

The Flora of South Gare



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Photo above is of Broad-leaved Everlasting-pea *Lathyrus latifolius*.

Table of Contents

<u>Introduction</u>	<u>History of South Gare</u>
<u>Why is South Gare Interesting?</u>	<u>Plant surveys</u>
<u>Study area</u>	<u>Land ownership at the South Gare</u>
<u>SSSI Land designation</u>	<u>Industrial impact</u>
<u>Habitats</u>	<u>The “Cabin Rocks”</u>
<u>Saltmarsh</u>	<u>Dunes</u>
<u>Dune slacks</u>	<u>Access Road & the end of the Gare</u>
<u>Soil Mounds</u>	<u>Ponds</u>
<u>Grassland</u>	<u>Alien Plants</u>
<u>Species Profiles</u>	<u>Sea-holly</u>
<u>Hawkweeds</u>	<u>Heath Dog-violet</u>
<u>Purple Milk-vetch</u>	<u>Sand Sedge</u>
<u>Distant Sedge</u>	<u>Long-bracted Sedge</u>
<u>Lesser Centaury</u>	<u>Maiden Pink</u>
<u>Frog Rush</u>	<u>Acknowledgements</u>
<u>Bibliography</u>	<u>Index</u>

Introduction

My intention with this flora is to highlight the very diverse plant life that has developed at the South Gare. I hope to show that former industrial areas can over time become wildlife havens. The mosaic of habitats and the geographic position of the Gare plus man's influence has and continues to affect the flora. It is perhaps one of the best places in North East Yorkshire for alien plants to thrive. There are too many species to consider for individual profiles in this flora but a complete list is available as a spreadsheet linked to the pdf. I will concentrate on key species both aliens and native. South Gare has several nationally rare plants and any visit to the South Gare in June and July is a spectacular delight with thousands of wildflowers equal to anywhere in the country. The plants are in a sanctuary free from herbicides and pesticides. At any time of year the Gare can produce masses of flowers even in the depths of winter! The Botanical Society of Britain and Ireland (BSBI) bsbi.org have over the last few winters run a New Year Plant Hunt. On January 4th 2021 I managed to find an amazing 55 species in flower. If you come in the summer expect that number to be considerably higher!

The South Gare is a mixture of wild coastal habitat with the addition of the impact of industry. It is a playground for the people of Redcar and beyond. From people walking their dogs to fishermen and people just spending a day looking at the passing ships or having a picnic the Gare caters for everyone. A hidden aspect of the Gare is its fabulous flora which goes mostly unnoticed by nearly everyone.

I hope this flora will stimulate an interest in what we have in our area so that we will cherish our heritage and protect it for the future. South Gare is a Site of Special Scientific Interest (SSSI) and as such has a degree of protection. It is a botanical oasis untouched by farming and ironically the impact of industrialisation has actually produced a more diverse flora than would have been otherwise. The South Gare is a good place for local birdwatchers and is particularly attractive to migrating birds in spring and autumn. It can be a good place to see butterflies and moths especially in the summer months. It is also home to two rare spiders, *Silometopus incurvatus*, found in the sand dunes, the records at the Gare are the furthest south in the U.K. and also *Dysdera crocata*, the Woodlouse Spider, which is rare in northern England.

One of the Gare's many alien plant species which runs riot in the dunes overlooking Bran Sands is Red Valerian *Centranthus ruber*. It is a native of the Mediterranean region, although it has spread throughout the world now. It can tolerate very alkaline rocky soil conditions such as at the Gare which is similar to its native habitat in the Mediterranean. This probably means it is very at home at the Gare especially amongst the calcareous steelworks slag. In the summer it puts on spectacular display especially on the bare areas of slag, NZ565260.



Red valerian, *Centranthus ruber*, overlooking Bran Sands, NZ557268.

History of South Gare

South Gare is at the southern edge of the Tees estuary. It is a man made construction to enable the River Tees to be navigated by larger ships. The construction of the two Gares, North and South of the mouth of the Tees also constrained the river from altering its course. The construction took place in the mid 1800s. The word ‘Gare’ has several meanings.

1. a dock-basin on a waterway
2. a pier or wharf
3. a train station.

In essence the South Gare is almost all three. The Gare was constructed by using a railway to bring the millions of tonnes of slag from the iron works. Some of the original railway rails from the 1860s can still be seen at the end of the Gare.

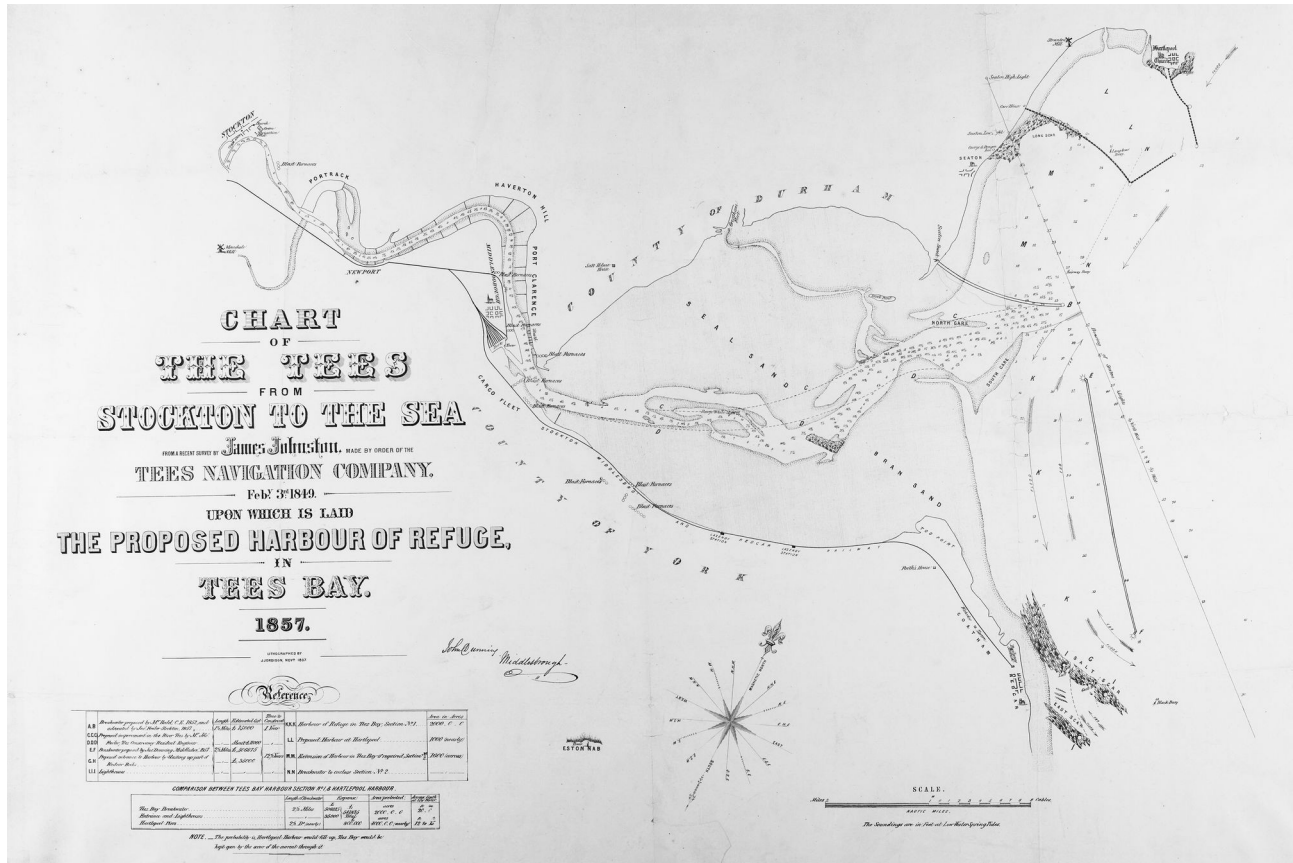
Before the industrial revolution the mouth of the Tees was much wider and the river was probably shallow in places. This is shown particularly well in this map from [1]J. G. Baker’s supplement to the Flora of Yorkshire. In the top of the map it shows the wide River Tees estuary. At the time this map was produced in 1854 South Gare didn’t exist.



Here is a series of historic maps of Teessmouth showing the South Gare area. These maps are from the Teesside archives (many thanks to Christine Corbett for these maps). The maps belong to the collection U-S-2128. The first map shows the mouth of the Tees before most of the land reclamation started in the mid 1800s. Unfortunately we don’t have a great deal of information

Flora of South Gare

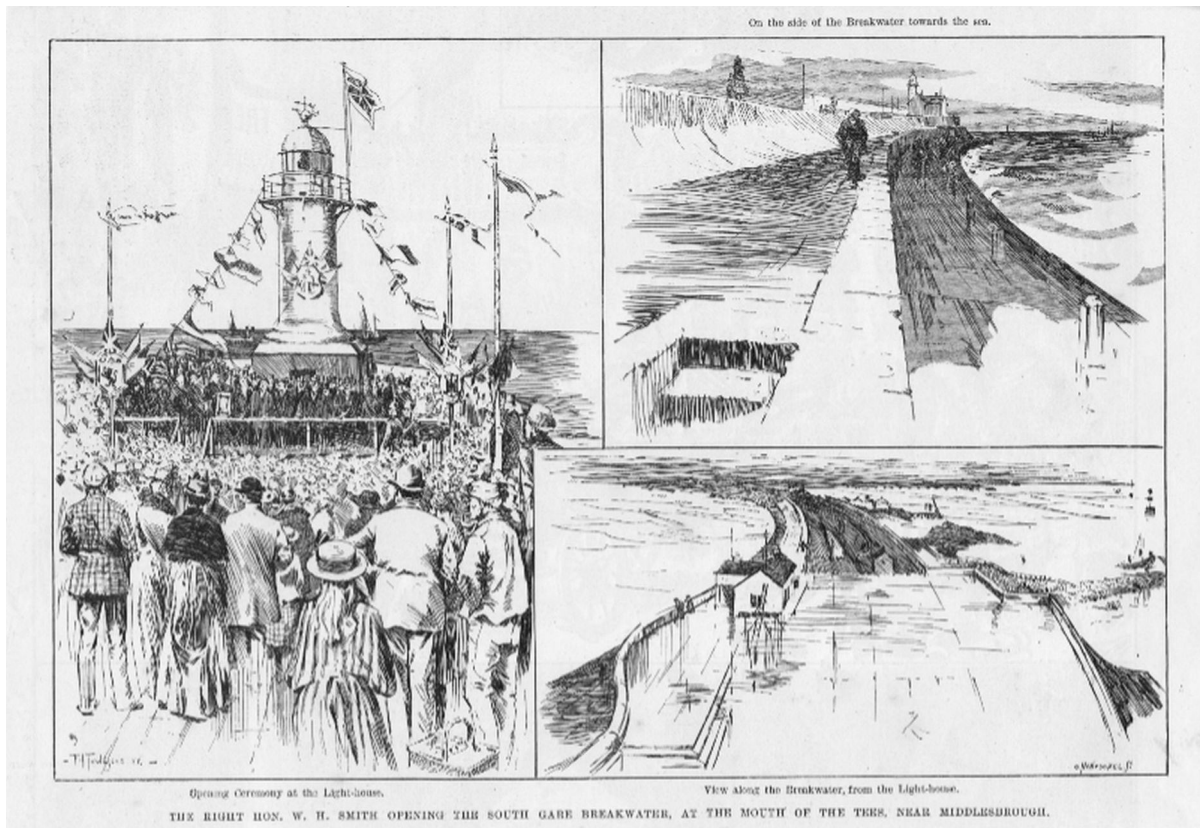
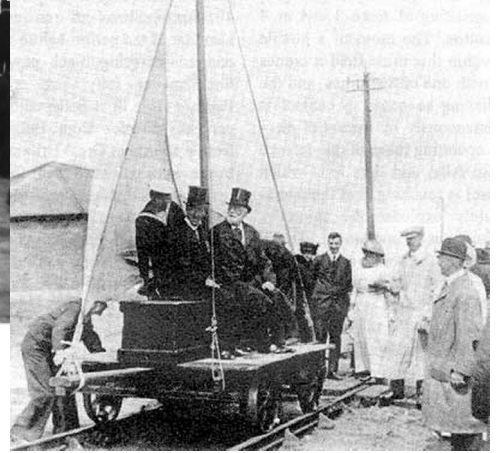
about the flora at this time but the fragments of habitat and species which still survive at the Gare are evidence of the former richness of the botanical interest. Unfortunately some species which were present at this time now seem to have gone. An example of this is Yellow-horned Poppy, *Glaucium flavum*, the first record in the BSBI database was in 1863. However, it was recorded in Baker's supplement to the Flora of Yorkshire in 1854 down the river in Middlesbrough.



This map from 1857 shows just how extensive the Tees estuary was. The railway line from Middlesbrough to Redcar seems to have been on the edge of the estuary. This must have been quite a scenic ride alongside the saltmarsh. They may also have seen beds of Common Eelgrass, *Zostera marina*, recorded in 1863 or Dwarf Eelgrass, *Zostera noltei*, which was also recorded up to the 1930s. These two species would be a welcome addition to our flora now especially as the river is much cleaner than in the past.

An interesting photo below taken in 1888 when the South Gare was officially opened. Photos from Stewart Ramsdale, Tees Heritage Trust Ltd. Also a drawing from the illustrated London News 1888. Further images can be found at Tees & Hartlepool Port Authority at Teesside Archives for which the reference is: U/THPA.

Flora of South Gare



Opening Ceremony at the Lighthouse.
THE RIGHT HON. W. H. SMITH OPENING THE SOUTH GARE BREAKWATER, AT THE MOUTH OF THE TERS, NEAR MIDDLESBROUGH.
View along the Breakwater, from the Lighthouse.

