# 9. Flora

## The flora of the Humber Estuary

The diverse range of habitats found on Humber Estuary and its hinterlands support a rich variety of botanical species. One of the major interests of the Humber is phytogeographical, with several plant species occurring at or close to the limits of their geographical range on the east coast of Britain. For example, saltmarsh flat-sedge, *Blysmus rufus* is at its southern limit, while slender hare's-ear, *Bupleurum tenuissimum* is at its northern limit.

There are a number of plant species that were previously listed on the SSSI and European site citations, and several of these have individual proformas. However, in undertaking this review, it has become clear that several of these listed species have not been recorded on the Humber Estuary for several years, although it is possible that they may still be present. It is also thought that several past records may be due to misidentification. The Red Data Book and Nationally Scarce plant species recorded on the Humber Estuary are listed in Table 9. (These species are not known to have been introduced and have been reliably recorded since 1987).

**Table 9 Nationally scarce plant species recorded from the Humber Estuary and its hinterlands.**

| Scientific name | Common Name | Rarity status |
|---|---|---|
| *Alopecurus bulbosus* | Bulbous foxtail | Nationally scarce |
| *Bupleurum tenuissimum* | Slender hare's ear | Nationally scarce |
| *Carex divisa* | Divided sedge | Nationally scarce |
| *Festuca arenaria* | Rush-leaved fescue | Nationally scarce |
| *Hippophae rhamnoides* | Sea buckthorn | Nationally scarce |
| *Lathyrus palustris* | Marsh pea | Nationally scarce |
| *Limonium binervosum ssp.* | Rock sea lavender | Nationally scarce/ RDB |
| *Parapholis incurva* | Curved hard-grass | Nationally scarce |
| *Poa bulbosa* | Bulbous meadow grass | Nationally scarce |
| *Ruppia cirrhosa* | Spiral tasselweed | Nationally scarce |
| *Sium latifolium* | Great water parsnip | Nationally scarce |
| *Trifolium suffocatum* | Suffocated clover | Nationally scarce |
| *Trifolium squamosum* | Sea clover | Nationally scarce |
| *Elytrigia repens spp. arenosa* | Common couch sub-species | Only recently recognized as a distinct taxon |

In addition to the nationally scarce species listed in the table above, additional records have been received whilst undertaking this review. These refer to the importance of the Humber Estuary and its surrounds for supporting regionally scarce species. (Please note that the records relate to VC61 and Lincolnshire only.)

Tables 10-12 comprise records from Peter J. Cook, BSBI recorder for the north bank of the Humber between Saltend and Spurn in VC61 (1990-2002):

**Table 10 Regionally scarce plants representative of the Southern Temperate Biome (European and Suboceanic elements).**

| Scientific name | Common Name |
|---|---|
| *Aira praecox* | Early hair-grass |
| *Bupleurum tenuissimum* | Slender hare's ear |
| *Callitriche obtusangula* | Blunt-fruited water-starwort |
| *Carex distans* | Distant sedge |
| *Carex extensa* | Long bracted sedge |
| *Eryngium maritimum* | Sea holly |
| *Filago vulgaris* | Common cudweed |
| *Juncus ambiguus* | Frog rush |
| *Juncus maritimus* | Sea rush |
| *Lotus glaber* | Narrow leaved bird's foot trefoil |
| *Myosotis ramosissima* | Early forget-me-not |
| *Oenanthe lachenalii* | Parsley water dropwort |
| *Ornithogalum angustifolium* | Star of Bethlehem |
| *Parapholis strigosa* | Hard grass |
| *Petroselinum segetum* | Corn parsley |
| *Phleum arenarium* | Sand cat's tail |
| *Ranunculus parviflorus* | Small flowered buttercup |
| *Sagina maritima* | Sea pearlwort |
| *Salsola kali* | Saltwort |
| *Samolus valerandi* | Brookweed |
| *Saxifraga tridactylites* | Rue-leaved saxifrage |
| *Stellaria pallida* | Lesser chickweed |
| *Suaeda maritima* | Annual seablite |
| *Trifolium striatum* | Knotted clover |

**Table 11 Regionally scarce plants representative of the Mediterranean element.**

| Scientific name | Common Name |
|---|---|
| *Atriplex portulacoides* | Sea purslane |
| *Blackstonia perfoliata* | Yellow wort |
| *Calystegia soldanella* | Sea bindweed |
| *Catapodium marinum* | Darnel fescue |
| *Glaucium flavum* | Yellow horned poppy |
| *Lavatera arborea* | Tree mallow |
| *Limonium vulgare* | Common sea lavender |
| *Ophrys apifera* | Bee orchid |
| *Parapholis incurva* | Curved hard-grass |
| *Sison amomum* | Corn or stone parsley |
| *Torilis nodosa* | Knotted hedge parsley |
| *Trifolium suffocatum* | Suffocated clover |
| *Trifolium scabrum* | Rough clover |
| *Vulpia bromoides* | Squirrel tail fescue |

**Table 12 Regionally scarce plants, their phytogeographical element and locations in the Humber region.**

| Scientific name | Common Name | Phytogeographical element |
|---|---|---|
| *Atriplex laciniata* | Frosted orache | Oceanic Temperate |
| *Crambe maritima* | Sea kale | European Temperate |
| *Ruppia cirrhosa* | Spiral tassleweed | Circumpolar Wide Temperate |
| *Ruppia maritima* | Beaked tassleweed | Circumpolar Wide Temperate |

Tables 13 and 14 comprise records from Paul Kirby, Lincolnshire Naturalists' Union (1993-2002) for Lincolnshire:

**Table 13 Species rare or uncommon in Lincolnshire.**

| Scientific name | Common Name |
|---|---|
| *Calystegia soldanella* | Sea bindweed |
| *Catapodium marinum* | Darnel fescue |
| *Eleocharis quinqueflora* | Few-flowered spike-rush |
| *Eleocharis uniglumis* | Slender spike-rush |
| *Epipactis palustris* | Marsh helleborine |
| *Eryngium maritimun* | Sea holly |
| *Hordeum marinum* | Sea barley |
| *Lathyrus nissolia* | Grass vetchling |
| *Ruppia maritima* | Beaked tassleweed |

