North Thames Estuary and Marshes Vascular Plant Survey 2024

Including Enovert landfill, Ashfields complex, Low Street Pit area and Linford Wood grasslands.

November 2024

Natural England Commissioned Report NECR601

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Catalogue code: NECR601

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Keywords

Vascular plants, SSSI, survey, North Thames Estuary & Marshes

Acknowledgements

Natural England would like to thank landowners for land access permission.

Citation

Abrehart Ecology. 2024. North Thames Estuary & Marshes Vascular Plant Survey. NECR601. Natural England.

Foreword

A botanical survey of rare and uncommon species was undertaken between Tilbury Fort and Mucking village to update records and assess the number and distribution of species across the survey area over the past two years and to inform proposals to enlarge the Mucking Flats and Marshes Site of Special Scientific Interest. The report does not itself make a case for designation, rather it provides an objective record of survey findings to support Natural England's independent assessment of special interest.

Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England.

Executive summary

Abrehart Ecology Ltd was commissioned by Natural England to undertake a botanical survey of rare and uncommon species which had previously been recorded in the survey area. A walkover survey of six survey compartments from Tilbury Fort to Mucking village was undertaken. The study aimed to update the records and assess the number and distribution of species across the survey area, to assess changes in habitats over the past two years. Records were made from the six areas from May to June 2024.

The six survey compartments were:

-Enovert landfill site (compartment C), specifically sub-compartments C1 (Mucking Landfill South); C3 (Mucking Landfill North-West); C4 (Mucking Landfill North-East); C5 (Mucking Landfill West) and C7 (LTC Enovert Zone A).

- Ashfields Complex (compartment G), specifically sub-compartments G3 (Goshem's landfill); G4 (Freeport 50 acres); G5 (Goshem's Farm conservation area); G6 (Goshem's Pool); G7 (Ash B east); G8 (Ash B west); G9 (Ash C1); G10 (Ash C2); G11 (Ash C3); G12 (Ash A1); G13 (Ash A2); G14 (Ash A3); G15 Pylon area); G16 (Tilbury2 mitigation area).

- Area H2 (southern saline influenced area).

- Area J1 (Low Street Pit)

- Area J2 (European Metal Recycling site).

- Area C9 (Grassland adjacent to Linford Wood).

Additional opportunistic botanical records were taken from the Tilbury Fort Marshes compartment during the aquatic invertebrate survey, also commissioned by Natural England for the North Thames Estuary & Marshes project, published separately.

Summary of overall botanical value:

Artemisia absinthium – 2 records in the grasslands across Goshem's, G12 and G16 small stands present.

Bupleurum tenusissimum – 1 record from Coalhouse Fort only. It was recorded at this location in the 2022 survey and was persisting.

Carex divisa – 7 records from four compartments, Tilbury Fort outer marshes (TFM3 & 6) and south of Coalhouse Fort (E1, SSSI unit 2 &H2).

Hordeum marinum – 2 records from Enovert – C3

Inula conyza – 8 records all from G16 an area of calcareous grasslands adjacent to the railway track.

Lathyrus aphaca – 1 record of two plants in the middle of the Enovert Site – C4

Lepidium latifolium – 4 records from across three survey compartments, C4, G3 and TFM6.

Lotus tenuis – 13 records from across all the survey areas.

Medicago polymorpha – 4 records from Enovert (C3) and Goshem's (G3).

Oxybasis chenopodioides – 3 records from one G9 and 2 from just outside the site near G13.

Parapholis incurva – 4 records from three compartments across the survey area.

Petroselinum segetum – 1 record from G3 only.

Potentilla argentea – 1 record from Enovert - C6 only.

Puccinellia fasciculata – 6 records from across the survey area, H2, G3, G4 and G11.

Puccinellia rupestris – 3 records from two areas, G3 and H2.

Ranunculus sarduous – 4 records from two compartments, Enovert (C7) and Goshem's (G3).

Rumex palustris – 2 records from Enovert – C3 and Tilbury Fort Marshes (TFM8).

Rumex pulcher – 2 records from Goshem's – G4 only.

Ruppia maritima – 1 record from Coalhouse Fort only.

Trifolium glomeratum – 1 record from Enovert - C9.

Trifolium micranthum – 1 record from Enovert - C9.

Trifolium resupinatum – 2 records from Goshem's – G13

Trifolium squamosum –1 record from H2.

Trifolium subterraneum – 1 record from Enovert - C9.

Verbena officinalis – 2 records from two compartments, Enovert (C3) and J2

Vicia bithynica – 1 record from Enovert – C3

X *Agropyron littoralis* – 18 records from Goshem's (G3, 4, 12, 13 &14) and Enovert – C3 & 4.

Zannichellia palustris – 2 records from Goshem's (G3 &13).

Non-native species

Cotula australis – 1 record from north of Tilbury Fort

All photos in the report credited to Toby Abrehart, 2024.

Table 1 – Compartments, with plants species and frequency found during the 2024 survey. Cells left blank where data is unavailable.

Species name	Threat Status	C – Enovert landfill	E - Coalhouse	H2 – seawall area	C9 – Linford grassland	J – Low Street	SSSI Unit 2	Goshem' s	Tilbury Fort
Artemisia absinthium	LC							2	
Bupleurum tenusissimum	VU (A2c)						1		
Carex divisa	VU (A2c)		1				1		4
Cotula australis									1
Hordeum marinum	VU	2							
Inula conyza								8	
Lathyrus aphaca		1							
Lepidium latifolium	LC	1						3	1
Lotus tenuis		6		1				6	
Medicago polymorpha	LC	3						1	
Oxybasis chenopodioides								1	
Parapholis incurva		3						1	
Petroselenium segetum								1	
Potentilla argentea		1							
Puccinellia fasciculata				1				5	
Puccinellia rupestris				2				1	
Ranunculus sarduous		3						1	
Rumex palustris		1							1
Rumex pulcher								2	
Ruppia maritima			1						
Trifolium glomeratum					1				
Trifolium resupinatum								2	
Trifolium squamosum				1					
Trifolium subterraneum					1				
Verbena officinalis		1				1			
Vicia bithynica		1							
X Agropyron littoralis		3				1		14	
Zannichellia palustris								2	

Contents

Background

Natural England is considering the enlargement of Mucking Flats & Marshes Site of Special Scientific Interest (SSSI) in order to recognise the national importance of a series of additional habitats and the species which they support. The proposed enlargement would be an important contribution towards nature recovery in the Thames Estuary. The Tilbury Fort to Mucking Flats and Marshes corridor on the Essex side of the River Thames is a key area for biodiversity. Efforts have been made over some years to influence land use change towards nature conservation after-uses to further strengthen these qualities.

The area includes post-industrial habitats with restored landfill/quarry and flooded pits, historic grazing marsh and arable farmland. It has a riverside setting, which supports a range of transitional habitats from the inter-tidal zone to coastal grasslands, scrublands and pockets of woodland. Several water bodies are also present with fringing scrub. Some areas are under active nature conservation management, but many areas have other primary land uses, with incidental wildlife value.

Natural England has commissioned an up-to-date field survey to provide records for vascular plants of conservation importance within the survey area (see Appendix 1). This survey will add to the existing body of evidence to enable Natural England to determine whether there are species present which qualify for selection under the Guidelines for the Selection of Biological SSSIs, Part 2: Detailed Guidelines for Habitats and Species, Chapter 11 and Chapter 15 for vascular plants respectively.

Field survey methodology

The field survey involved walking the survey compartments at appropriate times of year to obtain maximum coverage of the survey areas, targeting habitats and plant communities likely to support potentially qualifying species. Data and sample collection were undertaken by two surveyors, including an experienced on-site surveyor Toby Abrehart FLS, MCIEEM, FISC5 and a second team member responsible for recording, health and safety, and assisting with sample collection, Jordan Squire BSc (Hons) and Alister Killingsworth BSc (Hons), MSc, Grad CIEEM. Surveyors used their experience of recording plants to identify and search for suitable habitats to target populations of plants of conservation concern. All target species encountered were recorded. Records were supported with photographs and grid references. Photography was utilised where possible to enhance understanding of the survey area and plant populations. Where there was doubt over the identification of a plant, specimens or photos as appropriate were sent to national experts for confirmation. The focus of this survey was primarily species previously recorded in the survey area (see Appendix 2) but not to survey for them exclusively. Any other potentially qualifying species were also recorded.

Sample point locations

Survey locations were chosen once on site to allow the most suitable habitats for the species list provided to be surveyed for rather than be restricted to previous sample locations. Maps of land surveyed within each compartment are provided in Appendix 3. Land not surveyed was regarded as unsuitable for the target species, or otherwise was surveyed in 2022.

‘Area’: Covers the whole survey area as provided in maps by Natural England.

‘Compartment’: One of twelve distinct parcels of land within the overall study ‘Area’ (note that not all twelve were visited as part of this survey). Remaining compartments are covered by other survey reports within the overall survey programme.

‘Sub-Compartment’: Discrete zones within larger Compartments.

‘Site’: A portion of a compartment often with an individual separate name.

‘Record’: a record of a certain species at that location, which may be only a single plant, may be a group of plants or a stand. Additional notes are in the accompanying spreadsheet.

Timing

Three days were spent in the field from 18th to 20th June with additional opportunistic plant identification undertaken when carrying out the linked Natural England aquatic invertebrate surveys in July 2024. The field surveyor determined the ideal times to undertake surveys at specific locations, though the limited number of days for surveying meant that mid-June was optimal for the sites visited.

Presence/absence, nil records and coverage

The surveyor recorded locations of the notable species as presence/absence with accompanying information on population size (specified in more detail in the survey spreadsheet). For greater understanding of nil records of rare species with previous known records in a locality, comments are provided on time spent searching, habitat suitability and survey coverage.

Health and Safety

Not all survey compartments had been visited by Natural England staff in advance, and some areas were industrial in character. Appropriate risk assessments were carried out in discussion with site staff. Some sites were near residential areas, and horses or other stock may have been encountered. Health and safety regarding work in or near to water was considered, together with lone working procedures when lone working was undertaken. Appropriate safeguards in working around deep water and on friable and possibly slippery slopes, steep banks and any other hazards noted during prior or dynamic risk assessment were put in place.

Efforts were made to ensure that all landowners and their agents were fully sighted with the Natural England plans, and that any specific procedures and inductions as requested were adhered to.

Limitations

The survey start date meant that some of the vernal (Spring) species were less visible or identifiable during this survey effort along with later flowering species.

Results

Enovert Mucking Landfill: sub-compartments C1, C3, C4, C5 & C7.

This area comprises restored quarry and landfill sites. The majority of the compartment was dominated with maturing grasslands and developing scrub with larger areas of newly planted trees and managed grasslands. There are areas in the middle of the compartment where some chalk open habitat (C2) has been created. Towards the river in the east of the compartment there was an area that has been capped and where vegetation was developing. All of this compartment is saline in character with those areas closest to the River Thames the most saline. Note that sub-compartments C2 and C6 were not covered as part of this survey but have been covered previously.

The main species of interest that were found are associated with grassland edges and tracksides.

Changes in communities: There were two areas that have now been planted with a variety of native tree and shrub species (C7 and C4). The grasslands around these planted areas were variously mown and some areas (C4) had been sprayed with glyphosate. Previously these areas had been species poor grasslands.

The target assemblage species were, however, still present across the compartment. The only obvious changes were in the density and abundances of *Polypogon monspeliensis*. The annually disturbed habitats this requires had moved across the site with changes in areas worked as part of the site restoration. In time this species will become rare due to competition with more dominant grasses as was apparent in other more mature grasslands in C1, C5 and C3. All other species noted appeared to have changed little in distribution and abundance.

Table 2 – Enovert Mucking Landfill (Compartment C) survey results.

Species	Number of records	Comments
Hordeum marinum	2	This was found on the edges of vehicle tracks across the centre of the site – C3.
Lathyrus aphaca	1	Two s were found in maturing Fabaceae-rich grasslands.
Lotus tenuis	6	This was found across the compartment often in good numbers following the paths and tracks. It was generally absent from the more mature grassland areas.
Parapholis incurva	3	This was found sparsely in the middle of the site in areas of drying vehicle tracks - C1 & C3.
Polypogon monspeliensis	6	This was a common component in the early-succession grasslands shortly after restoration. In the older restored land, the numbers were greatly reduced though still present throughout the sward. A significant number of large robust plants were growing along the edge of the track leading back to the offices.
Potentilla argentea	1	A single plant was found in a broken concrete track – C6.
Ranunculus sardous	3	Scattered plants were found in grasslands in the north of the site – C7.
Rumex palustris	1	A single plant was found in the ditch running N-E – C3.
Trifolium subterraneum	1	A single plant was found in a broken concrete track – C7.
Verbena officinalis	1	This was found on the side of a roadway along the lake margin in short goose-grazed grasslands – C3.

Species	Number of records	Comments
Vicia bithynica	1	A single large plant was found in the more mature grasslands in the centre of the site - C3.
X Agropyron littoralis	3	Scattered colonies were found along the wet track edge within the abundant *Polypogon monspeliensis,* with additional plants found scattered across the developing grasslands.

Photo 1. Grasslands along new planting.

Photo 2. Developing grasslands.

Photo 3. C1 Trackside vegetation.

Photo 4. Sprayed grasslands.

Coalhouse Fort & surrounds. Compartment E (E1-E5):

The grasslands south of the southern moat supported a coastal grassland with *Elytrigia atherica* and large stands of *Bolboscheonus maritima*. Within this habitat two more colonies of *Carex divisa* were recorded.

Changes in communities: there were no discernible changes in the main assemblage species across the Compartment.

Table 3 – Compartment E1-E5 survey results.

Species	Number of records	Comments
Bupleurum tenusissimum	1	This was found in one area on the path side leading to the offshore tower.
Carex divisa	2	A large colony was found in the southern marsh grasslands.
Ruppia maritima	1	This was abundant in southern moat.

Photo 5. ***Bupleurum tenuissimum*****.**

Photo 6. ***Carex divisa.***

Field west of Coalhouse Fort (Sub-Compartment: H2)

This was a small area of habitat on the landward side of the sea wall. Following a breach in the sea wall in 2019, a repair was carried out by the Environment Agency in Summer 2022. This work left an area of low-lying disturbed land that was seasonally flooded, and being so close to the sea this habitat was saline.

Changes in communities: This area of land had not previously been assessed by the surveyor, though it was noted previously that this area had recently been repaired and that the land behind the sea wall was still disturbed by this work. During this survey it was noted that a seasonally flooded lagoon had dried, leaving much exposed mud. These supported a range of uncommon grasses, but it was too early in the season to check for uncommon *Oxybasis* species.

Photo 7. Newly created saline grassland

Photo 8. Upper saltmarsh grasslands

Table 4: Sub-Compartment H2 survey results

Species	Number of records	Comments
Crepis biennis	1	This was found on the southern grassland.
Lotus tenuis	1	Numerous plants were scattered across the grasslands and track sides. Many plants were scattered across the main grasslands.
Puccinellia fasciculata	1	This was only present in the developing grasslands close to the arable field edge.
Puccinellia rupestris	2	Several plants were found scattered all along this seasonally flood lagoon edges.
Trifolium squamosum	1	A small number of plants were found along the disturbed grasslands behind the sea wall.

Ashfields Complex (Compartment G) and G5 (Goshem's Farm Conservation Area)

These sub-compartments are all located to the east of Tilbury Port. The main species found here were associated with maturing grasslands, disturbed and ephemeral habitats. The western portion of the site was of restored grasslands and developing scrub. There were large areas of the site that were still having the old, pulverised fuel ash (PFA) removed and processed. Around these areas were areas of disturbed habitats that were becoming vegetated.

