP)

At the local level, peat and soils are addressed primarily through Policy 55: Peat and Soils of the Highland-wide Local Development Plan (The Highland Council, 2012).

This policy requires that:

- unnecessary disturbance, degradation or erosion of peat is avoided wherever possible;
- development affecting peat must be clearly justified; and
- impacts are minimised and appropriately mitigated.

Peat is also recognised as a physical constraint to development, and proposals must demonstrate that site constraints have been fully considered and addressed. Where peat disturbance cannot be avoided, the Council may require the preparation of a Peat Management Plan, setting out how peat will be excavated, stored, reused and reinstated. In practice, the HwLDP supports a design-led approach, whereby development is directed to:

- areas of shallow or non-peat soils; and
- locations where environmental effects can be minimised.

2.3 NATURESCOT GUIDANCE ON PEATLAND AND CARBON-RICH SOILS

NatureScot provides supporting guidance on the consideration of peatland habitats and carbon-rich soils in development management (NatureScot, 2023).

The guidance reinforces the application of the mitigation hierarchy, with a clear expectation that:

- development proposals are designed to avoid peatland, particularly deep peat and priority peatland habitats, wherever possible;
- impacts are minimised through layout and construction design; and
- opportunities for restoration and enhancement are considered where appropriate.

Particular importance is placed on:

- deep peat deposits (typically >1.0m);
- priority peatland habitats, such as blanket bog; and
- areas of near-natural peatland condition, which may be of national importance.

NatureScot also highlights that:

- the Carbon and Peatland Map (2016) (Scottish Natural Heritage, 2016) is a high-level planning tool; and
- site-specific survey data is required to accurately characterise peat depth and condition.

Development proposals are expected to demonstrate that:

- peat disturbance has been avoided through iterative design;
- impacts on carbon-rich soils are minimised; and
- the proposal does not give rise to significant effects on nationally important peatland resources.

2.4 SUMMARY OF POLICY REQUIREMENTS

In summary, national and local policy, supported by NatureScot guidance, requires that development proposals:

- prioritise the avoidance of peat disturbance, particularly deep peat;
- are informed by site-specific peat survey data;
- direct development to areas of lowest peat sensitivity;
- minimise excavation and disturbance of peat soils; and
- implement appropriate mitigation and management measures where impacts cannot be avoided.

These principles have informed the assessment of peat conditions at the Site and will guide the design of the proposed development.

3 METHODOLOGY

3.1 DESK-BASED ASSESSMENT

A desk-based assessment was undertaken to provide an initial understanding of the likely presence, distribution and sensitivity of peat and carbon-rich soils within the Site and surrounding area. The findings were used to inform the design of the field survey and to provide context for the interpretation of peat depth data.

The assessment included review of the NatureScot Carbon and Peatland Map (2016) (Scottish Natural Heritage, 2016), Ordnance Survey mapping, aerial imagery, and topographic data. The Carbon and Peatland Map provides a high-level indication of carbon-rich soils, deep peat and priority peatland habitat, with Classes 1 and 2 representing nationally important resources. However, the dataset is relatively coarse and is intended as a strategic planning tool only.

The desk-based assessment is subject to limitations, including the resolution of national datasets and the inability to confirm peat depth and condition without field verification. As such, the findings provide an initial indication only and have been refined through site-specific peat probing.

3.2 FIELD SURVEY

A peat depth survey was undertaken on 31st March 2026 by a suitably experienced surveyor (James Bunyan), in accordance with current guidance including Scottish Government, NatureScot and SEPA Peatland Survey: Guidance on Developments on Peatland (‘Scottish Government, 2017).

The survey methodology comprised:

- a systematic grid of probe locations at approximately 25m spacing across the Site;
- positioning of probe locations using handheld GPS;
- measurement of peat depth at each location using a graduated probe, advanced vertically until refusal or the base of peat was encountered; and
- recording of peat depths in centimetres.

The full dataset, including probe locations and recorded depths, is provided separately in CSV format.

In addition to probing, two peat cores were obtained at representative locations within the Site. Core locations were selected to:

- confirm the presence of peat; and
- provide an indication of peat composition and profile.

Coring was undertaken using a hand-held gouge auger, with cores extracted to the maximum practicable depth. The cores were visually assessed in the field to confirm the presence of organic material and general peat characteristics. This included identification of the upper acrotelm layer and underlying catotelm where present, together with an indication of the degree of peat decomposition using the Von Post scale (Lindsay, 2010). Observations were recorded in the field to provide a general understanding of peat characteristics and condition. Given the scale of the proposed development and the density of probe data collected, the limited number of cores is considered proportionate and sufficient to support the interpretation of peat characteristics across the Site.

As with all peat surveys, there is an inherent level of uncertainty associated with probe positioning and depth measurement, particularly in areas of uneven ground or dense vegetation. In addition, peat depths between probe locations are interpolated and may vary locally. Notwithstanding these limitations, the dataset is considered sufficient to provide a representative understanding of peat depth distribution across the Site.

Peat depth measurements recorded at individual probe locations were interpolated to produce a continuous surface of peat depth across the Site. Interpolation was undertaken within QGIS using a Multilevel B-spline approach, which is widely applied for environmental datasets to generate a smooth surface while maintaining consistency with measured values. The resulting raster was clipped to the Site boundary and reviewed against the raw probe data to ensure that the interpolated surface accurately reflects the spatial distribution and variability of recorded peat depths. The interpolated output is intended to provide a visual representation of peat depth patterns between survey points and does not replace the underlying measured data.

3.3 PEAT CLASSIFICATION

Peat depths have been classified in accordance with current Scottish Government guidance (Scottish Government, NatureScot and SEPA, 2017) as follows:

- <0.25m – Non-peat soils;
- 0.25–0.5m – Organo-mineral soils (not classified as peat);
- >0.5m – Peat; and
- >1.0m – Deep peat.

