Specification: Swan Brook Wetlands – NFM_ID_LW_000082

Environment Agency Natural Flood Management Programme Phase 2:

Westwood North, Godlingston Manor Farm, Spyway 2, Spyway Farm & Langton Matravers:

The Swanbrook catchment covers 15.2 km2. Fed by springs rising in the Wealden beds and by ephemeral streams on the limestone plateau of South Purbeck, multiple tributaries converge upstream of Swanage town, where it discharges into the sea. The Swanbrook Wetlands NFM project is funded by a grant from the Environment Agency and Defra. It comprises a range of Natural Flood Management (NFM) measures to be installed across 6 National Trust tenanted farm project sites, interventions on five of the sites will be delivered in 2025. The overall aim is to increase water retention in the headwaters and reduce flood risk downstream. NFM measures proposed are specific to each location and include low earth bunds, in-field scrapes, roughening features, leaky dams and areas of floodplain reconnection. Multiple strategic benefits are expected.

The project is sub-divided into 5 distinct sites:

i. **Westwood North:**
ii. **Godlingston Manor Farm (North of Farm only, north of Washpond Lane):**
iii. **Spyway 2:**
iv. **Langton Matravers**
v. **Spyway Farm**

The aim of the project: reduce local flood risk using NFM by reducing peak flows and increasing lag-times in all Swan Brook tributaries where NFM is undertaken. This will reduce flooding incidents in Langton Matravers village and effectively mitigate impacts of climate change by delaying or preventing the need for more expensive capital works to upgrade the existing Flood Storage Area in Swanage. It will also provide wider benefits to the environment, nature, and society: by creating 11.86 ha of new seasonal and permanent wetland habitats with measurable biodiversity gains and improved ecological connectivity across the landscape; improve water quality in all tributaries in terms of key chemical, physical and biological indices; reduce erosion and transport of fine sediment into the lower reaches of the Swan Brook, reducing the need for desilting maintenance.

The objectives are to:

- Construct low earth bunds, in-field scrapes and roughening features, which will act to store and slow the flow of ephemeral surface runoff, allowing water to soak into soils, reducing flash flooding.
- Construct leaky dams which will be used to slow the flow within existing farm drainage networks and create better water storage. Where water storage and associated localised flooding is incompatible with adjacent land use, low X-shaped leaky dams will be used in ditches to merely slow the flow.
- Reconnect floodplains reconnection and restoring disconnected flow pathways by infilling/ reprofiling incised channels and redirecting water into low-lying land. This will restore larger areas of wetland habitat and retain more water for longer. Water will be reconnected to existing drainage systems before leaving National Trust land, so as not to negatively impact other landowners or land users within the community.

Considerations:

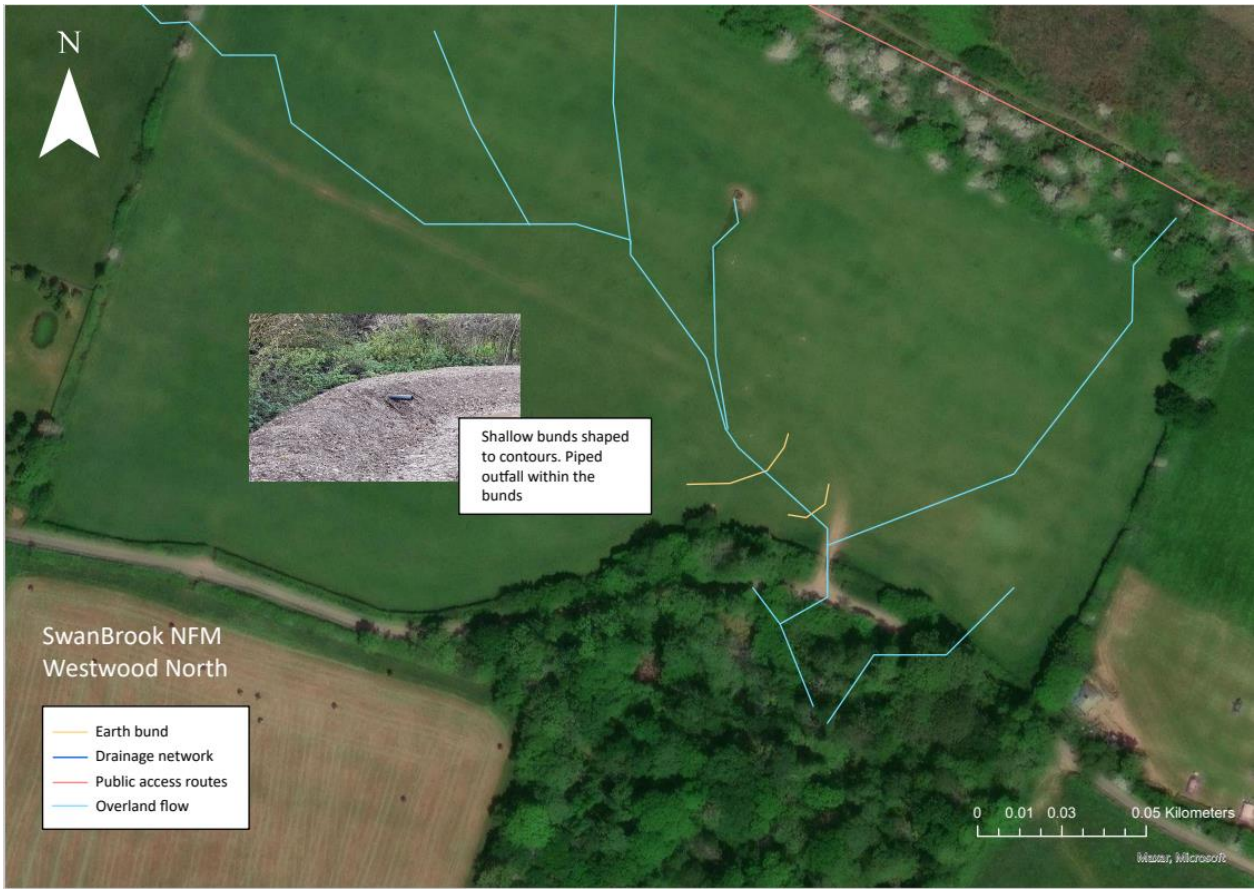
- All sites are within the Dorset National Landscape
- Rights of way - All necessary consents have been agreed with the Dorset Council Senior Ranger