In other areas there had been capping with imported soil. Vegetation/grasslands were developing across much of the eastern side of the compartment. *Polypogon monspeliensis* was abundant across much of the southern portion of the site often as a dominant sward over acres of land. In the south-west *Blackstonia perfoliata* was notable in the ash around the half-moon habitat scrapes.

In the north-western areas (sub-compartments G14, G15 and G16) were mature grasslands with *Arrhenatherium elatius* and large stands of *Securigera varia* throughout. G16 is an area of Water Vole mitigation habitat creation with associated grasslands, wet ditch margins and mature grasslands. G5 is a conservation area that was difficult to access and supported a dense scrub with brambles and *Phragmites australis*.

There were a small number of changes across the compartment since the previous survey. This was mainly the maturing of previously recently disturbed grasslands in the south of the site. As these mature, some species are reduced especially *Polypogon monspeliensis*. It should be noted that much of this compartment was not previously surveyed by the author, and so limited direct comparisons are possible.

Table 5 – Compartment 'G' 'Ashfields Complex' survey results.

Species	Number of records	Comments
Artemisia absinthium	2	A small number of stands were found scattered across the sub-compartments G12 and G16.
Inula conyza	8	This was found in the northern end of G16 in the grasslands.
Lepidium latifolium	3	This was found in two areas G3 and G11 in the mature grasslands.
Lotus tenuis	6	This was scattered across the compartment. Often large areas of the habitat were covered in this species.

Species	Number of records	Comments
Oxybasis chenopodioides	1	This was found in a small ephemeral area of grassland in G9.
Paraphalis incurva	1	This was found in open disturbed areas of restored land.
Petroselenium segetum	1	A single plant was found in an open area of disturbed soils with developing grasslands.
Puccinellia fasciculata	5	This species was found scattered across the site in areas of ephemeral pools that had dried by the time of the survey.
Puccinellia rupestris	1	This was found in one of the ephemeral pools.
Ranunculus sardous	1	This was found scattered in the developing grasslands.
Rumex pulcher	2	This was found along the edge of a track to the south of the conservation area, totalling 22 plants.
Trifolium resupinatum	2	Two plants were found in sub-compartment G13 in maturing grasslands.
X Agropogon littoralis	14	This was scattered across the site in areas with abundant *Polypogon monspeliensis*.
Zannichellia palustris	2	This was found in the brackish dykes of G3 & G13.

Photo 9. Ephemerally wet Ashfield – G3.

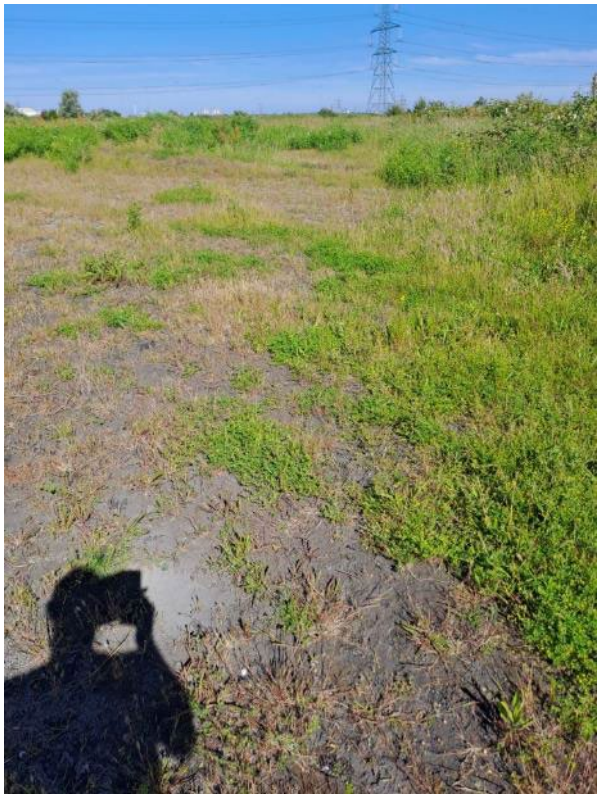


Photo 10. Crescent Ashfields – G12

Photo 11. Establishing grasslands- G5.

Photo 12. Ditch G13.

Linford Wood (Sub-Compartment: C9)

A Local Nature Reserve of open calcareous grasslands with scrub and a small area of wet woodland in the south and east.

Table 6 – Linford Wood survey results.

Species	Number of records	Comments
Trifolium glomeratum	1	A single plant was found on a path.
Trifolium micranthum	1	A single plant was found on a path.

Photo 13. Calcareous grasslands – C9.

Photo 14. Calcareous grasslands – C9.

Low Street Pit & Surrounds (Compartment 'J')

European Metal Recycling (EMR) area – sub-compartment J2

This newly-surveyed compartment 'J' held three distinct survey areas within two sub-compartments. In the north was a skip and container storage area, with limited ruderal species scattered around the majority of the land, species of interest included *X Agropogon littoralis*. The remainder of the habitat was mature scrub and shrubs with no species of interest present.

There was an area of horse-grazed marshes near to the railway tracks, these were dominated by *Ranunculus bulbosus*. No target species were present in this part of sub-compartment J2.

Low Street Pit area – sub-compartment J1

The third area to the south supported a range of mature grasslands, shrubs, developing woodlands. No target species were present in this sub-compartment.

Table 7 – 'Low Street Pit & Surrounds' (compartment J) survey results.

Species	Number of records	Comments
Verbena officinalis	1	A small number of plants were found in one area only.
X Agropogon littoralis	1	A single plant was found in amongst both parents.

Photo 15. Disturbed land - J2.

Photo 16. Maturing grasslands – J1.

Compartment TFM: Tilbury Fort and marshes

Abrehart Ecology was also contracted by Natural England for an aquatic invertebrate survey of the northern marshes at Tilbury Fort during 2024. As part of that separate contract, opportunistic botanical recording was undertaken and has been reported here for

convenience. A separate targeted survey of the northern marshes at Tilbury Fort was commissioned by Natural England during 2024, and this will be reported and published separately (please refer to the Natural England Access to Evidence landing page for the North Thames Estuary & Marshes project).

An area of horse-grazed marshes was dominated by a range of grass species with *Hordeum secalinum* a common component, there were several ephemeral ditches and pools across these marshes. *Phragmites australis* was scattered across the outer ditches with *Bolboscheonus maritimus* common in some of the ditch margins.

This area was not previously surveyed by the author but appears to have had a consistent management regime across the compartment.

Table 8 – Tilbury Fort and marshes survey results.

Species	Number of records	Comments
Carex divisa	4	Several small stands were scattered across the outer marshes that are grazed by horses and pigs in TFM3 & TFM6.
Lepidium latifolium	1	Scattered stands were found in the grazed marshes.
Rumex palustris	1	A single plant was found in the northern ditch.

Photo 17. Drying ditch – TFM6.

Photo 18. Ephemeral pool - TFM7.

Discussion

Forty-two species of interest of locally uncommon and rare plants were recorded as part of this survey and 200 records were made of scarce and uncommon species. The winter and spring preceding the survey had been wet and cool, and the abundance of some species may have increased compared to other years. The majority of the records came from the Ashfield's Complex and the Enovert Landfill compartments. These both supported extensive areas of grasslands that were in various stages of succession, with large areas recently worked with significant exposed soil. Large areas of established grasslands were also present. The most frequent of the rare species of interest was *X Agropogon littoralis* which was found across the Ashfield's Complex and Enovert Landfill compartments.

Changes in communities across the surveyed sites indicated that the most significant changes were where tree and shrub planting had been carried out across the north and eastern sides of the Enovert landfill site (Compartment C). In addition to this several areas of both Goshem's and Enovert had a range of developing and maturing grasslands.

Sustainability

The sustainability of many of the uncommon plant species found across the sites is varied. Many of the species recorded in this 2024 survey were species of ephemeral and transitional habitats that require regular disturbance for their survival.

Table 9 – Assessment of the sustainability of populations of uncommon plant species found during the survey.

Species name	Sustainable population	Sustainability Assessment Notes
Artemisia absinthium	Yes	Stands were scattered across the survey areas and previously known populations were still present. There is the chance for succession to a scrub habitat may reduce the extant populations.
Bupleurum tenusissimum	Yes	This was only found once in these surveys but, the habitats at Tilbury Fort were still extant and were likely to still support large populations. The habitat where this record was made was in the grasslands in front of the sea wall. There is limited habitat where this species will be able to move into with increasing tidal squeeze. The habitat to the rear of this location was blackthorn with a footpath behind. All other stable populations are to the rear of the sea wall within the survey area.
Carex divisa	Yes	This was common and dominant at the southern end of the Coalhouse Fort site. This population is unlikely to reduce unless *Bolboscheonus maritima* increases with increased salinity in the marshes. The population at the side of the road gully at Tilbury Fort, although it has been present for a long time, may be at risk from spraying of road works. New populations found in the northern Tilbury Marshes area are considered stable, even though the sites are horse grazed.
Catapodium marinum	Yes	This was found in very low numbers and is likely to persist at low levels across several compartments. This will persist in areas where there is disturbance, in particular the wetter vehicle ruts and where there are horse grazed habitats.
Cerastium semidecandrum	Yes	This was likely to be more common than the survey indicates. An earlier Spring survey is likely to have produced more records. It requires disturbed habitats which are dry in the spring including vehicle ruts in lighter soils and footpath edges.
Ceratophyllum submersum	Yes	Although only found once, at north Tilbury Marshes in a single ditch, it may be present in more locations. Habitats are suitable more widely across the survey area. Only clearance of the ditch and succession to *Bolboscheonus maritima* or *Phragmites australis* will affect this population.
Cotula australis	Yes	This invasive plant was found mainly at north Tilbury Fort and at G6 where it was present at a low density. It should be considered for eradication.
Crepis biennis	Yes	This was present mainly in coastal grasslands and on sea walls, these sea walls were managed with an annual cut, this seems to reduce competition from other species allowing this to persist in high numbers. In other sites it was present in unmanaged grasslands and could in time become out-competed by more rank vegetation without a cutting management regime.

Species name	Sustainable population	Sustainability Assessment Notes
Hordeum marinum	Yes	Although only found in sub-compartment C3 in some vehicle tracks, it was still noted as abundant at Coalhouse Fort and Tilbury Fort. The ephemeral waterbodies and disturbed sea walls are essential for the continued survival of this species. Only changes in disturbance and winter flooding levels will affect this species. Winter flooding at Coalhouse Fort reduces competition and creates large areas of unvegetated habitat suitable for this species to become abundant.
Inula conyza	Yes	This was found in one calcareous area of habitat that abutted the railway track of G16. This habitat will persist as long as the scrub encroachment is maintained.
Lepidium latifolium	Yes	This rapidly expanding halophyte was common in many areas of grasslands near the river. There is little chance of this reducing in the future.
Lotus tenuis	Yes	This was common across the survey area and is at no risk other than from robust vegetation and scrub becoming dominant. Only succession from grasslands to a scrub habitat will reduce the abundance across the site.
Medicago polymorpha	Yes	This was found four times in C3 only, with low numbers of plants. Suitable habitat comprises lightly-vegetated short turf on slightly disturbed soils. It is likely to persist as long as some areas are still disturbed.
Oxybasis chenopodioides	Yes	This was found scattered in three areas, never in high densities, though scattered in loose colonies with *Oxybasis rubra*. It was always found in ephemeral habitats where water has receded in the summer, flowering late in the season. As long as these winter wet ephemeral habitats persist then this species will continue to occasionalupy the site. It is important that the wet areas dry in the summer.
Parapholis incurva	Yes	This was found scattered across C1 and C3 though only as occasional scattered plants, especially in areas of disturbed soils in vehicle tracks. In G3 this was scattered rarely in amongst the abundant *Polypogon monspeliensis*. It is likely to persist.
Polypogon monspeliensis	Yes	This was one of the most common plants in the survey, always found in ephemeral habitats, either in areas of receding waters in pools or in the soils used as capping on the restored landfills. It often formed extensive areas covering a hectare or more on the landfill sites. A couple of years post restoration other more dominant vegetation starts to establish pushing *Polypogon monspeliensis* and other ruderal species out.
Puccinellia fasciculata	Yes	This was found at four areas across the survey area, requires ephemeral wet areas to persist with limited competition.
Puccinellia rupestris	Yes	This was found twice at new sites in an area of restored land behind the sea wall at H2 and in G3.

Species name	Sustainable population	Sustainability Assessment Notes
		Only likely to persist if muds of receding winter flooded areas are maintained as such.
Ranunculus sardous	Yes	This was scattered in the short mown or grazed coastal grasslands, as long as the management remains the populations should be stable. Only scrub encroachment and lack of mowing at the sites will prevent these populations from persisting.
Rumex palustris	No	Two records in two areas this year, not present in the 2022 site survey. The sites where this was found will mature rapidly and the plants will be lost. Only intervention to create a regularly disturbed damp habitat will maintain the species. Previous known sites (2022 survey) were checked, and it was no longer present there indicating the ephemeral nature of the species.
Rumex pulcher	Yes	This was found new to one site in G4 and still present in the two areas the well-known site at Coalhouse Fort where it was present in two distinct areas of the site. At the new site, it is likely to be lost due to developing vegetation and the more open sward will be lost that this species requires. The two known sites were not revisited, but as long as the established cutting regime is maintained then these populations should continue.
Ruppia maritima	Yes	This was found commonly at Tilbury Fort and Coalhouse Fort in the moats and ditches. The only potential risk to the populations is a reduction in salinity in these systems.
Trifolium glomeratum	Yes	This was only found in the short turf of the paths in Linford Wood. Not re-searched for in other sites. At no risk at this site as long as the footpaths are still walked as succession is likely to reduce the suitability of the open sward required.
Trifolium resupinatum	No	This was found twice in one sub compartment in G13, may be out competed with increasing grassland dominance in this habitat.
Trifolium squamosum	Yes	This was found new in only one area (H2), but noted as present at several sites behind the sea walls north of Coalhouse Fort, so presumed still extant in all older known sites. Disturbance in vehicle ruts and sides of tracks is required for this species.
Trifolium subterraneum	Yes	This was only found once, but this disturbed short-grazed rubble path habitat is likely to persist for some time. Only re-making the path will remove the habitat.
Verbena officinalis	Yes	This was found at two new sites. Still expected to be present at previous sites as general conditions for this species have not changed since the 2022 survey. Succession to a less ruderal habitat will reduce this species presence.
Vicia villosa	Yes	This was found in multiple sites in large quantities. Not expected to reduce unless there is considerable scrub encroachment and no grassland

Species name	Sustainable population	Sustainability Assessment Notes
		management. As with all the vetch species, all are dependent on pollination for seed production. A reduction in pollinators will reduce the potential for seed development and future generations of plants to be viable as populations.
Vicia bithynica	No	This was only found once and only one plant, likely to be out-competed soon.
X Agropyron littoralis	No	This rare hybrid grass was found in seven areas in the three compartments. Always found with both parents. All populations are unlikely to be ephemeral, depending on the grassland development. If semi-disturbed habitats are maintained then this should persist, but as soon as the habitat is over two years old it is likely to be out-competed.
Zannichellia palustris	Yes	This was found new twice for this survey, several of the previous sites still hold many plants, so it is considered not at risk except from dredging or high salinity.