For the purposes of this assessment, peat depth is used as a proxy for identifying areas of increased environmental sensitivity and potential development constraint, with deeper peat generally representing a higher constraint in line with national and local planning policy.

4 RESULTS

4.1 DESK-BASED ASSESSMENT

The NatureScot Carbon and Peatland Map (Scottish Natural Heritage, 2016) indicates that the western third of the Site and much of the northern boundary are classified as Class 1, representing nationally important carbon-rich soils, deep peat and priority peatland habitat (Figure 2). The remainder of the Site is mapped as Class 5, reflecting areas considered to be of lower peatland importance, typically associated with modified or previously disturbed ground. However, this mapping does not fully reflect site-specific conditions. In particular, the presence of the A830 public road along the northern boundary is not clearly represented within the dataset, and the extent of Class 1 in this area may therefore be overstated. Furthermore, small areas of topography with often exposed bedrock in the western third of the Site do not appear to be captured within the peatland map. The classification of much of the Site as Class 5 is understood to relate to its previous use as commercial forestry land, which can mask underlying peat conditions. As such, while the Carbon and Peatland Map provides useful strategic context, it is considered a high-level dataset and is supplemented by detailed site-specific survey data presented within this report.

The review of aerial imagery and site information indicates that the Site has been subject to historic commercial forestry operations, including windthrow and subsequent harvesting within the last decade, particularly across the eastern part of the Site (Figure 3). These activities are likely to have resulted in disturbance to soils and modification of drainage patterns and are typically associated with variable peat depth and condition.

Topographic data indicates that the Site comprises gently undulating ground, with slightly elevated and better-drained areas—primarily in the western part of the Site—likely to be associated with shallower soils. In contrast, flatter and potentially wetter areas, particularly within the eastern part of the Site, may support deeper peat accumulation.

Overall, the desk-based assessment indicates that peat is likely to be present within the Site, although its distribution and condition are expected to be influenced by both topography and previous land use. The Site is not anticipated to comprise extensive areas of intact peatland; however, site-specific field survey is required to confirm the depth and variability of peat across the Site.

4.2 OVERVIEW OF PEAT DEPTHS

A total of 130 probe locations were surveyed across the Site. The results confirm that peat is present throughout the Site, although depth and distribution are highly variable.

The distribution of peat depths is summarised in Table 1.

Table 1: Peat Depth Distribution

Peat Depth Category	Depth Range (m)	Number of Probes	Approx. Proportion (%)
Non-peat	<0.25	39	30%
Organo-mineral	0.25 – 0.5	20	15%
Shallow peat	0.5 – 1.0	26	20%
Deep peat	>1.0	45	35%
Total		130	100%

Overall, approximately 45% of the Site comprises soils less than 0.5m in depth, which are not classified as peat. Peat greater than 0.5m is present across approximately 55% of probe locations, including a notable proportion of deeper peat.

Peat depths exceeding 2.0 m and locally greater than 3.0 m were recorded at several locations, indicating the presence of locally deep peat deposits.

4.3 SPATIAL DISTRIBUTION

Peat depth across the Site shows a clear spatial pattern influenced by both topography and previous land use. The western part of the Site is generally characterised by shallow soils, with frequent occurrences of exposed bedrock, rocky outcrops and areas where peat is absent or very thin. These areas are typically associated with slightly elevated and better-drained ground (Figure 4).

Moving eastwards across the Site, peat depth becomes increasingly variable. The central areas comprise a mix of shallow peat, organo-mineral soils and deeper pockets, reflecting a combination of underlying topography and disturbance associated with historic forestry operations. Evidence of previous ground disturbance, including windthrow and harvesting, is particularly apparent in these areas.

The central and north-eastern parts of the Site are characterised by a greater frequency of deeper peat deposits. These areas tend to be flatter and more poorly drained, with peat depths commonly exceeding 1.0 m and locally exceeding 2.0 m and 3.0 m. Such deposits are not continuous across the Site, but instead occur as discrete clusters, often associated with marshy grassland, drainage features and areas of impeded drainage.

The interpolated peat depth surface reflects these patterns and provides a continuous representation of peat distribution across the Site. The outputs have been checked against the probe data to ensure that the spatial trends identified are consistent with the measured depths.

4.4 PEATLAND CONDITION

Field observations recorded during the survey indicate that the Site is predominantly characterised by modified peatland, reflecting its history of commercial forestry and associated land management practices. Evidence of this includes the presence of forestry stumps, brash, windthrow and areas of disturbed ground, particularly across the eastern part of the Site. In addition, a forestry track which appears largely of floating construction bisects the Site, running east to west.

In addition, localised areas of bare peat and erosion were observed, along with signs of altered drainage conditions, especially in proximity to existing tracks and drains. These factors indicate that the peatland within the Site has been subject to disturbance and is not representative of extensive areas of intact or near-natural peatland habitat.

While deeper peat deposits are present in parts of the Site, these are generally associated with modified or disturbed ground conditions rather than undisturbed peatland systems. Overall, the Site is considered to comprise peat soils of variable condition, with a significant proportion influenced by past land use.

4.5 CORES

Two peat cores were obtained to depths of approximately 2.1 m (Core 1) and 3.2 m (Core 2) (Figure 4). The cores indicate a profile comprising predominantly moderately to strongly decomposed peat (H5–H8), with limited occurrences of weakly decomposed peat (H3) confined to the upper layers (Table 2).

In both cores, the upper peat horizons comprise weakly to moderately decomposed material, consistent with the presence of a shallow acrotelm layer. However, this layer is relatively

limited in thickness and is underlain by more strongly decomposed peat, with H6–H8 values recorded through much of the profile.