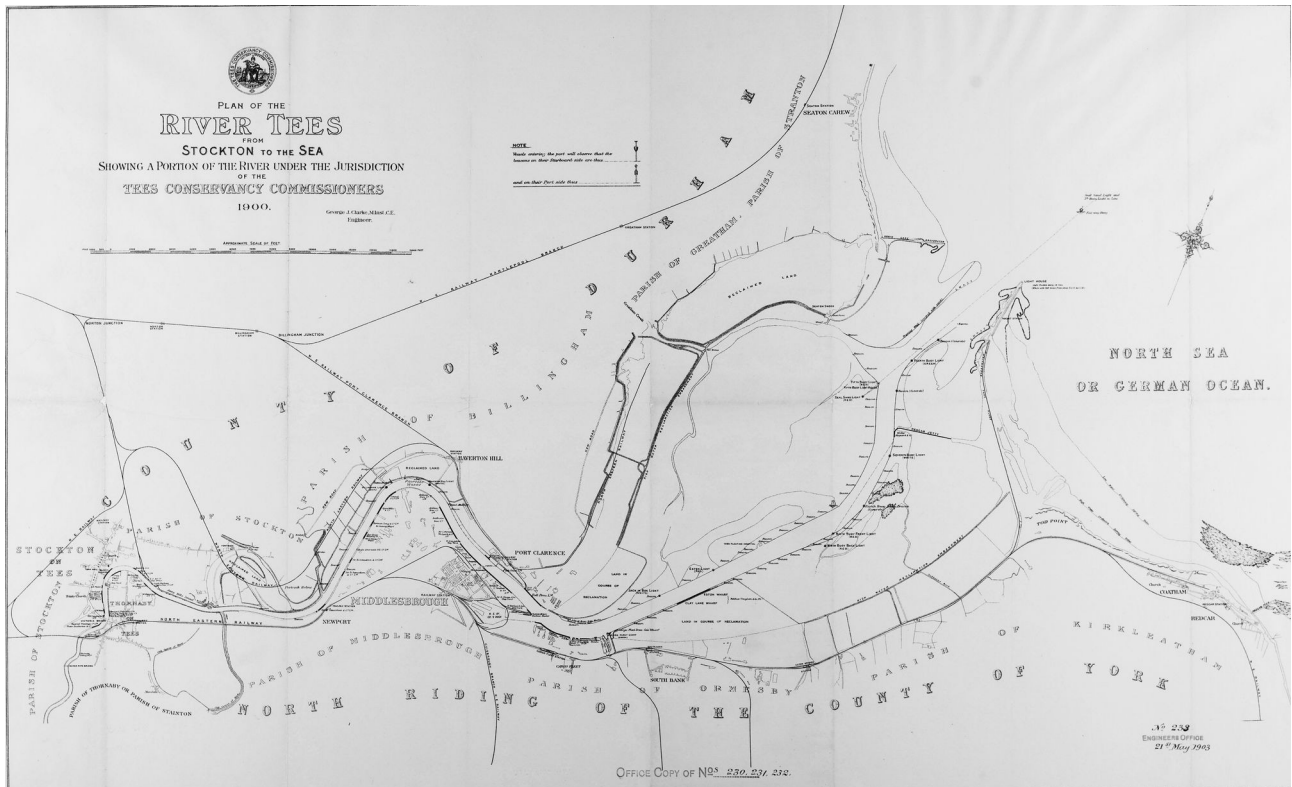
Image above is from the illustrated London News Ltd

Flora of South Gare

This map illustrates that at the beginning of the 20th century quite a bit of the estuary had now been reclaimed and North and South Gare are now noticeable.

The following is a brief account of the development of the structure from: [2]“*History and Directory of North Yorkshire*,” Bulmer, 1890, p.156

<https://www.genuki.org.uk/big/eng/YKS/NRY/Kirkleatham/Kirkleatham90>



“Near the village (Warrenby) is *Tod Point*, a projection of land at the mouth of the Tees, and from this point stretches the *South Gare Breakwater*, one of the most gigantic engineering enterprises of modern times. In the construction of this work, the huge unsightly accumulations of slag from the ironworks have been utilised, and as a writer in the "Yorkshire Post" observes, "*The necessity which brought about its construction has supplied the means for its accomplishment.*" In other words, the extraordinary development of the ironmaking industry, on Tees-side, has provided the material, without which, the South Gare Breakwater would, in all probability, never have been begun. This slag was not only supplied free of cost, but the ironmasters paid from twopence to fivepence per ton for its removal.

The work was commenced in January 1861 and by the end of the year about a mile of embankment had been formed across the Bran Sands, but a storm then occurring, nearly the whole of it was destroyed. Subsequent storms also did much damage, and greatly retarded the work. During a gale, in October, 1880, nearly 100 yards of the concrete wall, which protects the slag deposited between the levels of low and high water, was swept away. As the work neared the terminus in the deep water, greater resisting power was necessary, and here huge blocks of concrete, many tons weight, have been used. The circular extremity carrying the lighthouse is protected by a wall of this

Flora of South Gare

material, the blocks of which vary from 40 to 300 tons weight. The breakwater, which is about two-and-a-half miles in length, was completed and publicly opened by the Right Honourable W. H. Smith, First Lord of the Treasury, on the 25th of October, 1888. In the construction of this stupendous work no less than

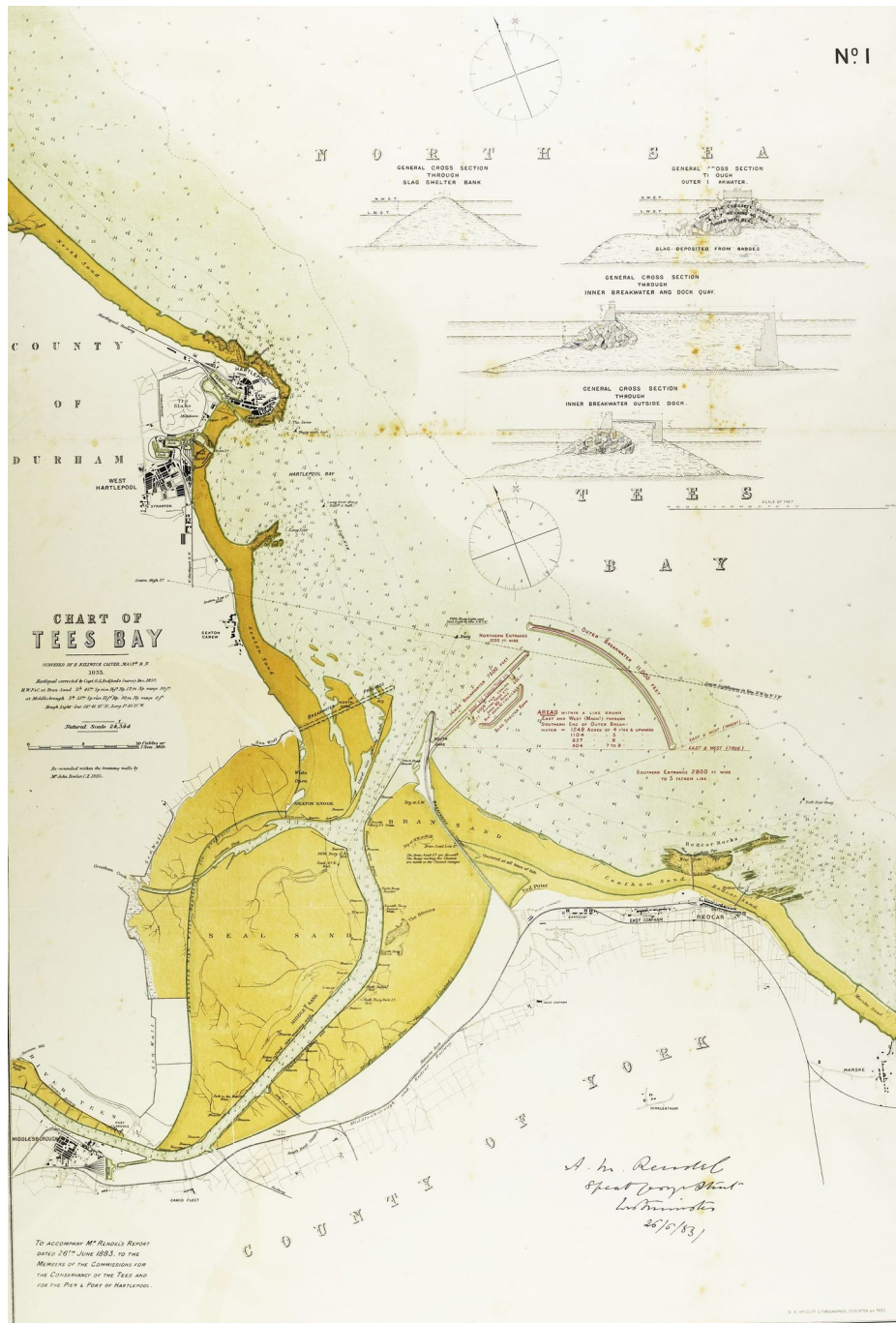


4,500,000 tons of slag, besides cement and other materials, have been used, and the gross cost has been £308,369. A corresponding breakwater will approach this from the north side of the Tees, leaving an entrance 2,400 feet wide. The plans were prepared by Mr. John Fowler, C.E., Engineer to the Tees Commissioners, and under his direction the whole work has been carried out.” Many thanks for this historical information from Stewart Ramsdale from Tees Heritage Trust.

teesheritage.org.uk

Flora of South Gare

The map on the previous page shows the Tees estuary in 1883 with the river channel now much straighter and some of the land on the south side of the estuary reclaimed. Although, at this point there was still considerable saltmarsh and mud flats.



This map is interesting in that it shows potential constructions at the end of South Gare which were never actually completed. It could have been a lack of funds or a change of priorities perhaps. If these structures had been built it may have actually been beneficial for birds in particular as roost sites or breeding areas.

Flora of South Gare

The Gare has also been an important structure during the two world wars with gun emplacements at the end of the Gare to protect the River Tees and the industrial areas of Teesside from bombardment from ships and aircraft. The base of the gun emplacements are still visible at the Gare today. They are a micro habitat to a number of plant species. Such as Sea Pearlwort, *Sagina maritima*, Buck's-horn Plantain, *Plantago coronopus*, Oxford Ragwort, *Senecio squalidus* and Alexanders, *Smyrniium olusatrum*, a plant introduced into Britain by the Romans. It was grown as a pot herb and was known by Theophrastus and Pliny the Elder who are probably the world's first botanists.



As you can see plants have taken advantage of the habitat provided by man. The biggest plants in the picture are Alexanders, *Smyrniium olusatrum*.



Alexanders, *Smyrniium olusatrum*, the image above shows a St. Mark's fly *Bibio marci* on the Alexanders flowers.



Sea Mayweed, *Tripleurospermum maritimum*, at the base of the large gun emplacement.

Why is South Gare interesting?

South Gare is a man made promontory which guards the southern side of the mouth of the River Tees. The modification of the mouth of the Tees estuary started as mentioned before in the early part of the industrial developments on Teesside.

An accidental benefit of this industrial dumping is that it has produced a patchwork of habitats which plants have taken advantage of. The colonisation of the Gare is still ongoing especially as new species take advantage of the often lime rich thin soils. So why is it an interesting area from a botanical point of view? It is an area with a good variety of habitats in a relatively small area with areas of natural and man made niches. As will be seen later it also has a large number of species recorded.

Plant surveys

As part of my role as the plant recorder for the BSBI, when I am recording the wildflowers of the county I use the system developed in the 19th century to record in vice counties. Most biological recording in the U.K. uses the Victorian vice county system. This has divided the country up into county regions; our area uses the River Tees as the northern boundary and reaches down the coast towards the outskirts of Filey in the south east. The western edge of the county is towards Northallerton, it also includes the whole of the North York Moors National Park. The southern part of the county includes the Howardian Hills, which is an Area of Outstanding Natural Beauty (ANOB). The far south also includes parts of the city of York some 1,400 square miles in total.

The BSBI and other biological recording organisations such as the RSPB use the Victorian system of vice counties which splits up the whole of the U.K. and Ireland into manageable chunks. These mostly followed original county boundaries. It does have the advantage of continuity as certain parts of the country have been divided up further since the 19th century. These vice counties are each given a number. North East Yorkshire is 62 whereas Durham (north of the Tees) is 66. You can see the boundaries of VC62 in the map below. South Gare is at the extreme north of the county marked in red.

I record in as much of the county as possible which is a satisfying thing to do while walking in the lovely countryside of North East Yorkshire.

The records of the plants seen are usually marked on a recording card which has a long list of likely species that might be seen in the county. It does take a bit of getting used to as all the plant names are scientific (Latin) on the card and to make it even more of a challenge the Latin is actually abbreviated to fit as many species on the card as possible.

The records and any notes and grid references are then entered into a biological database called MapMape (this is used by the RSPB and other organisations). This data is then uploaded to the BSBI National database. You can access these BSBI records at the Biological Records Centre website. <https://www.brc.ac.uk/plantatlas/>

Flora of South Gare

However, you don't have to have a complex scientific recording card to contribute to the recording of the wildflowers. If you have a smartphone you can use the app IRecord.

<https://www.brc.ac.uk/irecord/>.

Plant records from IRecord will eventually come to me for verification before they are uploaded to the BSBI database. You can also send me your records in other ways such as email, letter or telephone. The more records we have the better and it isn't just about the rarer plants. Distribution patterns are also important to know and to flag up any declines. We are lucky in the north east in still having good populations of species which are in serious decline in other parts of England. Perhaps a good example of this is the hedgerow plant Crosswort, *Cruciata laevipes*, (although it isn't present at South Gare as there are no hedgerows) which is classed as vulnerable in the BSBI Red List <https://bsbi.org/england>. However, there are many other species at South Gare which are threatened and some are classed as endangered.

2019 was the last year of a BSBI National Atlas recording scheme that had taken two decades to complete. This data will enable botanists and the wider public to assess the status of every species of wildflower in the U.K. The results of this huge project will probably be published in 2022. The enthusiasm and dedication for recording by the late Vincent Jones who was recorder for VC62 from 2006 to 2019 has enabled me to produce a [3]Rare Plant Register of scarce and rare plants in the county of North East Yorkshire which is downloadable from the North East Yorkshire page on the BSBI website. <https://bsbi.org/north-east-yorkshire>

When we are recording we use the Ordnance Survey's grid system to locate where a plant is found. Modern phones have good GPS capability and can record to 10 figures which is down to 1 square metre on the ground. However, most plants which are recorded are common and don't require such precision in their records. We therefore use a much bigger scale. The recent BSBI atlas scheme recorded mostly to tetrad level which is a 2x2 km square. Sometimes it was also recorded at monad level which is a 1x1 km square. In the study area of the South Gare I have used the monad squares. Each square is given the letters NZ which covers a 100 square kilometres. To denote a specific square; each monad is then given a unique number such as NZ5528 (the extreme end of the South Gare). There are 11 monad squares covered in the study area of South Gare although a number of these monads are only partial.