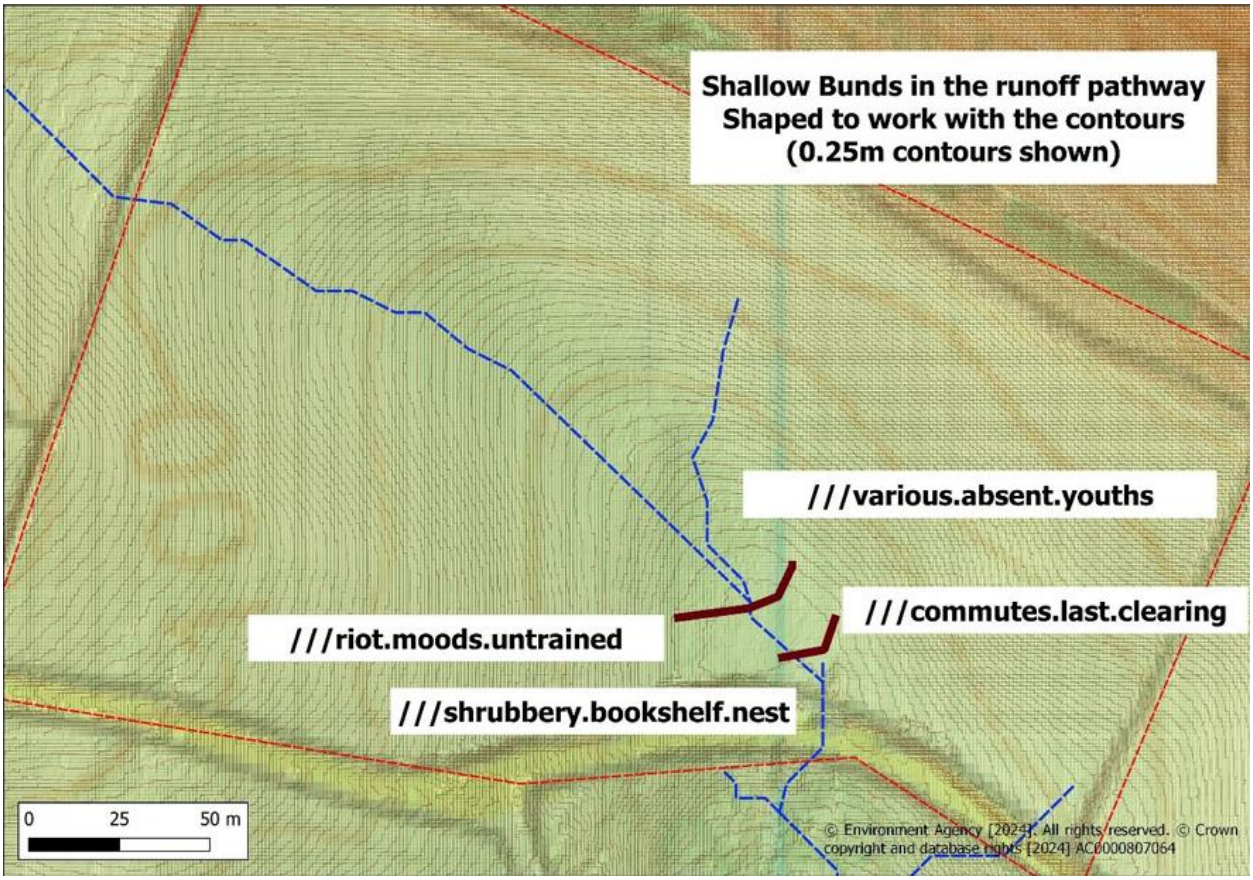
- Protected species present, including Bluebells and other woodland flora at Godlingston Manor Farm. NT ecology staff will be available as an ecological clerk during works.
- No evidence of Water Voles found at GMF during surveys in 2024 and to date in 2026. NT ecology staff will be available as an ecological clerk during works.
- No Invasive non-native species have been detected. All personnel on site will need to ensure that they follow Clean, Check, Dry campaign advice to ensure that spread of non-native plants or aquatic animals is not imposed within our wet habitats, through a daily cleaning protocol on shoes, and equipment.
- Buried services – Line Search Before You Dig enquiries have been made and no buried services have been identified.