The deeper sections of both cores are dominated by strongly decomposed peat (H7–H8), indicating a high degree of humification and limited preservation of plant structure at depth. This profile is consistent with peat that has undergone modification, likely associated with historical drainage and land management practices, including forestry.

Overall, the core data supports the interpretation that peat across the Site is variable in structure and predominantly modified in condition, rather than representing extensive areas of intact, near-natural peatland.

Table 2: Peat Core Stratigraphy and Von Post Classification

Core ID	Depth Interval (cm)	Von Post Classification	Interpretation
1	0 – 28	H3	Weakly decomposed peat
	28 – 53	H5	Moderately decomposed peat
	53 – 60	H3	Weakly decomposed peat
	60 – 95	H8	Strongly decomposed peat
	95 – 135	H5	Moderately decomposed peat
	135 – 210	H8	Strongly decomposed peat
2	0 – 20	H3	Weakly decomposed peat
	20 – 62	H5	Moderately decomposed peat
	62 – 160	H6	Moderately to strongly decomposed peat
	160 – 270	H8	Strongly decomposed peat
	270 – 290	H7	Strongly decomposed peat
	290 – 320	H8	Strongly decomposed peat

5 DISCUSSION

The peat depth survey confirms that peat is present across the majority of the Site, although both depth and distribution are highly variable. Approximately 45% of probe locations recorded soils of less than 0.5 m depth, indicating that a substantial proportion of the Site comprises shallow or non-peat soils (Figure 5). These areas are predominantly located within the western and more elevated parts of the Site, where ground conditions are generally better drained and locally characterised by exposed rock and thin soils.

In contrast, deeper peat deposits are more frequently encountered within flatter and more poorly drained areas, particularly towards the central and eastern parts of the Site. Peat depths exceeding 1.0 m were recorded at approximately 35% of probe locations, with locally very deep deposits (>2.0 m and >3.0 m) identified in discrete areas. However, these deposits do not form a continuous blanket across the Site and instead occur as localised clusters associated with topographic depressions, drainage features and wetter ground.

The peat core data indicates that peat across the Site is predominantly moderately to strongly decomposed, with limited development of weakly decomposed surface layers. This profile, together with field observations of forestry stumps, windthrow, brash and localised erosion, is consistent with peatland that has been subject to modification through historical land management practices, including forestry and associated drainage.

Taken together, the results indicate that while peat represents a constraint in parts of the Site, particularly where deeper deposits occur, these constraints are spatially defined and can be avoided through appropriate design. The presence of extensive areas of shallow or non-peat soils provides clear opportunity to adopt a design-led approach, whereby development can be directed to areas of lowest peat sensitivity. This approach is consistent

with the requirements of national and local planning policy, including NPF4 Policy 5 and the Highland-wide Local Development Plan, which seek to avoid and minimise disturbance to peat and carbon-rich soils.

6 REFERENCES

Lindsay, R. A. (2010). *Peatbogs and Carbon: a critical synthesis to inform policy development in oceanic peat bog conservation in the context of climate change.*

NatureScot. (2023). *Advising on peatland, carbon-rich soils and priority peatland habitat in development management.*

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Scottish Natural Heritage. (2016). *Carbon and Peatland 2016 map.* Available at http://map.environment.gov.scot/soil_maps/.

The Highland Council. (2012). *Highland-wide Local Development Plan.*

APPENDIX A – PHOTOGRAPHS



Plate 1: View east across Site with areas of former forestry visible in background.



Plate 2: View east across Site with minor topography visible.



Plate 3: Typical section of disturbed habitat within former forestry area.



Plate 4: Deep peat within standing dead wood of windthrown section of former forestry.