**Table 14 Species uncommon or very local and recorded on the Lincolnshire coast.**

| Scientific name | Common Name |
|---|---|
| *Anagallis tenella* | Bog pimpernell |
| *Angelica archangelica* | Angelica |
| *Carex extensa* | Long bracted sedge |
| *Oenanthe crocata* | Hemlock water-droplet |
| *Oenanthe lachenalii* | Parsley water dropwort |
| *Petroselinum segetum* | Corn parsley |
| *Ranunculus sardous* | Hairy buttercup |
| *Salix repens* | Creeping willow |
| *Sison amomum* | Corn or stone parsley |
| *Thalictrum minus* | Lesser meadow-rue |
| *Torilis nodosa* | Knotted hedge parsley |
| *Triglochin palustris* | Marsh arrowgrass |
| *Anacamptis pyramidalis* | Pyramidal orchid |
| *Dactylorhiza sps* | Orchid |
| *Gymnadenia conopsea* | Fragrant orchid |
| *Listera ovata* | Common twayblade |
| *Ophrys apifera* | Bee orchid |

## References

COOK, P., personal communication, 2002. Recorder for the Botanical Society British Isles, VC61 (SE Yorkshire).

KIRBY, P., personnal communication, 2002 Lincolnshire Naturalists' Union.

## Stag's-horn clubmoss *Lycopodium clavatum*

**Key Sites:** None.

**Summary Status:**

- Wildlife and Countryside Act: Schedule 8.
- Habitats Directive: Annex IVb.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Single unconfirmed record only.

### Description

Stag's-horn clubmoss *Lycopodium clavatum* is a prostrate, evergreen perennial herb of heaths, moors and mountains. It is often frequent on base-rich micaceous soils, but also occurs on more acidic *Calluna* heath and *Nardus* grassland, widely distributed and locally common on heath, moor and rough grassland especially in mountainous districts on acid soils (Rose 1989; Preston *et al* 2002).

### Distribution within the Humber

An unconfirmed record for stag's-horn clubmoss *Lycopodium clavatum* was noted in the 1984 SSSI citation for the North Lincolnshire Coast (NCC 1985). Four occurrences have been recorded elsewhere in Lincolnshire, but described as rare by Gibbons (1975) and Gibbons & Weston (1985) with no sites recorded by the estuary or coast. It has not been recorded on the north bank of the estuary and no suitable habitat is believed to be present (P. Cook pers. comm. 2002; Crackles, 1990).

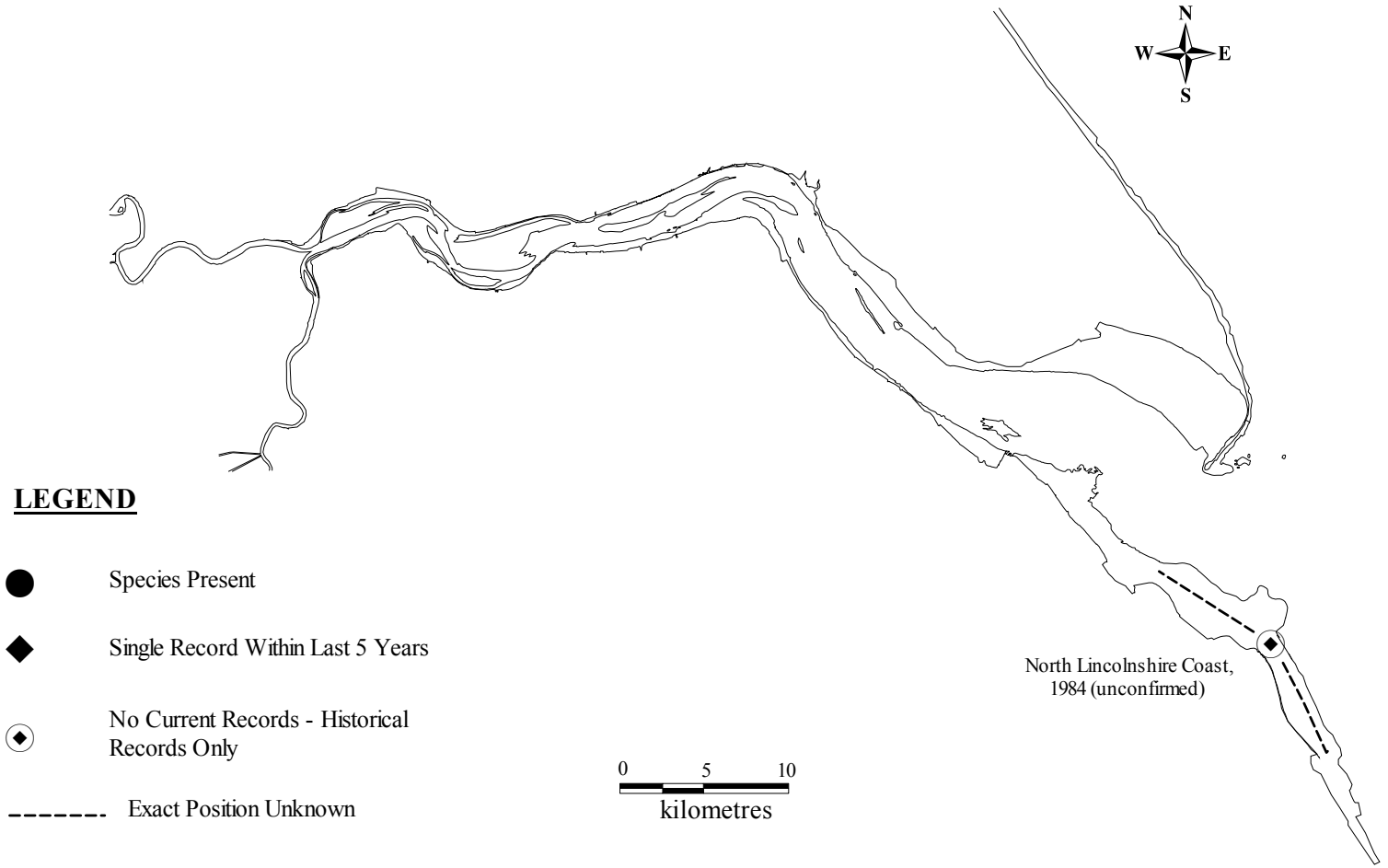
### Historical changes and trends

Stag's-horn clubmoss was formally found throughout Britain, but is now absent from much of the lowlands where many sites were lost before 1930. Populations elsewhere are somewhat transient, with losses owing to overgrazing, heather burning, conversion to scrub and agricultural improvement, being offset by the establishment of new populations (Stace 1991; Preston *et al* 2002).