Additional information

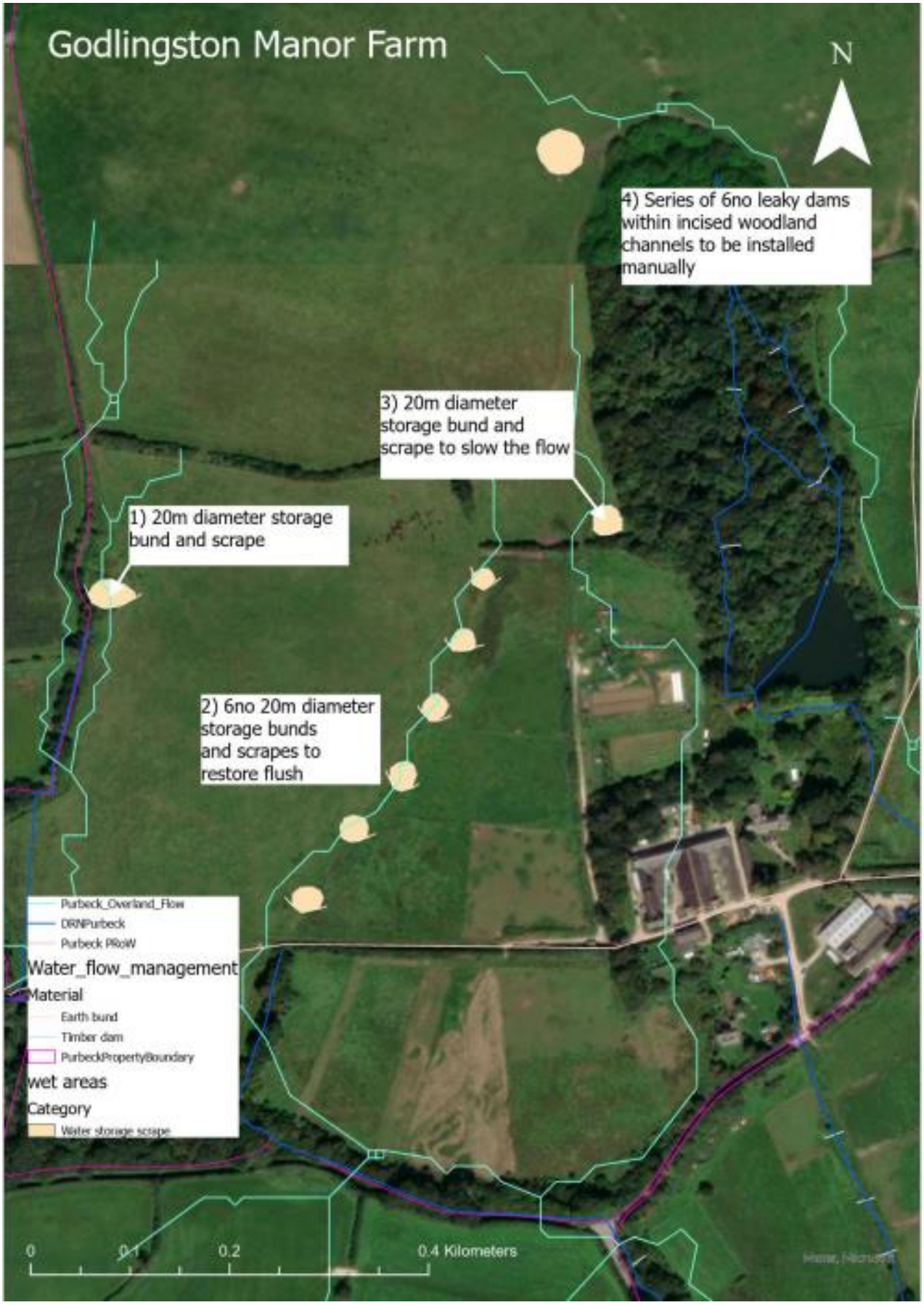
- Measurements are a guide. The chosen contractor will need to check measurements on site.
- Contractor to supply all materials. Natural materials to be sourced where possible.
- Please complete the attached Bill of Quantities