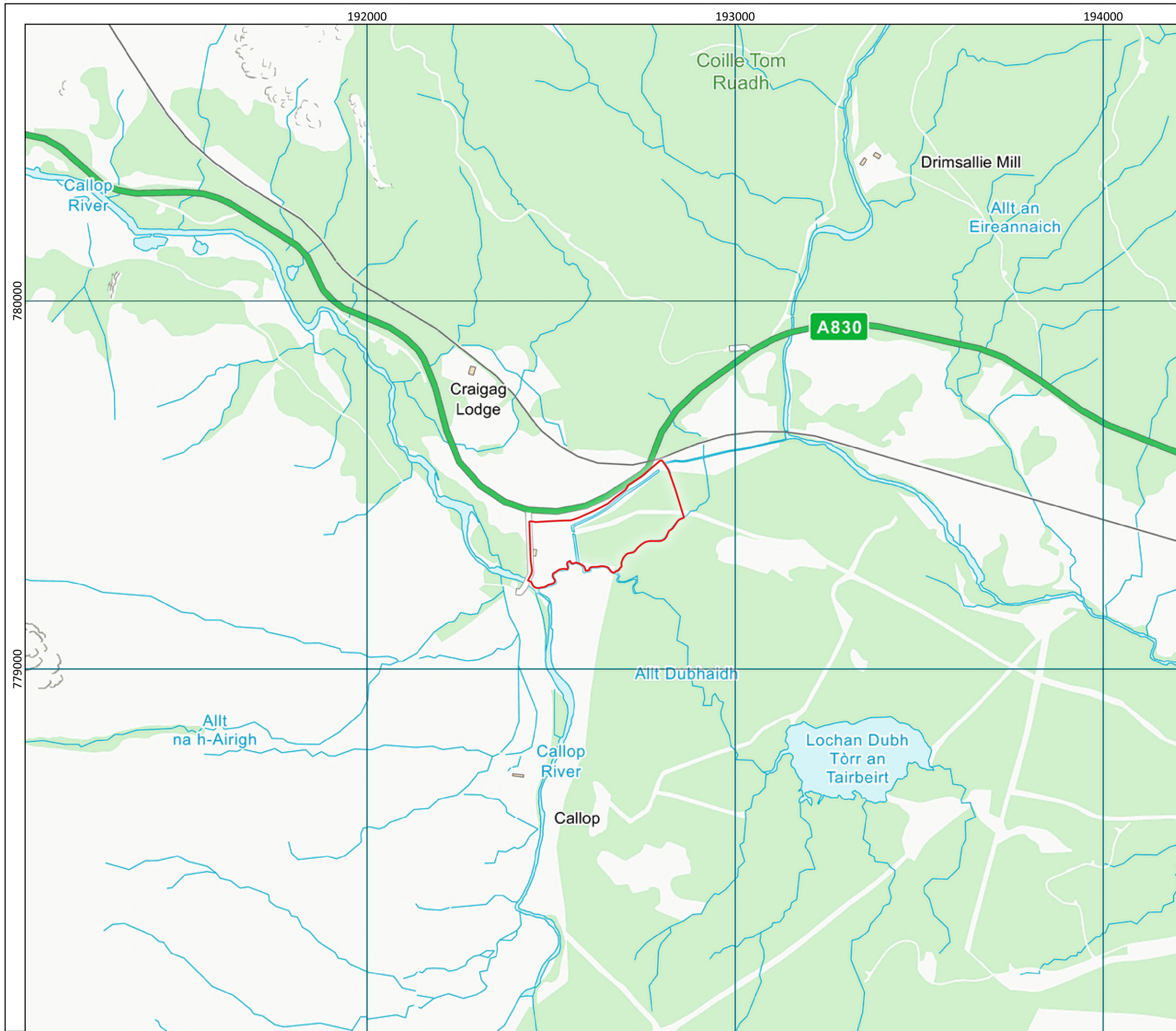


Plate 5: Floating track bisecting the Site.



Plate 6 Areas of bare peat along drainage route in north of the Site.

APPENDIX B – FIGURES



Callop, near Glenfinnan

Figure 1: Peat Depth Survey Area



 Survey Area



0 200 400 m

Scale @ A3 - 1:10,000

Drawing number: 26/010/GCF/001

Revision: 1

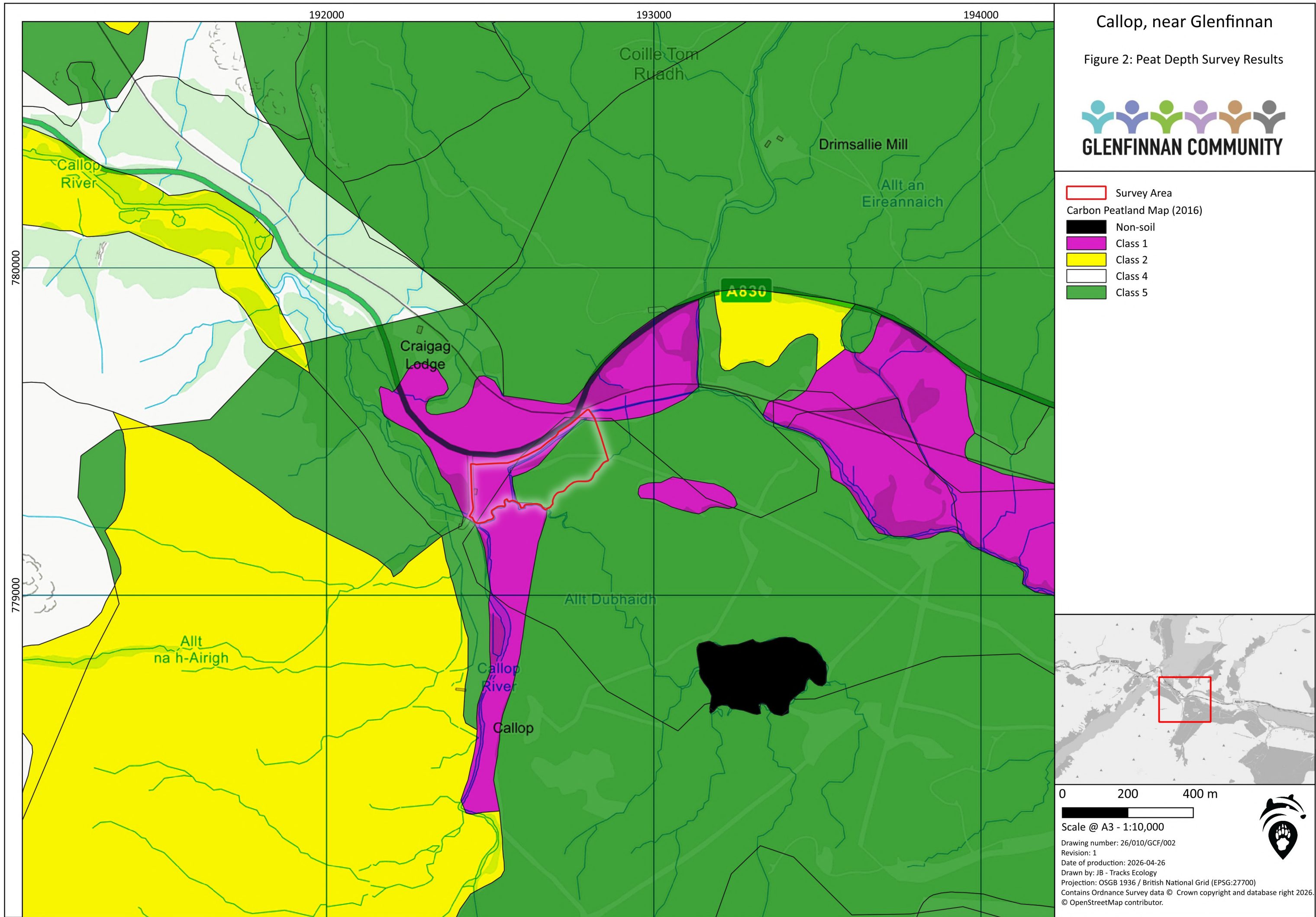
Date of production: 2026-04-26

Drawn by: JB - Tracks Ecology

Projection: OSGB 1936 / British National Grid (EPSG:27700)