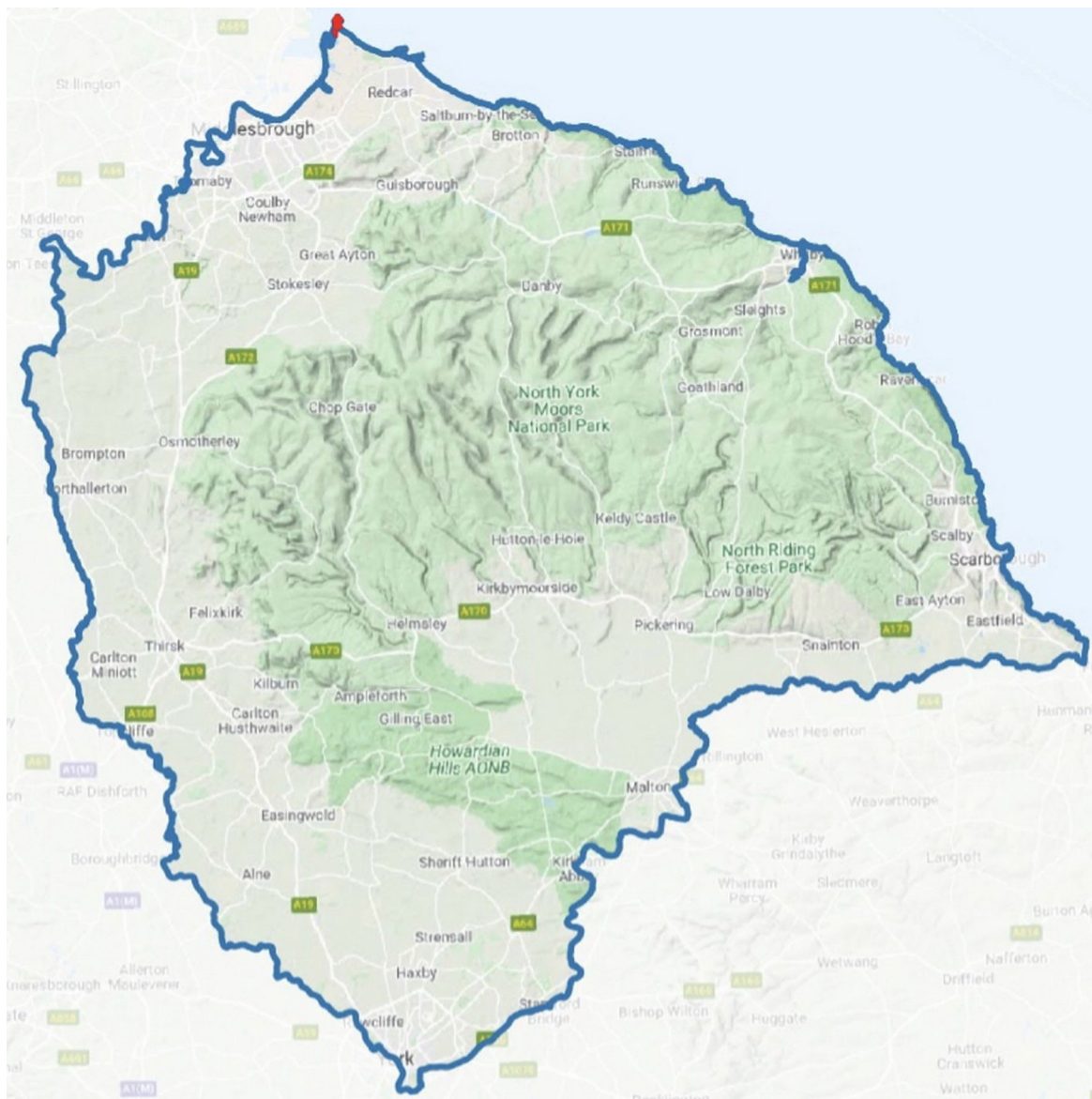
Some of the rarer and most notable species have been recorded at 6, 8 or 10 figures and these are displayed as points on the monads. This is useful to indicate the spread of a species and to record the records over time which can show increases or decreases. Often species seem to simply appear at South Gare before other parts of the county. This could be because of seeds spreading from shipping or from being blown there with strong gales. A good recent example of a plant that has had a dramatic spread and continues to advance is Narrow-leaved Ragwort, *Senecio inaequidens*, (picture right) first found in the county in 2007 not far from South



Flora of South Gare

Gare. This newcomer on the block comes from South Africa originally and has spread through Europe. In the U.K. it started spreading from the late 1990s in Kent. It often catches out budding botanists as it isn't in most plant identification books.

At the Gare there is a much more diverse flora than most of the rest of the biological area that is designated as North East Yorkshire.



Map of the boundary of vice county 62, North East Yorkshire. South Gare marked in red at the extreme northern point.

Study area

For the purposes of this study I have excluded Coatham Marshes, which are also botanically quite rich. The eastern border is at the Majuba Road car park at the western end of Redcar. The area from Majuba Road to the end of the South Gare is covered in this study. The former steelworks is a south-western boundary. This area (the former steelworks) is likely to be developed in the next few years by the South Tees Development Corporation (STDC). The area around the edge of Bran sands is also included as it includes a small area of saltmarsh. A more detailed idea of the area under consideration is shown on the map with the green line enclosing the part of the South Gare with the most botanical records.

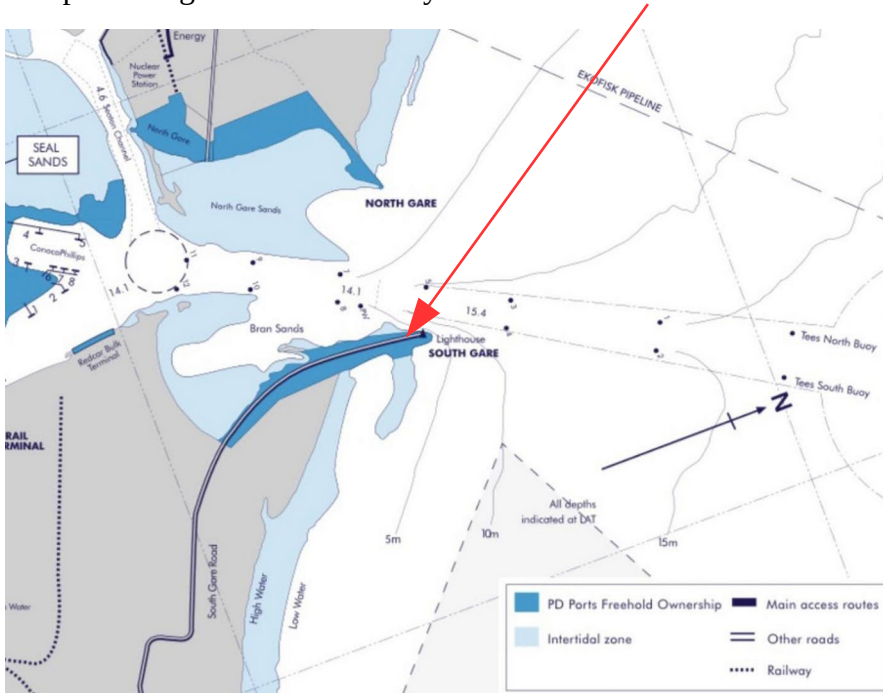
The map below shows the study area (within the green lines) and the dots show the total number of records of all species of which grid references were recorded at six figures or above.



Land ownership at the South Gare

Most of the land area included in the study is owned by STDC. There is also a section of the access road and the surrounding land is owned by PDPorts. PDPorts owned land is coloured blue in this map the grey coloured areas are owned by STDC.

A map showing the land owned by PDPorts at the end of the South Gare.



128 South Tees Regeneration Master Plan | November 2019



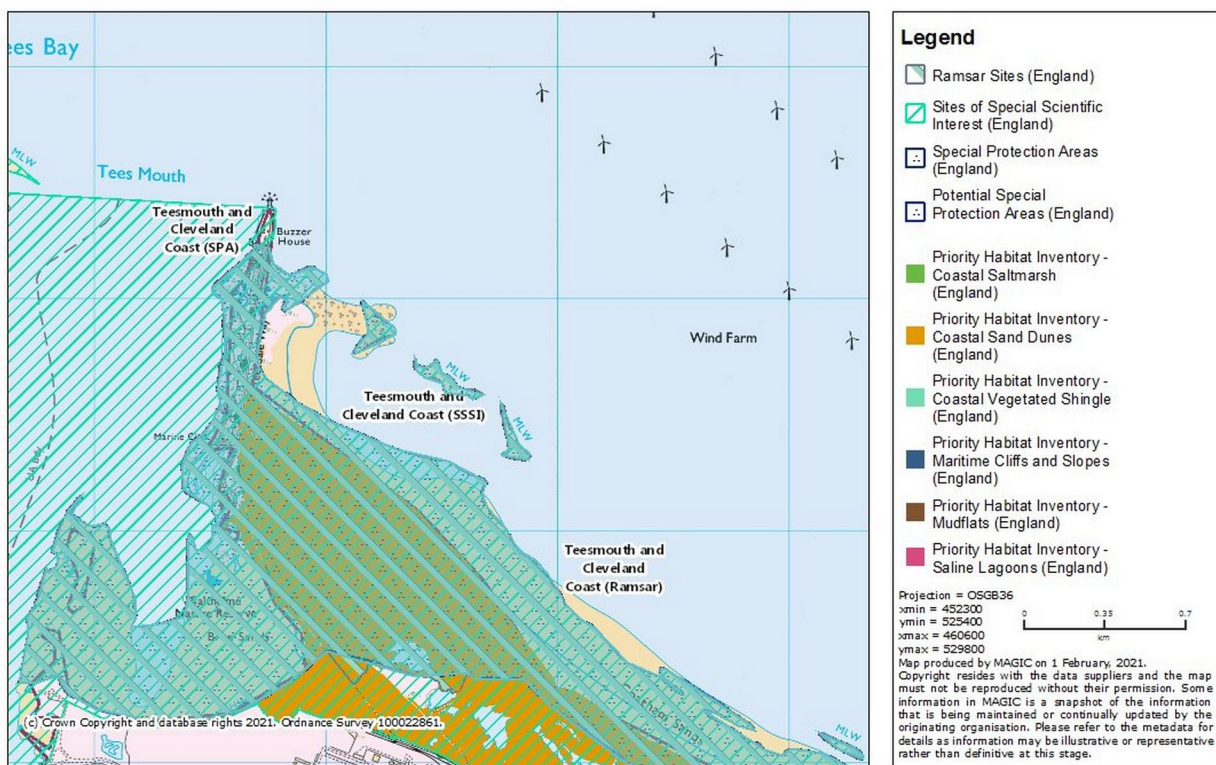
The map above is taken from the STDC development master plan [STDC's Master Plan | South Tees Development Corporation \(southteesdc.com\)](#). It shows that South Gare and Coatham Marsh are areas protected from significant development. The area at the bottom of the map shows the proposed land change from the former steelworks complex.

SSSI Land designation

Land named as a Site of Special Scientific Interest (SSSI) is a protected area in the UK. They are the basic building blocks of site-based nature conservation legislation and most other legal nature/geological conservation designations in the United Kingdom are based upon them, including national nature reserves, Ramsar sites, Special Protection Areas, and Special Areas of Conservation. The acronym "SSSI" is often pronounced "triple-S I". Teesmouth was designated as a Ramsar site in 1995. In 2000 it was extended to include all the Tees and Hartlepool foreshore and wetlands SSSI. The area we are concerned with is a Site of Special Scientific Interest (SSSI) notified under section 28C of the Wildlife and Countryside Act 1981. It was notified 31/07/2018. The following information about the relevant area of study and the flora and invertebrate fauna is taken from the Natural England document Teesmouth and Cleveland Coast SSSI Hartlepool, Middlesbrough, Redcar and Cleveland, Stockton-on-Tees Notification under section 28C of the Wildlife and Countryside Act 1981 Seal Sands SSSI Hartlepool, Stockton-on-Tees Notification under section 28D of the Wildlife and Countryside Act 1981. The map below is from the DEFRA magic maps. [Magic Map Application \(defra.gov.uk\)](https://magic.defra.gov.uk/)

MAGiC

South Gare



The site supports an extensive complex of dunes flanking both sides of the Tees estuary. It is the largest dune complex between Druridge Bay and Spurn Point. The dunes support a large area of semi-natural vegetation, including the typical succession from strandline through foredunes and

Flora of South Gare

mobile dunes to fixed dune grassland, as well as transitions to wetter habitats. There are two main dune systems: Seaton Dunes to the north of the Tees, and Coatham Dunes to the south. The structure and geomorphology of both systems has been heavily influenced by a long history of human intervention, including sand extraction. Most significant has been the construction of two large breakwaters (North Gare and South Gare), which guard the entrance to the estuary. They have a strong influence on sediment dynamics and result in both dune systems showing a combination of the features of bay and spit-dune systems. Small pockets of strandline vegetation occur throughout the site and occasionally include Sea Sandwort, *Honckenya peploides* and Sea Rocket, *Cakile maritima*. Foredunes of Sand Couch, *Elymus junceiformis*, are much more extensive and grade into mobile dunes with stands dominated by both Marram, *Ammophila arenaria* and Lyme-grass, *Leymus arenarius*. As conditions ameliorate in the semi-fixed dunes the dominance of Marram and Lyme-grass wanes and other plants such as Red Fescue, *Festuca rubra*, Ragwort, *Jacobaea vulgaris* and Common Cat's-ear, *Hypochaeris radicata*, become prominent. The band of mobile and semi-fixed dunes around the Tees Estuary is quite narrow in comparison with some dune systems due to the relative stability of the coast. The bulk of the dunes is covered with extensive stands of fixed dune grassland and in some places this has developed on base-rich slag. The dune grassland includes some diverse swards with herbs such as Common Bird's-foot Trefoil, *Lotus corniculatus*, Lady's Bedstraw, *Galium verum*, Fairy Flax, *Linum catarticum* and Common Restharrow, *Ononis repens*, forming a prominent component. They also support a number of scarce and threatened species, including Purple Milk-vetch, *Astragalus danicus*, Lesser Meadow-rue, *Thalictrum minus*, Field Mouse-ear, *Cerastium arvense* and Carline Thistle, *Carlina vulgaris*. In contrast there are also large areas with a coarse sward dominated by False Oat-grass, *Arrhenatherum elatius*. There is a number of damp depressions ('slacks') in both dune systems, which support a range of wetter vegetation types, usually with a sward dominated by mixtures of Red Fescue, *Festuca rubra* Yorkshire Fog, *Holcus lanatus* and Creeping Bent, *Agrostis stolonifera*. Creeping Willow, *Salix repens*, is extremely scarce in the Tees Estuary and so does not form a regular component of the dune slacks in contrast to many dunes systems. A particularly prominent feature of some of the slacks are large and colourful stands of Marsh Orchids, *Dactylorhiza*; species and their hybrids. Some of the slacks show affinities with saltmarsh vegetation, with a selection of salt tolerant species such as Saltmarsh Rush, *Juncus gerardii*, Sea Plantain, *Plantago maritima* and Sea-milkwort, *Glaux maritima* and are likely to have been derived from the isolation of saltmarsh vegetation by developing dunes. More consistently wet slacks support swamp communities. Fertile Feather Moss, *Drepanocladus polygamus* and Flat-sedge, *Blysmus compressus*, occur in some of the slacks.

The Tees Estuary supports the largest area of saltmarsh between Lindisfarne and the Humber Estuary. Its saltmarshes show a succession of vegetation types, from pioneer marshes of Glassworts, *Salicornia*, species and Annual Sea-blite, *Suaeda maritima*, through Common Saltmarsh-grass, *Puccinellia maritima*, communities, to stands dominated by Common Couch, *Elymus repens* and its hybrid with Sea Couch, *Elymus athericus*, *Elymus x drucei*, at the limit of tidal influence. The Common Saltmarsh-grass communities are diverse and Sea Aster, *Aster tripolium*, Common Sea-lavender, *Limonium vulgare* and Thrift, *Armeria maritima*, provide a colourful late summer display.