Westwood North

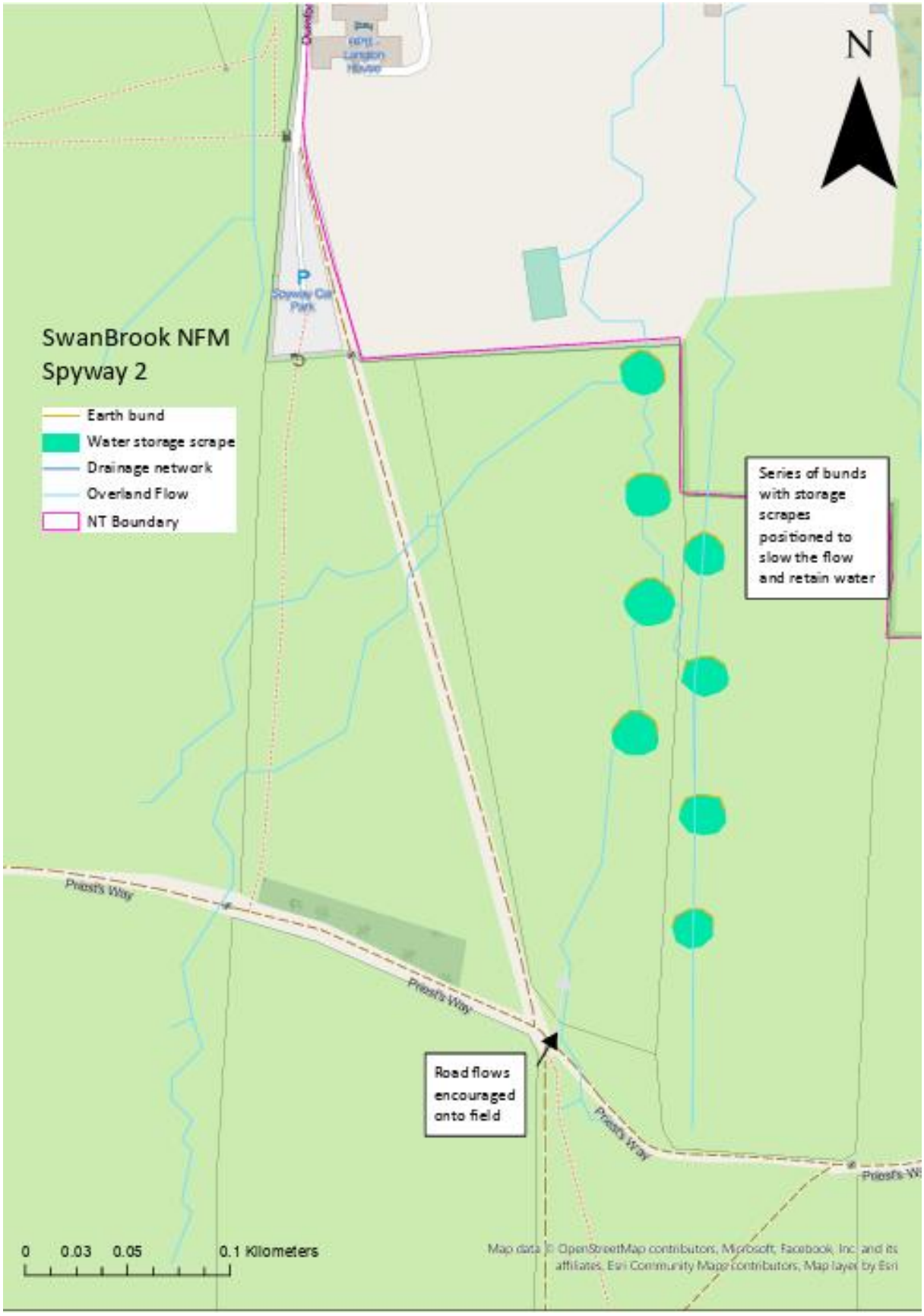




Godlingston Manor Farm


Godlingston Manor Farm
N
4) Series of 6no leaky dams within incised woodland channels to be installed manually
3) 20m diameter storage bund and scrape to slow the flow
1) 20m diameter storage bund and scrape
2) 6no 20m diameter storage bunds and scrapes to restore flush
Purbeck_Overland_Flow
DRNPurbeck
Purbeck PRoW
Water_flow_management
Material
Earth bund
Timber dam
PurbeckPropertyBoundary
wet areas
Category
Water storage scrape
0
0.1
0.2
0.4 Kilometers