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Callop, near Glenfinnan

Figure 3: Aerial Imagery (Bing Maps)



 Survey Area



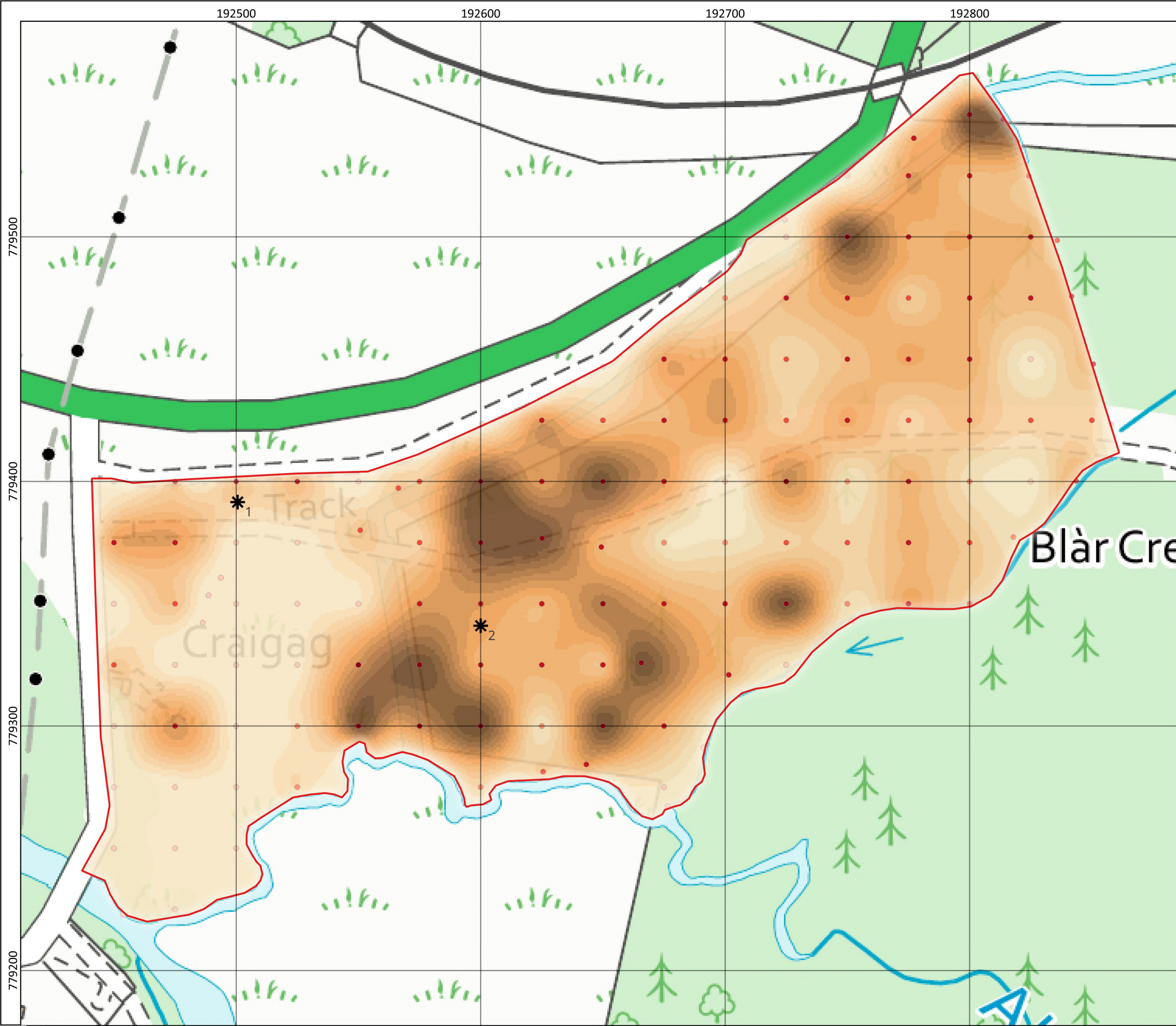
0 30 60 m



Scale @ A3 - 1:1,500

Drawing number: 26/010/GCF/003
Revision: 1
Date of production: 2026-04-26
Drawn by: JB - Tracks Ecology
Projection: OSGB 1936 / British National Grid (EPSG:27700)
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Contains Bing Maps imagery © Microsoft.





Callop, near Glenfinnan

Figure 4: Peat Depth Survey Results



Survey Area

Peat Depth (cm)

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 1000

Peat Depth (cm) - Multilevel B-spline Interpolation

- <= 25
- 25 - 50
- 50 - 75
- 75 - 100
- 100 - 125
- 125 - 150
- 150 - 175
- 175 - 200
- 200 - 225
- 225 - 250
- 250 - 275
- 275 - 300
- 300 - 325
- > 325