Flora of South Gare

The extensive complex of sand dunes within the site supports a nationally important invertebrate assemblage, including at least 14 threatened species. The assemblage is diverse and makes use of a wide range of niches, with a strong dependency on open but consolidated sand exposures within which to nest and hunt, as well as on flower-rich swards for nectar and pollen gathering. The assemblage does not include a high number of rarities but is a good example of its type in the north of its range. As such, species such as the *Tephritid* or fruit fly, *Acanthiophilus helianthi*, whose larvae feed within the capitula of Carline Thistle, occur towards the northern edge of their British range. The Grayling butterfly, *Hipparchia semele*, is found here and remains a scarce species on this north-eastern coastal strip.



Common lizard, *Zootoca vivipara*, can be found on the “Cabin Rocks”; this animal is growing back its tail.

Industrial impact

Teesside has been industrialised for over 200 years. The discovery of ironstone in the local hills in the 19th century brought with it a rapid development of iron and steel making on the banks of the Tees especially in Middlesbrough. Further developments in Teesside were with chemical industries, which are still a feature of the area. The impact of this on the natural world was significant with modifications to the course and shape of the river mouth. Seal Sands today is but a fraction of what it used to be. Even the Tees barrage has had an impact on the salinity and therefore the composition of the halophytes (salt loving) plants along the banks of the Tees. The impact on the river of industrialisation especially on the natural world is hard to quantify. The diversity of birds that were present in the area before the industry really took hold is evident in the Thomas Hudson Nelson collection of birds and eggs in the Dorman Museum in Middlesbrough, with many rare or unusual species recorded and shot in the 19th century. The diversity of bird species is less evident today which is partly due to habitat destruction.

The historical records of the vegetation of South Gare and Teesmouth in general are somewhat lacking with only occasional references to specific species in [4]Henry Baines's Flora of Yorkshire in 1840 and the subsequent supplement by J. G. Baker in 1864. One notable record which sadly seems to be long extinct in the river mouth is Eelgrass *Zostera*. There were two species recorded in the river in the 1860's but not since. The probable cause of this extinction is likely to be a combination of the turbidity in the river due to increased river traffic. This may have restricted the plants ability to photosynthesise. Also the terrible heavy pollution in the River Tees which the plants couldn't cope with. In Wales diving clubs have been recruited to plant *Zostera*, in areas where they formerly grew. It would be great if the two species of *Zostera* could be returned to the Tees estuary. They are particularly important for the marine environment as shelter for young fish and other marine creatures. They are also a food source for Brent geese which, although are still occasionally recorded in the estuary, they would be more likely to spend the whole winter in the Tees area if this food source was available.

Despite the negative impacts of man's industrial activities the brownfield sites in and around Teesside offer quiet places of sanctuary for wildlife. The sites often have very thin soils or very little soil at all which restricts competition and therefore enables specialist species which can cope with these conditions. All over the industrial parts of Teesside plants which are scarce in the wider countryside of North East Yorkshire are surprisingly common. More information about the flora and other wildlife can be found in the newly published book [5] "Wild Teesside" written by the team from Industry Nature Conservation Association (INCA) is a celebration of how nature has coexisted in the industrial areas of Teesside. ISBN 978-1-5272-5628-6

A good example of this is the lovely Yellow-wort, *Blackstonia perfoliata*, a member of the Gentian family *Gentianaceae*, and named after the 18th century botanical writer and apothecary John Blackstone. This plant is common at the Gare and can even be found in the centre of Middlesbrough.



Yellow-wort *Blackstonia perfoliata*

Habitats

South Gare has a surprising variety of habitats within quite a small area, which has increased the plant diversity. Some of these habitats are man made but many are natural or semi-natural. Even when areas are controlled, such as at the Cleveland Golf Course, the rough areas surrounding the greens are home to many species that would be swamped by the surrounding taller grasses. The mowing of these areas does help plants that need less competition. This mix of habitats does also provide small pockets or even micro-habitats which enable species to take hold. An example of a species taking advantage of a specific habitat is Black Spleenwort, *Asplenium adiantum-nigrum*, a small fern. The first record at the Gare was in 2002 but it has continued to spread and seems to like the crevices available in the slag boulders at the Gare particularly in the “Cabin Rocks” area. In the wetter areas there are quite large beds of Common Reed, *Phragmites australis*, which produces a monoculture which excludes other species.



Black spleenwort, *Asplenium adiantum-nigrum*

The “Cabin Rocks”

This area of bare steelworks slag is an important habitat at the Gare. The slag was laid down from 1861 and covers quite a large area. The lack of soil and the leaching of calcium from the slag has enabled a good selection of calcicole (lime loving) plants to establish. The only grazing here is by rabbits and, very rarely, roe deer. This area is home to some of the Gare’s rarest plants. Perhaps the most important is a small pink flower which was first found in 2000. It is Proliferous Pink, *Petrorhagia prolifera*. This plant is rare in the U.K. being found in the ‘Brecks’ in Norfolk and a few scattered sites in the south. Interestingly the ‘Cabin Rocks’ is actually not that different from the Breckland habitat. The pink seems to be doing well in this habitat where competition is lacking. However, I have recently found it spreading into the surrounding dunes. As to how it got to South Gare we will probably never know but it is possible that someone brought some seed from existing colonies further south.

In the spring the “Cabin Rocks” are a riot of colour especially with yellow flowers. The dominant plant is Kidney Vetch, *Anthyllis vulneraria*, with Bird’s-foot-trefoil, *Lotus corniculatus*, adding to the yellow theme. There is a number of other plants which find this habitat to their liking. The oddly named Ploughman’s Spikenard, *Inula conyzae*, is scattered about on the rocks. It gets the name as it was used in mediaeval times to make an expensive perfume, and ploughmen used to hang this plant up in their huts to sweeten the air. It was also used by herbalists for remedies for bruises, ruptures, inward wounds, pains in the side and difficulty in breathing. On the edges of the rocks are a few other rare plants. The attractive Purple Milk-vetch, *Astragalus danicus*, is now a rare and decreasing plant in the U.K. At the South Gare we have good populations of this lovely member of the pea family *Fabaceae*. In the Sandy edges of the rocks we also have the only site in the county for the lovely Heath Dog-violet, *Viola canina*. In the same area is a very few plants (often only 5 or 6) of Maiden Pink, *Dianthus deltoides*, which stand out in the short turf. Another violet, which is a great deal more common on the rocks is the Hairy Violet, *Viola hirta*. The rocks are also home to a few of the many alien plants that have managed to survive. If you walk across

Flora of South Gare

the rocks in June you cannot fail to see the many multi-coloured Antirrhinums, *Antirrhinum majus*, also on there are a few bushes of *Cotoneaster* species; these are most likely bird-sown plants. Lots of other species make up the mix such as Fairy Flax, *Linum catharticum*, Yellow-wort, *Blackstonia perfoliata*, a dwarf maritime form of Lady's Bedstraw, *Galium verum* (var. *maritimum* DC.), a number of species of Hawkweeds, *Hieracium*, (12 species have been recorded at the Gare), Harebell, *Campanula rotundifolia*, including some patches of a white version. In 2002 Plantlife named this the county flower of Yorkshire, it puts on a fine display at the Gare. In the county it is common along the coast and across the North York Moors.



Looking south towards the “Cabin Rocks”



A characteristic if rather insignificant plant on first inspection is Blue Fleabane, *Erigeron acris*, which seems to thrive in the bare stony areas.

Flora of South Gare



The “Cabin Rocks” area is a delight in spring and summer with a succession of flowers. The top image shows the rocks covered in a carpet of Kidney Vetch, *Anthyllis vulneraria*. Other photos show from left to right Common Centaury, *Centaurium erythraea*, Proliferous Pink, *Petrorahagia prolifera*, a close up view of Common Bird’s-foot-trefoil, *Lotus corniculata*, Lady’s Bedstraw, *Galium verum*, var. *maritimum*, Carline Thistle, *Carlina vulgaris* and Musk Thistle, *Carduus nutans*.

Flora of South Gare



Maiden Pink, *Dianthus deltoides*



Kidney Vetch, *Anthyllis vulneraria*



Harebell, *Campanula rotundifolia*



Purple Milk-vetch, *Astragalus danicus*

Flora of South Gare



Bloody Cranesbill, *Geranium sanguineum*.



There are very few places in VC62 with a carpet of flowers like this.



The lovely delicate flowers of Fairy Flax, also called Purging Flax, *Linum catharticum*, which contains the toxic cyanogenic glycoside Linamarin which may explain why the rabbits don't eat it. It is common on open ground at the Gare especially on the "Cabin Rocks"

If you look closely at the vegetation on the rocks it is soon apparent that there are a lot of species within a square metre. The diversity is made up of plants that can cope with the very dry habitat. Also the very poor soils does restrict the area from becoming invaded with coarse grasses and other species that would need more soil to become established.



The number of species within a small area is quite high on some parts of the "Cabin Rocks" This photo shows Kidney Vetch, *Anthyllis vulneraria*, Proliferous Pink, *Petrorhagia prolifera*, Ribwort Plantain, *Plantago lanceolata*, *Hieracium sp*, Yellow Rattle, *Rhinanthus minor*, *Rubus sp*.

Flora of South Gare



Thrift, *Armeria maritima*, is not a common plant at South Gare being found mostly at the edge of the rocks. A single Juniper, *Juniperus communis*, bush is an odd record here NZ55712719. The two plants below are also rare in the U.K. On the bottom left is a hybrid Eyebright, Western Eyebright x Common Eyebright, *Euphrasia tetraquetra x nemorosa*, which is very thinly distributed around the coast of the U.K. The only records of this hybrid in VC62 are at South Gare and Coatham Marsh. The plant below is a variation (var) of Bloody Cranesbill *Geranium sanguineum var. striatum*, which is also a rare variation in the U.K. It may have been a garden throw out at some time. GR NZ5564127386



Flora of South Gare

The edge of the “Cabin Rocks” with Narrow-leaved Ragwort, *Senecio inaequidens* and Shrubby Sea-blite, *Suaeda vera*.



Saltmarsh

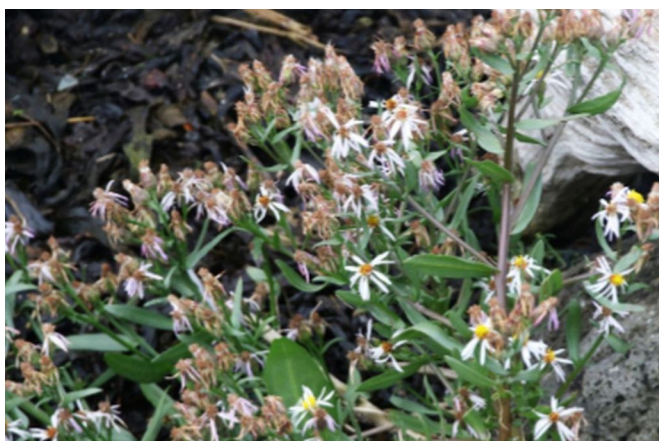
This is a very rare habitat in North East Yorkshire. A tiny patch near the former steelworks is all we have in the north of the county; there is also a very small patch in Whitby. At the Gare the area of mud is covered with four *Salicornia* species members of the *Amaranthaceae* family as well as Annual Sea-blite, *Suaeda maritima*, Sea Aster, *Tripolium pannonicum* and other halophytes (salt loving) plants such as Greater Sea-spurrey, *Spergularia media*, and Lesser Sea-spurrey, *Spergularia marina*. Other halophytes joining this assemblage include Sea and Buck's-horn Plantains, *Plantago maritima*, and *Plantago coronopus*, with Grass-leaved Orache, *Atriplex littoralis*, Sea Sand-wort, *Honckenya peploides*, Sea Beet, *Beta vulgaris subsp. maritima*, Sea Milkwort, *Lysimachia maritima*, Reflexed Saltmarsh-grass, *Puccinellia distans*, and Sea Wormwood, *Artemisia maritima*, an uncommon plant along the east coast especially in northern England.



Sea wormwood, *Artemisia maritima*.



Greater Sea-spurrey, *Spergularia media*.



Sea Aster, *Tripolium pannonicum*.
On the right is Sea Plantain, *Plantago maritima*.



Flora of South Gare

Two views of the rare saltmarsh habitat at South Gare, NZ5426. Lower image on the left is Long-spiked Glasswort, *Salicornia dolichostachya*. Image on the right is Purple Glasswort, *Salicornia ramosissima*. The bottom image shows samples of the four species recorded.



Flora of South Gare

At the Gare there is also a small patch of Sea Lavender, *Limonium vulgare*, which I think is the hybrid between Lax Sea Lavender, *Limonium humile* and Common Sea Lavender, *Limonium vulgare*. $L. vulgare \times L. humile = L. neumanii$, NZ55622697. The plant shows purple and brownish anthers whereas *L. vulgare* would have yellow anthers. Sea Lavender is actually a rare plant on the east coast of Britain. You would have to travel to the Humber in the south to find any more plants and Holy Island in Northumberland in the other direction. In Teesmouth we have a tiny oasis of maritime plants, which are a vestige of what we had before the industrial revolution. It is also home to a few other coastal plants that are stranded and isolated in the Tees estuary. A saltmarsh is a tough place for a plant which has to cope with very dry conditions as well as occasional flooding with sea water, which would be lethal to most land plants. These specialists often have the habitat to themselves as there are few competitors or even much grazing pressure and little in the way of insect predators, apart, from a few rare moths on *Salicornias*. Before the Gares were constructed the Tees estuary probably had extensive saltmarshes. Unfortunately only fragments now survive. On the Durham side (VC66) of the river there is a little more saltmarsh but even here these are only fragments of what must have been here in the past. One of the main components of any saltmarsh is *Salicornia* or Glasswort. This plant was actually used in the glass making process. The ashes of Glasswort and Saltwort plants and of Kelp were long used as a source of soda ash (mainly sodium carbonate) for glassmaking and soapmaking. It might have been collected in the Tees estuary and used in the glassmaking in Sunderland in the 17th and 18th centuries.



At the edges of the saltmarsh and often at the high tide mark are a number of plants able to cope with the extreme conditions.

Flora of South Gare



Flora of South Gare

Images on the previous page from left to right. Sea Beet, *Beta vulgaris ssp. maritima*, Sea Sandwort, *Honckenia peploides*. A hybrid between Spear-leaved Orache, *Atriplex prostrata* and Grass-leaved Orache, *A. littoralis* = *A. x hulmeana*. This is a fairly rare hybrid in the UK. It has also been found recently as a halophyte in VC62 and may be worth looking for along salted roads. The bottom right picture is a close up of the flowers of Sea Sandwort, *Honckenia peploides*.