### Conservation status

Stag's-horn clubmoss is considered to be nationally declining - see above. No particular conservation significance within the Humber context due to single unconfirmed record.

**Population Distribution of the Stag's-horn Clubmoss *Lycopodium clavatum*.**




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact Position Unknown

## References

COOK, P., personal communication, 2002. Recorder for the Botanical Society British Isles, VC61 (SE Yorkshire).

*CRACKLES, F.E., 1990. *Flora of the East Riding of Yorkshire*. Hull: Hull University Press.

GIBBONS, E.J., 1975. *The Flora of Lincolnshire*. Lincoln: Lincolnshire Naturalists Union.
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*PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press.

ROSE, F., 1989. *Grasses, Sedges, Rushes and Ferns of the British Isles and north-western Europe*. London: Viking.

*STACE, C.A., 1991. *New Flora of the British Isles*. Cambridge: Cambridge University Press.

## Brackish water-crowfoot *Ranunculus baudotii*

**Key Sites:** Widely distributed in the inner/middle estuary and not particularly associated with nature reserves (although it may be present there).

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Formally Nationally Scarce.

### Description

Brackish water-crowfoot *Ranunculus baudotii* is a characteristic flowering plant of still or slow moving shallow brackish water. In Britain, it is widespread where suitable habitats exist and is locally abundant but not common. It may be found in ditches of drained saltmarshes and transient pools in dune slacks. It has declined nationally especially in the west of Britain (Stewart *et al* 1994).

### Distribution within the Humber

This species survives well in the brackish borrow pits behind the Humber flood defence bank and on recently cut ditches in the Kilnsea area (Crackles 1990; P. Cook pers. comm. 2002). It is also known to be present in agricultural ditches on the Lincolnshire coast and south bank of the estuary although details of the recent distribution are not available (Farrow & Wright 2000). The brackishness of some borrow pits is possibly a factor of leaky defence banks in relatively poor condition, which influences the local distribution of this species. This species is also frequently recorded at Saltfleetby-Theddlethorpe Dunes (G. Weaver pers. comm. 2002).

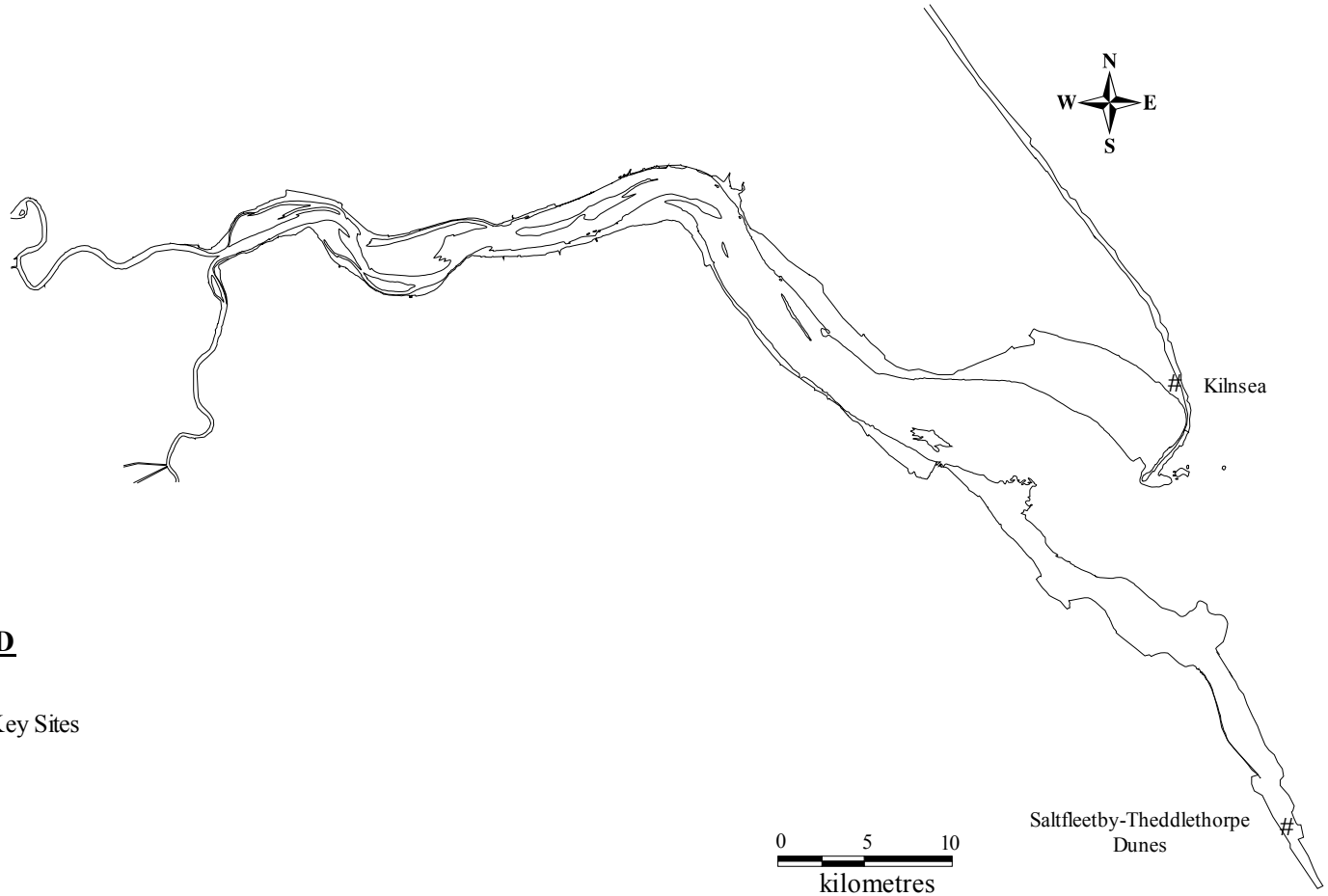
### Historical changes and trends

This species has declined locally and nationally in the last 150 years (Stewart *et al* 1994; Preston *et al* 2002). Details of local changes are however, poorly documented.