*** Peat Cores**

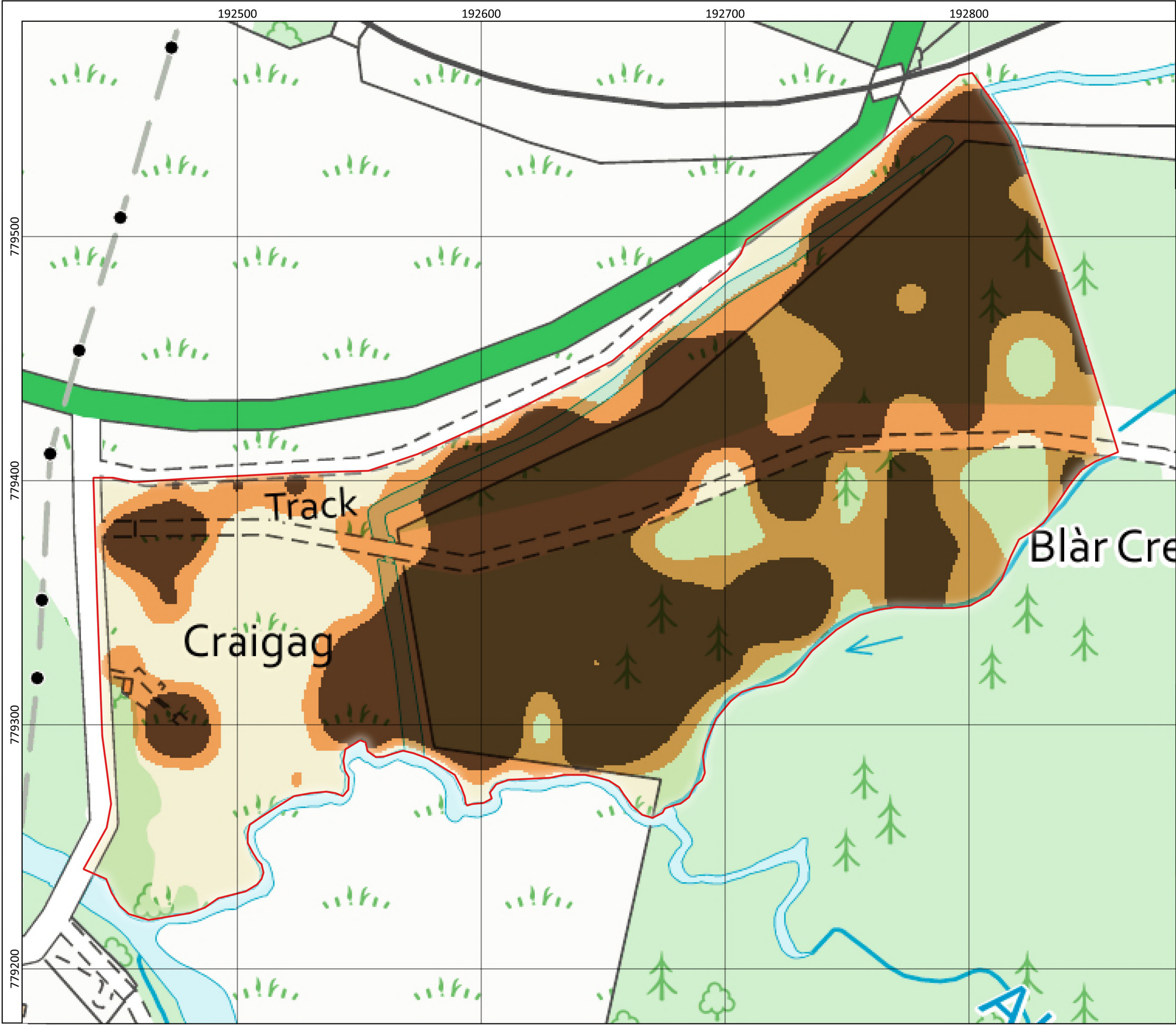


0 30 60 m

Scale @ A3 - 1:1,500

Drawing number: 26/010/GCF/004
Revision: 1
Date of production: 2026-04-26
Drawn by: JB - Tracks Ecology
Projection: OSGB 1936 / British National Grid (EPSG:27700)
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Callop, near Glenfinnan

Figure 5: Peat Depth Survey Categories



- Survey Area
- Peat Depth Categories (cm)
- ≤ 50
 - 50 - 100
 - > 100



0 30 60 m

Scale @ A3 - 1:1,500

Drawing number: 26/010/GCF/005

Revision: 1

Date of production: 2026-04-26

Drawn by: JB - Tracks Ecology

Projection: OSGB 1936 / British National Grid (EPSG:27700)

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APPENDIX C – PEAT DEPTH DATA

Sample ID	Peat Depth (cm)	Notes	Peat Condition	X	y
1	0	On old track	N/A	192450	779400
2	155	On edge of track, assumed floating track.	Modified	192450	779375
3	0	Disturbed ground next to track section which is probably founded.	N/A	192450	779350
4	80	Still deep on edge of area	Modified	192450	779325
5	0	Tree line on edge of road	N/A	192450	779300
6	0	Tree line on edge of toad	N/A	192450	779275
7	0	Edge of road on drain area	N/A	192450	779250
8	102	Edge of old track. Rushes. Grazing by deer	Modified	192475	779400
9	175		Modified	192475	779375
10	100	Small area of modified bog	Modified	192475	779350
11	0	Rocky outcrop with area of wet heath	N/A	192475	779325
12	190	Very localised deeper peat	Modified	192475	779300
13	0	No peat with bracken	N/A	192475	779275
14	5	Tufted hair grass and wet heath	Modified	192475	779250
15	0	No peat	N/A	192475	779225
16	105	Tufted hair grass and bog myrtle dominated.	Modified	192500	779400
17	0	Bedrock	N/A	192500	779375
18	5	Poorwet heath habitats with bog myrtle on hillock.	Modified	192500	779350
19	0	Rocky	N/A	192500	779325
20	5	Thin over bedrock	N/A	192500	779300
21	5	Rocky outcrops	N/A	192500	779275
22	0	No peat	N/A	192500	779250
23	112	Tufted hair grass and bog myrtle	Modified	192525	779400
24	0	Floating track	N/A	192525	779375
25	5	Edge of turning circle	Modified	192525	779350
26	10	Wet heath	Modified	192525	779325
27	35	Edge of hillock	Modified	192525	779300
28	50	Some sediment detected	Modified	192525	779275
29	0	No peat. Edge of wet collection area. Edge of track with boulders and mature birch	N/A	192550	779400
30	90	Edge of track	Modified	192551	779380
31	25	Edge of wet heath hillock	Modified	192550	779350
32	210	Tufted hair grass and wet heath edge	Modified	192550	779325
33	310	Edge of burn. Tufted Tufted hair grass dominated	Modified	192550	779300
34	75	Bare peat.	Actively eroding: flat bare	192575	779400
35	70	Edge of marshy grassland	Modified	192575	779375
36	180	Wet edge of marshy grassland	Modified	192575	779350
37	>320	Deep peat next to forestry. Deeper than 3.2m measuring capability.	Modified	192575	779325