This is Shrubby Sea-blite, *Suaeda vera*, a plant that was introduced to South Gare. It was probably brought here from Norfolk by local birdwatchers in the 1960s with the idea that the bushes would hold migrating birds in the spring and autumn. It doesn't seem to be spreading and most of the bushes are rather old now.

Flora of South Gare



The native Sea-blite is Annual Sea-blite, *Suaeda maritima*, which does cover more ground at the Gare. It is a much smaller plant.

Dunes

The sand dunes at the Gare range considerably in height and extent. As you might imagine they are mobile and the shape of the area is constantly changing especially due to strong winds and high tides and storms. This is another rare habitat along the east coast in VC62; we only have small pockets of dunes away from the South Gare. Two species are dominant in the sand, which enable the dunes to become fixed by their root system. The two architects of this are Lyme Grass, *Leymus arenarius*, which is a psammophilic (sand-loving) species as is Marram grass, *Ammophila arenaria*. These are also joined by Sea Couch, *Elymus athericus*, Sand Sedge, *Carex arenaria* (which is rare away from South Gare) and the Rush-leaved Fescue, *Festuca arenaria*. Other species in the dunes include Early Forget-me-not, *Myosotis ramosissima*, Frosted Orache, *Atriplex laciniata* and Sea Rocket, *Cakile maritima*. However, Oak-leaved Goosefoot, *Chenopodium glaucum* is a plant that may have been lost as it hasn't been seen since 2015.

The dunes at the end of the Gare in June and July are a blaze of yellow with several species of *Hieracium* (Hawkweeds) these are apomictic self seeding plants. One species in particular is very widespread here. It is Uig Hawkeed, *Hieracium uiginskyense*, which was originally found on the isle of Uig in the Hebrides. This plant is classed as endangered in England in the BSBI Red list book. It is interesting to speculate how this plant arrived at South Gare. One possibility is that seeds came from ships moving up the Tees estuary. Whatever its origin it seems to be very happy here and it has spread across the estuary to the Durham side. At South Gare it seems to be particularly happy in the dunes and now consists of thousands of plants even though the first record was only in 2004.

A much rarer *Hieracium*, locally and nationally is Large-toothed Hawkweed, *Hieracium prominentidens*, which can be hard to notice amongst the many stems of Uig Hawkeed, *Hieracium uiginskyense*. The main feature is the long teeth on the leaves. We are very fortunate in our area that the late Vincent Jones spent some thirty years studying these plants in Yorkshire. His study culminated in him producing a book in 2014 called [6]Yorkshire Hawkweeds (which is sadly out of print). The records of these lovely yellow flowered members of the *Asteraceae* family in North East Yorkshire are probably more extensive than in any other county in England.



Frosted Orache
Atriplex laciniata.

Flora of South Gare



Plants in the dunes from left to right and top to bottom Marram grass, *Ammophila arenaria*, Sand Cat's-tail, *Phleum arenarium*, Sea Rocket, *Cakile maritima*, Early forget-me-not, *Myosotis ramosissima*.



Flora of South Gare



The pictures on this page are of one of the many alien plants at the Gare. It is Orange-peel Clematis, *Clematis tangutica*, which has formed a large patch near the caravan park at Majuba Road, NZ58902540.



Flora of South Gare

On the right is some flower heads of Lyme-grass, *Leymus arenarius*.

Below is the dense fruiting tepals of Curled Dock, *Rumex crispus*. This the subspecies *ssp. littoreus*. Which is smaller <1m than the nominate *ssp.crispus*.



The flower on the right is Restharrow, *Ononis repens*, which does grow in the dunes as well as the grassland areas. The name *Ononis*, comes from the Greek used by Pedanius Dioscorides who was a botanist in c.40-90AD.

Flora of South Gare



Here are several patches of Lyme grass, *Lymus arenarius*, which can be told from Marram grass, *Ammophila arenaria*, by the leaves being much wider 8-20mm and glaucous in colour.



A path through the edge of the dunes looking towards the “Cabin Rocks” the yellow flowers are Uig Hawkeed, *Hieracium uiginskyense*, within dense stretches of Marram grass, *Ammophila arenaria*.

Dune slacks

Dune slacks are areas between dunes, which often become wet especially in the winter months. They are home to quite a variety of species that are often calcicole (lime loving species). The community of species in this habitat which is probably the most natural habitat niche at the South Gare includes a number of species which are scarce, rare or very uncommon or not at all present in the rest of the county. One part of this particular habitat which Vincent Jones used to call the “Ducky” (although I never knew why he called it that) is sometimes used illegally by off-road quad and motorbikes, although less so in recent years. Ironically the disturbance and churning of the sandy ground has helped some of the rarest plants to maintain a foothold. One species which did cling (literally) on the edges of these motorbike tracks was Oak-leaved Goosefoot, *Oxybasis glauca*, which I think is one of the most attractive members of the *Amaranthaceae* family. It is a rare plant in northern England and is classed as vulnerable. Unfortunately I haven’t seen it at the Gare since 2015.

Other species in this species-dense habitat include Saltmarsh Rush, *Juncus gerardii*, Distant Sedge, *Carex distans*, Sea milkwort, *Glaux maritima*, Frosted Orache, *Atriplex laciniata*, Few-flowered Spike-rush, *Eleocharis quinqueflora*, Prickly Saltwort, *Salsola kali*, Hard-grass, *Parapholis strigosa*, Pyramidal Orchid, *Anacamptis pyramidalis*, Sea Sandwort, *Honckenya peploides*, Northern Marsh-orchid, *Dactylorhiza purpurella*, Long-bracted Sedge, *Carex extensa*, Lesser Centaury, *Centaureum pulchellum*, Common Spotted Orchid x Northern Marsh Orchid, *Dactylorhiza fuchsii* x *purpurella* = *D. x venusta*, Slender Spike-rush, *Eleocharis uniglumis*, Frog rush, *Juncus ranarius*, Sea arrowgrass, *Triglochin maritima*, Sea-milkwort, *Glaux maritima*.



Pyramidal Orchid, *Anacamptis pyramidalis*.

Common Spotted Orchid, *Dactylorhiza fuchsii*.

Flora of South Gare



Northern Marsh-orchid, *Dactylorhiza purpurella*.



Saltmarsh Rush, *Juncus gerardii*.



Image above shows Oak-leaved Goosefoot, *Oxybasis glauca*, the image on the right is of Sea Arrowgrass, *Triglochin maritima*, with a single head of Sea Clubrush, *Bolboschoenus maritimus*.



Access Road & the end of the Gare

The road is single track in stretches to the end of the Gare and is partly owned by PDPorts and the final section is a private road. It is closed one day a year to stop it becoming a right of way. The rest of the year the road is open and many visitors to the South Gare use the road. Unfortunately, many people have in the past and continue to use the road to dump rubbish which sometimes includes garden waste despite a waste recycling area in Warrenby a short distance away. A number of these discarded plants manage to survive in this comparatively mild coastal situation.

The road snakes its way through areas of slag laid down in the Victorian period with the former steelworks on your left then through sand dunes to the bare concrete at the end of the Gare which also provides micro habitats for plants to get a foothold. At the far end of the Gare are several bushes of the Duke of Argyll's Teaplant, *Lycium barbarum*. A member of the *Solanaceae* (Nightshade) family it produces the goji berries although the plants at the windswept end of the Gare rarely produce fruit. These plants were originally planted by birdwatchers to provide cover for migrating birds, NZ55692816.



The plant above is Wild Clary, *Salvia verbenaca*, GR NZ55692816. It is at the side of the road and is probably a garden throw out. Top left and bottom left photos are of the Duke of Argyll's Teaplant, *Lycium barbarum*.

Flora of South Gare

Cypress Spurge, *Euphorbia cyparissias*, grows alongside the access road where the sand dunes meet the road, NZ56012647.



One of the rarest plants at the South Gare is another pink species this time it is Tunicflower, *Petrorhagia saxifraga*, this definitely looks like it is a garden throw out. It seems to be slowly spreading in small area at the side of the road, NZ57382546.



Two flowers that can be found in the section where the dunes run down to the road edge (single track section) are Bladder Campion, *Silene vulgaris* and Snow-in-summer, *Cerastium tomentosum*.

Flora of South Gare



Pink-sorrel, *Oxalis articulata*, NZ559266.



On the right is the attractive plant Zigzag Clover, *Trifolium medium* which is at the edge of the single track section.



Above is Curled Dock, *Rumex crispus* ssp. *littoreus*, on the right is a plant which can obviously read the field guides as it is Perennial Wall-rocket, *Diplotaxis tenuifolia*.

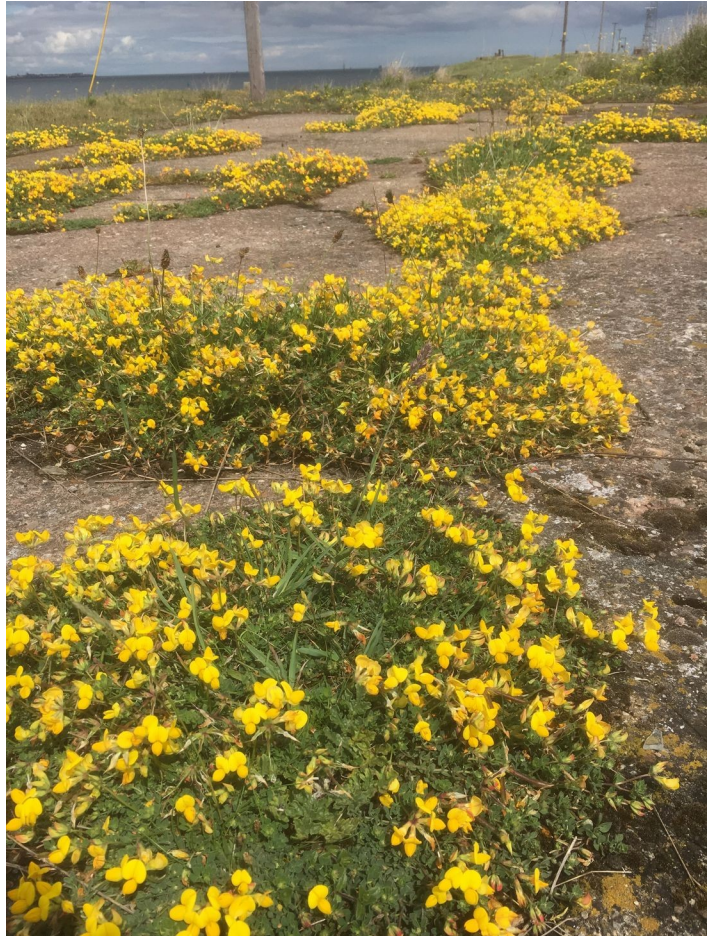


Flora of South Gare

Top left is Hare's-tail, *Lagurus ovatus*, an ornamental grass which lines the road in the single track area, NZ56012647.



Bottom left is Laurustinus, *Viburnum tinus*, a single bush at the side of the road. Top right is a carpet of Common Bird's-foot-trefoil, *Lotus corniculatus*. Unfortunately this area is now fenced off from public access. At the bottom right is Purple Crane's-bill, *Geranium x magnificentum*, there are a couple of clumps of this garden throw out near the fishermen's huts.



Soil Mounds

A feature that has appeared at South Gare over the last few years is the large mounds of soil that have been dumped at the edges of the golf course. The largest mound is quite big being some 25m in height. This large mound was completed in 2015. It had an amazing collection of alien species during the first two years. These consisted of a mixture of garden plants and agricultural species. It was a botanists “sweet shop” with each visit turning up new species.

It would have made an interesting study to look at the colonisation of the bare soil. The first seeds to germinate would have been those arriving with the soil, from its place of origin. As yet I haven't managed to track that down. It was interesting to watch native and aggressive alien species then colonise the mound species such as Hoary Mustard, *Hirschfeldia incana*, covered large areas at the top of the mound. Other more robust species also arrived on the mound, such as Buddleja, *Buddleja davidii* and Gorse, *Ulex europaeus*. Despite the encroachment of these more aggressive plants quite a few of the original plants are still on the mound. Such as Mediterranean Spurge, *Euphorbia characias*, Garden Tree Mallow, *Malva × clementii*, Rhubarb, *Rheum rhabarbarum* and many more. Perhaps the most unusual was Irish Spurge, *Euphorbia hyberna*. This plant was found by Michael Wilcox in 2019. It is the only record of this species growing wild in the whole of the north of England. It is an alien in England but native in Ireland. It was still on the mound in January 2021. Another find by Michael Wilcox at the base of the mound is a hybrid willow. This is the hybrid between *Salix repens* var *argentea* (Creeping Willow) and *Salix viminalis* (Osier), *Salix x friesiana*. It is the only east coast record in England.



This is the most recent soil mound. One the right of the picture you can see the largest mound at the end of the golf course. Photo taken in March 2020.

Flora of South Gare



The photo above was taken in March 2021, it shows the same mound with new growth of colonising vegetation. Most of the bare soil will probably be covered by the end of 2021. There is a new mound being laid alongside the golf course (March 2021). This mound is some several hundred metres long. The soil seems to be of local provenance (mostly from Kirkleatham); it will be interesting to see what alien species start to emerge on the new mounds.



Flora of South Gare



This is a view from the largest soil mound at the west end of the golf course. The photo was taken in June 2015. It shows a number of species beginning to colonise the bare soil. The pink flowers are Opium Poppy, *Papaver somniferum*, the yellow flowers are Hoary Mustard, *Hirschfeldia incana*.



Two of the many alien plants, of garden origin, growing on the mounds. On the far left are some Nasturtiums, *Tropaeolum majus*, on the right is Shasta Daisy, *Leucanthemum x superbum*.

Flora of South Gare

A view from the top of the large mound showing the growth of Gorse, *Ulex europaeus* and one of the many alien plants on the mound. The pink flowers are Flowering Currant, *Ribes sanguineum*, a member of the *Grossulariaceae* (Gooseberry family). There is also a bramble *Rubus* species yet to be determined to species level (there are some 350 species in the UK).



Two more unusual plants on the mounds on the far left Hollyhock, *Alcea rosea* and Fennel, *Foeniculum vulgare*.

Flora of South Gare



A view from the top of the large mound looking down on the golf course. Below are some plants of garden origin growing on the mounds. Reed Canary-grass, "Gardener's Garters", *Phalaris arundinacea* var. *picta*. Rhubarb, *Rheum rhabarbarum*, Sowbread, *Cyclamen hederifolium*, Baby's-breath, *Gypsophila elegans*.



Flora of South Gare



Some more from the “wild garden” that is South Gare. Top left Garden Pansy, *Viola x wittrockiana*, Milk Thistle, *Silybum marianum*, Opium Poppy, *Papaver somniferum*, (double flowered version), Borage, *Borago officinalis*, Spring Starflower, *Tristagma uniflorum*, Argentine Vervain, *Verbena bonariensis*.



