

# West Penwith Habitat Surveys: Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) (survey area 51 (part) – 2022)

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# West Penwith Habitat Surveys: Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) (survey area 51 (part) – 2022)

Mark Beard



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## Project details

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## Further information

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## West Penwith Habitat Surveys: Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) (survey area 51 (part) – 2022)

Vegetation survey:	Mark Beard & Alex Gilroy
Report compiled by:	Mark Beard
Dates surveyed:	30/03/2022 & 17/06/2022

## General Information

### Location

Site name/ No.	Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) / Site 51 (part)
County	Cornwall
Parish	Ludgvan / Madron
Central OS Grid Ref	SW 4904 3505 / SW 4833 3486 / SW 4810 3553 / SW 4795 3528
Natural England Area Team	Devon, Cornwall & Isles of Scilly
National Character Area	West Penwith (No. 156)

### Summary description

Area	10.58 ha
Altitude	170m – 215m A.O.D.
Aspect	moderate slopes, south-easterly / steep-sided disused spoil tip
Drainage	Predominantly dry / seasonally wet in some areas

Survey area 51 Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery was originally surveyed in 2012 and 2013 by Cornwall Environmental Consultants and Hewins Ecology respectively (commissioned by Natural England). Those surveys (combined) covered an extent of some 81.46 ha but omitted four smaller but contiguous areas at Higher Trenowin, Gulval, the former quarry spoil tip north-west of Tonkins Downs and Baker's Pit, all forming part of the same management / ecological unit. These smaller areas were surveyed in 2022 and are the subject of this report (spoil tip north-west of Tonkins Downs surveyed 17/06/2022; all other areas surveyed 30/03/2022).

### Access

Access to Higher Trenowin is via a private farm access lane. Access to Gulval is via a bridleway/access track from Castle Gate. Access to the spoil tip near Tonkins Downs is via Castle an Dinas quarry (with permission only) or via public rights of way from Chysauster or Tonkins Downs. Access to Baker's Pit is via a public footpath from the nature reserve parking area at Tredorwin.

The spoil tip near Tonkins Downs has steep and uneven terrain and much impenetrable vegetation growth meaning that access on foot on 17/06/2022 was limited to the central access track and an informal footpath running along the north-west edge. Observations were also made, however, from adjacent land to the south-west (Great Downs) and north-

east (Baker's Pit Nature Reserve/ Noon Digery) on 30/03/2022. Recent aerial photography was also used to help map this area.

## Tenure

Land at Higher Trenowin is private land; land at Baker's Pit is owned by Cornwall Wildlife Trust; land at Gulval and the former spoil tip near Tonkins Downs are owned by Cornwall Council and managed by Cormac, though the former is part of an agricultural tenancy. Surveys were carried out with the permission of the landowners / tenants / quarry managers.

## Survey methodology

The sites were surveyed by a 'walk-over' survey during which observations of the habitats present were made. For each distinct stand of vegetation observed a species list was compiled with an associated estimate of frequency based upon the DAFOR-scale and the most likely vegetation community type of the National Vegetation Classification (NVC) (Rodwell, et. al., Volume 1, 1991, Volume 2, 1991, Volume 3, 1992, Volume 5, 2000) was assigned. This community assignment was implied, based upon a working knowledge of the NVC by the surveyors, and is not based upon an analysis of quadrat data. As such the full NVC methodology has not been applied. Nevertheless, the experience of the surveyors in the field is considered sufficient for the implied NVC communities to be reliable for the purposes of this survey.

## Biological description

### Habitats

The survey areas support mosaics of lowland heathland, lowland dry acid grassland, improved and semi-improved grassland and scrub/underscrub habitats. Each habitat is discussed in turn below.

#### H4 *Ulex gallii* – *Agrostis curtisii* heath

Areas at Gulval and at Baker's Pit were occupied by heathland vegetation characterised by *Ulex gallii*, *Erica cinerea*, *Calluna vulgaris* and *Molinia caerulea* and showed a strong affinity to H4 *Ulex gallii* – *Agrostis curtisii* heath. The vegetation was atypical of the published NVC as *Agrostis curtisii* was restricted to path edges at Gulval. No sub-community was assigned. Heath vegetation at the former spoil tip at Baker's Pit was in an intimate mosaic with underscrub and acid grassland habitats.

The sides of the track into the centre of the spoil tip near Tonkins Downs also supported a narrow band of heath vegetation with affinities to H4 heath; these areas were too narrow to map.

#### H8 *Calluna vulgaris* – *Ulex gallii* heath

An area on the south-western side of the spoil tip near Tonkins Downs was observed from adjacent land, characterised by *Erica cinerea*, *Calluna vulgaris* and *Ulex gallii*. Due to difficulties of access, this area could not be reached on foot meaning a more complete species list could not be made.

#### M16 *Erica tetralix* – *Sphagnum compactum* wet heath

Towards the northern end of the spoil tip near Tonkins Downs, adjacent to an access track and surrounded by scrub, is a small area of wet heath vegetation (O.S. grid ref SW 4788 3544). Measuring just a few meters across this vegetation is characterised by *Erica tetralix*, *Sphagnum* spp., *Molinia caerulea*, *Carex pulicaris*, *C. echinata* and *C. demissa*. The species of *Sphagnum* could not be identified in the field. The absence of *Calluna vulgaris* and the diversity of sedges (*Carex* spp.) is atypical of the published NVC. Nevertheless, there is a strong affinity with M16 wet heath. Unusually, this small area is also characterised by the neophyte *Sisyrinchium californicum*; naturalised in some locations, this species is not believed to be invasive in nature.

#### **U4 Festuca ovina-Agrostis capillaris-Galium saxatile grassland**

Areas at Gulval and at Baker's Pit were occupied by acid grassland, characterised by *Agrostis capillaris*, *Festuca rubra*, *Luzula campestris*, *Rumex acetosella* and *Viola riviniana* and showed a strong affinity to U4 *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland. The vegetation was atypical of the published NVC as *Festuca ovina* was only rarely observed whilst *Galium saxatile* was not seen; the latter may be explained by the early season (March). No sub-community was assigned. Acid grassland vegetation at the former spoil tip at Baker's Pit was in an intimate mosaic with underscrub and heath vegetation.

#### **W25 Pteridium aquilinum - Rubus fruticosus underscrub**

Areas at Gulval, Baker's Pit and the spoil tip NW of Tonkins Downs were occupied by underscrub, characterised by *Pteridium aquilinum* and *Rubus fruticosus* agg. and showed a strong affinity to W25 *Pteridium aquilinum - Rubus fruticosus* underscrub community.

The former spoil tip at Baker's Pit supported an intimate mosaic of underscrub with acid grassland and heath vegetation. This area was observed as being diverse in plant species, including a number of scattered hawthorn trees which supported a diversity of lichens.