38	210	On edge of peat cutting along fenceline	Modified	192575	779300
39	310	On fence line. Very deep peat. Deeper than 3.2m measuring capability.	Modified	192600	779400
40	320	Deep peat. Deeper than 3.2m measuring capability.	Modified	192600	779375
41	180	Sections of bare peat	Forested/Previously Forested	192600	779350
42	140		Forested/Previously Forested	192600	779325
43	320	Deep peat. Deeper than 3.2m measuring capability.	Forested/Previously Forested	192600	779300
44	50	Tufted hair grass tussocks next to burn	Modified	192600	779275
45	185	Tufted hair grass tussock dominated	Modified	192625	779425
46	184	Deep. Bare peat	Forested/Previously Forested	192625	779400
47	320	Deep peat. Next to floating track	Modified	192625	779377
48	130	Sections of bare peat	Forested/Previously Forested	192625	779350
49	140		Forested/Previously Forested	192625	779325
50	35	Possible obstructions. Multiple efforts, likely to be deeper.	Forested/Previously Forested	192625	779300
51	86	Next to fenceline	Modified	192650	779425
52	310	Very deep. Tufted hair grass dominated with heath some mosses. Deeper than 3.2m measuring capability.	Forested/Previously Forested	192650	779400
53	130	Edge of floating track	Modified	192649	779373
54	240	Bare peat	Forested/Previously Forested	192650	779350
55	110		Forested/Previously Forested	192650	779325
56	315		Forested/Previously Forested	192650	779300
57	160	Next to wet cut area. More semi-natural.	Modified	192675	779450
58	125		Modified	192675	779425
59	182	Edge of disturbed track area	Forested/Previously Forested	192675	779400
60	30	Marshy grassland along drain with deep pools	Modified	192675	779375
61	165	Grassy heath near old forestry and small drain/burn	Modified	192675	779350
62	315	Deep peat with wind thrown on	Forested/Previously Forested	192666	779326
63	140		Forested/Previously Forested	192675	779300
64	20		Modified	192675	779275
65	45		Modified	192700	779475
66	155	Stumps nearby	Forested/Previously Forested	192700	779450
67	180	Drier with stumps	Forested/Previously Forested	192700	779425
68	0	Track	N/A	192700	779400
69	30	Bare peat	Forested/Previously Forested	192700	779375

70	115	Bare peat	Forested/Previously Forested	192700	779350
71	120	In old windthrow	Forested/Previously Forested	192701	779321
72	0	Roadside scrub	N/A	192725	779500
73	105	Near fence	Modified	192725	779475
74	55	Area of wet marshy grassland	Modified	192725	779450
75	74	Drier higher peat away from track	Modified	192725	779425
76	205	Wet area with sphagnum	Forested/Previously Forested	192725	779400
77	65	Edge of sections of bare peat	Forested/Previously Forested	192725	779375
78	310	Deep with forestry stumps present	Forested/Previously Forested	192725	779350
80	0	Road edge	N/A	192750	779525
81	320		Modified	192750	779500
82	170		Forested/Previously Forested	192750	779475
78	105	Very wet	Modified	192750	779450
84	155	Wet track margins. Track probably holding back water.	Modified	192750	779425
85	32	Some bare peat. A lot of buried brash. Multiple samples attempted, potential for deeper than measured	Forested/Previously Forested	192750	779400
86	60	Edge of areas of bare peat.	Forested/Previously Forested	192750	779375
87	35	Within are of forestry stumps	Forested/Previously Forested	192750	779350
88	175		Modified	192775	779525
89	145	Some brash track layers felt	Modified	192775	779500
90	80	Wet marshy grassland	Forested/Previously Forested	192775	779475
91	155	Areas of disturbed and poss burnt ground nearby	Modified	192775	779450
92	65	Wet margins of track	Modified	192775	779425
93	135	Very wet areas with extensive sphagnum	Modified	192775	779400
94	135	B wet	Forested/Previously Forested	192775	779375
95	160	In tussocky marshy grassland next to drain. Forestry stumps present.	Forested/Previously Forested	192775	779350
96	320	Deeper than 3.2m measuring capability.	Modified	192800	779550
97	120	Marshy grassland developing on wet ground.	Modified	192800	779525
98	150	Wet marshy grassland	Modified	192800	779500
99	135	Wet marshy grassland. Some standing water	Modified	192800	779475
100	140	Disturbed bare ground. Fire?	Modified	192800	779450
101	110	Very wet margins of track	Modified	192800	779425
102	37	Drier area with old brash track. Several locations recorded.	Forested/Previously Forested	192800	779400
103	90	Brash	Forested/Previously Forested	192800	779375