Appendix 1. Survey Area

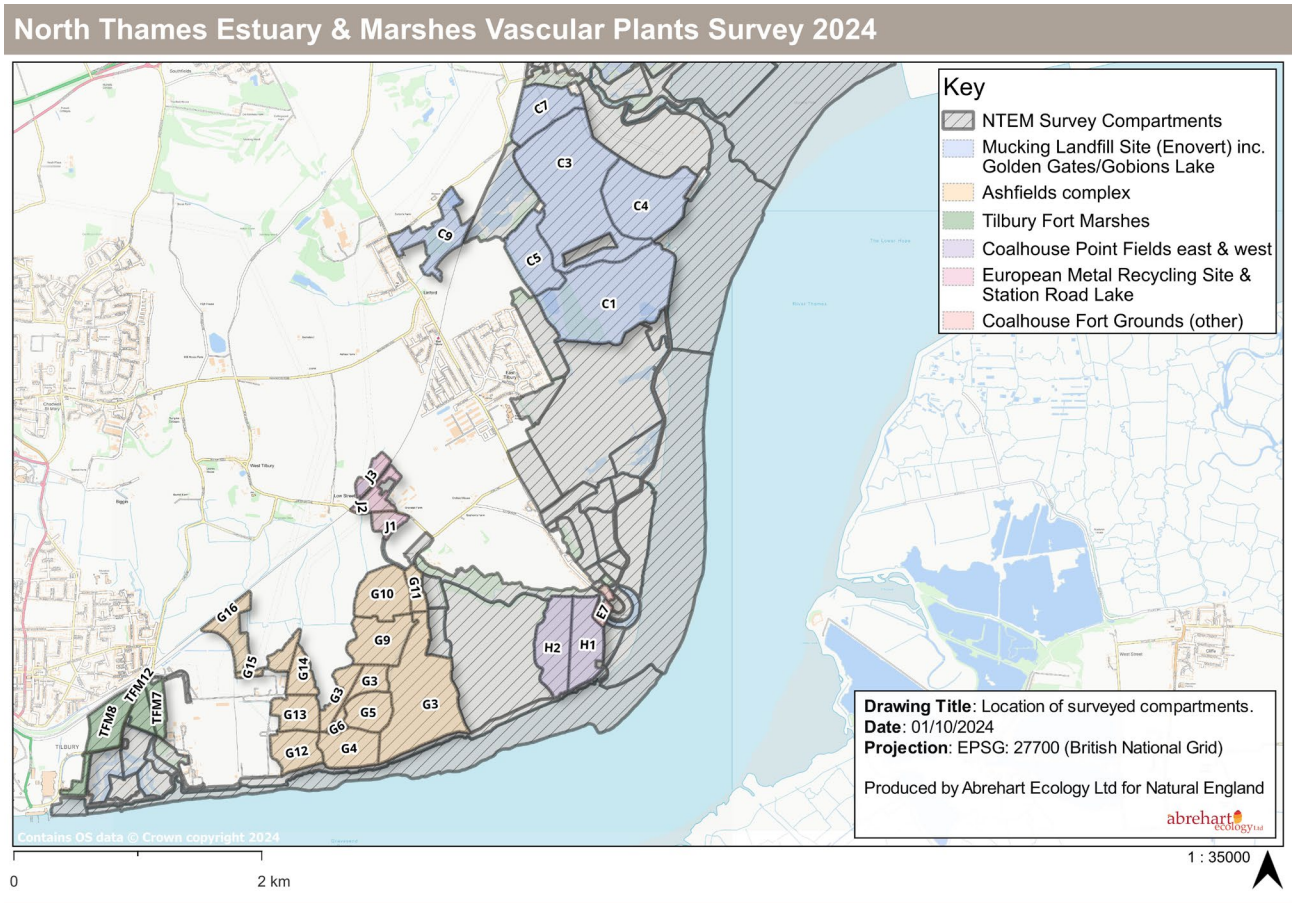


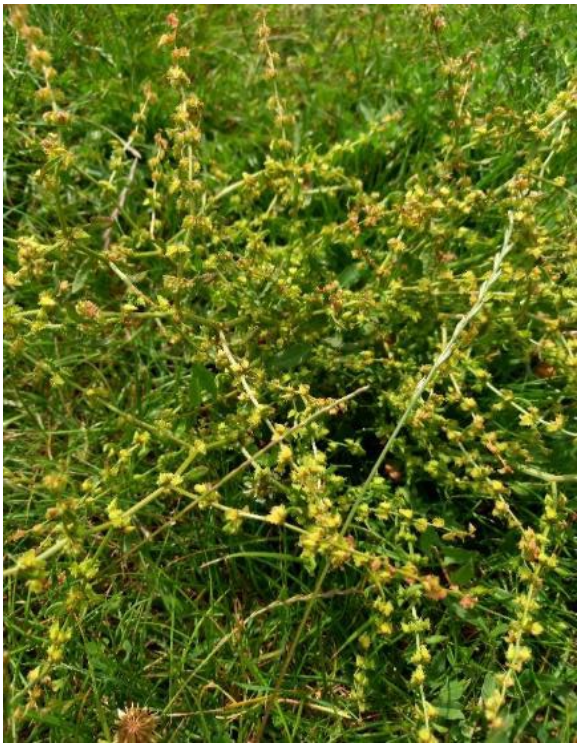
Figure 1: Location of surveyed compartments across the North Thames Estuary & Marshes site.

Appendix 2. Photo of the site and plants

All photos credited to Toby Abrehart.

***Hordeum marinum* – in vehicle ruts, still abundant across the sites.**

***Trifolium subterraneum* – on rabbit grazed concrete path.**



***Rumex pulcher* – found new at Goshem's and still present at old sites.**

***Carex divisa* – new colonies at Tilbury Fort northern marshes and Coalhouse Fort and still present at other sites.**

***Medicago polymorpha* – scattered in the south of the survey area.**

***Trifolium glomeratum* – found rarely at Enovert.**

***Trifolium squamosum,* new sites south of Coalhouse Fort, and still present in vehicle ruts behind the sea walls.**

***Bupleurum tenusissimum* – Only seen at one site but presumed present at all previous sites.**

***Artemisia absinthium* – Scattered in grasslands along the coast and in the more established grasslands inland.**

Vervain – *Verbena officinalis* – Found twice at J2 and C3.

***Lotus tenuis* – Common across most of the survey areas.**

***Oxybasis chenopodioides* – Found scattered at three sites in ephemeral muds.**

***Zannichellia palustris* – Common in ditches.**

***Polypogon monspeliensis* – abundant in many sites of disturbed soils.**

***Puccinellia fasciculata* – found at new colonies in G3, G4 G11 and H2.**

***Parapholis incurva* – scattered in old disturbed ephemeral vehicle tracks and in saline grasslands in the survey area.**

***Puccinellia rupestris* – Found at Coalhouse Fort and G6 ephemeral pond.**

***Rumex palustris* – found at the Enovert Site in drying ditch and at north Tilbury Marshes in ditch edge muds.**

***X Agropogon littoralis* – found with both parents at Enovert site.**

***Lepidium latifolium* – Scattered across the survey areas**

Appendix 3. Species previously recorded in the survey area, prior to the 2022 and 2024 surveys.

Table 1: Species previously recorded in the survey area, prior to the 2022 and 2024 surveys. Rarity column left blank where rarity status not available. NT- near threatened, VU- vulnerable, LC- least concern, EN- endangered, NS- nationally scarce.

Scientific name	Common Name	Threat Status	Rarity
Althaea officinalis	Marsh mallow	NT	NS
Anacamptis morio	Green winged Orchid	VU	
Artemisia absinthium	Wormwood	LC	Historic Decline
Artemisia maritima	Sea Wormwood	LC GB, NT Eng	
Asplenium adiantum-nigrum	Black Spleenwort	LC	Essex Listed
Asplenium ruta-muraria	Wall rue	LC	Essex Listed
Blitum bonus-henricus	Good King Henry	VU Archaeophyte	Essex Listed
Bupleurum tenuissimum	Slender Hare's ear	VU (A2c)	NS GB (Stroh et al 2013)
Carex divisa	Divided Sedge	VU (A2c)	NS GB (Stroh et al 2013)
Carlina vulgaris	Carline Thistle	LC GB, NT Eng	Essex Listed
Catapodium marinum	Sea Fern grass	LC	Essex Listed
Cerastium semidecandrum	Little Mouse ear	LC	Essex Listed
Chenopodiastrum murale	Nettle leaved Goosefoot	EN	

Scientific name	Common Name	Threat Status	Rarity
Chenopodium vulvaria	Stinking goosefoot	EN	Rare
Cochlearia anglica	English Scurvygrass	LC	Essex Listed
Clinopodium nepeta	Lesser Calamint	LC	NS
Crepis biennis	Rough Hawk's beard	LC	Essex Listed
Cynoglossum officinale	Hound's tongue	NT	Essex Listed
Dactylorhiza x grandis	A hybrid orchid		Essex Listed
Dactylorhiza incarnata	Early Marsh orchid	(WL)	Historic Decline
Erophila verna	Common Whitlowgrass	LC GB, NT Eng	
Galium parisiense	Wall Bedstraw	VU native/alien	NS
Geranium rotundifolium	Round leaved Crane's bill	LC	Essex Listed
Hippophae rhamnoides	Sea Buckthorn	LC	NS prob intro at Essex sites
Hordeum marinum	Sea Barley	VU	NS GB (Stroh et al 2013)
Inula conyzae	Ploughman's spikenard	LC	Essex Listed
Jacobaea aquatica	Marsh Ragwort	LC GB, NT Eng	Essex Listed
Lepidium latifolium	Dittander	LC	previously NS, but not in Atlas 2020
Limbarda crithmoides	Golden samphire	LC	NS GB (Stroh et al 2013)
Limonium vulgare	Common Sea lavender	LC GB, NT Eng	

Scientific name	Common Name	Threat Status	Rarity
Logfia minima	Small Cudweed	LC GB, NT Eng	
Lotus angustissimus	Slender Birdsfoot Trefoil	NT	NS
Lotus tenuis	Narrow leaved Bird's foot trefoil	LC	
Marrubium vulgare	White Horehound	LC	NS GB (Stroh et al 2013)
Medicago polymorpha	Toothed Medick	LC	NS
Moenchia erecta	Upright Chickweed	VU	
Myosotis discolor	Changing Forget me not	LC	Essex Listed
Myosotis ramossisima	Early Forget me not	LC	Essex Listed
Oenanthe lachenalii	Parsley Water dropwort	LC GB, NT Eng	
Origanum vulgare	Wild Marjoram	LC	Essex Listed
Oxybasis glauca	Oak leaved Goosefoot	VU	NS
Oxybasis chenopodioides	Saltmarsh Goosefoot	LC	NS GB (Stroh et al 2013)
Parapholis incurva	Curved Hard grass	LC	NS GB (Stroh et al 2013)
Poa bulbosa	Bulbous Meadow grass	LS	NS
Polycarpon tetraphyllum	Four-leaved Allseed	LC	NS
Polypogon monspeliensis	Annual Beard grass	LC	NS GB (Stroh et al 2013)
Potentilla argentea	Hoary Cinquefoil	NT	

Scientific name	Common Name	Threat Status	Rarity
Puccinellia fasciculata	Borrer's Saltmarsh grass	NT	NS
Ranunculus sardous	Hairy Buttercup	LC	
Rumex hydrolapathum	Water Dock	LC	Essex Listed
Rumex maritimus	Golden Dock	LC	NS GB (Stroh et al 2013)
Rumex pulcher	Fiddle Dock	LC	Essex Listed
Salicornia fragilis	Yellow Glasswort	LC	NS
Salvia verbenaca	Wild Clary	NT	Essex Listed
Sarcocornia perennis	Perennial Glasswort	LC	NS
Saxifraga granulata	Meadow Saxifrage	LC	Historic Decline
Saxifraga tridactylites	Rue-leaved Saxifrage	LC	Essex Listed
Scilla autumnalis	Autumn Squill	LC	NS
Spiranthes spiralis	Autumn Lady's tresses	NT	NS
Stellaria pallida	Lesser Chickweed	LC	Essex Listed
Stratiotes aloides	Water Soldier	LC Native/alien	NS GB (Stroh et al 2013)
Trifolium fragiferum	Strawberry Clover	VU	

Appendix 4. Areas surveyed within each compartment.

Compartment C

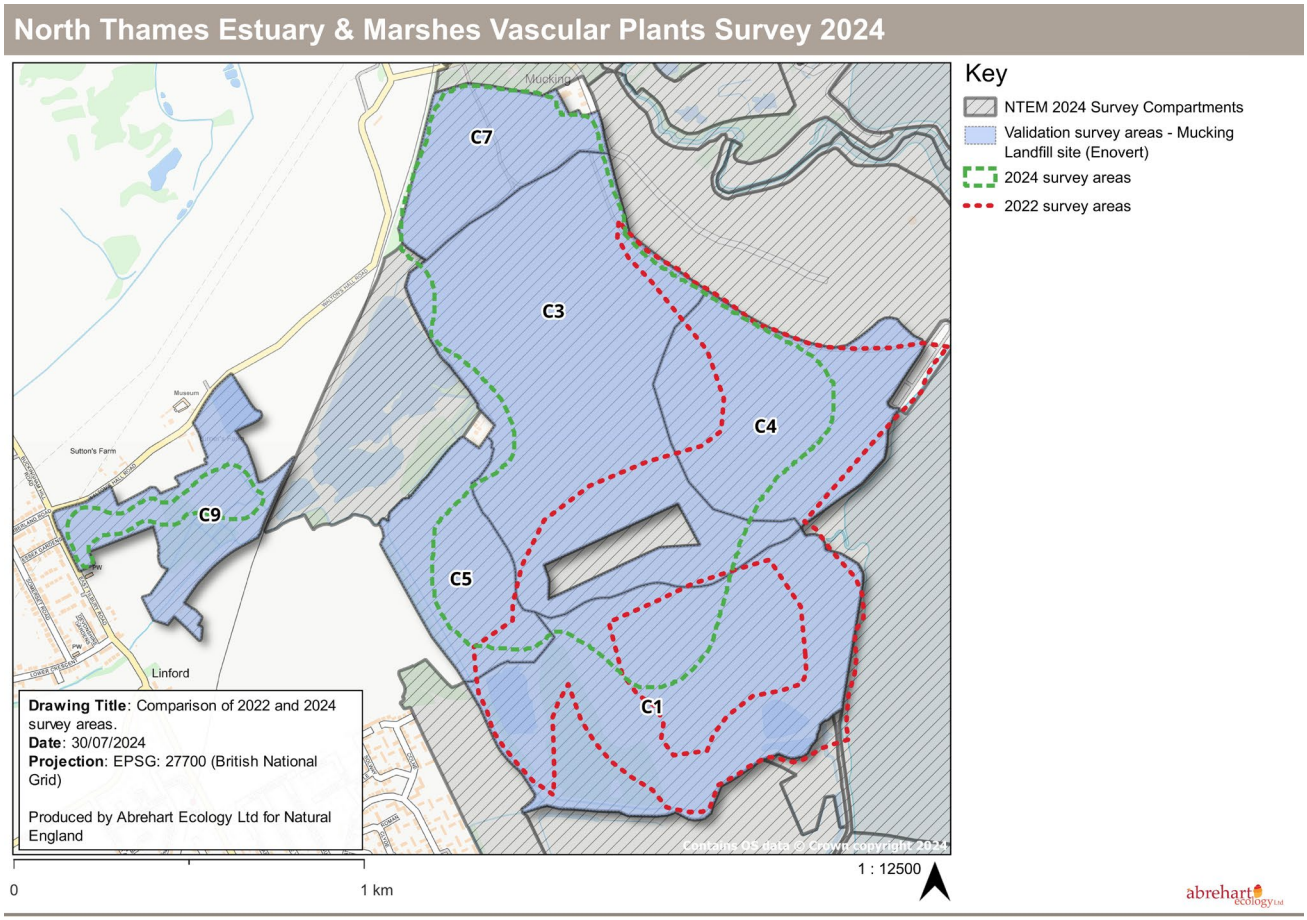


Figure 2: 2022 and 2024 survey areas within Mucking Landfill site (Enovert)