#### **W25 Pteridium aquilinum - Rubus fruticosus underscrub / OV27 Epilobium angustifolium community intermediate / transitional vegetation**

An area towards the centre of the spoil tip NW of Tonkins Downs is occupied by a stand of open vegetation characterised by *Pteridium aquilinum*, *Chamerion angustifolium* (*Epilobium angustifolium*), *Arrhenatherum elatius*, *Rubus fruticosus* agg., *Silene dioica*, and *Rumex acetosa*, punctuated by occasional *Salix cinerea*. This has affinities with both W25 *Pteridium aquilinum - Rubus fruticosus* underscrub and OV27 *Epilobium angustifolium* community and can be considered intermediate / transitional between the two.

#### **MG6b Lolium perenne - Cynosurus cristatus grassland, Anthoxanthum oderatum sub-community**

An enclosed pasture field at Baker's Pit was occupied by semi-improved grassland, characterised by *Agrostis capillaris*, *Holcus lanatus*, *Anthoxanthum oderatum*, *Cynosurus cristatus*, *Luzula campestris*, *Plantago lanceolata*, *Trifolium repens* and *Ranunculus repens*. This grassland showed affinities with both acid grassland and mesotrophic grassland, proving difficult to assign to a community in the field as the sward was very short and the season early. On balance this grassland is considered to be closest to MG6b *Lolium perenne-Cynosurus cristatus* grassland, *Anthoxanthum oderatum* sub-community. This stand is considered atypical of the published NVC due to the apparent absence of *Lolium perenne*. Species composition also suggests possible affinities with U4b *Festuca ovina-Agrostis capillaris-Galium saxatile* grassland, *Holcus lanatus-Trifolium repens* sub-



community, but due to the apparent absence of key acid grassland indicator species such as *Potentilla erecta* and *Galium saxatile* the match to U4 acid grassland is considered weaker. Also, the relatively high frequency of *Ranunculus repens* suggests more mesotrophic conditions.

### Improved grassland

Two fields at Higher Trenowin were occupied by species-poor, agriculturally-improved grassland. These fields form part of a single management unit with the adjacent semi-natural vegetation previously surveyed in 2013. The sward was observed to be species-poor and these fields are used at certain times of year for supplementary livestock feeding (a feeder was present at the time of the survey). The sward was observed to be poached/disturbed in nature. Whilst no species-list was made this grassland is considered to have affinities with MG7 *Lolium perenne* grassland.

### Scrub communities

An area at Baker's Pit was occupied by scrub. Wetter areas were characterised by *Salix cinerea* with *Sphagnum* spp. locally present at ground level. These showed affinities with W1 *Salix cinerea-Galium palustre* woodland. Drier areas were characterised by *Prunus spinosa*, *Rubus fruticosus* agg., *Ulex europaeus* and *Hedera helix*. These showed affinities with W22 *Prunus spinosa-Rubus fruticosus* scrub. Due to the impenetrable nature of this area of scrub the juxtaposition of these two community types could not be differentiated in the field and consequently this area is mapped as intermediate / transitional between the two community types.

At Gulval a stand of species-poor, semi-natural vegetation was observed characterised by *Ulex gallii* and *Molinia caerulea* with some localised patches of *Rubus fruticosus* agg. and *Crocsmia x crocosmiiflora*. The presence of abundant *U. gallii* might suggest some affinity with a heathland community (e.g. H4 *Ulex gallii – Agrostis curtisii* heath, H8 *Calluna vulgaris – Ulex gallii* heath), but the lack of other indicative dwarf-shrubs such as *Calluna vulgaris* or *Erica cinerea* make such associations tenuous and instead this element of the vegetation is treated as a scrub community not represented in the published NVC. Such stands have been described in this way in previous vegetation surveys across Penwith Moors (Mol-Ug). No species-list was made for this vegetation type. This stand of vegetation is adjacent to H4 heath and may have been derived from that community.

A narrow strip of *Salix* and *Rhododendron* was present at Gulval. No NVC community could be assigned to this stand.

The old spoil tip NW of Tonkins Downs contains a relatively extensive area of scrub. This is characterised by *Salix cinerea*, *Prunus spinosa*, *Crataegus monogyna*, *Rubus fruticosus* agg., *Ulex europaeus*, *Rhododendron ponticum*, *Hedera helix*, *Fallopia japonica*, *Chamerion angustifolium*, *Vaccinium myrtillus*, and *Dryopteris affinis*. This species composition has some affinities with W1 *Salix cinerea – Galium palustre* woodland, W21 *Crataegus monogyna – Hedera helix* scrub and W22 *Prunus spinosa - Rubus fruticosus* scrub but is not considered truly representative of any of the communities described in the published NVC. Due to issues of access a comprehensive species list was not compiled. No NVC community could be assigned to this area. The central areas of this scrub could not be reached on foot for reasons of health and safety. Recent aerial photographs suggest possible areas of W25 *Pteridium aquilinum - Rubus fruticosus* underscrub and H8 *Calluna vulgaris – Ulex gallii* heath within, but as these could not be confirmed on the ground the contiguous area is mapped as "mixed scrub mosaic" (indicative species of these

communities are suggested as LA in the survey area species list but are suffixed with “?” as they could not be confirmed in the field).

#### **other habitats**

The old spoil tip NW of Tonkins Downs contains an access track and a seasonally wet hollow (pond). The access track is partly vegetated with early-successional plant communities with both dry and seasonally wet areas. Dry areas were characterised by *Sedum album*, *Centaurium erythraea*, *Rumex acetosella*, *Aira caryophyllea*, *Euphrasia* spp., *Leontodon saxatilis*, *Lotus corniculatus*, *Spergularia rubra*, *Veronica officinalis*, *Hypericum humifusum*, *Hypochaeris radicata* and *Pilosella officinarum*. Seasonally wet areas were characterised by *Juncus effusus*, *Potentilla anserina*, *Lotus pedunculatus*, *Pedicularis sylvatica*, *Carex ovalis*, *Ranunculus flamula*, *R. repens*, *Dactylorhiza maculata* and *D. praetermissa*. Surrounded by *Salix cinerea*, a seasonally wet hollow at O.S. grid ref SW 4801 3522 supported *Carex nigra*, *J. effusus*, *L. pedunculatus*, *R. flamula* and *Eleocharis* spp. None of the plant communities described here were considered to have strong affinities with any in the published NVC.

Plate 1 – Former china-clay spoil tip at Baker's Pit; note mosaic of W25 underscrub, U4 acid grassland and scattered hawthorn (supporting notable lichens)



Plate 2 – Enclosed pasture (MG6b) at Baker's Pit



Plate 3 – U4 acid grassland at Baker's Pit (note stock-fence between acid grassland and adjacent cattle-grazed pasture)



Plate 4 – *Molinia caerulea* – *Ulex gallii* vegetation at Gulval Downs; looking north from southern end of survey area; this vegetation transitions to H4 heath just beyond the near horizon; note small area of U4 acid grassland on the left of the picture



Plate 5 – improved grassland at Higher Trenowin



Plate 6 – livestock supplementary feeder at Higher Trenowin



Plate 7 - former granite quarry spoil tip NW of Tonkin Downs, viewed from the south-west (30/03/2022); note the extensive cover of scrub



Plate 8 – W25 *Pteridium aquilinum* - *Rubus fruticosus* underscrub on old quarry spoil tip NW of Tonkins Downs (17/06/2022)



## Species

A number of scattered hawthorn trees on the former spoil tip at Baker's Pit were observed to support a diversity of lichens including *Teloschistes flavicans* and *Usnea articulata*. No other rare, scarce or threatened species were noted during the survey.