104	65	Banks of drain	Forested/Previously Forested	192800	779350
105	130	Wet marshy grassland	Modified	192825	779500
106	116	Very wet. Surface water	Modified	192825	779475
107	15	In pooling water. Shallow soils	Modified	192825	779450
108	58	Wet margins of track	Modified	192825	779425
109	12	Brash over areas of shallow soils, but could be obstructions masking deeper peat.	Forested/Previously Forested	192825	779400
110	55	Close to floating track.	Modified	192850	779425
111	82	Additional sample in between features. Rose and tufted hair grass dominating.	Modified	192566	779397
112	133	On boundary in rushes along drain.	Modified	192844	779400
113	0	Hardstanding of track	N/A	192601	779424
114	0	Old track. Raised with scrub on banks	N/A	192650	779447
115	115	Site edge	Modified	192851	779448
116	120	V wet	Modified	192842	779476
117	65	Wet marshy grassland	Modified	192836	779499
118	95	Next to open wet area of drainage route	Modified	192824	779525
119	285	Near road embankment	Modified	192814	779548
120	135	Additional point near road margin	Modified	192777	779540
121	35	On banks of drain	Modified	192818	779377
122	25		Modified	192752	779343
123	20	Near drain. Lots of brash	Forested/Previously Forested	192725	779325
124	25		Modified	192676	779267
125	15		Modified	192691	779291
126	160	Next to river	Modified	192643	779284
127	80		Modified	192626	779281
128	0	Exposed bedrock	N/A	192486	779342
129	0	Exposed bedrock	N/A	192489	779353
130	0	Exposed bedrock	N/A	192494	779361

APPENDIX D – SURVEYOR CV

JAMES BUNYAN

DIRECTOR – TRACKS ECOLOGY LTD



TRACKS ECOLOGY

ECO - GIS - UAV

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PROFILE

I have over 20 years' experience working in the ecological sector, both in academia and commercial consultancies. In 2014 I set up Tracks Ecology Ltd to enable me to focus on a number of interests around the integration of technology in ecological consultancy and research. Today I provide a bespoke consultancy service incorporating a wide array of surveys for developments, forestry and nature recovery projects with a focus on using GIS, UAVs and wider technological applications.

EDUCATION

Biodiversity and Conservation, M.Sc.

University of Leeds, UK
Grade: Distinction. 2001 - 2002

Environmental Science B.Sc (Hons)

University of Birmingham, UK
Grade: 2:1 Hons. 1995 - 1998

EXPERTISE

- Ecological Survey & Assessment
- QGIS – data analytics & cartography
- UAVs for ecological applications
- Environmental applications of AI
- Integration of remote sensing data
- Harnessing emerging technology
- Clear and concise reporting

WORK EXPERIENCE

DIRECTOR

Tracks Ecology Ltd

2014
–
Present

Provision of high quality bespoke ecological and GIS services for projects of all sizes. Tracks Ecology Ltd offers pragmatic and ecologically responsible solutions to a range of sectors including construction, forestry and rewilding. Harnessing technological advances and novel approaches combined with traditional field techniques Tracks Ecology Ltd aims to provide a comprehensive range of services efficiently and effectively.

SENIOR CONSULTANT

Atmos Consulting Ltd

2010
–
2014

Management of ecological inputs for planning applications in relation to a large number of renewable energy schemes (wind and hydro) both large (Section 36) and small (FIT) across Scotland. Projects included ecological input to screening, scoping, EclA, Habitat Regulations Appraisal and Environmental Appraisal documents. Development of habitat and post construction management plans, peat restoration plans and licensed mitigation strategies.

SENIOR ECOLOGIST

Worcestershire Wildlife Consultancy

2008
–
2010

All aspects of ecological survey work were undertaken with the preparation, submission and implementation of numerous EPS licence applications (bats, great crested newts) along with a number of badger development licences. Production of tenders, client liaison, project management, marketing and administration along with providing training and support for colleagues.

KEY SKILLS _____

- Protected Species Surveys
- Ecological Impact Assessments
- CAA Approved UAV Pilot
- NatureScot EPS Licenses – Bats
- NatureScot EPS Licenses – GCN
- Skilled in QGIS
- Proficient in MS Office applications
- Qualified and insured UAV pilot
- Budget management (> £100K)
- Client liaison and management

INTERESTS _____



Rewilding



Photography



Cartography



Running

MEMBERSHIPS _____

**Chartered Institute of Ecology
and Environmental
Management (Full membership)**

ARPAS-UK

**The Association for
Geographic Information**

WORK EXPERIENCE _____ (CONTINUED)

POSTGRADUATE RESEARCH

2007

University of Bristol

2008

Research project focusing on predator-prey interactions within wildlife corridors in north eastern Belize. Project involved various tropical field research techniques including camera trapping, scat collection, surveys for signs of prey and carnivore species and small mammal trapping. All work was carried out within the remote tropical forests of NE Belize.

ECOLOGICAL CONSULTANT

2006

Land Care Associates, Birmingham

2007

Ecological surveys across both urban and rural landscapes involving Phase 1 and protected species surveys. Involvement in large-scale urban development focusing on regeneration and urban biodiversity improvement schemes across the UK.

RESEARCH ASSISTANT

2004

Wildlife Conservation Research Unit, Oxford University

2006

Research assistant working on a number of projects including behavioural ecology of badgers and population monitoring of small mammals. Position also involved extensive administrative and project management work.

PROJECTS _____

- **WILDCAT SURVEYS** – Survey design and implementation using over 80 camera traps within the Cairngorm Connect landscape to assess baseline populations of the Scottish Wildcat. (Client: Saving Wildcats partnership)
- **UAV MAPPING** – Acquisition and processing of over 5000 high resolution images for production of detailed 3D model as baseline model for seabird research, Orkney. (Client: School of Biological Sciences, University of Aberdeen)
- **DETAILED HABITAT MAPPING** – Use of UAV acquired aerial imagery and ground based habitat surveys to provide detailed 3D models of habitats. Outputs guided native woodland creation plans. (Client: Bidwells)
- **BAT SURVEYS, WIND FARM** – Survey design and data collection of bat activity with the use of 12 static detectors at proposed wind farm site in remote location in Scottish Highlands. (Client: ITP Energised)

MORE PROJECT EXAMPLES CAN BE PROVIDED ON REQUEST

REFERENCES



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