Spyway 2


N
SwanBrook NFM
Spyway 2
Earth bund
Water storage scrape
Drainage network
Overland Flow
NT Boundary
Series of bunds with storage scrapes positioned to slow the flow and retain water
Road flows encouraged onto field
Pissfs Way
0 0.03 0.05 0.1 Kilometers
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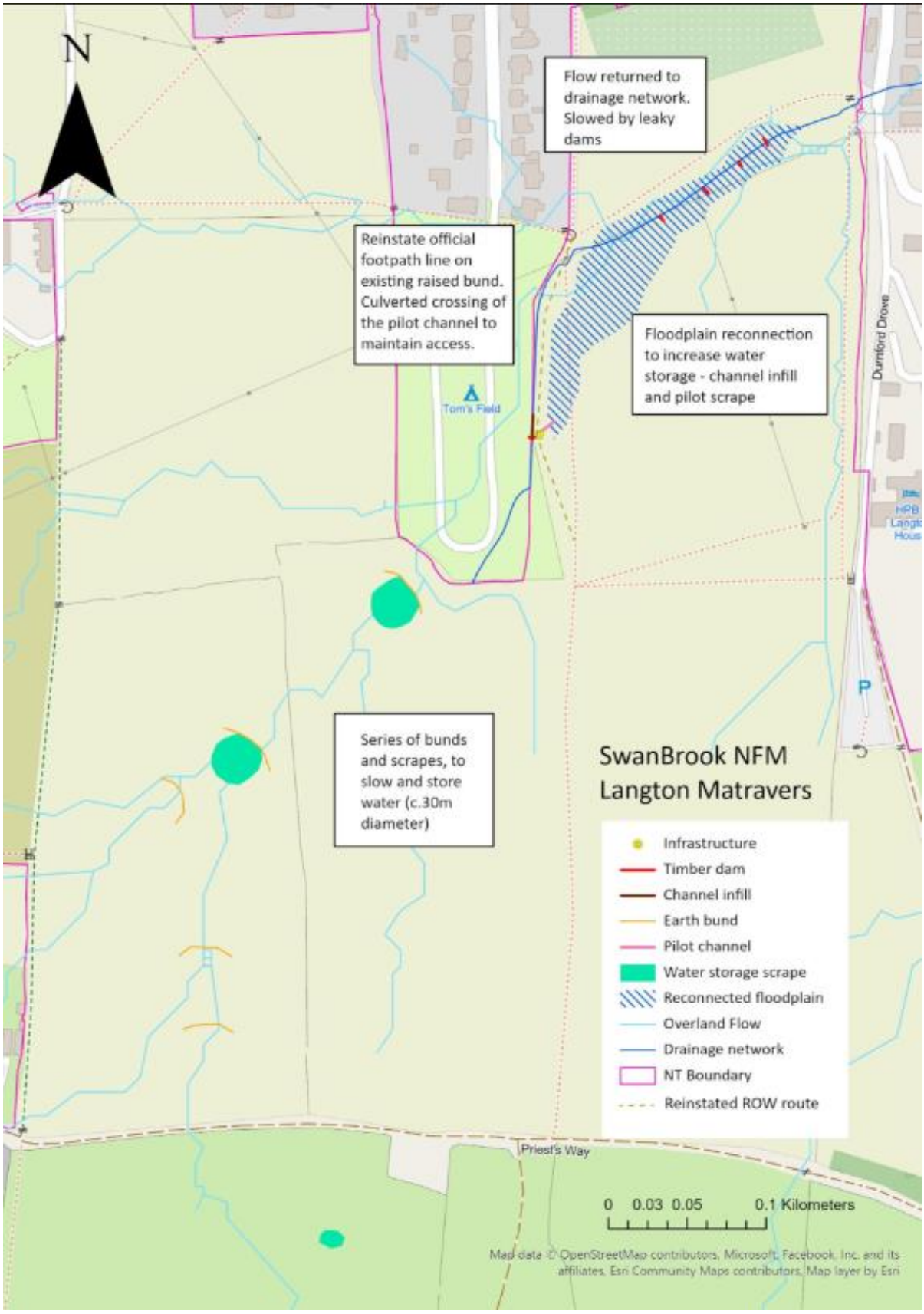
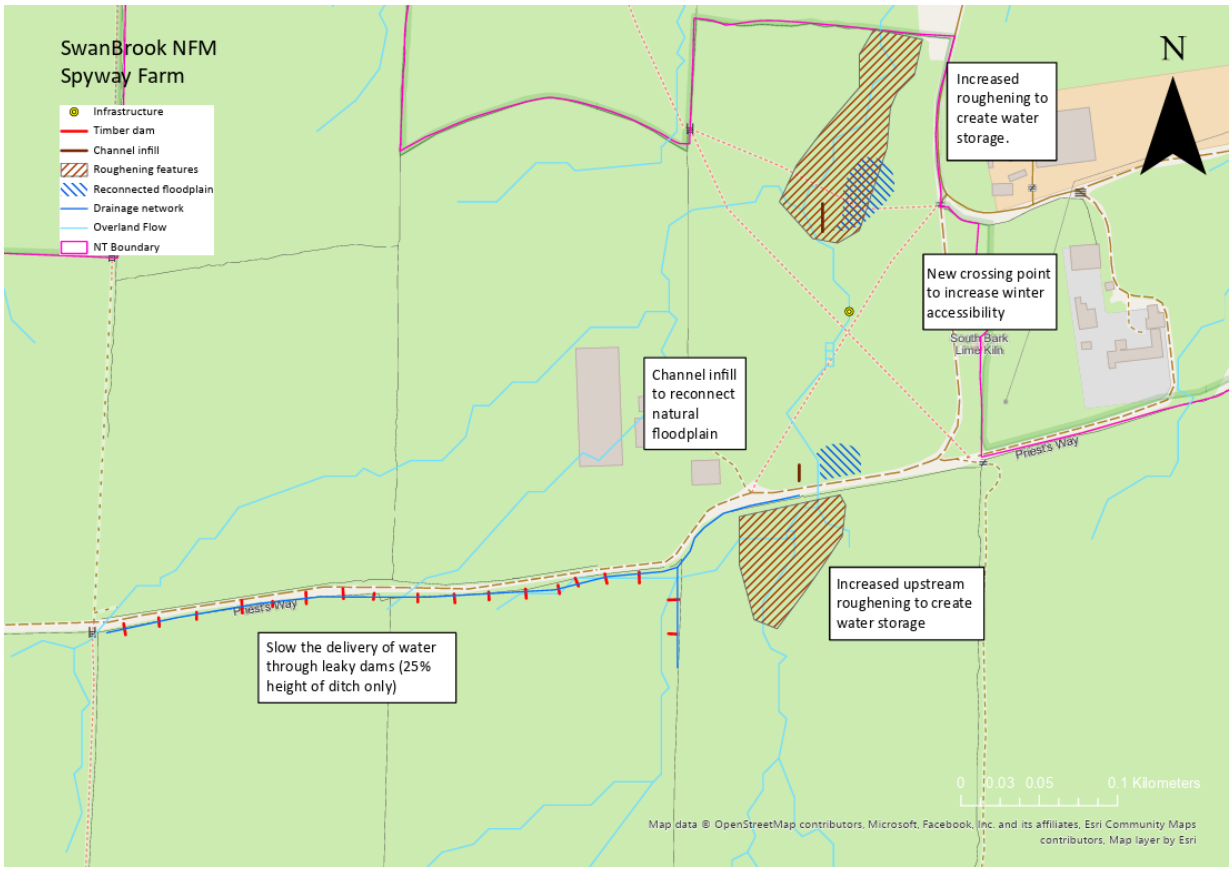
Langton Matravers