A number of invasive non-native plant species were noted during the survey, including *Fallopia japonica* and *Cotoneaster horizontalis*, though neither were widespread within the survey areas (recorded at O.S. grid refs SW 4800 3523 and SW 4804 3526 respectively). *Rhododendron ponticum* was also occasional (e.g. at SW 4803 3530).

The neophyte *Sisyrinchium californicum* was recorded in a small area of wet heath at SW 4788 3544. This species is naturalised in some locations, but is not believed to be invasive in nature.

## Condition Assessments

Due to the small size of habitats present and that the survey areas form part of a larger extent of semi-natural habitat previously surveyed, no condition assessment were deemed necessary.

Table 1 Summary of habitats and vegetation communities

Site 51 (part) – Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) (2022)				
Habitat	NVC communities	Area (ha)	Priority Habitat area (ha)	CA category
Lowland Heathland	H4	0.39	0.39	n/a
	H8	0.09	0.09	n/a
	M16	0.01	0.01	n/a
Acid grassland	U4	0.29	0.29	n/a
Semi-improved grassland	MG6b	0.40	n/a	n/a
Improved grassland	MG7	1.66	n/a	n/a
Scrub / underscrub	W25	1.03	n/a	n/a
	W25/OV27	0.45	n/a	n/a
	W1/W22	0.37	n/a	n/a
	Mol-Ug	0.43	n/a	n/a
	Salix-Rhododendron	0.04	n/a	n/a
	Mixed scrub mosaic	5.29	n/a	n/a
Other	Track	0.13	n/a	n/a
	Seasonal pond	<0.01	n/a	n/a
Condition assessment reporting categories: Favourable (F), Unfavourable Recovering (UFR), Unfavourable No Change (UFNC), Unfavourable Declining (UFD)				

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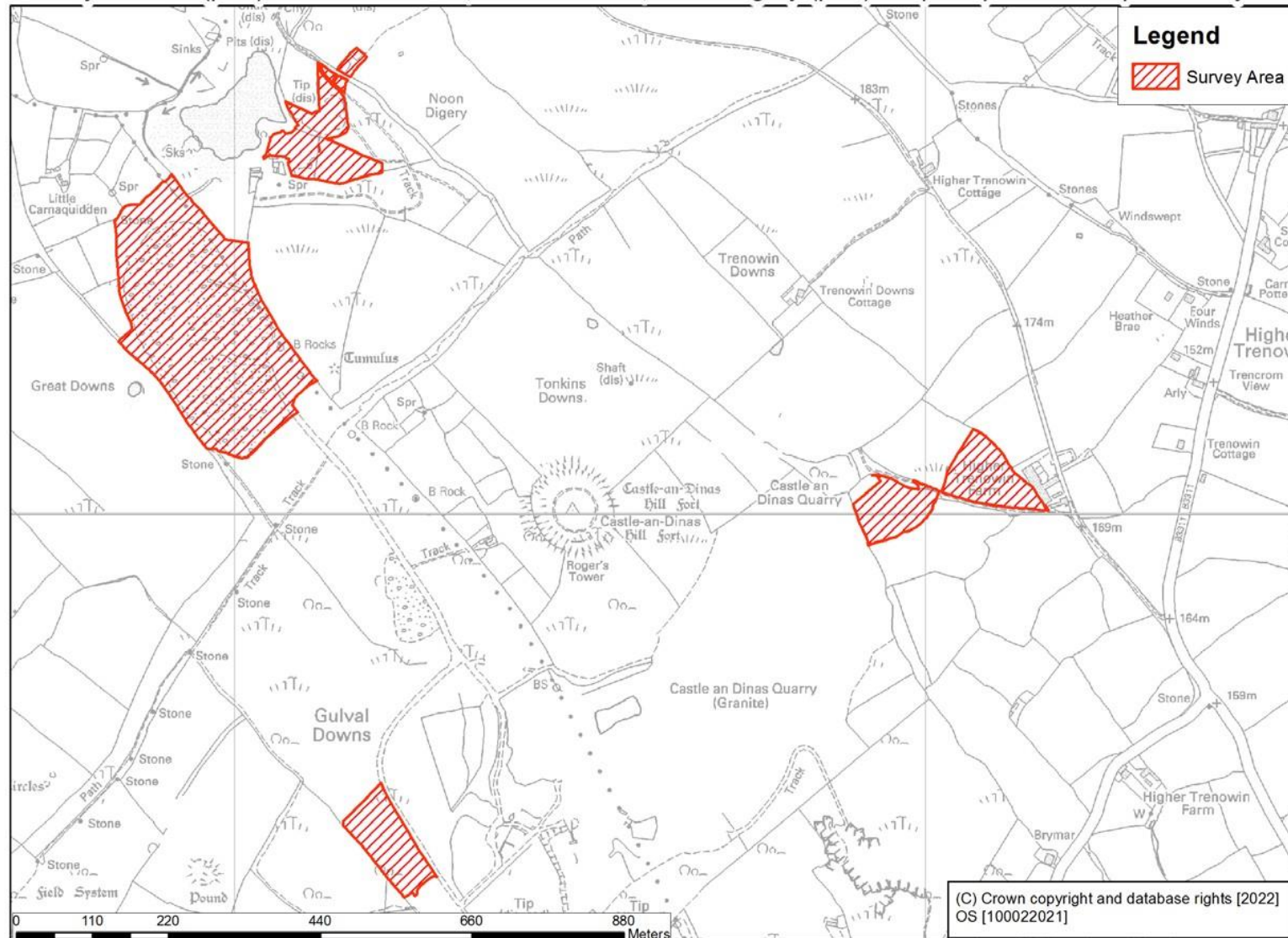


<i>Dactylorhiza praetermissa</i>	southern marsh orchid											O
<i>Digitalis purpurea</i>	foxglove						F	O				
<i>Dryopteris affinis</i>	scaly male fern							LF			LF	
<i>Erica cinerea</i>	bell heather	F	A								LA ?	
<i>Erica tetralix</i>	cross-leaved heath			A								
<i>Euphrasia spp.</i>	eyebright											O
<i>Fallopia japonica</i>	Japanese knotweed										E / R	
<i>Festuca ovina</i>	sheep's fescue					R						
<i>Festuca rubra</i>	red fescue					LF						O
<i>Galium saxatile</i>	heath bedstraw	R										
<i>Hedera helix</i>	ivy						F				O	
<i>Heracleum sphondylium</i>	hogweed							O				
<i>Holcus lanatus</i>	Yorkshire-fog				F	A		O				
<i>Hyacinthoides non-scripta</i>	bluebell							R/O				
<i>Hypericum androsaemum</i>	tutsan										O	
<i>Hypericum humifusum</i>	trailing St. John's-wort											O
<i>Hypochaeris radicata</i>	common cat's-ear					O	O					O
<i>Juncus effusus</i>	soft rush					O	O					O
<i>Leontodon saxatilis</i>	lesser hawkbit											O
<i>Lonicera periclymenum</i>	honeysuckle							O	LF			
<i>Lotus corniculatus</i>	common bird's-foot-trefoil											O
<i>Lotus pedunculatus</i>	greater bird's-foot-trefoil					R						O
<i>Luzula campestris</i>	field woodrush					O	F					
<i>Molinia caerulea</i>	purple moor-grass	F		A								
<i>Oenanthe crocata</i>	hemlock water dropwort										E / LF	
<i>Pedicularis sylvatica</i>	common lousewort			O								O
<i>Plantago lanceolata</i>	ribwort plantain						F					
<i>Potentilla erectca</i>	tormentil	R				R						
<i>Potentilla anserina</i>	silverweed											O
<i>Prunella vulgaris</i>	selfheal						R					