### Conservation status

This species is no longer Nationally Scarce, and is a characteristic component of the brackish margins of the estuary. Sites may be vulnerable to flood defence works, including managed realignment unless provision is made for brackish pool habitat replacement.

**Population Distribution of Brackish water-crowfoot *Ranunculus baudotii.***




**LEGEND**

● Key Sites

## References

COOK, P., personal communication, 2002. Recorder for the Botanical Society British Isles, VC61 (SE Yorkshire).

*CRACKLES, F.E., 1990. *Flora of the East Riding of Yorkshire*. Hull: Hull University Press.

FARROW, S. & WRIGHT, D.F., eds., 2000. *Action for Wildlife in Lincolnshire - The Lincolnshire Biodiversity Action Plan*.

*PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press.

STEWART, A., PEARMAN, D.A., & PRESTON, C.D., 1994. *Scarce Plants in Britain*. Peterborough: Joint Nature Conservation Committee/Institute of Terrestrial Ecology/Botanical Society of the British Isles.

WEAVER, G., personal communication, 2002. English Nature, The Maltings, Wharf Road, Grantham, Lincolnshire, NG31 6BH.

## Glasswort *Salicornia* spp.

**Key Sites:** Hawkin's Point, Saltfleetby-Theddlethorpe dunes, North Lincolnshire coast, Humberston Fitties, Pyewipe to Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- *Salicornia pusilla* is Nationally Scarce.

### Description

*Salicornia* species are annual flowering plants of intertidal areas. Stace (1990) describes seven species present in the British Isles. However, local populations form morphologically distinctive 'sorts' making identification to a species level a specialist task. *Salicornia pusilla* is the most easily identified of the species within the genus, although even this is morphologically plastic and is a Nationally Scarce plant.

Perennial glasswort *Sarcornia perennis* is also included in the genus by some authors although this species is not recorded north of the Wash and is easily distinguished as a perennial shrubby plant of the upper intertidal zone.

### Distribution within the Humber

In 1995, pioneer saltmarsh at Tetney Haven and Donna Nook on the Lincolnshire coast was recorded to be dominated by glasswort species. The saline lagoons at Humberston Fitties were also seen to exhibit a high diversity of brackish water species including the marsh samphire *Salicornia* sp. In 1987 glasswort beds were recorded forming the lower band of saltmarsh along the Pyewipe to Cleethorpes coastline (NCC 1988). Crackles (1990) and Gibbons (1975) provide more detail of species records within the area although it should be acknowledged that reliable distribution records are probably hampered by identification difficulties. Dargie (2002) recorded *Salicornia europaea* within a series of saltmarsh complexes along the north-east Lincolnshire coast from Saltfleet to Tetney, with the best examples within SM10 near Saltfleet (with *Puccinellia maritima* and *Suaeda maritima*), off Horse Shoe Point in a SM13y/SM6/SM8 mosaic, and in SM13y in Tetney Haven.

