

Specification: Agglestone Mire Restoration – Year 2 project

Dorset Peat Partnership: As part of the Dorset Peat Partnership project the National Trust is undertaking the restoration of Agglestone Mire, near Studland, to restore natural dynamic processes.

Agglestone Mire: The Dorset Peat Partnership has identified this site for restoration of hydrological and natural processes. The catchment area has, in places, been disconnected from the adjacent floodplain area through a combination of historic drainage, incision and entrenchment. Hydrological assessments have been completed for this system and have informed project design.

The project is sub-divided into 4 distinct areas:

- i. **Upper mire:** The upper mire catchment has been partially drained into a single ditch that channels water off the mire. The drainage has reduced the floodplain connectivity and associated water table. This has disrupted the natural hydrological system of the wet heath and mire habitat making the site much drier and less capable of forming peat, and extremely vulnerable to the impacts of climate change. Some works were undertaken in February 2024, for completion within this project.
- ii. **Incised gully:** At the bottom end of the upper Agglestone mire is a rapid drop in level to a deeply incised section of channel, adjacent to a public bridleway. The depth of this gully, extent of mature woodland either side of it and the position of the bridleway make stage zero restoration impractical, but slowing the flow here will be beneficial to the hydrology of the system as a whole and will better protect the features installed downstream.
- iii. **Wet woodland reconnection:** The gully opens onto flatter ground downstream, forming a defined channel within deciduous woodland. Storm evidence through the adjacent woodland reflects the natural flow path of the modified channel. Reconnecting natural flow paths will slow the flow, allowing water to be absorbed and retained for longer; and make it possible to redirect water onto the floodplain earlier than if this is not included in the lower mire site.
- iv. **Lower mire:** At the confluence of Coronella & Agglestone mires, sallow growth within the floodplain and dominant Molinia tussocks (up to 1m high) contribute to the drying of the mire, with established drainage channels at either side of the floodplain.

The aim of the project: To reconnect drained mire habitat, slow the flow and raise water levels across the mire all year round, which will favour Sphagnum over Molinia and reinitiate peat formation.

The objectives are to:

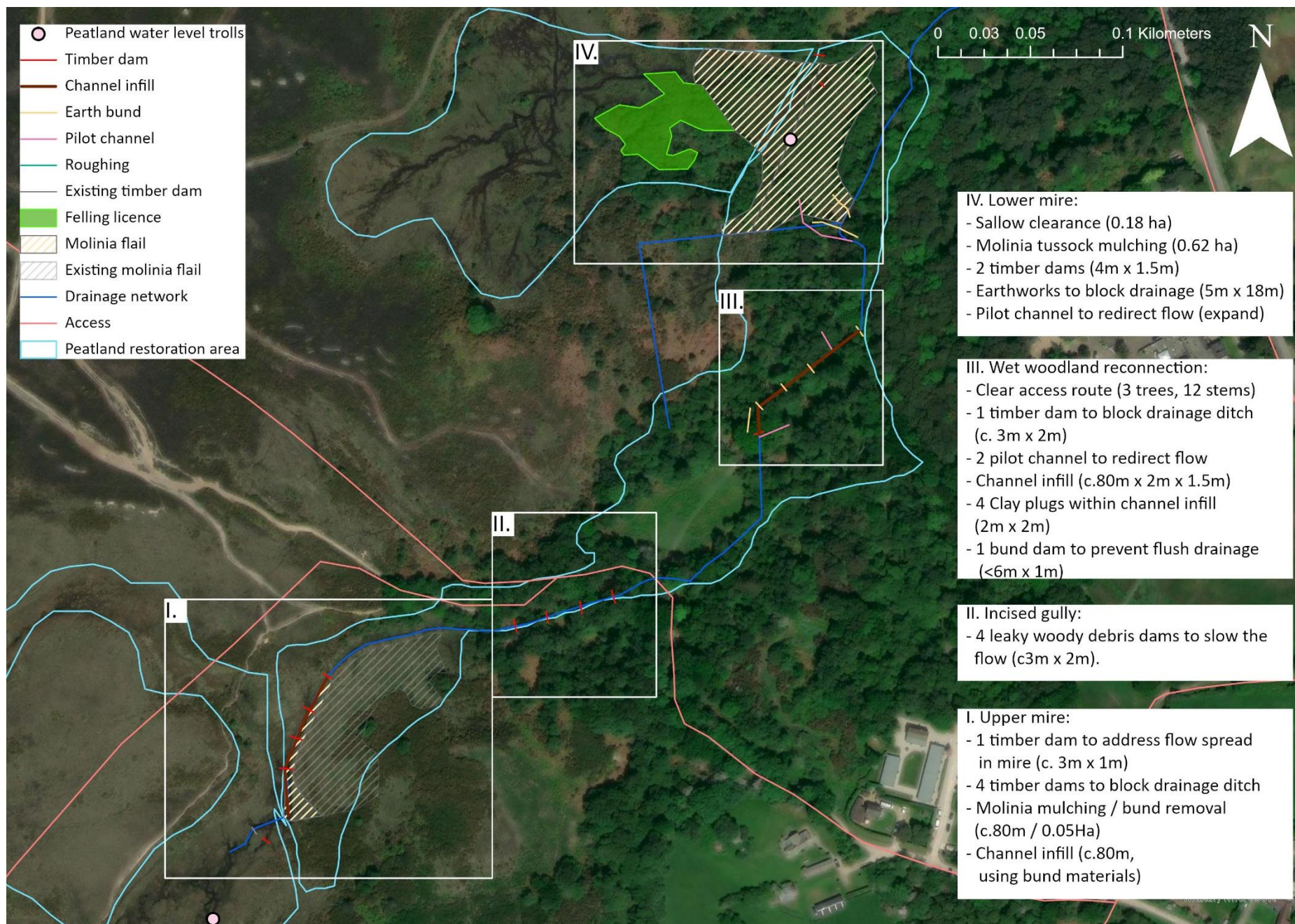
- Remove vegetation from the floodplain to ground level, including sallow trees and Molinia tussocks;
- Block drainage channels with timber, woody debris and clay soil dams to slow the flow;
- Excavate pilot channels and infill drainage ditches to redirect water onto natural flow pathways;