<i>Prunus spinosa</i>	blackthorn					E	A			A	
<i>Pteridium aquilinum</i>	bracken						F	A	A	LA ?	
<i>Ranunculus flamula</i>	lesser spearwort			O							O
<i>Ranunculus repens</i>	creeping buttercup					F					O
<i>Rhododendron ponticum</i>	common rhododendron						O			O	
<i>Rubus fruticosus</i> agg.	bramble						F	A	A	F	
<i>Rumex acetosa</i>	common sorrel				O/F			F	F		
<i>Rumex acetosella</i>	sheep's sorrel				O						O
<i>Salix cinerea</i>	grey willow						A	O	O	A	
<i>Scrophularia nodosa</i>	common figwort							R			
<i>Sedum album</i>	white stonecrop										LF
<i>Silene dioica</i>	red campion						O	F	F		
<i>Sisyrinchium californicum</i>	yellow-eyed-grass			F							
<i>Spergularia rubra</i>	sand spurry										O
<i>Sphagnum</i> spp.	bog-moss			A			LF				
<i>Taraxacum officinale</i> agg.	dandelion					O					
<i>Teucrium scorodonia</i>	wood sage							O			
<i>Thymus serpyllum</i>	wild thyme				R						
<i>Trifolium repens</i>	white clover					F					
<i>Ulex europaeus</i>	European gorse						O	O		O	
<i>Ulex gallii</i>	western gorse	A	A							LA ?	
<i>Vaccinium myrtillus</i>	bilberry	LF					O			O	
<i>Veronica officinalis</i>	heath speedwell										O
<i>Viola riviniana</i>	common dog-violet	R				O					

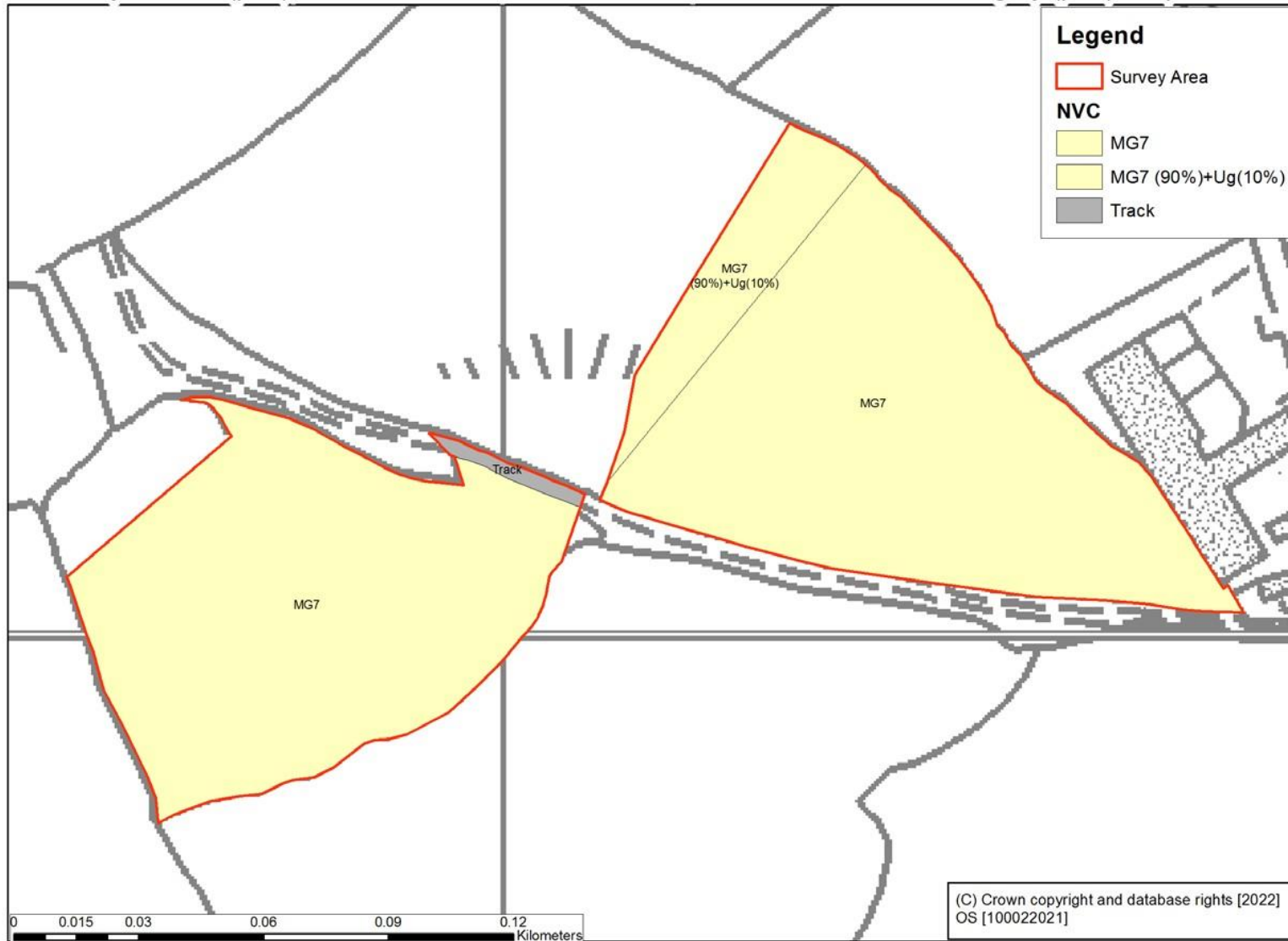
**Map 1 Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Digery (part) 2022 survey area**

Survey Area 51 (part) Trenowin Downs, Gulval Downs, Noon Digery (part) & Spoil tip - 2022 Map 1 Survey area