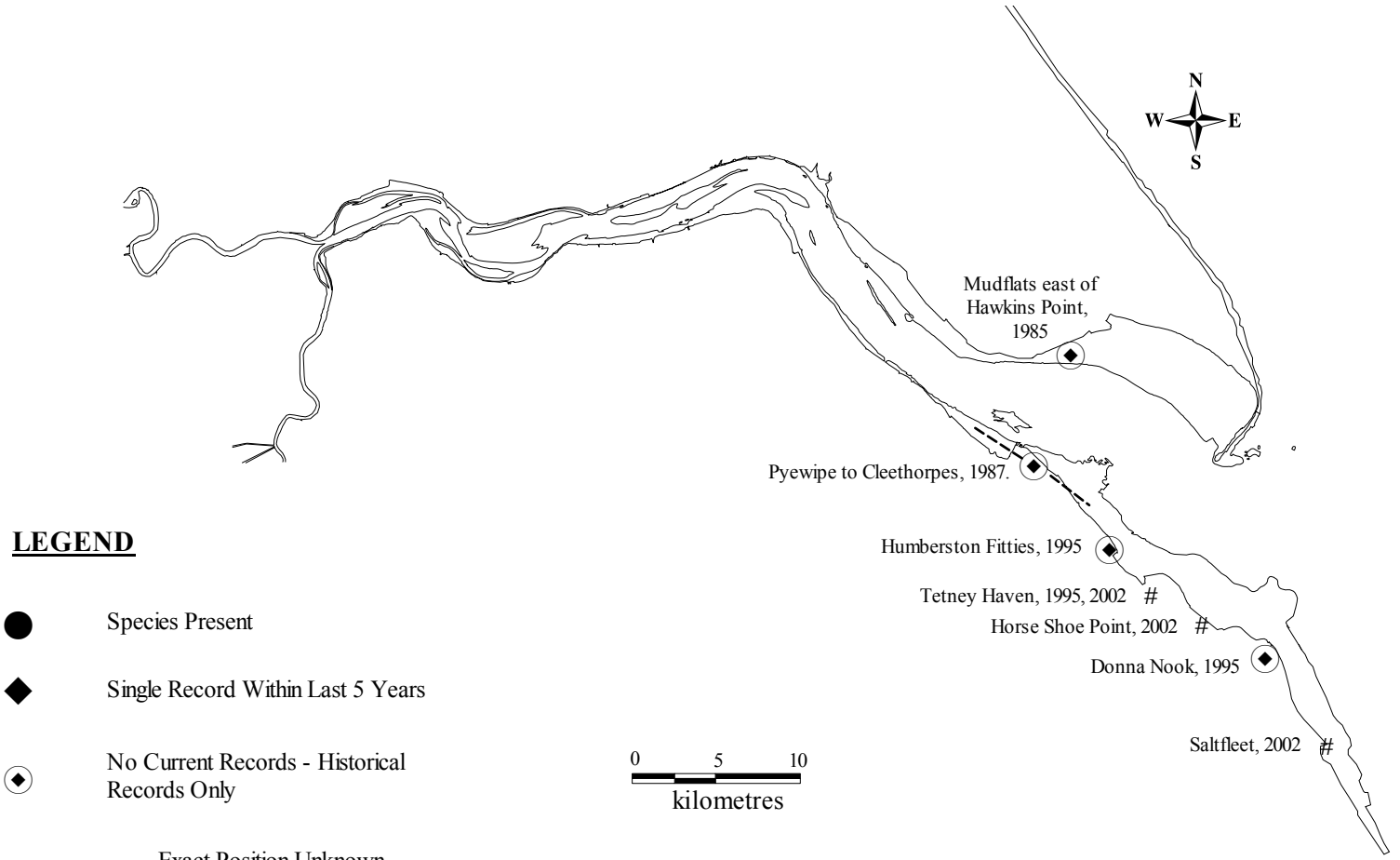
### Historical changes and trends

On the Humber, one-flowered glasswort *S. pusilla*, yellow glasswort *S. fragilis,* purple glasswort *S. ramosissima* and the common glasswort *S. europaea* have all been recorded, with an old 1970-1986 record for the long-spiked glasswort *S. dolichostachya* (Preston *et al* 2002). The common glasswort *S. europaea* was noted to be colonising the mudflats east of Hawkin's Point as detailed in the 1985 citation for the Humber Flats and Marshes: Spurn Head to Saltend Flats SSSI (NCC 1985). No records of this species have however, been noted on the north bank in recent years.

### Conservation status

Of all the glasswort species, only the one-flowered glasswort *S. pusilla* is considered Nationally Scarce.

## Population Distribution of Glasswort *Salicornia sp.*



## References

*CRACKLES, F.E., 1990. *Flora of the East Riding of Yorkshire*. Hull: Hull University Press.

*DARGIE, T., 2002. An NVC Survey of the North Lincolnshire Coast SSSI. Peterborough: English Nature.

GIBBONS, E.J., 1975. *The Flora of Lincolnshire*. Lincoln: Lincolnshire Naturalists Union.

NCC, 1985. SSSI citation for Humber Flats and Marshes: Spurn Head to Saltend Flats. Peterborough: Nature Conservancy Council.

NCC, 1988. SSSI citation for Saltfleetby-Theddlethorpe Dunes, North Lincolnshire. Peterborough: Nature Conservancy Council.

*PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press.

STACE, C.A., 1991. *New Flora of the British Isles*. Cambridge: Cambridge University Press.

## Fine-leaved sandwort *Minuartia hybrida*

**Key Sites:** Pyewipe and Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.

### Description

Fine-leaved sandwort *Minuartia hybrida* is a low, summer flowering annual plant native to calcareous rocky slopes, walls and dry bare stony places. In Britain, where it is at the northern limit of its European distribution, it was previously associated with sandy arable fields but has more recently been recorded as a casual in association with railways. The species has no particular affiliation with coastal or estuarine habitats (Stace 1990; Stewart *et al* 1994).

### Distribution within the Humber

This species was apparently recorded along the Pyewipe and Cleethorpes coast in 1987 (NCC 1988), and on the south bank of the Humber in 1987 (Preston *et al* 2002).