Considerations:

- Risk of unexploded ordnance (UXO) due to World War 2 training at Studland.
- Higher Tier Countryside Stewardship (LH1 – managing heathland)
- The extent of the project site falls within Godlingston Heath SSSI habitat designation.
- Open access land
- Protected species present, including reptiles, breeding birds, and invertebrates.
- Historic Environment features assessment indicates a non-designated prehistoric activity site (MDO7949) within the restoration area.

Additional information

- Measurements are estimated. The chosen contractor will need to check measurements on site.
- Grid references mapped here: [Grid Reference Finder](#)
- Contractor to supply all materials.
- Please complete the attached Bill of Quantities: BoQ_AgglestoneY2_2024



Section	Tasks (To be discussed on site visit. Also see methodology and photos below)	Grid reference	Ha/no/m
I. Upper mire	<p>(a) 1 x leaky timber dam within mire channel, to address where previous damming has spread the flow.</p> <p>(b) 4 leaky timber dams to stabilise/support channel infill.</p> <p>(c) Molinia mulching / bund removal (upper section only). Channel infill, using bund materials.</p>	<p>a) SZ 02610 83013</p> <p>b1) SZ 02620 83051 b2) SZ 02626 83068 b3). SZ 02633 83083 b4) SZ 02643 83102</p> <p>(c) From SZ0262183026 to SZ0264383102.</p>	<p>(a) 4m wide x 1m high</p> <p>(b) 3m wide x <2m high</p> <p>(c) 80m reach (0.05 ha)</p>
II. Incised gully	(a) 4 x woody debris dams	<p>a1) SZ 02744 83128 a2) SZ 02761 83134 a3) SZ 02780 83139 a4) SZ 02797 83144</p>	(a) 4 x 3m wide x 2m high
III. Wet woodland reconnection	<p>(a) Access clearance</p> <p>(b) 1 x Solid timber dam to block channel</p> <p>(c) Create pilot channel to redirect water into woods</p> <p>(d) 4 x clay plugs to stabilise channel infill</p> <p>(e) Infill channel. Material to be discussed on site.</p> <p>(f) 1 x pilot channel / crossing – to promote water flow across the filled channel, onto the next section of floodplain.</p> <p>(g) 1 x earth bund to prevent a wet flush draining towards the channel.</p>	<p>(a) SZ 02871 83225 (b) SZ 02877 83233 (c) as above (d) From SZ0287683246 to SZ0293183288 (e) From SZ0287783233 to SZ0293183288 (f) SZ 02916 83279 (g) SZ 02870 83237</p>	<p>(a) Clear 3 trees (<12 stems)</p> <p>(b) 3m wide x 2m high</p> <p>(c) ~</p> <p>(d) c.2m wide x 2m high</p> <p>(e) c.80m (c.2m wide x 1.5m high)</p> <p>(f) ~</p> <p>(g) <6m reach x 1m (50cm above, 50cm below surface).</p>
IV. Lower mire	<p>(a) Sallow clearance</p> <p>(b) Mulch Molinia tussocks (in two stages)</p> <p>(c) 2 x leaky timber dams in drainage channel</p> <p>(d) 2 x earth bunds to block drainage channel</p> <p>(e) Pilot channel to redirect flow</p>	<p>(a) SZ 02825 83407 (centre) (b) SZ 02898 83399 (centre) (c1) SZ 02909 83438 (c2) SZ 02911 83422 (d) SZ 02920 83344 (e) From SZ0292383338 to SZ0289883359.</p>	<p>(a) 0.18 ha</p> <p>(b) 0.62 ha</p> <p>(c) 4m wide x 1.5m high</p> <p>(d) 5m wide</p> <p>(e) Expand natural pilot</p>