Ponds

The ponds at the Gare are probably the least explored habitat. The ponds are a mixture of brackish and freshwater. Some of them are of a temporary nature filling up in the winter and drying out completely during the summer. A couple of ponds near the golf course have what are considered by the BSBI to be honorary vascular plants. These are actually algae species which because of their size are often also recorded. We do have a couple (I think) of *Chara*, (Stoneworts) species in the ponds which can become the dominant plant in these alkaline pools. Stoneworts, *Chara*, species are not easy to identify in the field; they usually need to be examined under a microscope. They often become encrusted in calcium carbonate and can sometimes smell of rotten eggs.



This pond is near the access road at GR NZ569258. It is home to Hart's Pennyroyal, *Mentha cervina* and around the edges is the tiny Lesser Centaury, *Centaureum pulchellum*.



A Stonewort, this one is probably Bristly Stonewort, *Chara hispida*.



The rather grass-like Horned Pondweed, *Zannichellia palustris*.



Parsley Water-dropwort, *Oenanthe lachenalii*. The ancient Greeks thought it was wine-fragrant. However, it is probably not one to eat as the family *Oenanthe* has some of the most poisonous plants in the U.K. This is a rare plant on the east coast north of the Humber. Once again Teesmouth has a relic small population; the next occurrence of this plant along the east coast northwards is in Northumberland.

Flora of South Gare



Two large plants from the *Cyperaceae* family which line the edges of the ponds and often grow together are shown on the photo above right. Grey Club-rush, *Schoenoplectus tabernaemontani*, on the left and Common Club-rush, *Schoenoplectus lacustris*, on the right. The other archetypal water plant that most people can recognise is Bulrush, *Typha latifolia*, (A name from ancient Greek, *latifolia* meaning broad leaved) from the *Typhaceae* family. The photo shows the female part of the flower stem with the pappus of the seeds beginning to be released.



Water Horsetail, *Equisetum fluviatile* and Hart's Pennyroyal, *Mentha cervina*.





There are a few large stands of Common Reed, *Phragmites australis*, in some of the ponds and damp areas. It is a helophyte (aquatic plant), especially common in alkaline habitats and it also tolerates brackish water. It is one of the most widespread plants on the planet and only absent from Antarctica.



Yellow Iris, *Iris pseudacorus*
NZ586254.

Grassland



ch2m.



November 2018 | South Sea Regeneration Master Plan

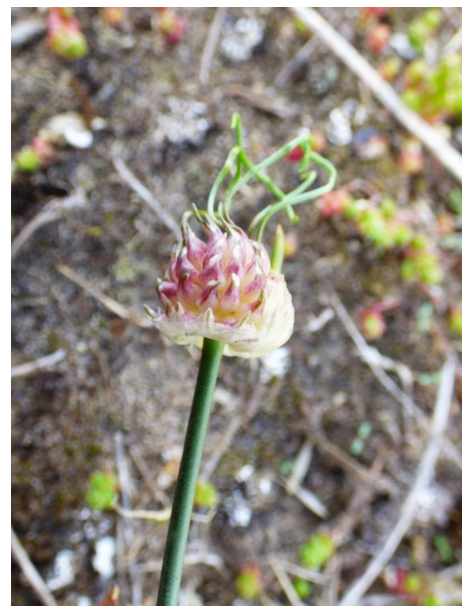
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Although this habitat constitutes possibly the largest area at the South Gare it is the least diverse in species richness. However, it does have some interesting plants scattered about in pockets. There are large areas of coarse grasses mostly made up of False Oat, *Arrhenatherum elatius* and Creeping Bent, *Agrostis stolonifera*. However, there are areas of greater species diversity especially where the grass is shorter. The aerial photo above show part of the South Gare with large areas of grassland. The image is from the STDC development master plan.

A plant which is very localised in the county but has a good population in the grassland with hundreds if not thousands of plants is Wild Onion, *Allium vineale*. NZ55942713



Common Knapweed, *Centaurea nigra*, tends to be found in the longer grass.



Flora of South Gare

Field Mouse-ear, *Cerastium arvense*, is scattered about mostly on the edge of the golf course.
NZ577255



Don't forget that grasses are flowering plants and they have their own beauty especially when you look closely. At the top right are the flowering spikes of Cock's-foot grass, *Dactylis glomerata*, middle left

is Yorkshire Fog, *Holcus lanatus*, to the right is the attractive Quaking grass, *Briza media*, which is often a good indication of some lime in the soil. The grass at the bottom is False oat-grass, *Arrhenatherum elatius*, a common species along roadsides and where grazing pressure is low.



A plant which helps to create grasslands with a diversity of species is Yellow-rattle, *Rhinanthus minor*. It is semi-parasitic annual which weakens grasses by feeding off their roots. Keeping with the yellow flower theme other species that can be found in the grassy areas include Common Toadflax, *Linaria vulgaris*.



Not as common at the South Gare is Tansy, *Tanacetum vulgare*, a plant which has had many uses including as an effective insecticide. It was first recorded as being cultivated by the ancient Greeks for medicinal purposes. Tansy was used to treat intestinal worms, rheumatism, digestive problems, fevers, sores, and to bring out measles.



Another member of the *Asteraceae* family along with Tansy is Beaked Hawk's-beard, *Crepis vesicaria*, one of the initially confusing yellow "Jobs". It is often the first yellow *Asteraceae*, to flower in the spring. Note the two rows of phyllaries (bracts) Other members of the *Asteraceae* family include the Ragworts. South Gare has Common Ragwort, *Jacobaea vulgaris*, Oxford Ragwort, *Senecio squalidus*, Narrow-leaved Ragwort, *Senecio inaequidens*, Hoary Ragwort, *Jacobaea erucifolia*, and on the next page the

Flora of South Gare

hybrid between Silver Ragwort and Common Ragwort, *J. maritima* x *J. vulgaris* = *J. albescens*.
NZ55612755



Above is Common Ragwort, *Jacobaea vulgaris*, note how close together the flower heads are. Other yellow flowers include Creeping Buttercup, *Ranunculus repens*, Autumn Hawkbit, *Scorzoneroides autumnalis*, Perennial Sowthistle, *Sonchus arvensis* and many species of *Taraxacum*, including a very rare species *Taraxacum scanicum*,

NZ55692790. One of some 234 Dandelion species present in the UK.

Perennial Sowthistle, *Sonchus arvensis*, a tall yellow “Job” flowering from August onwards, note the sticky yellow glands on the flower peduncle (stalk of the flower).



The seed-head of Goat’s-beard, *Tragopogon pratensis*.





In the shorter grassy areas you might come across Bee orchid, *Ophrys apifera*, the image on the right shows the wintering leaves of the orchid which means you can find this plant at almost any time of the year. The plants have a habit of appearing one year in one place then disappearing and moving somewhere else. A few years ago there were a number of spikes at the far end of the Gare.



Image on the left shows some of the shorter grassland with Pyramidal orchid, *Anacamptis pyramidalis*, with Ribwort plantain, *Plantago lanceolata* and Common Bird's-foot-trefoil, *Lotus corniculatus*.

Flora of South Gare



The photo on the left shows that some areas of grassland can have a number of species in a small area. Hawkweed, *Hieracium*, species and Restharrow, *Ononis repens*, is the most noticeable in the photo. There are some examples of a white flowered version of Restharrow at the Gare.



Hare's-foot Clover, *Trifolium arvense*, an attractive clover. Like many members of the *Fabaceae* family it fixes nitrogen in the soil. The flowers are usually self-fertilized.

Bladder Campion, *Silene vulgaris*, a plant from the *Caryophyllaceae* family the leaves are sometimes eaten by people, especially in the Mediterranean region. Also Oxeye Daisy, *Leucanthemum vulgare*, a member of the *Asteraceae* family somewhat of a weed in other parts of the world where it has been introduced.





In the grassy areas bordering the dunes and the access road there are patches of Lesser Meadow-rue, *Thalictrum minus*, (image on the left) perhaps surprisingly this plant is actually in the *Ranunculaceae* (buttercup) family. In the north of England and Scotland it is a species found predominately in coastal areas.

A plant that you might not expect to find in open grassland is the fern Intermediate Polypody, *Polypodium interjectum*, NZ574252. An attractive lemon coloured flower in the shorter grassy areas is Mouse-ear-hawkweed, *Pilosella officinarum*, on the right is one of the last flowers of the year to bloom Common Fleabane, *Pulicaria dysenterica*, the Latin *pulicis*, means to ward off fleas.





The attractive delicate flower spikes of Pyramidal orchid, *Anacamptis pyramidalis*, add colour to the July and early August grassland areas. While I was collecting images for this document I noticed the bramble (*Rubus*) in the bottom left of the photo. It appears to be *Rubus dasyphyllus*, it is actually one of the most common species in the UK. One noticeable identification feature is the reddening at the base of the sepals after flowering. Another species to add to the list for the Gare as it doesn't appear to have been recorded before!

Two other characteristic members of the grassland assemblage are Wall Barley, *Hordeum murinum* and Common Stork's-bill, *Erodium cicutarium*.



Slag Areas

This habitat is perhaps the most interesting and may even be unique as a botanical habitat in the U.K. The slag from the iron and steelworks was laid down in the area a considerable time ago, around 1860s.



The presence of lime in the slag has helped to develop a flora with species more used to limestone environments. This chemical composition plus the very thin soils has produced a habitat for species which find these rare rocky habitats to their liking. One species which does particularly well here and puts on an attractive display on the slag areas is Red Valerian, *Centranthus ruber*, (photo top left). It is native to the Mediterranean region and the dry rocky environment is very similar to the natural habitats in the Mediterranean. A plant that can be found in some quantity on the rocks is Wild Strawberry, *Fragaria vesca*, a member of the *Rosaceae* family (five petals, five sepals and spirally arranged stamens). The photo at the bottom of the page shows the stark and bare slag plateau near the former steelworks; the plant in the foreground on the boulder of slag is Oxford Ragwort, *Senecio squalidus*. This plant seems very



much at home around the slag boulders as it is native to mountainous rocky or volcanic areas. A well drained rocky habitat mirrors its original home. Each plant head can produce 10,000 fruits during the season, which is most of the year.



Flora of South Gare



This picture above shows just how barren the area is, it is almost like something the Perseverance rover on Mars might navigate over. However, if you look carefully on the lower left you may just be able to make out some Hairy Violet, *Viola hirsuta*, flowers. Some likely species to meet in this area include:-



Weld, *Reseda luteola*, (the plant rosette) with the distinctive crinkly leaves. To the right of that is the other related species Wild Mignonette, *Reseda lutea*, in the cracks and holes between some of the big slag boulders are a few plants of Maidenhair Spleenwort, *Asplenium trichomanes*, a species which has only recently colonised the South Gare.



The plant on the left is unfortunately not the best photograph or the best specimen of Moonwort, *Botrychium lunaria*, a rather strange fern which shows a markedly northern and western distribution in the U.K. NZ564262. Unfortunately, it is eaten by the rabbits so often it doesn't get a chance to release spores.



Below left is Knotted Pearlwort, *Sagina nodosa*, (*nodosa* means many-jointed, conspicuously jointed, knotty). At the bottom of the page is Carline Thistle, *Carlina vulgaris*, (for Charlemagne Carolinus); his army was supposed to have been cured of the plague with a species of *Carlina* and bottom right is Musk Thistle *Carduus nutans*, (*nutans* means drooping, nodding flowers).



Flora of South Gare

A plant that is common on the rocky areas at the Gare is the Common Whitlowgrass, *Erophila*



verna. The trouble with vernacular English names is that they are often rather odd. Common Whitlowgrass, isn't a grass being in the *Brassicaceae* (Cabbage family). Also there is some disagreement about which genus it should be in. [7]Stace (New Flora of the British Isles fourth edition) has kept it in *Erophila*, rather than *Draba*, where some authorities have placed it. Despite that it is a very small but attractive flower in the spring. It is also common at the edges of paths in urban areas and is often overlooked.

Another plant that is particularly common in the dry plateau areas of slag is Viper's-bugloss, *Echium vulgare*, a member of the *Boraginaceae* family. It is often found in calcareous grassland areas and bare and waste places. It is a showy and distinctive plant which also attractive to bees.





A fine display of Viper's-bugloss, *Echium vulgare*, on the flat slag plateau NZ568260.

Alien Plants

It is hard to know where to start with the alien plants at South Gare. The area has so many species which have managed to thrive in this coastal habitat; in many cases they have originated in gardens. As to what we mean by alien plants perhaps the best definition could be found in [8]Clive Stace and Michael J. Crawley's book *Alien Plants* 2015. "An alien taxon is one that has migrated to the area with human involvement (whether intentional or unintentional), or has migrated there without human involvement but from an area in which the taxon is/was also alien".

Although many of the plants which could be classed as alien species have apparently appeared here with man's help; there are species that have been dispersed by birds, particularly *Cotoneaster*, species. There are also some puzzling plants whose origins are much harder to understand; the most striking example is perhaps Uig Hawkweed, *Hieracium uiginskyense*, which only appeared in 2004. At South Gare it is present in the thousands and is a real delight in the dunes in July. Another rather odd plant appearance was found on a BSBI field trip to the South Gare in 2019. Ambrose Baker, a local botanist, brought me a sample of a very puzzling plant he had found on the trip. We couldn't identify it at the time (it wasn't in flower) but it was obviously a mint species (*Mentha*) as it had a very strong mint smell. Ambrose eventually identified it as Hart's pennyroyal, *Mentha cervina*.

Although it had been recorded as growing wild in the U.K. twice before (it was known to have been planted) the plants at the Gare were very unlikely to have been dumped or deliberately planted. My best guess is that it arrived as seed from water birds such as waders and ducks which frequent the pool where it was found. This then was the first record in the U.K. of this Mediterranean water species found growing in the wild in the U.K. It appears to be still there (2021) but now down to only a single plant so only time will tell if it manages to survive.

You can usually tell that some plants have been dumped at the Gare from garden waste as they tend to be very close to the access road. However, the large soil mounds which have appeared around the edges of the golf course in the last few years are something of a mystery as to where the soil originated. A real cross section of garden and alien plants sometimes associated with farmland have also appeared. Unfortunately, most don't last very long and are either out-competed by more aggressive native plants or in some cases have been covered over by more soil waste. The mixture of alien plants at the Gare does certainly add to the species list. Perhaps more remarkable is the fact that quite a number of plants have managed to establish themselves and have been known there for many years. This wild garden at the South Gare is continuously being added to and new plants seem to turn up every year. Quite a few alien species must have arrived via birds as they are often away from the road. An example of this is the single small tree of Orange Whitebeam, *Sorbus croceocarpa*, which in the middle of a reed bed.

Although some of the perennial plants manage to take hold at the Gare a lot of the aliens are short lived annuals which tend to find it difficult to compete with the coarse grasses. Bare ground is very quickly colonised with fast growing annuals which race to flower before the larger grasses and other plants take over. One plant that has been at the Gare for many years is the Orange Bladder-

Flora of South Gare

senna, *Colutea arborescens* x *C. orientalis* = *C. x media*, which is a hybrid between Bladder-senna, and Red flowered Bladder-senna.