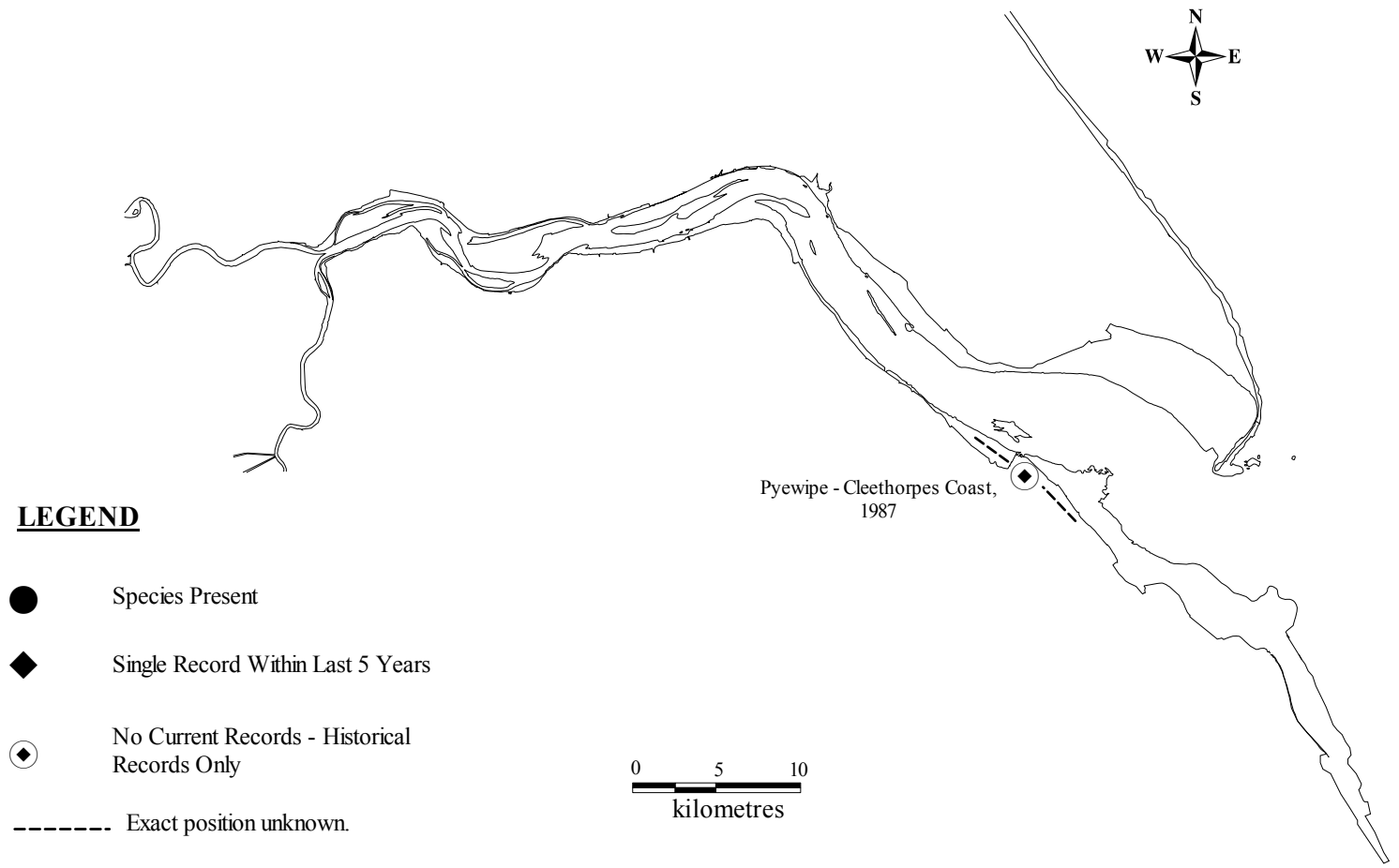
### Historical changes and trends

Fine-leaved sandwort has declined markedly in Britain over the past century, particularly on arable and grassland sites due to intensive agriculture. This decline has been partially off set by its colonisation of railways (Stewart *et al* 1994).

### Conservation status

*Minuartia hybrida* is considered to be Nationally Scarce.

## Population Distribution of Fine-leaved sandwort *Minuartia hybrida.*




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact position unknown.

## References

NCC, 1988. SSSI citation for Humber Flats and Marshes: Pyewipe and Cleethorpes Coast. Peterborough: Nature Conservancy Council.

*PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press.

STACE, C.A., 1991. *New Flora of the British Isles*. Cambridge: Cambridge University Press.

*STEWART, A., PEARMAN, D.A. & PRESTON, C.D., 1994. *Scarce Plants in Britain*. Peterborough: Joint Nature Conservation Committee/Institute of Terrestrial Ecology/Botanical Society of the British Isles.

## Lax-flowered sea-lavender *Limonium humile*

**Key Sites:** North East Lincolnshire coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.
- Rare on the Humber Estuary.

### Description

Lax-flowered sea-lavender *Limonium humile* is a native species of muddy saltmarsh, where it generally grows close to mean high water. It has a preference for bare mud and often grows in close proximity to the far more common sea lavender *Limonium vulgare* (Stewart *et al* 1994). It may also be found on sandy shores or fine shingle along the drift line and on stabilised shingle or sand. In some areas such as north-west England it may dominate the intermediate zone above the community dominated by sea aster *Aster tripolium* until it is excluded by taller growing species (Boorman 1967).

### Distribution within the Humber

Records of lax-flowered sea-lavender have shown its presence at the southern mouth of the Humber Estuary on the north-east Lincolnshire coast, however these records should be regarded as doubtful. Records show an unconfirmed recording at Cleethorpes in 1919 (Gibbons 1975) and on Saltfleetby-Theddlethorpe dunes in 1986 (NCC 1988). This species does not presently occur at Saltfleetby-Theddlethorpe dunes nor at Donna Nook further up the coast (G. Weaver pers. comm. 2002).

It has not been recorded on the north bank of the Humber Estuary (Crackles 1990). Exhaustive searches for this and other Red Data Book listed sea lavenders in appropriate locations in the period 1998-2001 have also proved negative (P. Cook pers. comm. 2002).