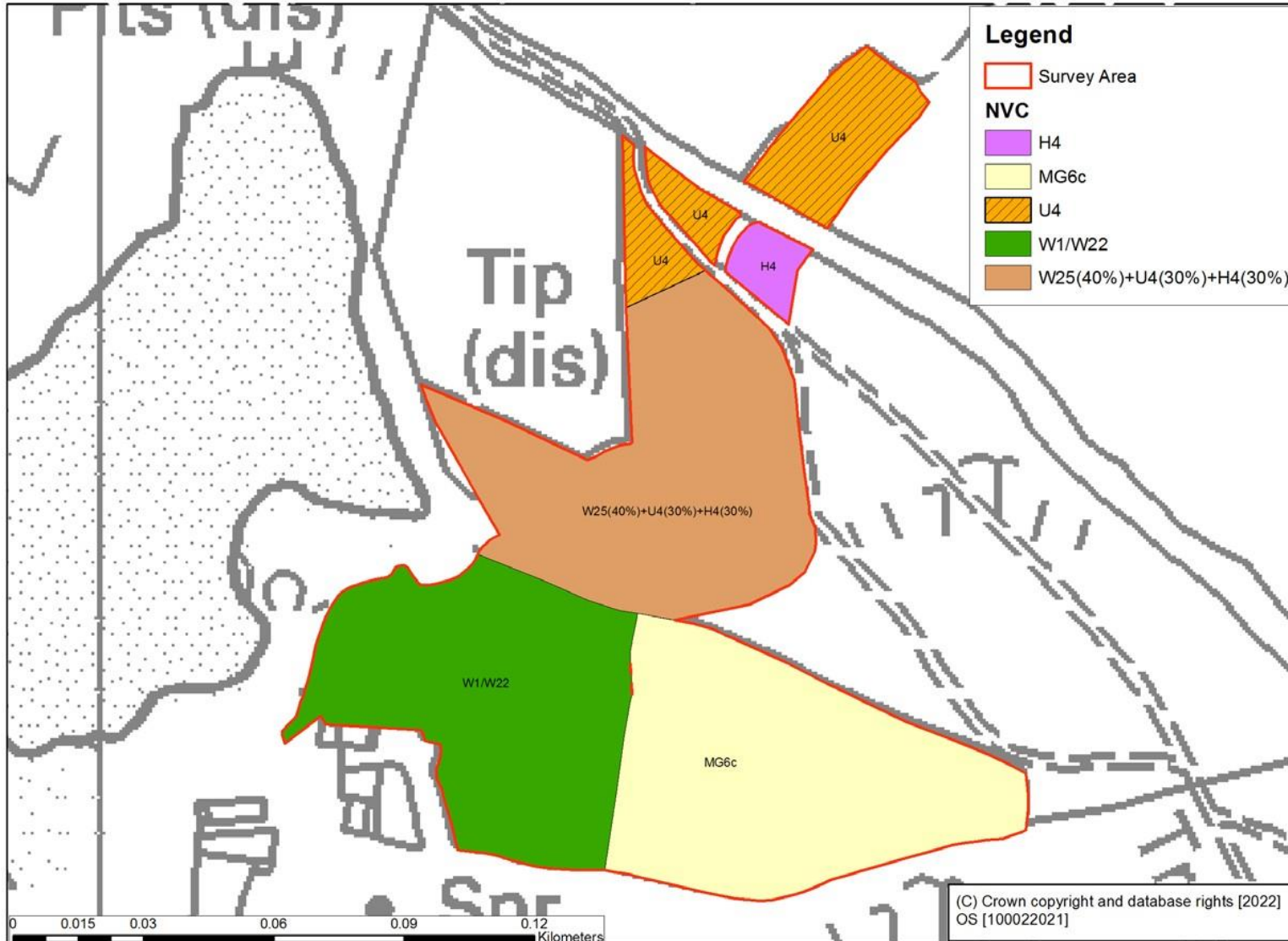
**Map 2a Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 NVC: Higher Trenowin**

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 2a NVC



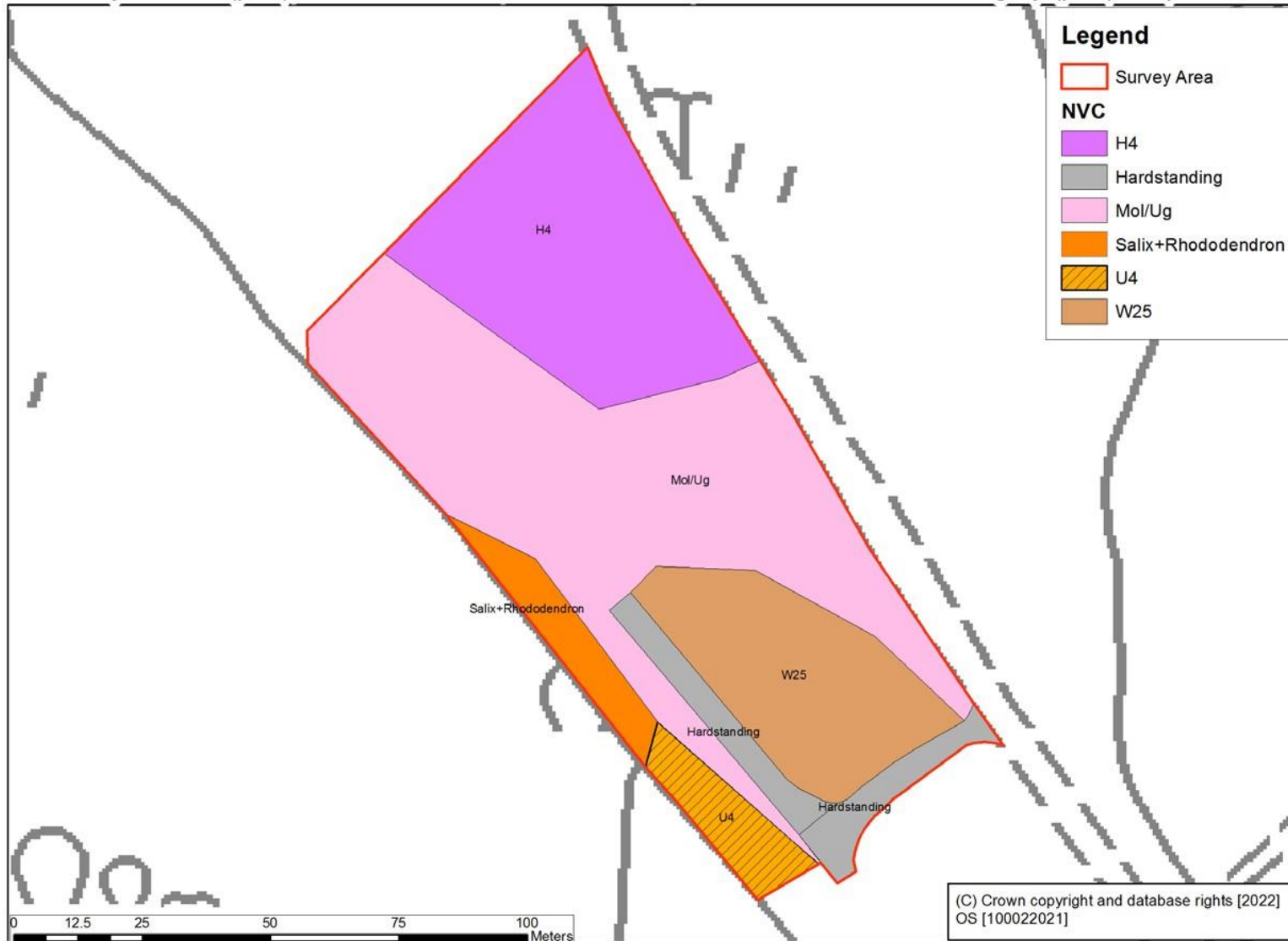
Map 2b Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Digery (part) 2022 NVC: Baker's Pit