Orange whitebeam, *Sorbus croceocarpa*. NZ56052636



Orange Bladder-senna, *C. x media*. NZ56552600

There is a large number of attractive alien species at the Gare which have become very well established and have been known for many years. Here are some examples of them:

The two plants on the right are most likely garden throw outs. Bearded Iris, *Iris germanica*. The other plant is Elephant-ears, *Bergenia x schmidtii*, this is at the edge of the "Cabin Rocks" it was positively identified by John Poland (Veg Key author) when he visited South Gare.



Flora of South Gare

Sweet Alison, *Lobularia maritima*, is common at the end of the Gare; it is able to cope well with the dry bare areas. A native to the Macaronesia islands but is widely naturalised around the world.



The lovely pink flowers above are Broad-leaved Everlasting-pea, *Lathyrus latifolius*, this is a garden escape first recorded in the wild in the U.K. in 1670. It has been at the Gare for many years. Another plant that has been at the Gare for a long time is the attractive yellow flowers of Spanish Broom, *Spartium junceum*, NZ58512546.



On the far left is the grass Hare's-tail, *Lagurus ovatus*, yet another plant originally from the Mediterranean region but scattered about the U.K. often near the coast. First recorded at the Gare in 2001 it can be found at the edge of the access road, NZ56012647. One very noticeable plant on the "Cabin Rocks" is the Snapdragon, *Antirrhinum majus*, which seems to thrive on the rocks.

Flora of South Gare



Another plant that was most likely introduced by well meaning birdwatchers in the past is Sea Buckthorn, *Hippophae rhamnoides*, although it is a native plant in the UK it is unlikely that it is native in the Tees estuary. It can become invasive and unfortunately is spreading fast at the Gare. <https://www.brc.ac.uk/plantatlas/plant/hippophae-rhamnoides>

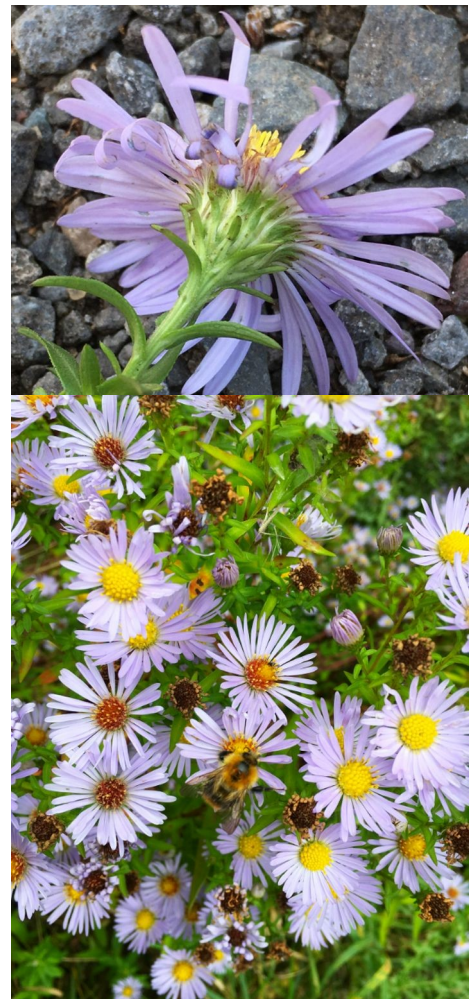


Wallflower, *Erysimum cheiri*, is an Archaeophyte (A plant introduced before 1500). It is scattered about in the dunes at the side of the access road. Presumably originally a garden throw out.



Cape Daisy, *Osteospermum jucundum*, has been recorded at the Gare since 2012 but it has probably been there much longer than that, NZ55612755.

On the right are two photos of Common Michaelmas-daisy, *Symphyotricum x salignum*.



Flora of South Gare

The South Gare does produce a number of unexpected plants. We do have Wild Mignonette, *Reseda lutea*, and Weld, *Reseda luteola*, which are both common especially in the industrial areas of Teesside. A much rarer plant has occurred on the soil mounds but tends not to persist is White Mignonette, *Reseda alba*, shown in the picture below; they are members of the *Resedaceae* family.



Another plant that appeared on the soil mounds is Ivy-leaved Toadflax, *Cymbalaria muralis*, a member of the *Veronicaceae* family. Below is the cultivated form of Purple Toadflax, *Linaria purpurea*, (which also occurs at the Gare). This pink version is called 'Canon Went'.



Two plants which people have helped to inadvertently establish at the Gare are Sweet William, *Dianthus barbatus*, NZ55632738 and on the right Wild Clary, *Salvia verbenaca*, the Clary's position next to the access road suggests it was originally dumped there NZ57352540.



The yellow flower on the left is an unusual casual alien plant called Safflower, *Carthamus tinctorius*, which was found on one of the mounds in 2017, it is sometimes found in birdseed, unfortunately it didn't persist. However, the grass to the left is likely eventually to be much commoner. It is Water Bent, *Polypogon viridis*, first recorded in the county in 2005 but not until 2017 at the Gare.

Flora of South Gare

Many of the unusual species recorded at the Gare are garden plants which have been discarded over many years. Most of these plants don't become invasive.



Flora of South Gare

The plant photos on the previous page are from left to right and top to bottom: Globe artichoke, *Cynara cardunculus*, an uncommon plant growing wild in the UK.

Purple Viper's-bugloss, *Echium plantagineum*, again an uncommon plant with scattered records in the U.K.

Gentian Speedwell, *Veronica gentianoides*, a very rare plant in the wild in the U.K.

Pot Marigold, *Calendula officinalis*, growing on one of the soil mounds.

Canary-grass, *Phalaris canariensis*, an attractive alien grass.

Turkish Iris, *Iris orientalis*, this was the first record in VC62 a fairly rare plant growing wild in the UK.



Two more unusual plants: on the left is Cockspur grass, *Echinochloa crus-galli*, on the right is Irish Spurge, *Euphorbia hyberna*, this is the only record of this plant growing wild in the whole of the north of England.

Species profiles

Sea-holly *Eryngium maritimum*

Sea-holly, *Eryngium maritimum*, was recorded in Baines's flora of 1840 as being "opposite Coatham marshes" presumably in the dunes. It was recorded again in 1863 but after that the next record in the BSBI database wasn't until the 1960s. Once again there was a big gap until 2001 when it was found again. Today we still have it at the Gare in a relatively small area in the dunes. However, it does seem to be spreading although fairly slowly. It is an interesting member of the *Apiaceae* (Umbellifers) the name is derived from the type genus *Apium*, which was originally used by Pliny the Elder circa 50 AD for a celery-like plant. However, the plant doesn't really look like most of the rest of this family.

The distribution of this distinctive plant is coastal with most U.K. records along the south and west coasts. It is much less common on the east coast especially in northern England. It is classed as near threatened in the Red List for England. At the Gare it is found in the sand dunes and at the edges of paths that people have made in the dunes. The waxy cuticle coating on the stiff leaves helps to protect the plant from water loss.



Flora of South Gare

The photo on the right shows Sea Holly, *Eryngium maritimum*, spreading at the edge of a path through the dunes. The map below shows just how small an area in the dunes the plant grows.



Hawkweeds *Hieracium*

We were very fortunate in North East Yorkshire (VC62) to have had the expertise of the late Vincent Jones who was an acknowledged expert in this genus of attractive yellow flowered members of the *Asteraceae* family. Hawkweeds are apomictic species which means they don't reproduce sexually. Instead each plant is self fertile and produces clones. Each plant produces a large number of seeds which are identical to the parent plant. Although there are quite a lot of species in the U.K. (some 250 species) many are actually rare and some extremely so. At South Gare, Vincent Jones identified twelve species. Some of these are common but there are also rare species found here. Interestingly these plants have been helped by the industrialisation of Teesside. Brownfield sites can be particularly rich in these plants.



One species that only appeared at the Gare in 2004 is Uig Hawkweed, *Hieracium uiginskyense*. It can be identified by the leaves-rather bright, yellowish-green, 1-3cm wide, elliptical or lanceolate, subentire, denticulate or shortly dentate. cuneate or attenuate at the base. Inflorescence corymbose with up to 15 heads and suberect branches giving a narrow outline. Peduncles sometimes with a few simple hairs, eglandular. Phyllaries (bracts) with numerous simple hairs of varying lengths, including numerous very short fine ones and dense micro glands. Styles yellow. You can see the yellow styles clearly in the photograph on the next page. Many other *Hieracium*, species have slightly discoloured styles.



The picture to the left and the one below shows a close view of the flowers of Uig Hawkweed, *Hieracium uiginskyense*. Note the yellow styles.



The plant to the left is Large-toothed Hawkweed, *Hieracium prominentidens*. This Hawkweed is rare in the U.K. and at the Gare. Best told from *H. uiginskyense*, by the large teeth-like projections of the leaves up to 20mm in length.

Flora of South Gare



The map above shows all the recorded records of *Hieracium* species recorded at six figures or above at the Gare. The full list of *Hieracium* species recorded at South Gare in the table below.

Anglian Hawkweed	<i>Hieracium anglorum</i>
Southern Hawkweed	<i>Hieracium argillaceum</i>
Petite-leaved Hawkweed	<i>Hieracium daedalolepiodes</i>
Northern Hawkweed	<i>Hieracium eboracense</i>
Large-toothed Hawkweed	<i>Hieracium prominentidens</i>
Autumn Hawkweed	<i>Hieracium sabaudum. f. sabaudum</i>
Bluish-leaved Hawkweed	<i>Hieracium salticola</i>
Autumn Hawkweed	<i>Hieracium sect, Sabauda</i>
Grey-headed Hawkweed	<i>Hieracium triviale f. pseudosubramosum</i>
Uig Hawkweed	<i>Hieracium uiginskyense</i>
Glabrous-headed Hawkweed	<i>Hieracium vagum. f. vagum</i>

Heath Dog-violet *Viola canina*

This lovely little member of the Violet, *Violaceae* family is in serious decline in the U.K. as a whole. The Red List for England classes this plant as vulnerable. It was first recorded in the county in 1958 by Franklin Perring who was best known as joint editor of the Atlas of the British Flora. His record was inland at Beggar's bridge Near East Arncliffe woods.

However, since the 1990s all the records have been at South Gare. We still have a small population of this lovely violet but further survey work could inform just how much of this plant we have left. This violet prefers to be out in the open in very short turf or soil. Some of the plants at the Gare seem to be at home at the edge of the "Cabin Rocks" area especially in sandy soil. There is another colony on an area of flat slag. The extent of this colony is uncertain as often the plants are grazed by rabbits. The other much more common species you may encounter at the Gare is Hairy Violet, *Viola hirsuta*. This plant is sometimes abundant on the Cabin Rocks and can readily be told from Heath Dog-violet, *Viola canina*, by the hairy leaves and petioles. Main key features to look for in Heath Dog-violet, *Viola canina*, are that a basal rosette of leaves is absent, all the leaves are on stems. The spur is yellow, notched or not (you can see the yellow spur in the photo). The leaves are lanceolate shaped, mostly shiny, strongly reticulate below, dark green, thick, glabrous. It also tends to flower later than Common Dog-violet, *Viola riviniana*, (there is only a single record of *V. riviniana* at the Gare in the 1980s but it is probably an error) and the flowers are often blue in colour.



You can see the yellow spur on the photo above. It can readily be separated from the much more common (on the rocks) Hairy Violet, *Viola hirta*, which has hairy petioles and underside of the leaves.



Flora of South Gare

The map shows the grid reference records for Heath Dog-violet, *Viola canina*.

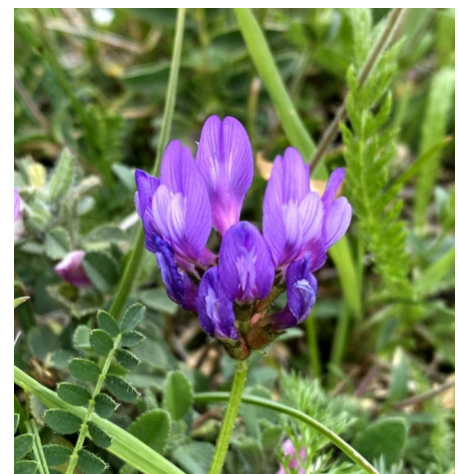
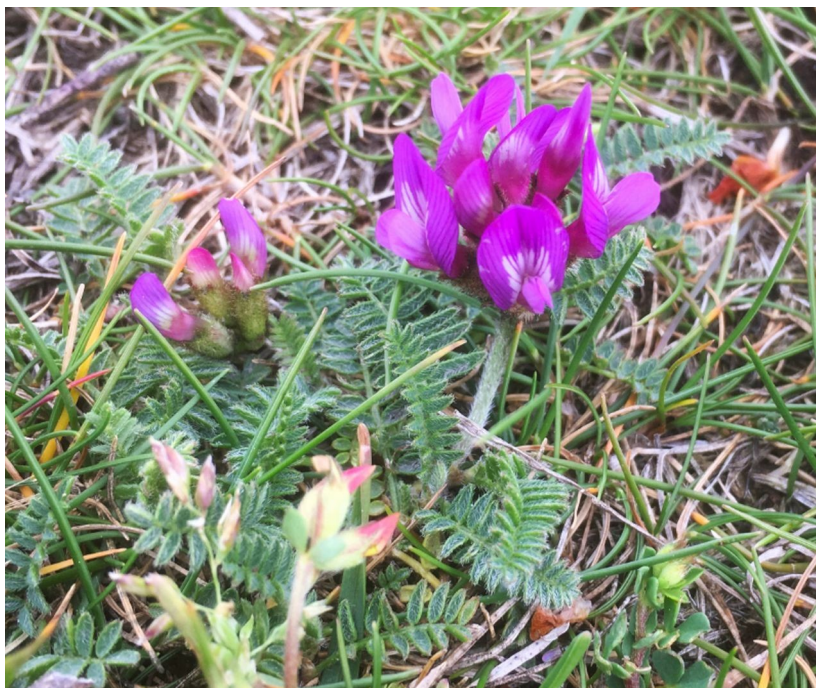
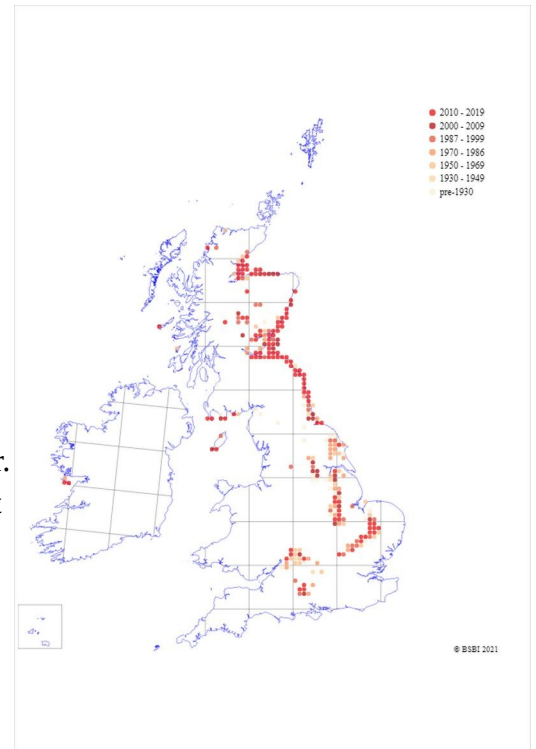
A national map can be found here [Viola canina | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](http://Viola.canina|OnlineAtlasoftheBritishandIrishFlora(brc.ac.uk))



This photo shows the other more common violet species on the rocks area. Hairy Violet, *Viola hirsuta*.