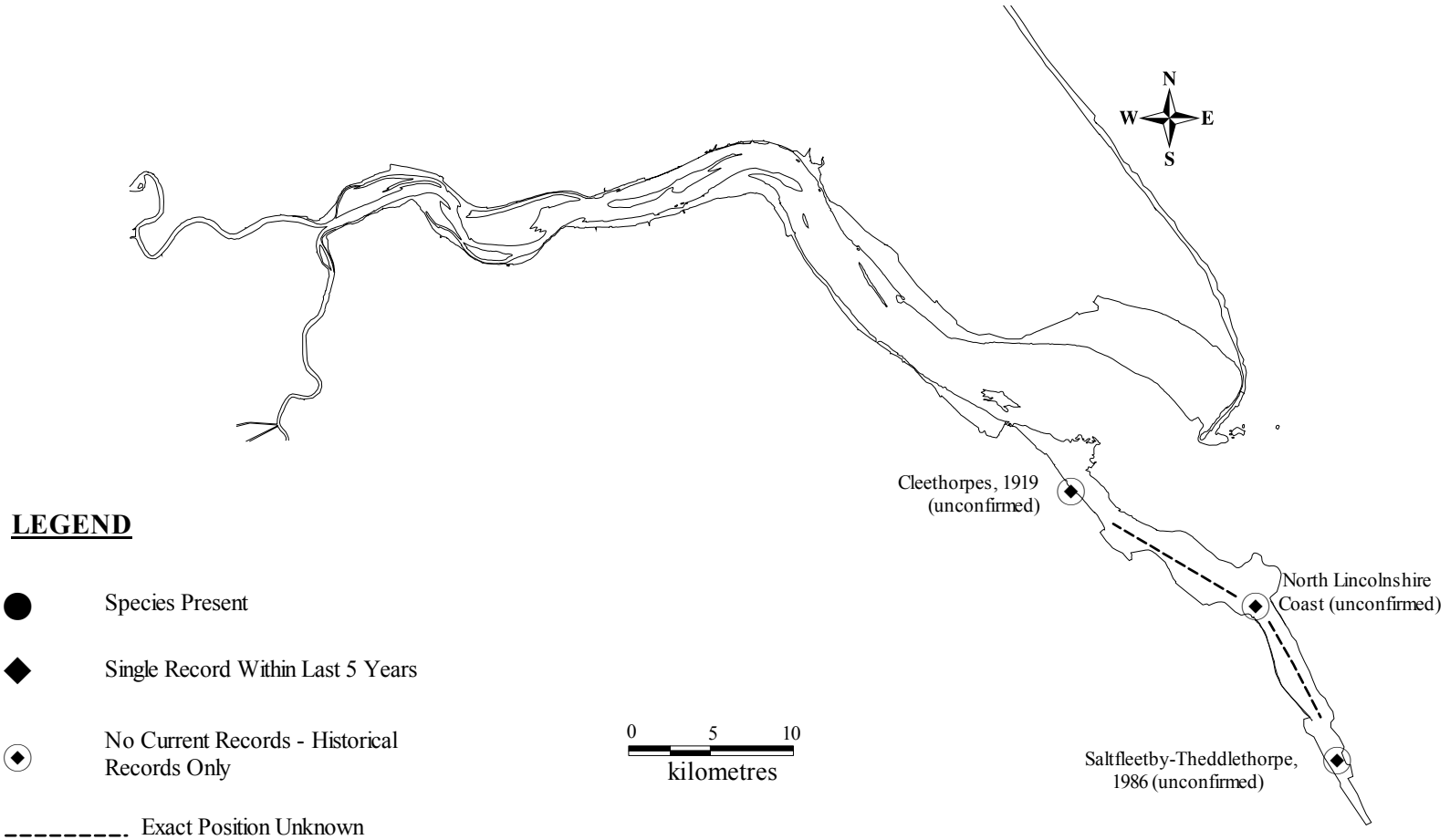
### Historical changes and trends

Nationally, there is little evidence that *Limonium humile* has decreased (Stewart *et al* 1994).

### Conservation status

Lax-flowered sea-lavender is considered to be Nationally Scarce

## Population Distribution of Lax-flowered Sea-lavender *Limonium humile*




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact Position Unknown

## References

BOORMAN, L.A., 1967. *Limonium vulgare* Mill. L. & *L. Humile* Mill. *Journal of Ecology,* **55**(1), pp. 221-232.

COOK, P., personal communication, 2002. Recorder for the Botanical Society British Isles, VC61 (SE Yorkshire).

*CRACKLES, F.E., 1990. *Flora of the East Riding of Yorkshire*. Hull: Hull University Press.

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NCC, 1988. SSSI citation for Saltfleetby-Theddlethorpe Dunes, North Lincolnshire. Peterborough: Nature Conservancy Council.

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## Marsh pea *Lathyrus palustris*

**Key Sites:** Saltfleetby-Theddlethorpe dunes.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.

### Description

Marsh pea *Lathyrus palustris* is a native perennial flowering scrambling plant of fen and tall damp grassland, reedbeds and fen-meadows. Marsh pea is also occasionally found on marshy ground by rivers with coarse vegetation. The flowering period is between February and August.

### Distribution within the Humber

The marsh pea has only been recorded in 1986 at the freshwater marsh and dune slacks at Saltfleetby-Theddlethorpe dunes, with no particular association with the estuary (NCC 1988). This species is currently present at Saltfleetby-Theddlethorpe dunes (G. Weaver pers. comm. 2002). It has also been found on rare occasions elsewhere in wet sites in Lincolnshire and East Yorkshire (Crackles 1990; Gibbons 1975).

This species has not been recorded on the north bank of the estuary (P. Cook pers. comm. 2002).

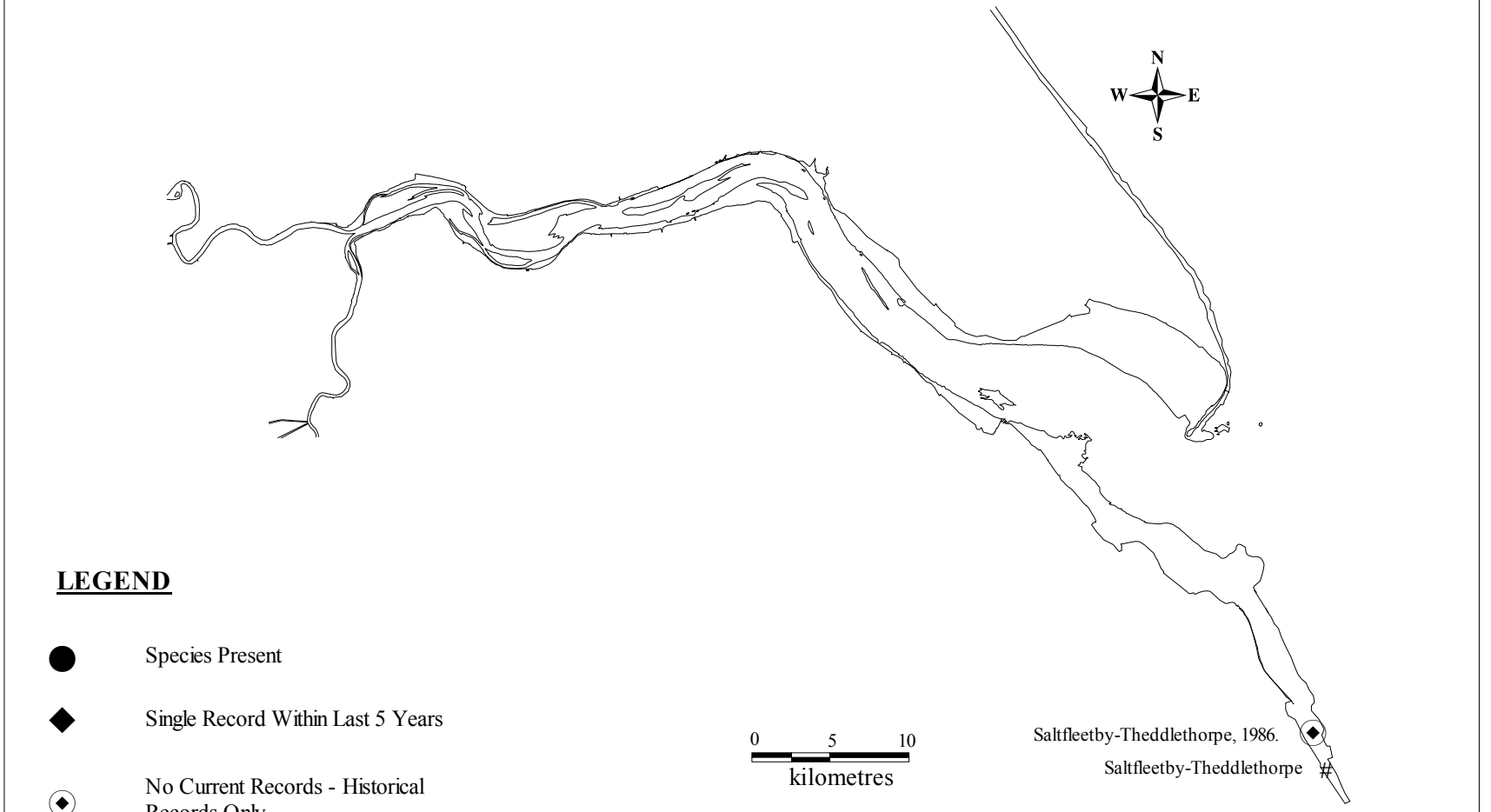
### Historical changes and trends

The marsh pea is declining in the eastern half of its range due to drainage and site destruction (Stewart *et al* 1994).