Suggested methods:

Sawn timber dams:

- Timber dams are to be constructed from sawn untreated larch boards or similar agreed timber. Contractors are responsible for assessing the exact requirements on site at each location, but suggested board dimensions are typically <4m long, with a recommended minimum thickness of 100mm unless otherwise agreed with the site managers.
- The boards are to be placed across the channel at right angles to the flow and must extend at least 1m either side into the channel bank and be dug into the channel bed by at least 400mm. This is to prevent undercutting and erosion to the dam edges.
- The boards must be at least 200mm proud of the channel edges to encourage water out and away from the channel.
- Boards are to be placed edge to edge, horizontally level and constructed with a 25mm gap between the horizontal boards to reduce the amount of pressure exerted on the dams when there are differentials in water levels upstream and downstream of the structure.
- Notches should be cut out of the top edge of the finishing board – to be agreed with the site managers.
- The dam structure should then be secured with vertical larch posts at 1m spacings and secured with M10 coach bolts to the vertical boards.
- Posts should be pointed and driven into the channel until submission.

Leaky woody debris dams – natural timber:

- Leaky woody debris dams are to be constructed from trees that are marked on site and windfall. Harder timber should be used in preference to softer wood.
- Trees are to be straight felled and cut into suitable length sections to suit the individual dam locations. This is anticipated to be lengths of around 3-4m.
- Low ground pressure machine with wide tracks should be used if required to move timber to the location of the dam.
- Sections should be placed into the channel at a right angle to the flow and be securely notched into the banks either side by no less than 750mm.
- Sections of timber should form a secure matrix which will slow the flow of water adequately, trap debris and some sediment but also permit some flow of water and not block the channel entirely.
- The structure should be securely pinned front and back by driven pointed stakes driven into the channel bank to submission.
- The structure should be constructed from the bed of the channel to a finished height of 175mm above the channel banks.

Molinia clearance / squashing tussocks:

- Areas identified for clearance will be clearly marked on site prior to commencement.
- The works are to be completed using an ultra-low ground pressure machine with mulching attachment and brushcutter, depending on access.
- All Molinia identified for removal must be cut to ground level as agreed with the site manager.
- All arisings are to be left in-situ.
- The identified area is to be carefully 'tracked in' using an ultra-low ground pressure machine with wide tracks (using bog mats if necessary due to ground conditions) in order to compress the tussocks together and slow the flow of water through this area.

- The machinery chosen by the contractor is to be approved by the site manager in advance of commencing this activity and will be carefully monitored during the work.

Tree and low scrub clearance:

- Areas identified for clearance will be clearly marked on site prior to commencement.
- The works are to be completed using motor-manual techniques i.e. chainsaws and brush-cutters fixed with appropriate blades.
- All trees and scrub identified for removal must be cleanly cut as low to its base as possible and below any side growth.
- Where the stem is protruding from a tussock or mossy tump the stem must be exposed as close to its base as possible by pushing the moss down or pushing the tussock aside to permit cutting at its base.
- Tree trunks can be used to create leaky woody debris dams. Brash to be removed from the wet mire habitat (to minimise nutrient inputs) and stacked on higher ground, as identified by site managers.. Tops to be mulched to reduce volume.

Site photos:

Photographs have been provided in reference to the distinct areas of work as described, captured in April 2024. A site visit is strongly recommended in order to support the provided information.



1. Upper mire: location proposed for leaky timber dam – where flow has spread from previous damming



2. Upper mire: bund to be removed and adjacent channel to be infilled



3. Incised gully: ditch to be blocked with 4 x woody debris dams



4. Wet woodland reconnection: Trees to be cleared to gain access & for pilot channel works



5. Wet woodland reconnection: Proposed location of the reconnection pilot channel from ditch



6. Wet woodland reconnection: Channel to be dammed and infilled



7. Wet woodland reconnection: Proposed location for earth bund to damflush draining towards the channel.



8. Lower Mire: Sallow and tussocky Molinia habitat to be cleared



9. Lower Mire: Channel to be dammed with 2 x timber dams



10. Lower Mire: Existing pilot channel to be expanded as required.



11. Lower Mire: Proposed location for earth bunds to support drainage blockage