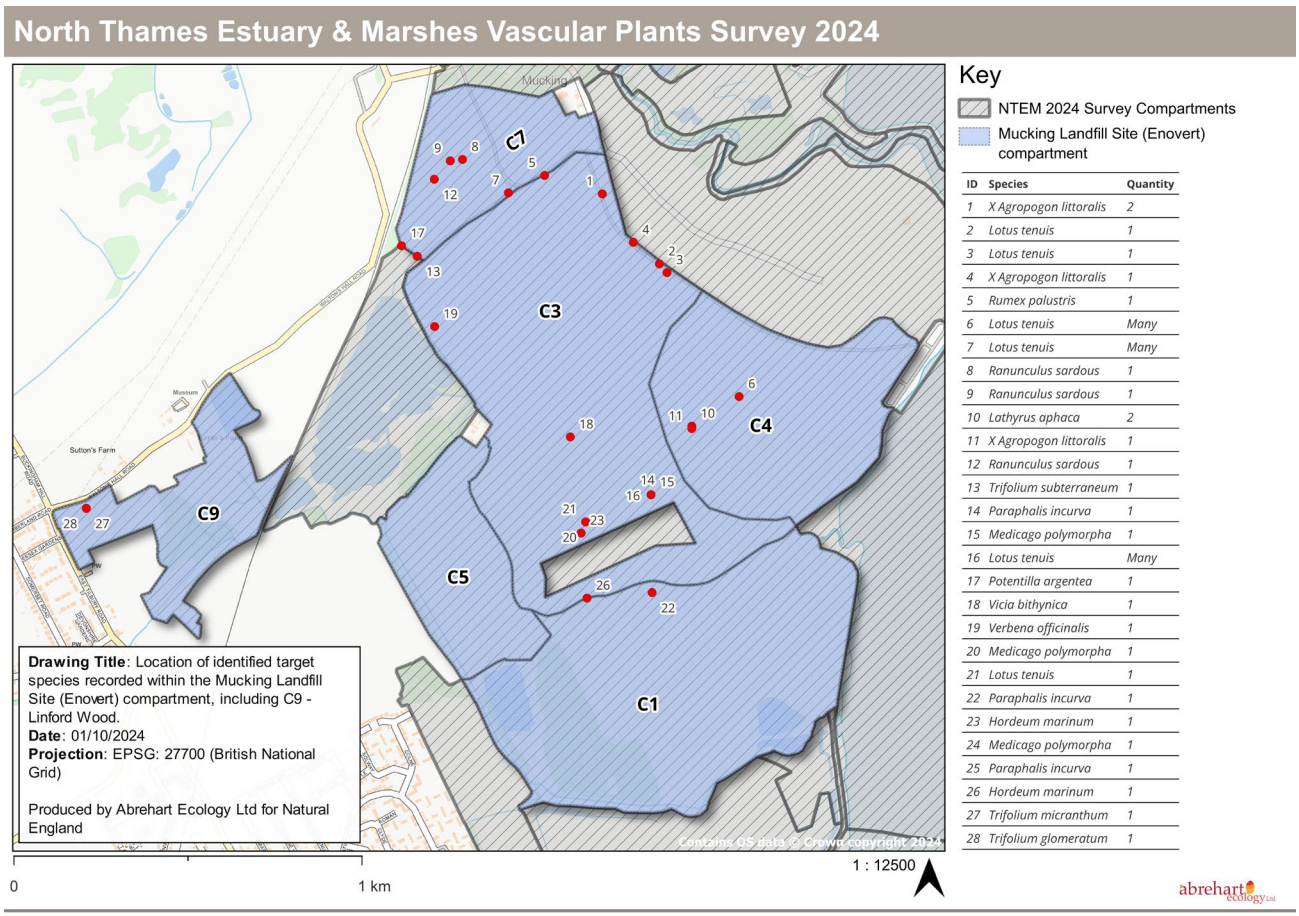


Figure 3: Location of identified target species recorded within the Mucking Landfill Site (Enovert) compartment, including C9- Linford Wood. Red dots mark the location of identified target species.

Table 2: ID number of identified target species recorded within survey area and quantity found.

ID	Species name	Quantity
1	*X Agropogon littoralis*	2
2	*Lotus tenuis*	1
3	*Lotus tenuis*	1
4	*X Agropogon littoralis*	1
5	*Rumex palustris*	1
6	*Lotus tenuis*	Many
7	*Lotus tenuis*	Many
8	*Ranunculus sardous*	1
9	*Ranunculus sardous*	1
10	*Lathyrus aphaca*	2
11	*X Agropogon littoralis*	1
12	*Ranunculus sardous*	1
13	*Trifolium subterraneum*	1
14	*Paraphalis incurva*	1
15	*Medicago polymorpha*	1
16	*Lotus tenuis*	Many

ID	Species name	Quantity
17	*Potentilla argentea*	1
18	*Vicia bithynica*	1
19	*Verbena officinalis*	1
20	*Medicago polymorpha*	1
21	*Lotus tenuis*	1
22	*Paraphalis incurva*	1
23	*Hordeum marinum*	1
24	*Medicago polymorpho*	1
25	*Paraphalis incurva*	1
26	*Hordeum marinum*	1
27	*Trifolium micranthum*	1
28	*Trifolium glomeratum*	1

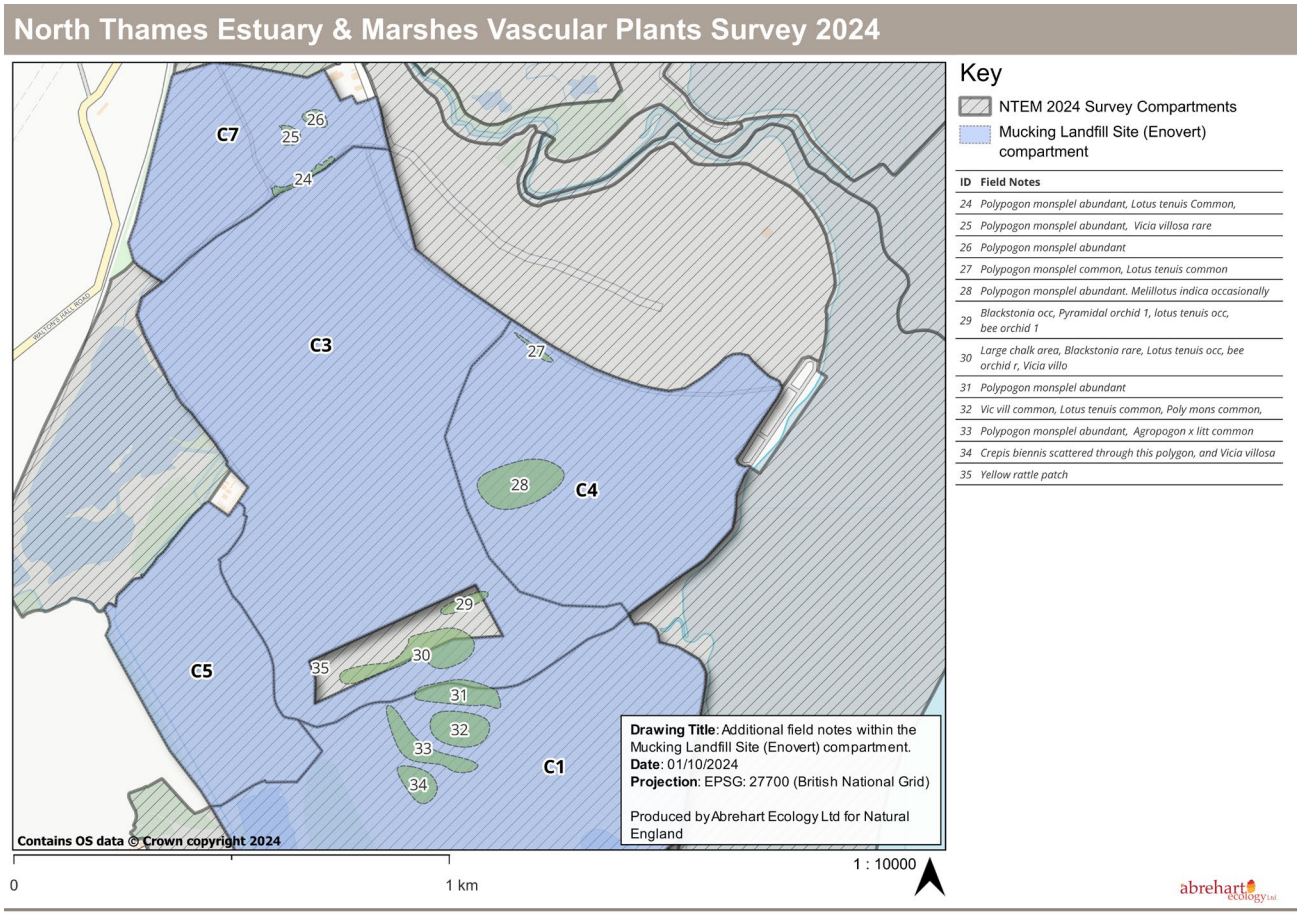


Figure 4: Additional field notes within the Mucking Landfill Site (Enovert) compartment, marked by green polygons.

Table 32: Sampling ID number and field notes for each point, including species found and abundance.

ID	Field notes
24	*Polypogon monspeliensis* abundant, *Lotus tenuis* common
25	*Polypogon monspeliensis* abundant, *Vicia villosa* rare
26	*Polypogon monspeliensis* abundant
27	*Polypogon monspeliensis* common, *Lotus tenuis* common
28	*Polypogon monspeliensis* abundant. *Melilotus indica* occasional
29	*Blackstonia* occasional, Pyramidal orchid 1, *Lotus tenuis* occasional, bee orchid 1
30	Large chalk area, *Blackstonia* rare, *Lotus tenuis* occasional, bee orchid rare, *Vicia villosa*
31	*Polypogon monspeliensis* abundant
32	*Vicia villosa* common, *Lotus tenuis* common, *Polypogon monspeliensis* common
33	*Polypogon monspeliensis* abundant, *X Agropogon littoralis* common
34	*Crepis biennis* scattered through this polygon, and *Vicia villosa*
35	Yellow rattle patch

Compartment E

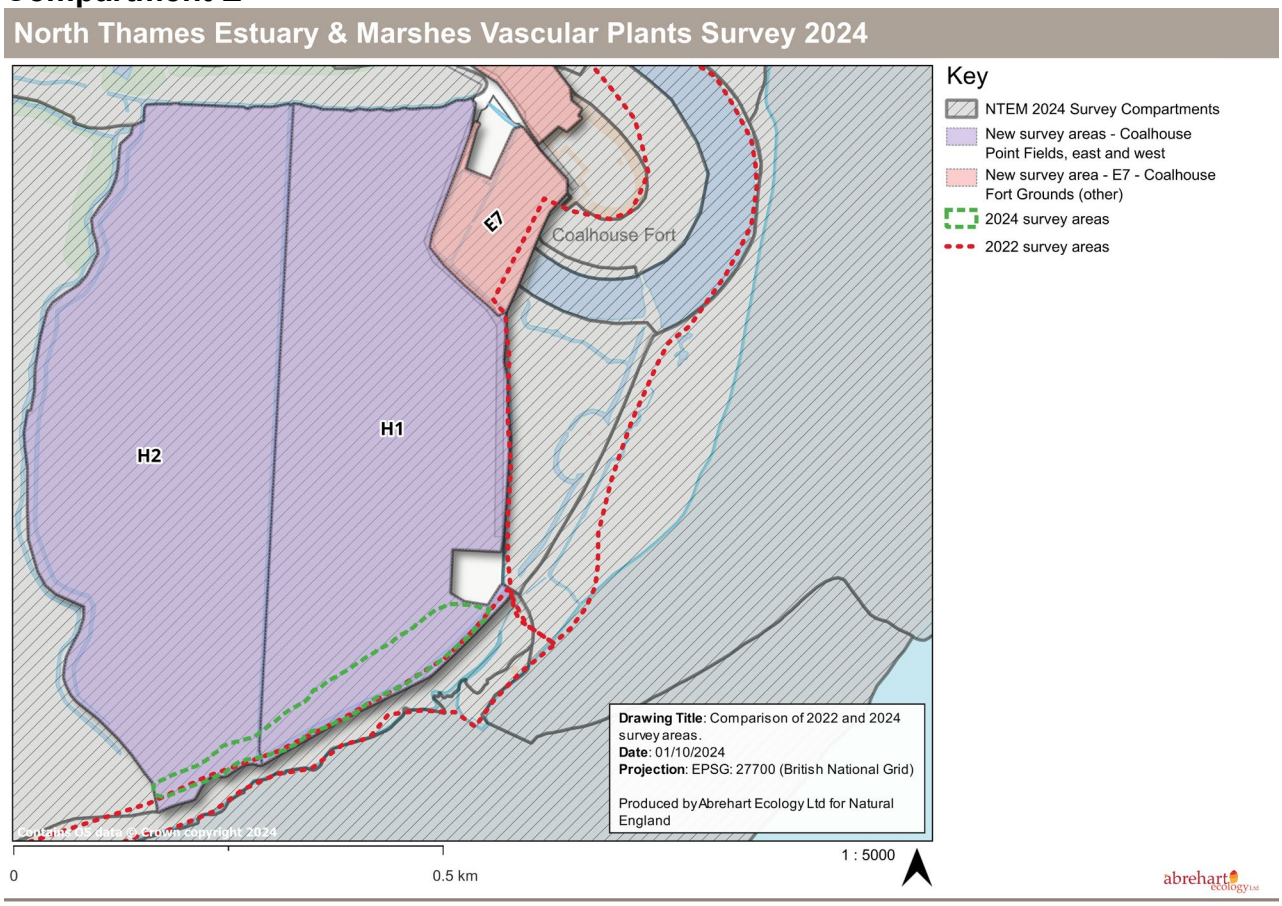


Figure 5: Comparison of 2022 and 2024 survey areas at Coalhouse Point Fields, east and west and E7- Coalhouse Fort Grounds (other).