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 2b NVC



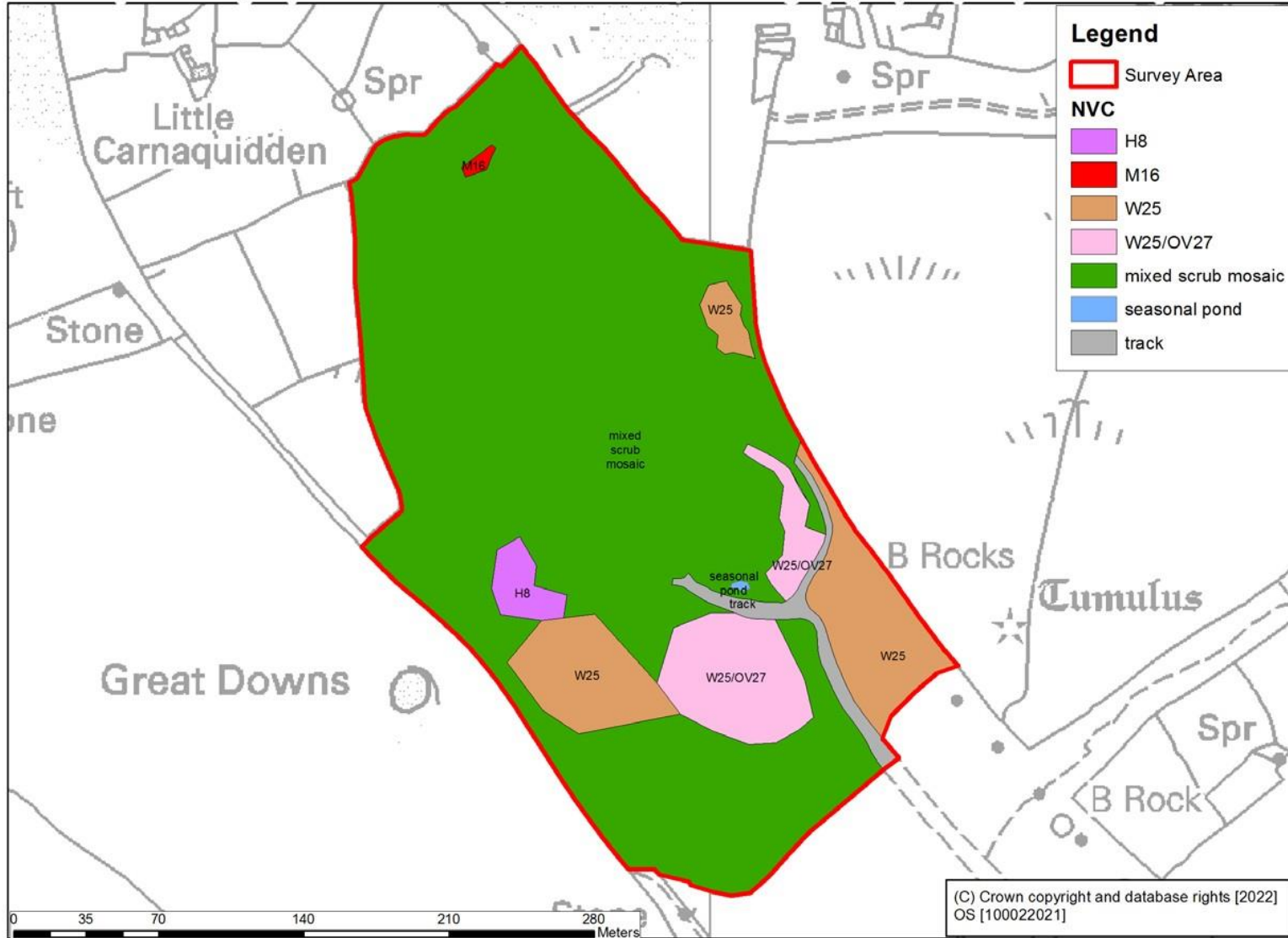
## Map 2c Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 NVC: Gulval Downs

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 2c NVC



Map 2d Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 NVC: quarry spoil tip north-west of Tonkins Downs

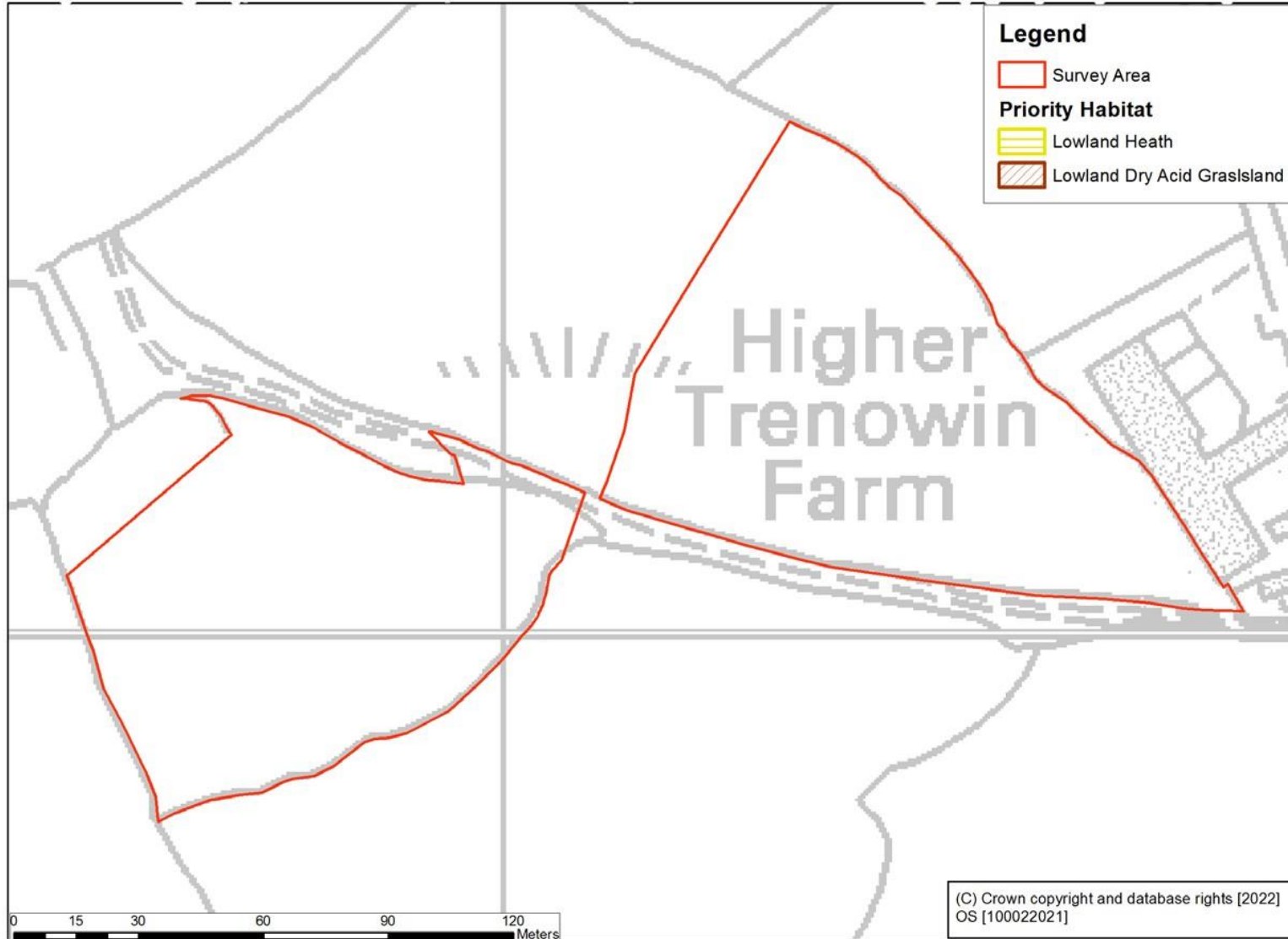
Survey Area 51 (part) Trenowin Downs, Gulval Downs, Noon Digery (part) & Spoil tip - 2022 Map 2d NVC