Purple Milk-vetch *Astragalus danicus*

This attractive member of the *Fabaceae*, (Pea) family is unfortunately another plant which is in serious decline in England. It is classed as endangered in the [9]Red List for England. It was first recorded in the county 1853 by J.G. Baker and a year later by William Foggitt. It now seems to be confined to the northern part of the county from South Gare towards Marske. It is mostly a coastal plant in the U.K. It also occurs most frequently on the eastern side of the country with a few isolated pockets in the Isle of Man and south west Scotland. At the Gare we have quite a good population of this plant which seems to flower all summer and I have seen flowers in November. It also seems to prefer short grass often at the edge of the paths at the Gare. The plant is hairy (which incidentally may offer some protection from rabbits who tend to avoid hairy plants). This plant is included as a species “of principal importance for the purpose of conserving biodiversity” under Section 41 (England) of the Natural Environment and Rural Communities Act 2006. The decline in England is thought to be due to habitat destruction and agricultural changes. Thankfully, South Gare has not suffered in the same way. Purple Milk-vetch, *Astragalus danicus*, has protected status. It is also considered endangered by the International Union for Conservation of Nature (IUCN).



More information and the U.K. distribution can be seen here <https://www.brc.ac.uk/plantatlas/plant/astragalus-danicus>

Flora of South Gare



Although the points on the map suggest that Purple Milk-vetch, *Astragalus danicus*, is quite widespread at the Gare. It is actually probably under recorded with some areas not systematically recorded to six figures or more. The best place to look for it is at the edge of paths and any short grassy areas.

Sand Sedge *Carex arenaria*

This small sedge is a component of the dune flora which binds together the sand along with Marram and Lyme grass, *Ammophila arenaria* and *Leymus arenarius*. In VC62, it is confined to a narrow coastal strip mostly in the northern part of the county. This plant inhabits a niche that lacks competition but is restricted to very sandy areas. It is a species that grows in lines. Long thin horizontal rhizomes help to stop the movement of the sand. The blades of the sedge also catch light wind-blown sand, which makes it an important plant for dune formation. The U.K. distribution can be seen on the Biological Records Centre's, (BRC), Online Atlas of the British and Irish Flora (link below).

It is the only member of the *Carex*, genus likely to be found in the dunes which does help with the identification. Like most members of the *Carex* genus in the *Cyperaceae* family the stems (Culms) are trigonous with rough edges (scabrous-angled) each plant has a single stem and is often quite small at the Gare, often only 10 to 15cm in height. The utricles (ovary) 4-5.5mm are winged with a beak. Some lovely illustrations of *Carex* parts can be found at Lizzie Harper's website. [Sedges: An introduction - Lizzie Harper](#).

The map below doesn't really show the distribution correctly as it is actually quite common in the dunes at the Gare and consequently hasn't been recorded at six figures or more.

[Carex arenaria | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](#)



Distant Sedge *Carex distans*

Like quite a few of the habitats at the Gare they are often in small areas. Distant Sedge, *Carex distans*, is scarce even in the right place and there isn't a great deal of this plant recorded at the Gare. The area of the "Ducky" seems to be the main stronghold of this sedge. It has been recorded near Whitby but most of the records in the last twenty years have been in the South Gare area. It is a tufted plant often densely so. The lowest bracts are much shorter than the inflorescence, utricles 3-4.5mm, with a beak 0.7-1mm. The female glumes have a narrow scarious (a thin, dry, membranous texture and usually colourless) margin. The distribution is shown on the BRC Online Atlas of the British and Irish Flora, [Carex distans | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](http://brc.ac.uk)



Distribution map on the next page as well as a typical clump of Distant Sedge, *Carex distans*.

Flora of South Gare



Long-bracted Sedge *Carex extensa*

This sedge is restricted to the South Gare and in the same habitat as Distant Sedge, *Carex distans*. It is a perennial plant, mainly confined to areas within reach of sea water or spray. It is also found on muddy or sandy estuarine flats, at the uppermost levels of saltmarshes and the edges of brackish ditches, and on moist coastal rocks and low cliffs. As the name suggests the bracts below each inflorescence; are long and far exceed the inflorescence they are often patent or reflexed. Female glumes 1.5-2mm with pale often green midrib. Utricles 3-4mm ovoid or ellipsoid with beak 0.5-0.75mm

[Carex extensa | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](http://brc.ac.uk)

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Lesser Centaury *Centaurium pulchellum*

This lovely tiny annual gem is in the *Gentianaceae* family. We are lucky to have this at the South Gare, it is also a rare plant in the north of England. As its name suggests, it is much smaller than its relative, Common Centaury, *Centaurium erythraea*. Often the plants at the Gare are only one or two centimetres tall and are very easily overlooked. Unlike the similar Common Centaury, *Centaurium erythraea*, it does not have leaves at the base of its stem, but has narrow, oval leaves that appear in opposite pairs up the stem. The main stem has two to four internodes and all branches arising at 30-45 degree angle.

BRC Online Atlas of the British and Irish Flora, [Centaurium pulchellum | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](https://www.brc.ac.uk/online-atlas-of-the-british-and-irish-flora)

During 2020 an interesting variation (var.) was found by David Broughton (recorder for VC64 & VC31). This is a variation of the more common species Common Centaury, *Centaurium erythraea* var. *fasciculare*, which is a tall plant with usually several stems. The leaves are broadly ovate oblong. The inflorescence a compact clusters of flowers in a short-peduncled cluster. The stamens are inserted at the apex of the corolla tube. Information taken from [10]The Flora of Great Britain and Ireland Vol, 3 Peter Sell & Gina Murrell. This var. has only been recorded five times in the whole of the UK. Images below are of Lesser Centaury, *Centaurium pulchellum*,



Flora of South Gare



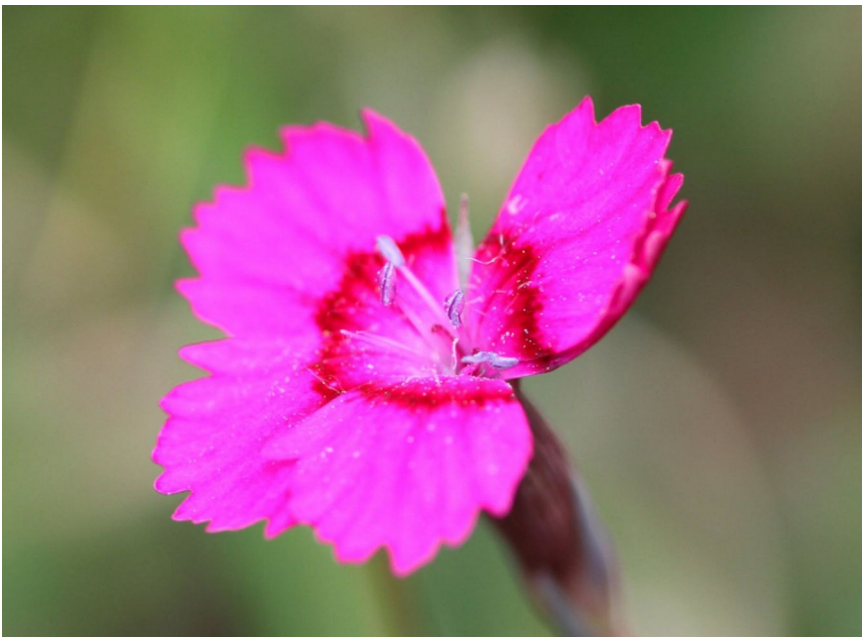
Lesser Centaury, *Centaurium pulchellum*, distribution at South Gare.



These are taller plants than most at the Gare. The angle of the branches is very noticeable at c.30-45°.

Maiden Pink *Dianthus deltoides*

This lovely flower is a member of the *Caryophyllaceae* family it was first recorded in the county in 1844. However, since 2002 it has only been recorded at South Gare. This is a plant that is very restricted even at the South Gare and is recorded only over a 10sqm area. It grows in very short sandy turf, which is heavily grazed by rabbits. It does manage to flower occasionally so it must not be so palatable to the rabbits. However, one consequence of where it grows is that the turf can become very dry and hot in the summer and this can often stop it flowering. I failed to find it for a few years but in 2019 and 2020 it did flower, producing some eight to ten flowers.



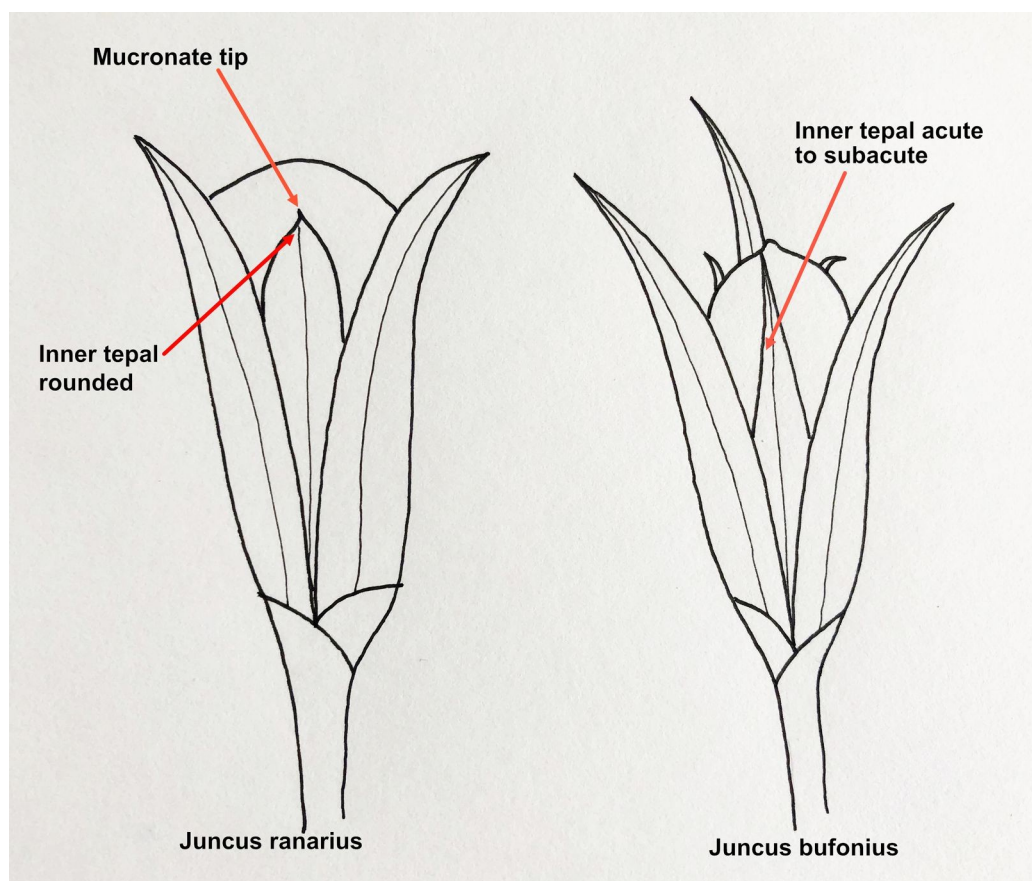
The records of the lovely flower are all in a small area of short sandy turf on the eastern edge of the “Cabin Rocks” Maiden Pink, *Dianthus deltoides*, NZ55802716.

Frog Rush *Juncus ranarius* (*J. ambiguus*)

This is a plant from the *Juncaceae* family, which is uncommon in large parts of the U.K. but it may be more widespread as it could well be under recorded. It may be worth checking for plants you might think are Toad Rush, *Juncus bufonius*, especially at the side of winter salted roads.

Frog rush, *Juncus ranarius*, is a small rush which often forms prostrate rosettes. It is a plant of damp brackish coastal habitats typically in mud and sandy areas. At the Gare it seems to prefer the disturbed areas with little competition from other plants. It is an annual plant and the best time to check the features is when it is going into fruit. It is most likely to be confused with Toad Rush, *Juncus bufonius*, but plants can be picked out in the field by the distinctive light brown colour and small clusters of fruits (rather than all flowers spaced out). *J. ranarius*, flowers often bunch together, usually 2-3 together at the tip of an ultimate branch; *J. bufonius*, flowers tend to be more spaced out, although small plants may be crowded together. Another character is the shape of the leaves of the flowers. The outer 3 are distinctly longer than the inner 3 and both have membranous margins. However, the best character is the combination of the big blunt fruit and the short blunt inner tepals.

Interestingly it was not recognized in the British Isles as a separate species until 1978.



Many thanks to Carol Wilson for improving my original line drawing.

[Juncus ambiguus | Online Atlas of the British and Irish Flora \(brc.ac.uk\)](http://brc.ac.uk)

Flora of South Gare



Frog Rush,
Juncus ranarius,
In the small area
of wet sandy
ground GR
NZ562266.



The two dots on the
map show how
restricted Frog Rush
is at the South Gare.

Flora of South Gare

A full list of the species recorded in the 11 monads at South Gare can be found in this spreadsheet.

Download from the BSBI VC62 page [North-east Yorkshire, v.c. 62 – Botanical Society of Britain & Ireland \(bsbi.org\)](#)

Acknowledgments

Many thanks for the following people who have contributed towards this document.

Christine Corbett, Wendy English, Stewart Ramsdale, Carol Wilson.

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Index

Access Road & the end of the Gare	44
Acknowledgments	96
Alien Plants	71
Astragalus danicus	85
Carex arenaria	87
Carex distans	88
Carex extensa	90
Centaurium pulchellum	91
Dianthus deltoides	93
Distant Sedge	88
Dune slacks	42
Dunes	37
Eryngium martimum	78
Frog Rush	94
Grassland	58
Habitats	22
Hawkweeds	80
Heath Dog-violet	83
Hieracium	80
History of South Gare	5
Industrial impact	21
Introduction	3
Juncus ranarius	94
Lesser Centaury	91
Long-bracted Sedge	90
Maiden Pink	93
Plant surveys	13
Ponds	54
Purple Milk-vetch	85
Saltmarsh	31
Sand Sedge	87
Sea-holly	78
Slag Areas	66
Soil Mounds	48
Study area	16
The “Cabin Rocks”	23
Viola canina	83
Why is South Gare interesting?	13