Spyway Farm


SwanBrook NFM
Spyway Farm
Infrastructure
Timber dam
Channel infill
Roughening features
Reconnected floodplain
Drainage network
Overland Flow
NT Boundary
N
Increased roughening to create water storage.
New crossing point to increase winter accessibility
South Bark Lime Kiln
Channel infill to reconnect natural floodplain
Priests Way
Priests Way
Increased upstream roughening to create water storage
Slow the delivery of water through leaky dams (25% height of ditch only)
0 0.03 0.05 0.1 Kilometers
Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri

Site	**Tasks** (To be discussed on site visit. Also see methods below)	**Grid reference (approx.)**	**Ha/no/m**
I. Westwood North	(1) Piped bund (2) Piped bund	(1) SY 98991 81382 (2) SY 99010 81369	(1) 35m diameter, 0.5m high bund (2) 15m, 0.5m high bund
II. Godlingston Manor Farm (North)	(1) Bund & scrape combination (2) Bund & scrape combination (3) Bund & scrape combination (4) X-shaped leaky dams	(1) SZ 01118 80383 (2) SZ 01351 80400 - SZ 01235 80178 (3) SZ 01427 80438 (4) Centred on SZ 01532 80492	(1) 35m, scrape 30cm deep (2) 6no 20m, scrape 30cm deep (3) 20m, scrape 30cm deep (4) 6no Channel dimensions: a. 2.3m (w) x 0.4m (d) b. 1.4m (w) x 0.4m (d) c. 1.5m (w) x 0.5m (d) d. 1.6m (w x 0.3m (d) e. 2.4m (w) x 0.4m (d) f. 2.5m (w) x 0.5m (d)
III. Spyway 2	(1) Bund and scrape combination	(1) SY 99907 78223 - SY 99939 77948	(1) 8no bunds 20m diameter & 30cm height. Scrape 30cm deep
IV. Langton Matravers	(1) Bunds (2) Bunds and scrape combination	(1) SY 99298 78203, SY 99334 78109 & SY 99329 78066 (2) SY 99338 78216 & SY 99449 78334	(1) 3no bunds 30m diameter

	(3) Channel infill (4) Pilot channel (5) Leaky dams (6) Culverted crossing of pilot channel	(3) SY 99538 78447 (4) SY 99542 78449 (5) SY 99602 78565, SY 99632 78586, SY 99665 78608, SY 99691 78623 (6) Approx SY 99542 78449	(2) 2no bunds 30m diameter. Scrape 30cm deep (3) 1no. Approx 3m length of ditch (4) 1 no (5) Ditch dimensions: a. 2m (w) x 0.7m (d) b. 2.5m (w) x 0.7m (d) c. 1.8m (w) x 0.7m (d) d. 1.4m (w) x 0.5m (d) (6) Council specification (see below)
V. Spyway Farm	(1) Leaky dams	(1) SZ 00212 77850 - SZ 00568 77854	(1) 18no. Ditch dimensions (width x depth) a. 1.5m x 0.4m b. 1.2m x 0.3m c. 1.3m x 0.4m d. 1.3m x 0.3m e. 1.3m x 0.3m f. 1.2m x 0.5m g. 1.7m x 0.3m h. 1.1m x 0.4m i. 1.6m x 0.4m

	(2) Roughening features (3) Roughening features (4) Channel infill (5) Culverted crossing	(2) SZ 00651 77930 - SZ 00641 77866 (3) SZ 00707 78230 - SZ 00665 78121 (4) SZ 00660 77947 & SZ 00665 78121 (5) SZ 00674 78064	j. 1.6m x 0.4m k. 1.3m x 0.4m l. 1.1m x 0.4m m. 1.1m x 0.7m n. 1.2m x 0.5m o. 1.1m x 0.5m p. 1.7m x 0.5m q. 1m x 0.2m r. 1m x 0.2m (2) 0.25ha (3) 0.75ha (4) 2no (5) Council specification (see below)

Suggested methods:

Leaky woody debris dams

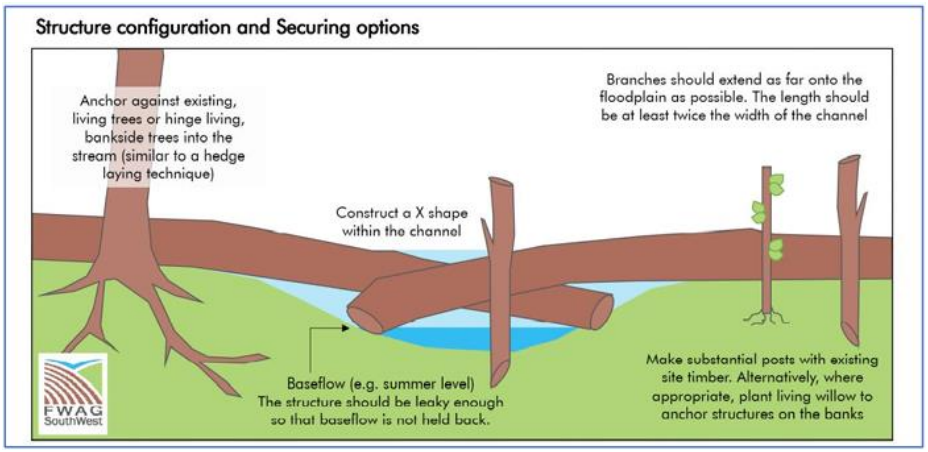
- Low ground pressure machine should be used if required to move timber to the location of the dam. Avoid access through the wettest areas. Tracking and turning to be minimised. All routes to be agreed and walked before start of works. Walkover and toolbox talk with site managers/supervisers and key operatives identifying hazards and sensitive areas. Matting will need to be used if required.
- 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 X-shaped leaky dam design is proposed to minimise scour. By ensuring environmentally friendly procedures during the installation of dam structures (eg minimising plant access), additional mobilsation of sediment during works will be limited.
- No plastic twines or fixings will be used in construction.