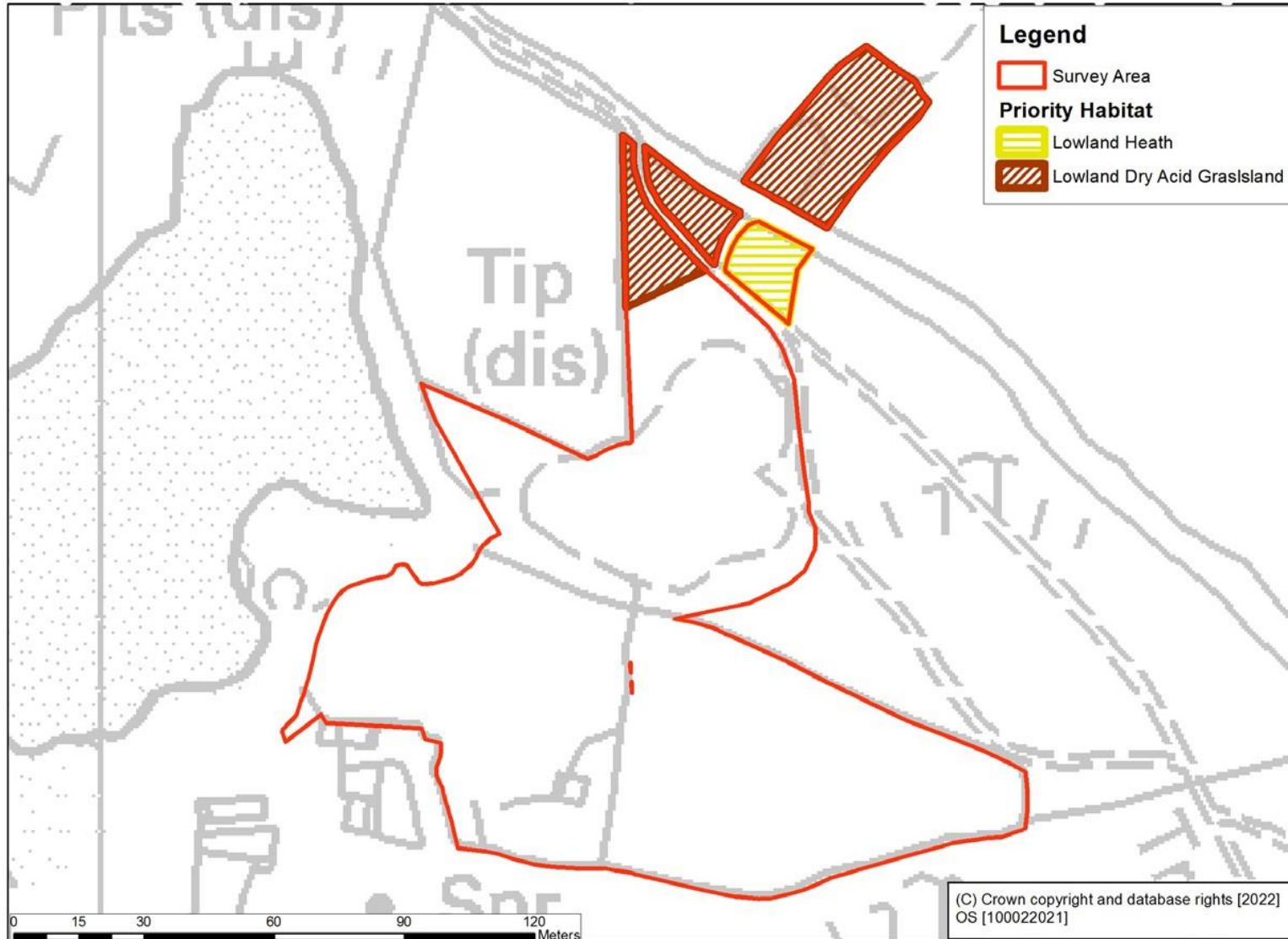
**Map 3a Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 priority habitats: Higher Trenowin**