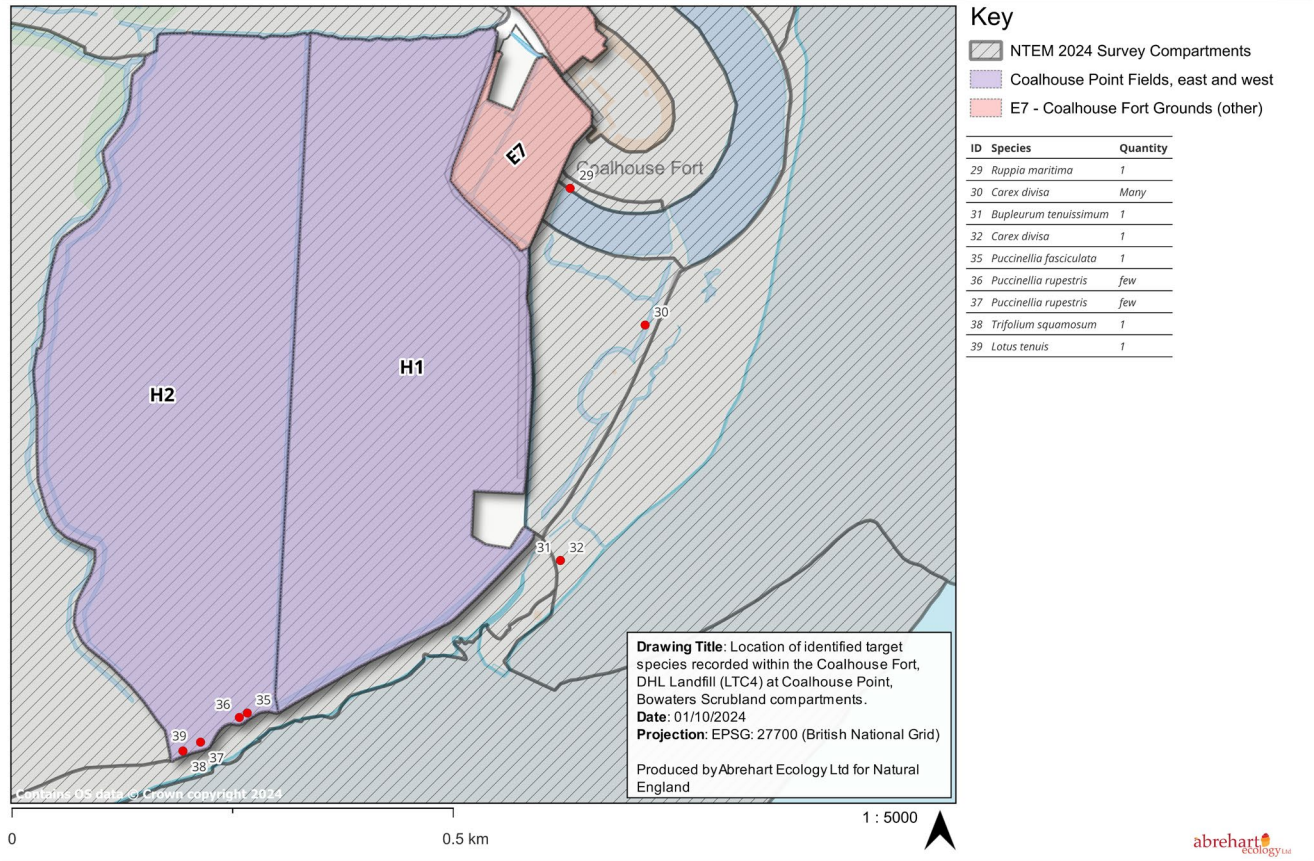


Figure 6: Location of identified target species recorded within the Coalhouse Fort, DHL Landfill (LTC4) at Coalhouse Point, Bowaters Scrubland compartments. Red dots mark the location of identified target species.

Table 43: Sample ID of identified target species recorded within the survey area, species name and quantity

ID	Species name	Quantity
29	*Ruppia maritima*	1
30	*Corex divisa*	Many
31	*Bupleurum tenuissimum*	1
32	*Corex divisa*	1
35	*Puccinellia fasciculata*	1
36	*Puccinellia rupestris*	Few
37	*Puccinellia rupestris*	Few
38	*Trifolium squamosum*	1
39	*Lotus tenuis*	1

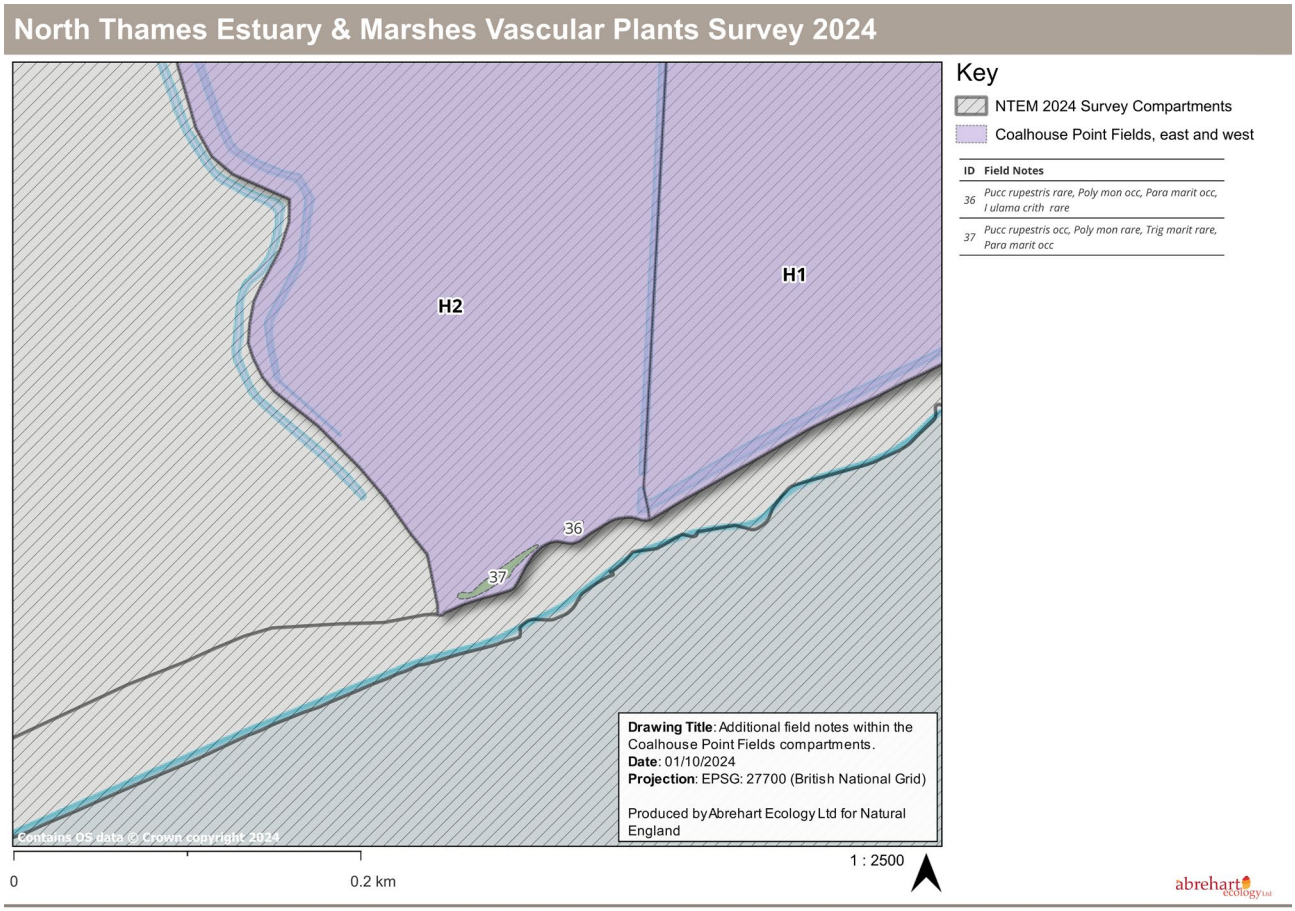


Figure 7: Additional field notes within the Coalhouse Point Fields, east and west compartments. Compartments marked by green polygons.

Table 54: ID and field notes for Coalhouse Points Fields survey area.

ID	Field Notes
36	*Puccinellia rupestris* rare, *Polypogon monspeliensis* occasional, *Parapholis incurva* occasional, *Limbardia crithmoides* rare
37	*Puccinellia rupestris* occasional, *Polypogon monspeliensis* rare, *Triglochin maritima* rare, *Parapholis incurva* occasional.

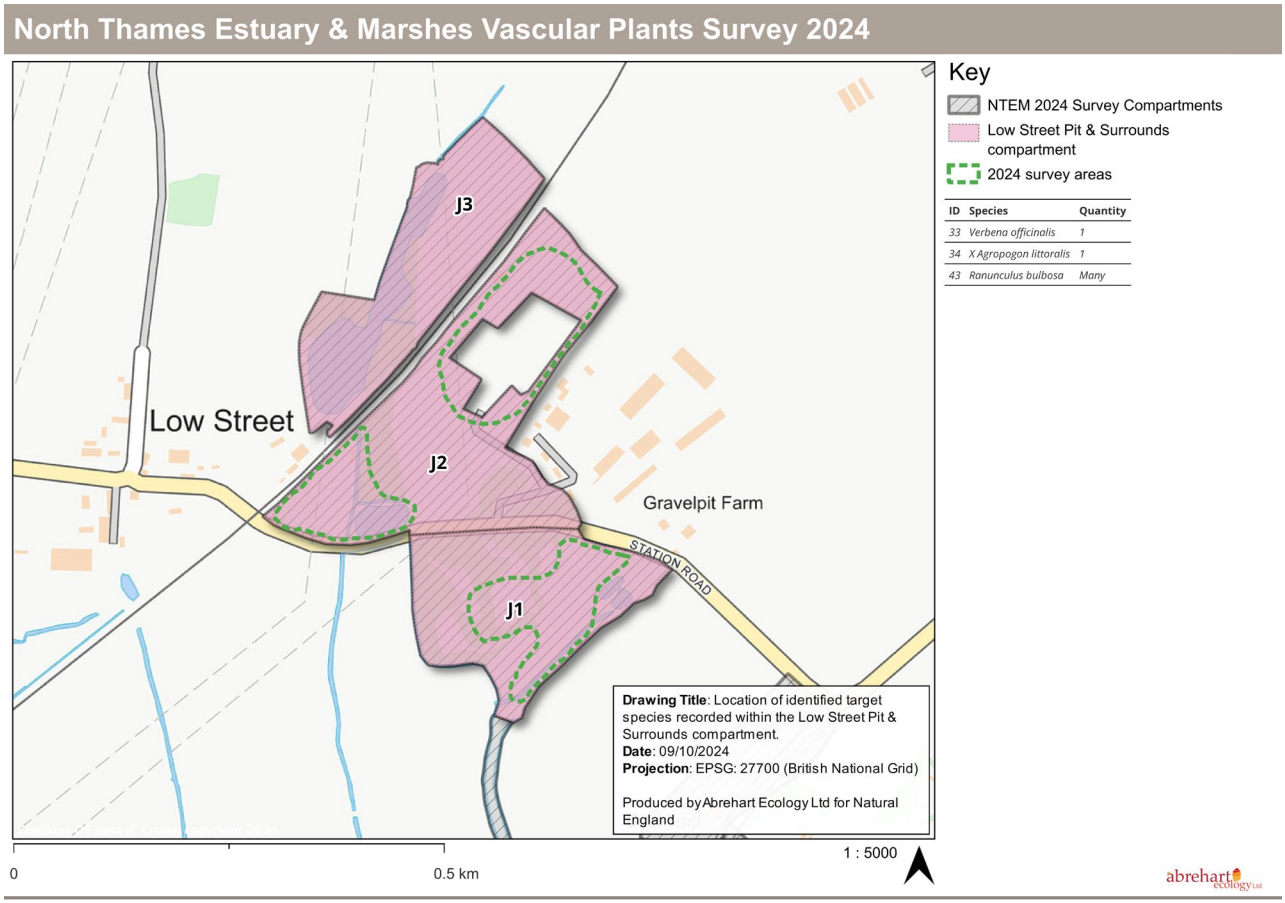


Figure 8: 2024 area surveyed within the 'Low Street Pit & Surrounds' compartment.

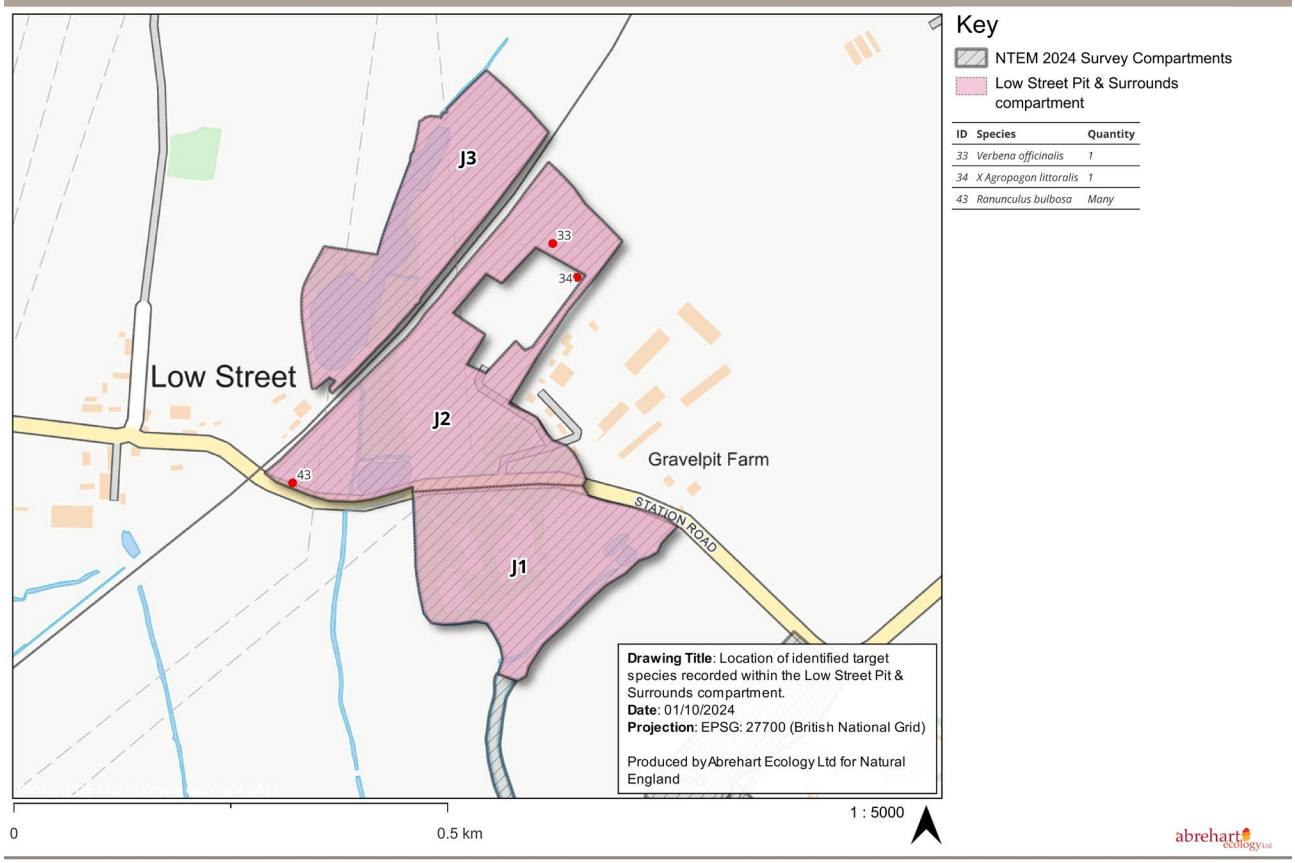


Figure 9: Location of identified target species recorded within the Low Street Pit and Surrounds compartment. Red dots mark the location of identified target species.

Table 6: ID number, species name and quantity recorded within the Low Street Pit & Surrounds compartment.