Leaky woody debris dams – Godlingston Manor Farm

- Dams will need to be constructed by hand, using materials sourced within the woodland, due to the sensitive and inaccessible nature of the habitat

Leaky woody debris dams - Spyway Farm

- The leaky woody debris dams will be installed manually.
- Works will be undertaken using a chainsaw and logs manually manoeuvred into place.
- Any fixings will be manually installed.
- The approach to installation will be:
    - Source natural timber to bring to site
    - Secure the trunk (s) with stakes made from local durable wood, flat to the bed of the channel, to create a leaky structure which can be overtopped.
    - The height of the dam should be no more than 25% of the ditch height;
    - Stakes securing the tree should be on the downstream side, angled so the top of the stake is pointing upstream and >0.1m above the top of the felled tree.



Bunds & scrapes

- The slope of the sides should be less than 1 in 4. The base of the bund should be at least three to four times its height.
- It is best to construct a bund when soil conditions are dry. This will a) reduce structural damage to the soil caused by heavy machinery, and b) allow the bund to stabilise.
- Key in the base to the existing ground to prevent slumping or movement
- Build up the soil in 15 cm layers, compacting each layer as you go
- Bunds constructed from material taken from upstream (the associated scrape or a seperate borrow 'pit')
- If the bund/scrape extends over an existing electric fence line, the fence posts/line will need to be repositioned to respect the scrape/bund as part of the works

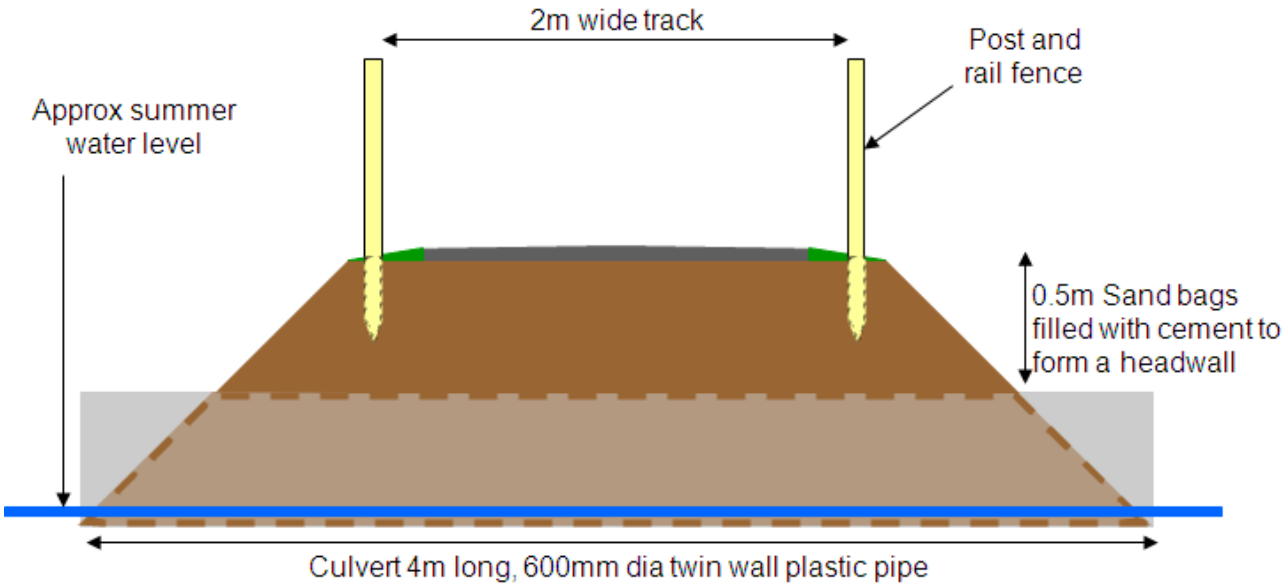
Roughening features – Spyway Farm

- 1ha of surface roughening = c.100no tree boles/logs located to create baffles across the flow pathway
- Diameter and length of tree boles to use on site. Dependent on materials. Min 3m long; minimum 20cm diameter, greater diameter preferred.
- Stakes - to cross pin the 'tree boles'

Stage Zero river restoration project on the Holnicote Estate | © National Trust Images/Barry Edwards

Culverted crossing

- Culverted crossings should be built to the Dorset Council specification supplied below
- They will allow access to remain open throughout the winter/periods of heavy rain
- The length of the crossings will need to be estimated by the contractor
- Stone used must be crushed Dorset Limestone, sourced locally


2m wide track
Post and rail fence
Approx summer water level
0.5m Sand bags filled with cement to form a headwall
Culvert 4m long, 600mm dia twin wall plastic pipe