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 3a Priority Habita



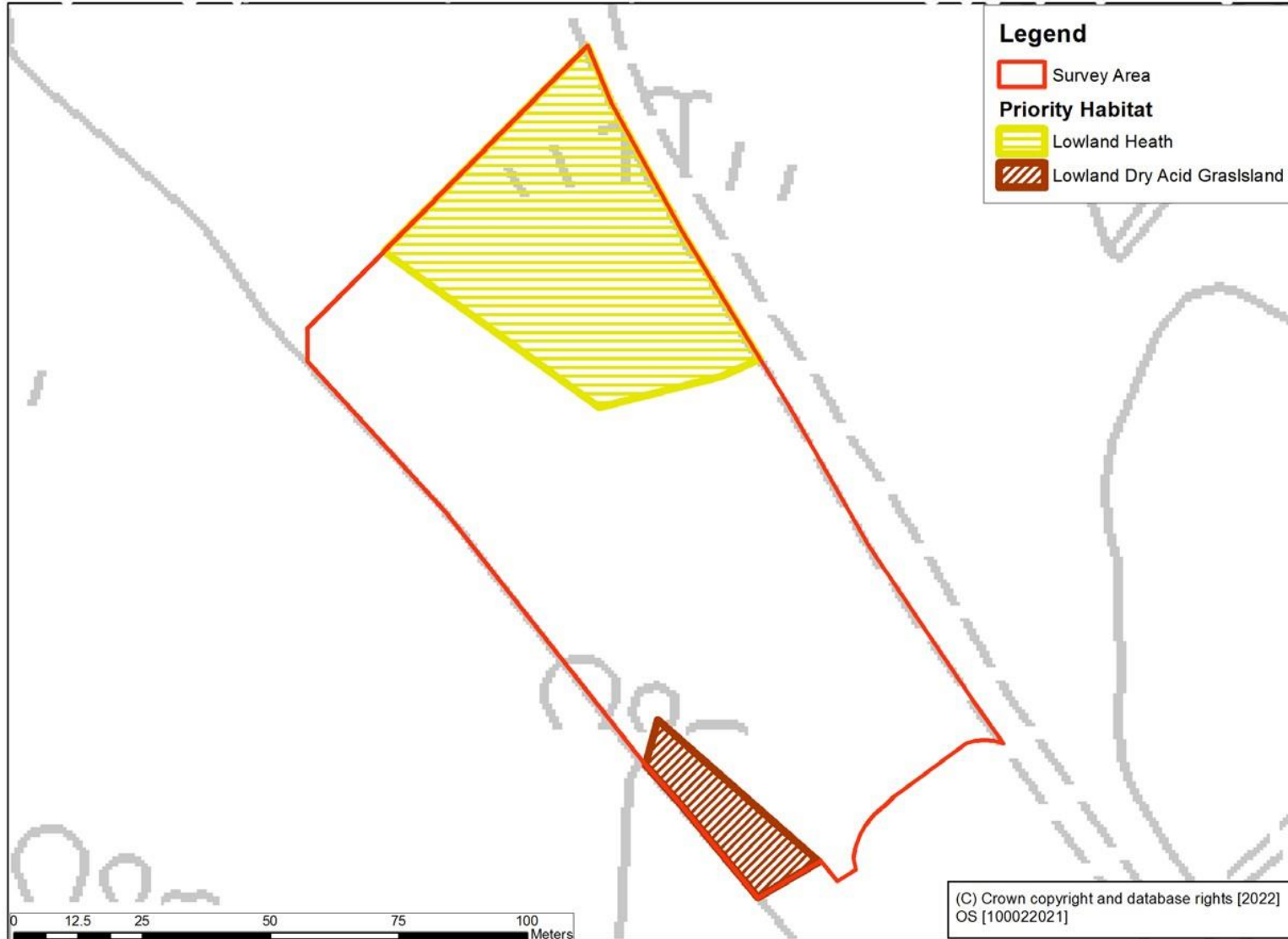
**Map 3b Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 priority habitats: Baker's Pit**

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 3b Priority Habita



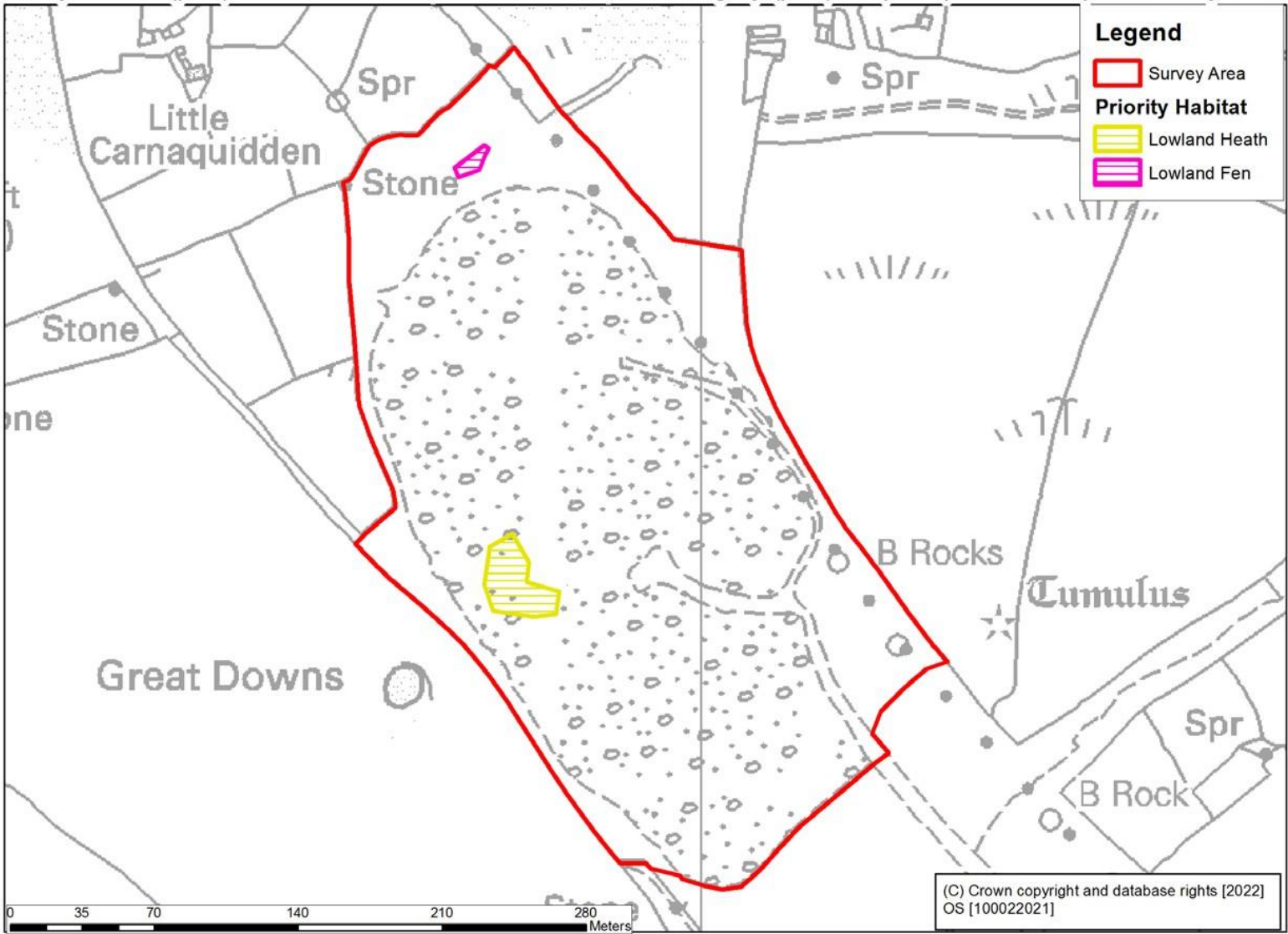
**Map 3c Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022 priority habitats: Gulval Downs**

Survey area 51 (part), Trenowin Downs, Tonkins Downs, Gulval Downs & Noon Digery (part) Map 3c Priority Habita



**Map 3d Trenowin Downs, Tonkin Downs, Gulval Downs and Noon Diggery (part) 2022  
priority habitats: quarry spoil tip north-west of Tonkins Downs**

Survey Area51 (part) Trenowin Downs, Gulval Downs, Noon Digery (part) & Spoil tip - 2022 Map 3d Priority Habita



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