ID	Species	Quantity
33	*Verbena officinalis*	1
34	*X Agropogon littoralis*	1
43	*Ranunculos bulbosa*	Many

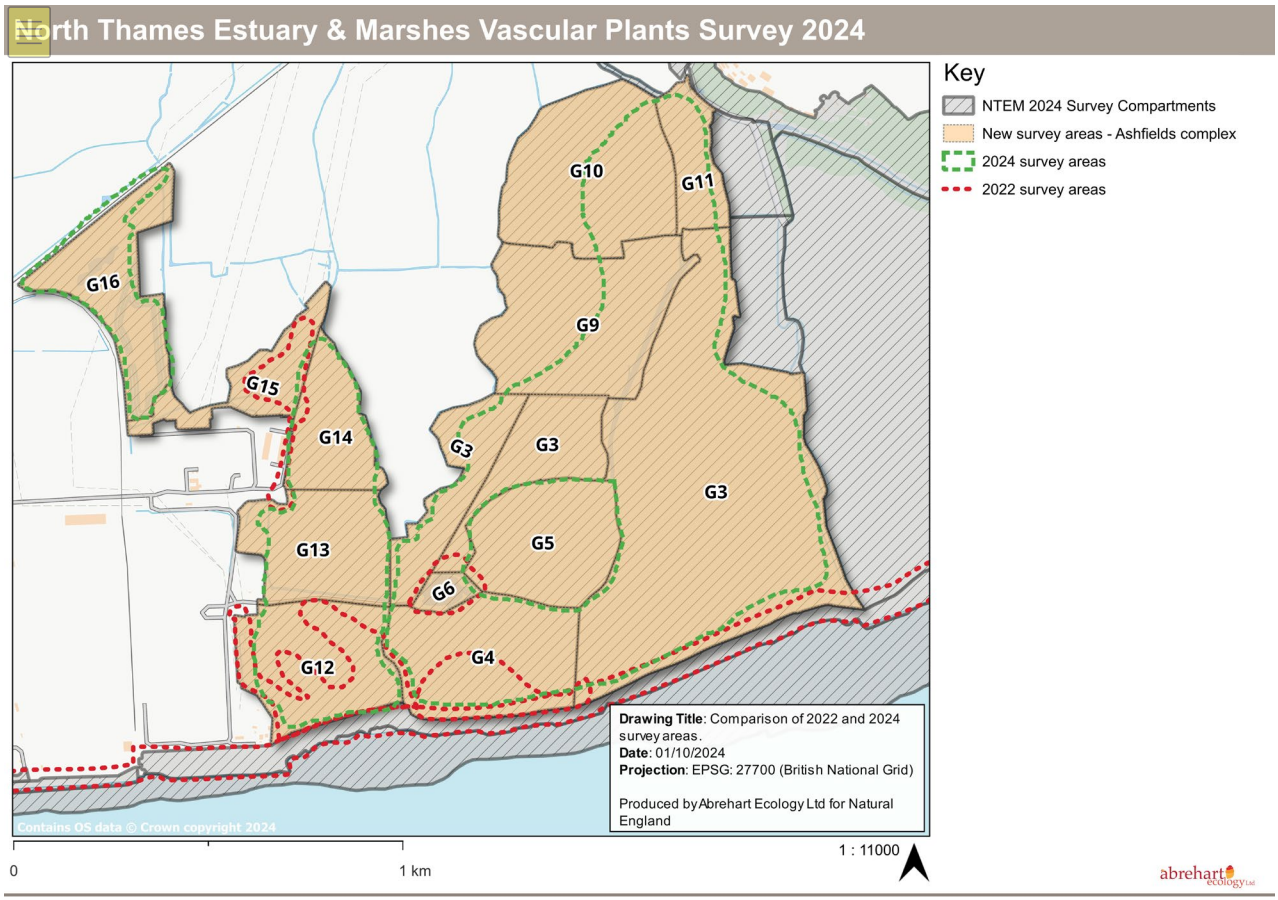


Figure 10: Comparison of 2022 and 2024 survey areas at Ashfields complex.

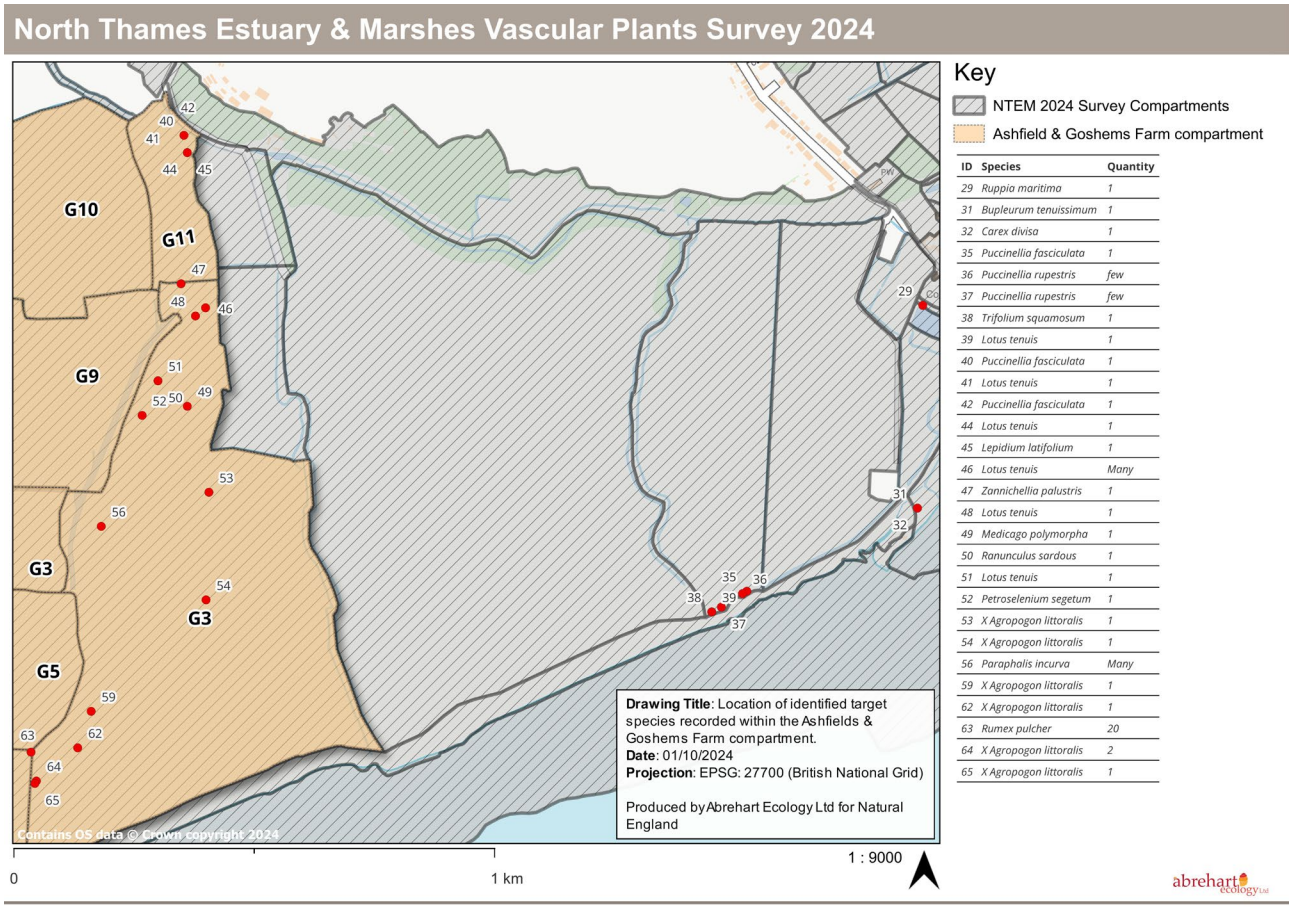


Figure 11: Location of identified target species recorded within the Ashfields & Goshems Farm compartment. Red dots mark the location of identified target species.

Table 7: Location of identified target species recorded within the Ashfields & Goshems Farm compartment. Red dots mark the location of identified target species.

ID	Species	Quantity
29	*Ruppia maritima*	1
31	*Bupleurum tenuissimum*	1
32	*Carex divisa*	1
35	*Puccinellia fasciculata*	1
36	*Puccinellia rupestris*	Few
37	*Puccinellia rupestris*	Few
38	*Trifolium squamosum*	1
39	*Lotus tenuis*	1
40	*Puccinellia fasciculata*	1
41	*Lotus tenuis*	1
42	*Puccinellia fasciculata*	1
44	*Lotus tenuis*	1

ID	Species	Quantity
45	*Lepidium latifolium*	1
46	*Lotus tenuis*	Many
47	*Zannichellia palustris*	1
48	*Lotus tenuis*	1
49	*Medicago polymorpha*	1
50	*Ranunculus sardous*	1
51	*Lotus tenuis*	1
52	*Petroselenium segetum*	1
53	*X Agropogon littoralis*	1
54	*X Agropogon littoralis*	1
56	*Paraphalis incurva*	Many
59	*X Agropogon littoralis*	1
62	*X Agropogon littoralis*	1
63	*Rumex pulcher*	20
64	*X Agropogon littoralis*	2
65	*X Agropogon littoralis*	1

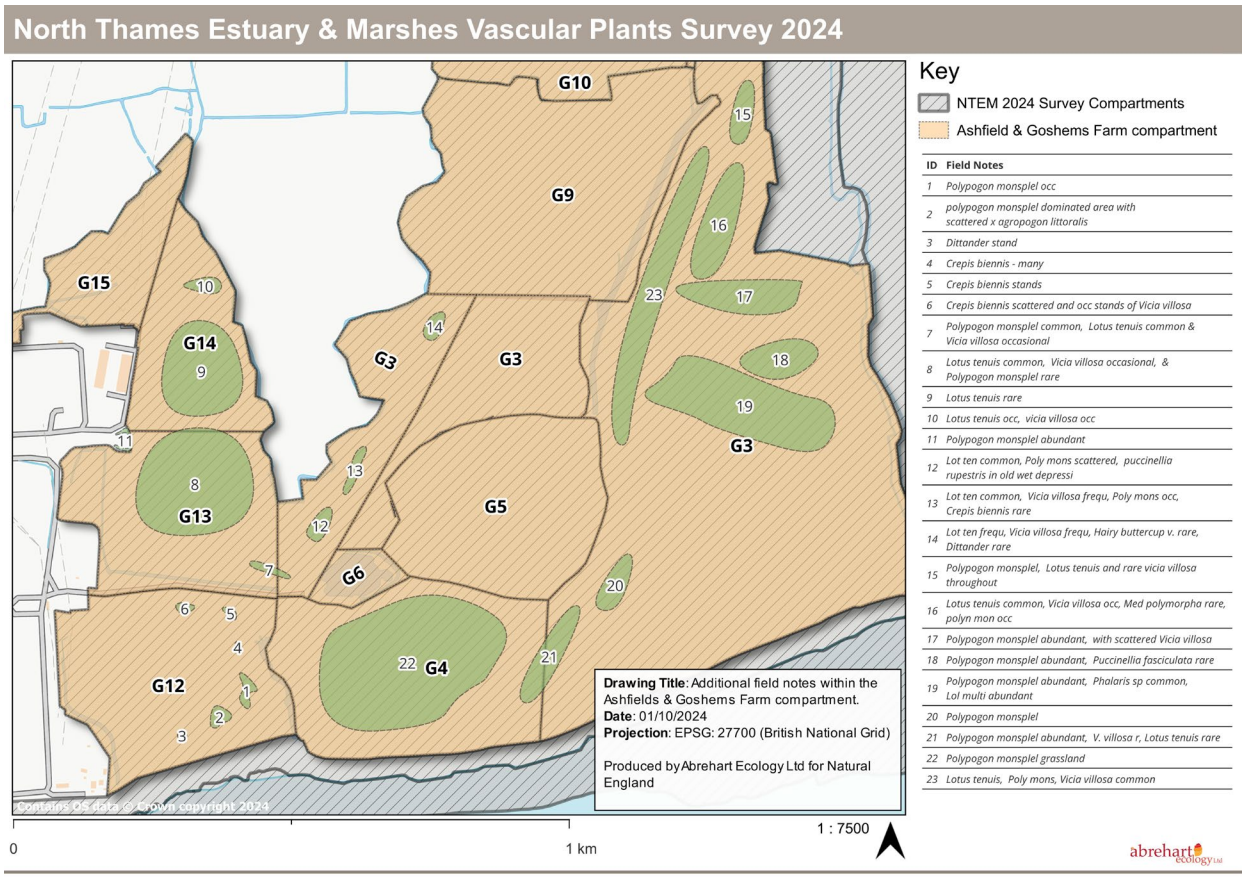


Figure 12: Additional field notes within the Ashfields & Goshems Farm compartment. Compartments marked by green polygons.

Table 8: ID number and field notes for the Ashfields & Goshems Farm compartment.

ID	Field notes
1	*Polypogon monspeliensis* occasional
2	*Polypogon monspeliensis* dominated area with scattered *x Agropogon littoralis*
3	Dittander stand
4	*Crepis biennis* - many
5	*Crepis biennis* stands
6	*Crepis biennis* scattered and occasional stands of *Vicia villosa*
7	*Polypogon monspeliensis* common, *Lotus tenuis* common & *Vicia villosa* occasional
8	*Lotus tenuis* common, *Vicia villosa* occasional, & *Polypogon monspeliensis* rare
9	*Lotus tenuis* rare
10	*Lotus tenuis* occasional, *Vicia villosa* occasional
11	*Polypogon monspeliensis* abundant

ID	Field notes
12	*Lotus tenuis* common, *Polypogon monspeliensis* scattered, *Puccinelia rupestris* in old wet depression
13	*Lotus tenuis* common, *Vicia villosa* frequent, *Polypogon monspeliensis* occasional, *Crepis biennis* rare
14	*Lotus tenuis* frequent, *Vicia villosa* frequent, Hairy buttercup very rare, Dittander rare
15	*Polypogon monspeliensis, Lotus tenuis* and rare *Vicia villosa* throughout
16	*Lotus tenuis* common, *Vicia villosa* occasional, *Medicago polymorpha* rare, *Polypogon monspeliensis* occasional
17	*Polypogon monspeliensis* abundant, with scattered *Vicia villosa*
18	*Polypogon monspeliensis* abundant, *Puccinellia fasciculata* rare
19	*Polypogon monspeliensis* abundant, *Phaloris* sp. common, *Lolium multiflorum* abundant
20	*Polypogon monspeliensis*
21	*Polypogon monspeliensis* abundant, *Vicia villosa* rare, *Lotus tenuis* rare
22	*Polypogon monspeliensis* grassland

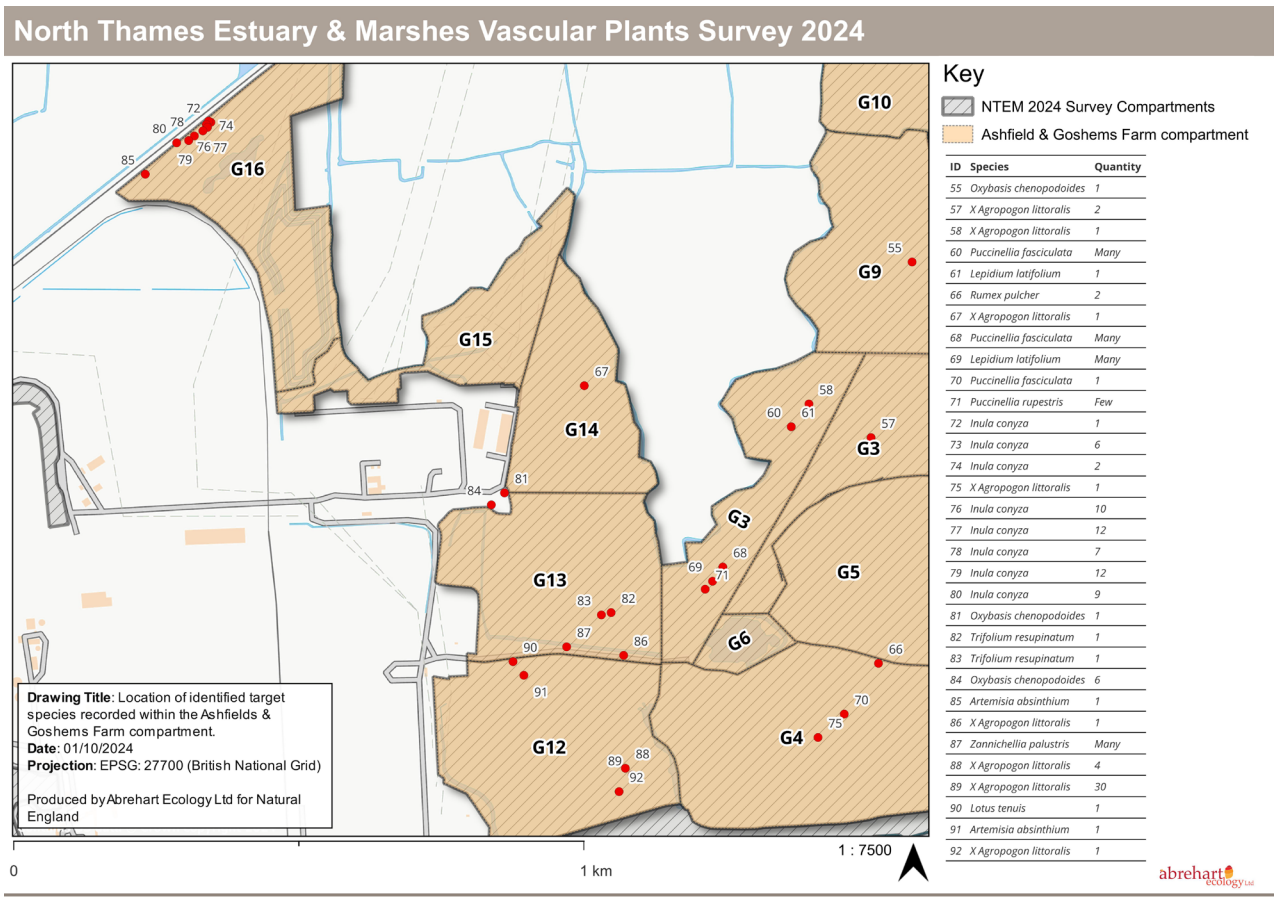


Figure 13: Location of identified target species recorded within the Ashfields & Goshems Farm compartment. Red dots mark the location of identified target species.

Table 9: ID number and field notes for the Ashfields & Goshems Farm compartment.

ID	Species	Quantity
55	*Oxybasis chenopodioides*	1
57	*X Agropogon littoralis*	2
58	*X Agropogon littoralis*	1
60	*Puccinellia fasciculata*	Many
61	*Lepidium latifolium*	1
66	*Rumex pulcher*	2
67	*X Agropogon littoralis*	1
68	*Puccinellia fasciculata*	Many
69	*Lepidium latifolium*	Many
70	*Puccinellia fasciculata*	1
71	*Puccinellia rupestris*	Fewer
72	*Inula conyza*	1
73	*Inula conyza*	6
74	*Inula conyza*	2

ID	Species	Quantity
75	*X Agropogon littoralis*	1
76	*Inula conyza*	10
77	*Inula conyza*	12
78	*Inula conyza*	7
79	*Inula conyza*	12
80	*Inula conyza*	9
81	*Oxybasis chenopodioides*	1
82	*Trifolium resupinatum*	1
83	*Trifolium resupinatum*	1
84	*Oxybasis chenopodioides*	6
85	*Artemisia absinthium*	1
86	*X Agropogon littoralis*	1
87	*Zannichellia palustris*	Many
88	*X Agropogon littoralis*	4
89	*X Agropogon littoralis*	30
90	*Lotus tenuis*	1
91	*Artemisia absinthium*	1
92	*X Agropogon littoralis*	1

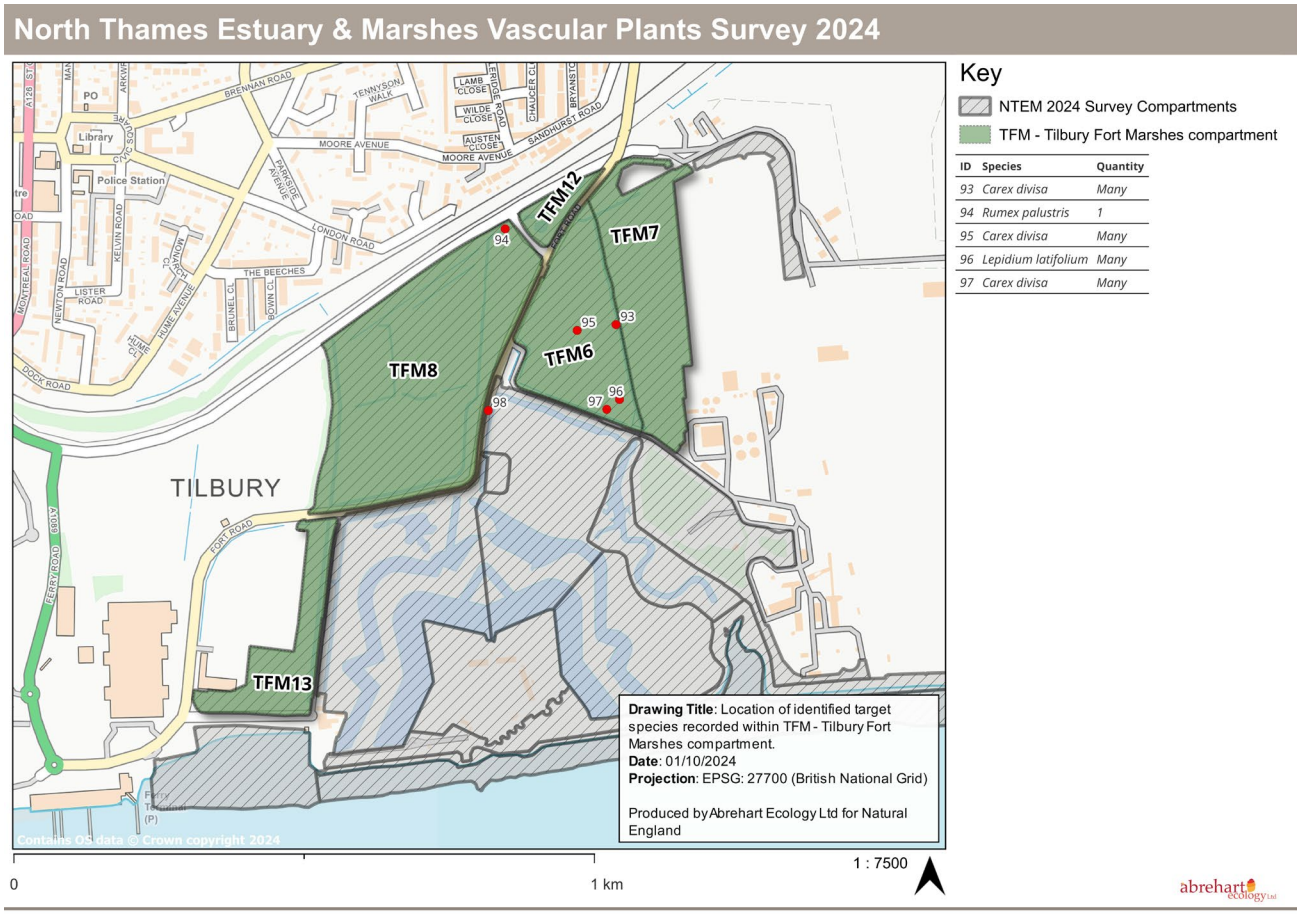


Figure 14: Location of identified target species recorded within Tilbury Fort Marshes (TFM) compartment. Red dots mark the location of identified target species.

Table 5: ID number, species name and quantity of identified target species recorded within Tilbury Fort Marshes compartment.

ID	Species	Quantity
93	*Carex divisa*	Many
94	*Rumex palustris*	1
95	*Carex divisa*	Many
96	*Lepidium latifolium*	Many
97	*Carex divisa*	Many

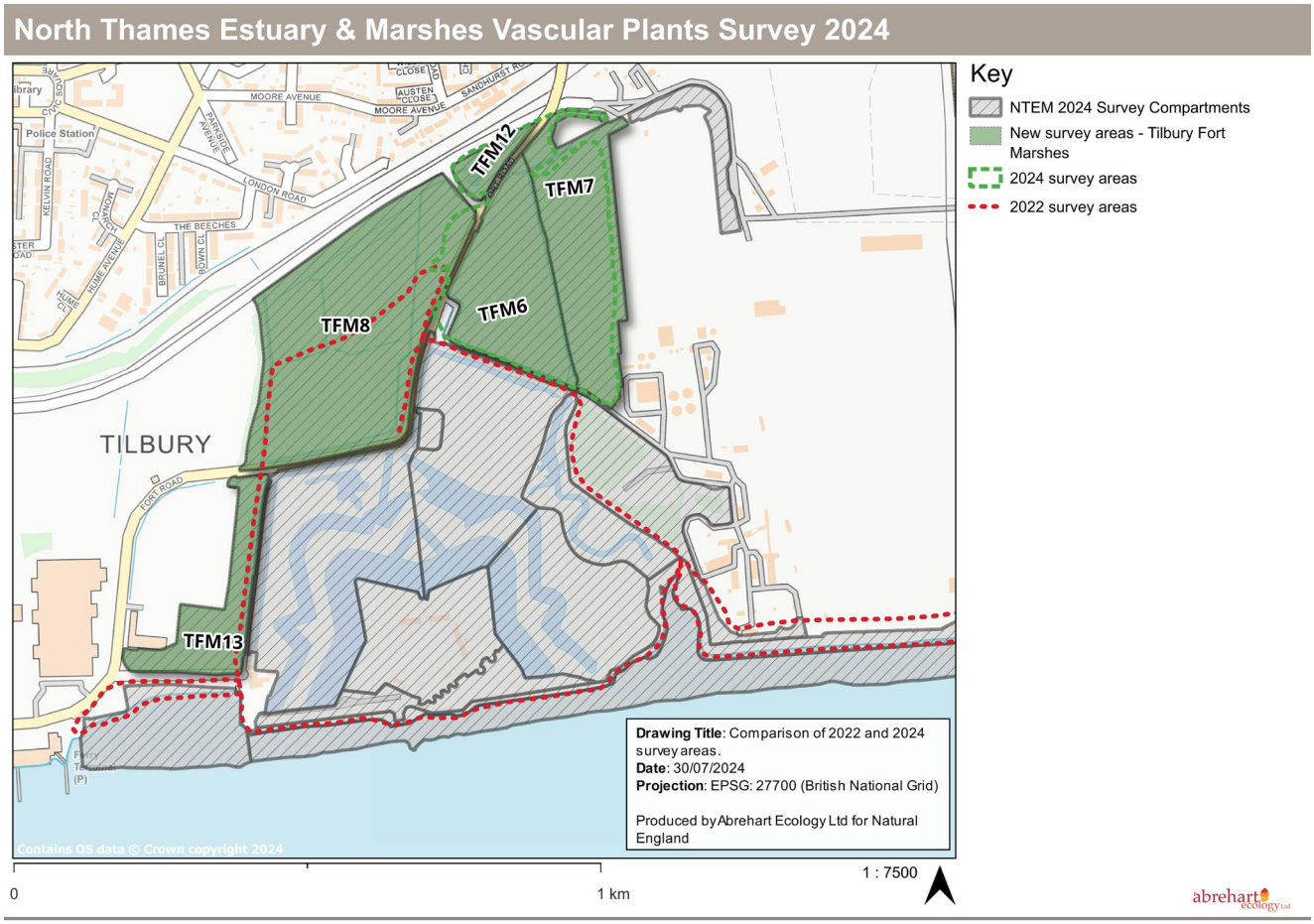


Figure 15: Comparison of 2022 and 2024 survey areas at Tilbury Fort Marshes (TFM).

Appendix 5

Table 11: Full species record of vascular plant survey. Cells left blank where data not available.

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Agrostis gigantea	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6667 475802	19/06/2024	Track side - disturbed soils	
Allium vineale	Toby Abrehart	Y	Toby Abrehart	Flowering	4 plants	C3	TQ6895 279868	19/06/2024	Track side - disturbed soils	
Allium vineale	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	C9	TQ6732 679799	19/06/2024	Track side - disturbed soils	
Allium vineale	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	SSSI2	TQ6899 976295	19/06/2024	Track side - disturbed soils	
Anacamptis pyramidalis	Toby Abrehart	Y	Toby Abrehart	Flowering	3 plants	C3	TQ6871 680012	19/06/2024	Grasslands	
Anacamptis pyramidalis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6831 180538	19/06/2024	Grasslands	
Anisantha diandra	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6831 180538	19/06/2024	Track side - disturbed soils	
Anisantha diandra	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6740 276529	19/06/2024	Track side - disturbed soils	
Artemisia absinthium	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G12	TQ6642 975775	20/06/2024	Grasslands	
Artemisia absinthium	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G16	TQ6576 576654	20/06/2024	Grasslands	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Bromus madritensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6850 979975	19/06/2024	Track side - disturbed soils	
Bromus madritensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C4	TQ6921 280272	19/06/2024	Track side - disturbed soils	
Bromus madritensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch		TQ6637 376092	20/06/2024	Track side - disturbed soils	2m x 5m stand
Bupleurum tenuissimum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	SSSI2	TQ6899 976295	19/06/2024	In coastal grasslands	
Capella rubella	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Plant	C1	TQ6896 779478	19/06/2024	Track side - disturbed soils	
Capella rubella	Toby Abrehart	Y	Toby Abrehart	Flowering	2 Plant	C7	TQ6866 380802	19/06/2024	Track side - disturbed soils	
Capella rubella	Toby Abrehart	Y	Toby Abrehart	Flowering	3 Plant	J2	TQ6712 377743	19/06/2024	Track side - disturbed soils	
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	E1	TQ6909 576562	19/06/2024	In coastal grasslands	2m x 2m stand
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	SSSI2	TQ6899 976295	19/06/2024	In coastal grasslands	
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	TFM3	TQ6508 675809	20/06/2024	In coastal grasslands	Patch on side of road
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	TFM6	TQ6523 975947	20/06/2024	In coastal grasslands	Large patch

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	TFM6	TQ6530 675957	20/06/2024	In coastal grasslands	Patch bank side
Carex divisa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	TFM6	TQ6529 075811	20/06/2024	In coastal grasslands	Large patch
Carex divulsa ssp. learsii	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C9	TQ6737 379747	19/06/2024	Grasslands	
Carex muricata	Toby Abrehart	Y	Toby Abrehart	Flowering	Several Patches	J1	TQ6727 877511	19/06/2024	Grasslands	Multiple stands
Carlina vulgaris	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C9	TQ6746 479792	19/06/2024	Calcareous Grasslands	
Carlina vulgaris	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C9	TQ6730 679792	19/06/2024	Calcareous Grasslands	
Catapodium marinum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C4	TQ6921 280223	19/06/2024	Track side - disturbed soils	
Catapodium marinum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C7	TQ6827 680531	19/06/2024	Track side - disturbed soils	
Cerastium semidecandrum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C9	TQ6732 579807	19/06/2024	Track side - disturbed soils	Rare
Cerastium semidecandrum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G12	TQ6658 675581	20/06/2024	Track side - disturbed soils	Rare
Cerastium semidecandrum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	J2	TQ6714 277695	19/06/2024	Track side - disturbed soils	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Cochlearia anglica	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C7	TQ6859 180854	19/06/2024	Track side - disturbed soils	
Cotula coronopifolia	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G6	TQ6675 975828	19/06/2024	Ditch	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C1	TQ6888 679419	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C2	TQ6893 179722	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6842 080624	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6899 480484	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6871 680012	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C9	TQ6732 679799	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	20 plants	G12	TQ6654 875540	20/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G12	TQ6650 775767	20/06/2024	Grasslands	Scattered
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	6 plants	G12	TQ6641 075799	20/06/2024	Grasslands	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6741 976560	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	H2	TQ6856 676079	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	J2	TQ6730 277846	19/06/2024	Grasslands	
Crepis biennis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	J2	TQ6716 977591	19/06/2024	Grasslands	
Hordeum marinum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6876 479549	19/06/2024	Track side - disturbed soils	
Hordeum marinum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6874 779736	19/06/2024	Track side - disturbed soils	In vehicle track
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G16	TQ6588 076745	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	10 plants	G16	TQ6587 476736	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	12 Plants	G16	TQ6586 676730	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	12 Plants	G16	TQ6584 176713	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	6 plants	G16	TQ6587 676747	20/06/2024	Calcareous Grasslands	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	G16	TQ6587 276741	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	7 plants	G16	TQ6585 176721	20/06/2024	Calcareous Grasslands	
Inula conyza	Toby Abrehart	Y	Toby Abrehart	Flowering	9 plants	G16	TQ6582 076709	20/06/2024	Calcareous Grasslands	
Lathyrus aphaca	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	C4	TQ6906 580043	19/06/2024	Grasslands	
Lepidium latifolium	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G11	TQ6748 077035	19/06/2024	Track side - disturbed soils	
Lepidium latifolium	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6689 876211	19/06/2024	Track side - disturbed soils	Rare
Lepidium latifolium	Toby Abrehart	Y	Toby Abrehart	Flowering	Many stands	G3	TQ6676 075940	19/06/2024	Track side - disturbed soils	Stand on slope
Lepidium latifolium	Toby Abrehart	Y	Toby Abrehart	Flowering	Many stands	TFM6	TQ6531 275828	20/06/2024	Track side - disturbed soils	Patch
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6897 280509	19/06/2024	Grasslands	Rare
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6876 079768	19/06/2024	Grasslands	
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6899 480484	19/06/2024	Grasslands	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C3	TQ6894 879846	19/06/2024	Grasslands	Common
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C4	TQ6920 180128	19/06/2024	Grasslands	Common
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C7	TQ6853 880713	19/06/2024	Grasslands	Clump
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G11	TQ6744 577099	19/06/2024	Grasslands	
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G11	TQ6748 077035	19/06/2024	Grasslands	
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G12	TQ6641 075799	20/06/2024	Grasslands	Common
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6751 876712	19/06/2024	Grasslands	Common
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6749 776695	19/06/2024	Grasslands	
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6741 976560	19/06/2024	Grasslands	
Lotus tenuis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	H2	TQ6857 176079	19/06/2024	Grasslands	Rare
Medicago polymorpha	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6874 779736	19/06/2024	Track side - disturbed soils	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Medicago polymorpha	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6876 079768	19/06/2024	Track side - disturbed soils	
Medicago polymorpha	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	C3	TQ6894 879846	19/06/2024	Track side - disturbed soils	occasional
Medicago polymorpha	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6748 076507	19/06/2024	Track side - disturbed soils	
Melilotus indica	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G3	TQ6741 776169	19/06/2024	Track side - disturbed soils	Rare
Myosotis ramosissima	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	G16	TQ6584 076716	20/06/2024	Track side - disturbed soils	
Myosotis ramosissima	Toby Abrehart	Y	Toby Abrehart	Flowering	Many patches	G16	TQ6588 176743	20/06/2024	Track side - disturbed soils	Scattered all through habitat
Myosotis ramosissima	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Plants		TQ6625 175783	20/06/2024	Track side - disturbed soils	Rare
Oenanthe crocata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Plants	SW	TQ6709 275519	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	10 plants	SSSI1	TQ6929 777588	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	30 plants	SSSI1	TQ6930 477589	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	SSSI1	TQ6930 977603	19/06/2024	Coastal grasslands	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	SSSI1	TQ6931 177612	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	4 plants	SSSI1	TQ6930 777610	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	5 plants	SSSI1	TQ6930 177607	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	39 plants	SSSI1	TQ6930 377602	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	24 plants	SSSI1	TQ6930 377639	19/06/2024	Coastal grasslands	
Orchis morio	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	SSSI1	TQ6927 077634	19/06/2024	Coastal grasslands	
Oxybasis chenopodoides	Toby Abrehart	Y	Toby Abrehart	Start of basal leaves only	1 patch	G9	TQ6711 076500	19/06/2024	Track side - disturbed soils	
Oxybasis chenopodoides	Toby Abrehart	Y	Toby Abrehart	Start of basal leaves only	1 patch		TQ6639 576095	20/06/2024	Track side - disturbed soils	
Oxybasis chenopodoides	Toby Abrehart	Y	Toby Abrehart	Start of basal leaves only	6 patches		TQ6637 276074	20/06/2024	Track side - disturbed soils	
Papaver dubium	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6889 780571	19/06/2024	Track side - disturbed soils	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Paraphalis incurva	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C1	TQ6895 179565	19/06/2024	Track side - disturbed soils	
Paraphalis incurva	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6874 779736	19/06/2024	Track side - disturbed soils	
Paraphalis incurva	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6894 879846	19/06/2024	Track side - disturbed soils	
Paraphalis incurva	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6730 176257	19/06/2024	Track side - disturbed soils	Several patches on bare soil
Petroselenium segetum	Toby Abrehart	Y	Toby Abrehart	Non flowering	1 plant	G3	TQ6738 676488	19/06/2024	Track side - disturbed soils	
Phalaris paradoxa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 large patch	C3	TQ6860 780274	19/06/2024	Track side - disturbed soils	
Phalaris paradoxa	Toby Abrehart	Y	Toby Abrehart	Flowering	2 large patch	G3	TQ6752 976246	19/06/2024	Track side - disturbed soils	
Poa infirma	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6876 479549	19/06/2024	Track side - disturbed soils	In vehicle track
Poa infirma	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	J2	TQ6715 277758	19/06/2024	Track side - disturbed soils	
Poa infirma	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	SSSI1	TQ6925 777475	19/06/2024	Track side - disturbed soils	Common in this section of the track
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6876 479549	19/06/2024	Track side - disturbed soils	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6874 779736	19/06/2024	Track side - disturbed soils	
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6897 280509	19/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6837 180805	19/06/2024	Track side - disturbed soils	
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6827 680531	19/06/2024	Track side - disturbed soils	
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C7	TQ6833 680711	19/06/2024	Track side - disturbed soils	10m x2m patch
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G11	TQ6744 577099	19/06/2024	Track side - disturbed soils	Large, on bank of coal ash
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G11	TQ6747 377071	19/06/2024	Track side - disturbed soils	
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G11	TQ6749 676914	19/06/2024	Track side - disturbed soils	On track edge
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G12	TQ6661 475553	20/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G12	TQ6656 575743	20/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G12	TQ6659 675571	20/06/2024	Track side - disturbed soils	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6751 876712	19/06/2024	Track side - disturbed soils	Common
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6753 876761	19/06/2024	Track side - disturbed soils	
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6749 776695	19/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6667 475802	19/06/2024	Track side - disturbed soils	Stand
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G9	TQ6711 076500	19/06/2024	Track side - disturbed soils	Frequent in this area
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	J2	TQ6713 977702	19/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	J2	TQ6715 777750	19/06/2024	Track side - disturbed soils	Rare
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	Many		TQ6725 877805	20/06/2024	Track side - disturbed soils	Scattered
Polypogon monspeliensis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch		TQ6625 175783	20/06/2024	Track side - disturbed soils	occasional
Potentilla argentea	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C6	TQ6823 180561	19/06/2024	Acid grasslands	
Pseudognaphalium luteoalbum	Toby Abrehart	Y	Toby Abrehart	Flowering	30		TQ6625 175783	20/06/2024	Pavement	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G11	TQ6747 377071	19/06/2024	Coastal developing grasslands, seasonally flooded	On edge of road
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G11	TQ6744 577099	19/06/2024	Coastal developing grasslands, seasonally flooded	Large
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6689 876211	19/06/2024	Coastal developing grasslands, seasonally flooded	Frequent in this area
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G3	TQ6677 875965	19/06/2024	Coastal developing grasslands, seasonally flooded	Small number of stands
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G4	TQ6699 175707	19/06/2024	Coastal developing grasslands, seasonally flooded	
Puccinellia fasciculata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	H2	TQ6864 476122	19/06/2024	Coastal developing grasslands, seasonally flooded	On edge of field
Puccinellia rupestris	Toby Abrehart	Y	Toby Abrehart	Flowering	Few	G3	TQ6674 775926	19/06/2024	Coastal developing grasslands, seasonally flooded	

Species name	Recorder name	Certainty	Identified by	Stage	Quantity	Site name	Grid Ref	Date	Habitat	Comment
Puccinellia rupestris	Toby Abrehart	Y	Toby Abrehart	Flowering	few	H2	TQ6863 576117	19/06/2024	Coastal developing grasslands, seasonally flooded	
Puccinellia rupestris	Toby Abrehart	Y	Toby Abrehart	Flowering	few	H2	TQ6859 176089	19/06/2024	Coastal developing grasslands, seasonally flooded	
Ranunculus bulbosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	J2	TQ6695 177579	19/06/2024	Grasslands, seasonally flooded	In abundance, not much else in this field
Ranunculus sardous	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6837 180805	19/06/2024	Coastal developing grasslands, seasonally flooded	
Ranunculus sardous	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6832 580752	19/06/2024	Coastal developing grasslands, seasonally flooded	
Ranunculus sardous	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6840 680809	19/06/2024	Coastal developing grasslands, seasonally flooded	
Ranunculus sardous	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6741 976560	19/06/2024	Coastal developing grasslands, seasonally flooded	

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Reseda alba	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6860 780274	19/06/2024	Track side - disturbed soils	
Rostraria cristata	Toby Abrehart	Y	Toby Abrehart	Flowering	>10 plants	C3	TQ6894 579842	19/06/2024	Track side - disturbed soils	Small colony
Rostraria cristata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C4	TQ6922 580234	19/06/2024	Track side - disturbed soils	
Rumex palustris	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6864 280763	19/06/2024	In ditch	
Rumex palustris	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	TFM8	TQ6511 576122	20/06/2024	In ditch	In ditch
Rumex pulcher	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	G4	TQ6705 175796	19/06/2024	Track side - disturbed soils	
Rumex pulcher	Toby Abrehart	Y	Toby Abrehart	Flowering	20 plants	G4	TQ6715 575787	19/06/2024	Track side - disturbed soils	
Ruppia maritima	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	E2	TQ6901 076717	19/06/2024	In ditch	In lagoon edge
Sanguisorba minor ssp muricata	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6852 680804	19/06/2024	Track side - disturbed soils	
Sisymbrium altissimum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6871 680012	19/06/2024	Track side - disturbed soils	
Sisymbrium altissimum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6740 076513	19/06/2024	Track side - disturbed soils	

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Suaeda maritima	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G9	TQ6711 076500	19/06/2024	Coastal developing grasslands, seasonally flooded	Occasional
Trifolium glomeratum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C9	TQ6732 579807	19/06/2024	Track side - disturbed soils	On path
Trifolium micranthum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C9	TQ6732 579807	19/06/2024	Track side - disturbed soils	On path
Trifolium resupinatum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G13	TQ6656 575881	20/06/2024	Developing grasslands	
Trifolium resupinatum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G13	TQ6658 275885	20/06/2024	Developing grasslands	
Trifolium squamosum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	H2	TQ6857 176079	19/06/2024	Coastal developing grasslands, seasonally flooded	Occasional
Trifolium subterraneum	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6827 680531	19/06/2024	Track side - disturbed soils	
Verbascum blattaria	Toby Abrehart	Y	Toby Abrehart	Flowering	4 plants	C6	TQ6823 580538	19/06/2024	Track side - disturbed soils	
Verbascum blattaria	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	J2	TQ6727 077831	19/06/2024	Track side - disturbed soils	
Verbena officinalis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6832 680329	19/06/2024	Track side - disturbed soils	

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Verbena officinalis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	J2	TQ6725 177855	19/06/2024	Track side - disturbed soils	
Vicia bithynica	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6871 680012	19/06/2024	Developing grasslands	
Vicia parviflora	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6893 779907	19/06/2024	Developing grasslands	
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C3	TQ6896 779976	19/06/2024	Developing grasslands	Common
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C3	TQ6897 280509	19/06/2024	Developing grasslands	Rare
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C4	TQ6901 779992	19/06/2024	Developing grasslands	Large patch
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	6 patches	C4	TQ6921 280272	19/06/2024	Developing grasslands	
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	C4	TQ6920 180128	19/06/2024	Developing grasslands	Common
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	C7	TQ6856 280875	19/06/2024	Developing grasslands	
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G12	TQ6661 475553	20/06/2024	Developing grasslands	Rare
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many	G12	TQ6650 775767	20/06/2024	Developing grasslands	Common

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Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 patch	G3	TQ6741 976560	19/06/2024	Developing grasslands	
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	Many patches	G3	TQ6753 076709	19/06/2024	Developing grasslands	On bank, abundant
Vicia villosa	Toby Abrehart	Y	Toby Abrehart	Flowering	1 Patch	J2	TQ6713 777699	19/06/2024	Developing grasslands	In skip
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C3	TQ6889 780571	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	C3	TQ6880 880710	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	C4	TQ6906 580036	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	4 plants	G12	TQ6660 775612	20/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	30 plants	G12	TQ6661 975600	20/06/2024	Coastal developing grasslands, seasonally flooded	Plants smaller than usual

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X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G12	TQ6659 675571	20/06/2024	Coastal developing grasslands, seasonally flooded	Rare
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G13	TQ6660 475810	20/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G14	TQ6653 576283	20/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6752 576328	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6751 976104	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6725 275796	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	G3	TQ6716 675727	19/06/2024	Coastal developing grasslands, seasonally flooded	

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X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6728 075872	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6716 375722	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	2 plants	G3	TQ6692 976251	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G3	TQ6703 876192	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant	G4	TQ6694 575666	19/06/2024	Coastal developing grasslands, seasonally flooded	
X Agropogon littoralis	Toby Abrehart	Y	Toby Abrehart	Flowering	1 plant		TQ6727 977816	20/06/2024	Coastal developing grasslands, seasonally flooded	
Zannichellia palustris	Toby Abrehart	Y	Toby Abrehart	Flowering	Many stands	G13	TQ6650 475825	20/06/2024	In ditch	Abundant in ditch

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Zannichellia palustris	Toby Abrehart	Y	Toby Abrehart	Flowering	Many stands	G3	TQ6746 776762	19/06/2024	In ditch	

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