### Conservation status

This species is considered to be Nationally Scarce (Preston *et al* 2002).

## Population Distribution of Marsh pea *Lathyrus palustris*.



## References

COOK, P., personal communication, 2002. Recorder for the Botanical Society British Isles, VC61 (SE Yorkshire).

*CRACKLES, F.E., 1990. *Flora of the East Riding of Yorkshire*. Hull: Hull University Press.

GIBBONS, E.J., 1975. *The Flora of Lincolnshire*. Lincoln: Lincolnshire Naturalists Union.

NCC, 1988. SSSI citation for Saltfleetby-Theddlethorpe Dunes, North Lincolnshire. Peterborough: Nature Conservancy Council.

*PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford: Oxford University Press.

*STEWART, A., PEARMAN, D.A. & PRESTON, C.D., 1994. *Scarce Plants in Britain*. Peterborough: Joint Nature Conservation Committee/Institute of Terrestrial Ecology/Botanical Society of the British Isles.

WEAVER, G., personal communication, 2002. English Nature, The Maltings, Wharf Road, Grantham, Lincolnshire, NG31 6BH.

## Sea-buckthorn *Hippophae rhamnoides*

**Key Sites:** Spurn Peninsula, Saltfleetby, Donna Nook.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: Annex 1 habitat (dunes with *Hippophae rhamnoides*).
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce, but locally abundant on the Lincolnshire coast.

### Description

Sea-buckthorn is a maritime, berry-bearing thorny shrub or small tree native to eastern Britain ranging from Kent to south-eastern Scotland. It forms the climax vegetation on immobile dunes and occasionally cliffs where it gains dominance over herbaceous species in the absence of grazing pressure. It is most vigorous where it is sheltered from winds on the leeward side of dunes or in hollows. It has been widely planted to stabilize dunes and for its attractive berries both within and outside of it natural range (Stewart *et al* 1994; Ranwell 1972; Pearson & Rogers 1962).

### Distribution within the Humber

Sea-buckthorn is found on most dune areas within the Humber, particularly on the Spurn Peninsula and the dunes at Donna Nook. The Lincolnshire coast has 55% of England's sea-buckthorn, extensively found at Saltfleetby NNR (Farrow & Wright 2000). Dargie (2002a) recorded scattered bushes of *Hippophae rhamnoides* invading MG1a grassland at Saltfleet, but with bushes showing signs of saline toxicity in SM24 off Donna Nook. 5.56 hectares of *H. rhamnoides* was found to be present within the dune scrub along the Pyewipe to Cleethorpes SSSI, with over 27 hectares of the *Hippophae* vegetation community found on fixed dunes on the north bank mainly on Spurn peninsula (Bullen Consultants 2001). Other areas where it is present include the lagoons at Easington and on the north bank of the upper Humber section of the Humber Flats and Marshes.

### Historical changes and trends

Sea-buckthorn is native to the Lincolnshire coast, with really mature sea-buckthorn being rarer than ancient woodland habitat. Before the World Wars, the Lincolnshire dunes were grazed by cattle, sheep and rabbits, preventing the spread of buckthorn, however with the cessation of grazing and the outbreak of myxomatosis, sea-buckthorn was able to rapidly spread. This led to a loss or reduction of some botanically rich short grassland communities and considerable changes to the structure of the dune vegetation. Within this area, where sea-buckthorn is native, the species should be carefully managed to balance this habitat with other interest features, particularly on international sites. Management via rotational coppice blocks, areas where *Hippophae* cover is reduced, and other areas where scrub is left to allow succession, should all aim to maintain a diverse age and class structure for *Hippophae* without adversely affecting the other interest features on the site (Smith, 2000; Dargie, 2002; Farrow and Wright, 2000).

On the north bank of the Humber, sea-buckthorn is a native species occurring abundantly on Spurn. *Hippophae rhamnoides* scrub is now conspicuous on many terrestrial parts of the peninsula and appears to have been expanding since the introduction of myxomatosis in 1954 led to a drastic reduction in rabbit numbers and hence grazing pressure. However, while rabbits and domestic stock grazing probably held *Hippophae* in check prior to myxomatosis, the shrub has a long history on the site. It has been present in the area since the retreat of the last glaciation (Beckett 1981; Godwin 1975; Van de Noort & Davies 1993) and is considered native to this part of the east coast of Britain (Ward 1972; Groves 1958; Pearson & Rogers 1962). Recent records of *Hippophae* at Spurn date back to 1878 (Pickwell 1878). In 1902, Robinson described it as *"abundant .... being the principal shrub there"* (Robinson 1902) with no suggestion that it was then a new arrival on the site. Earlier references to *"scrubby thorns"* in 1567 and, in the 17th Century when *"bushes, scroggs and berry trees"* were present on the Den (HRO DDCC/139/66) suggesting a longer recent history. Ainsworth (1951) describes *Hippophae* as co-dominant with *Ammophila* in the main dune ridge in the late 1940's and Crackles (1954) records the shrub as *"dominating large areas of the peninsula - from the southern part of the Warren southwards"*.

Comparison of maps drawn for the *Hippophae* Inquiry in the late 1960's/early 1970's with those of the National Sand Dune Vegetation Survey in 1988 (Radley & Woolven 1990), and photographic and anecdotal evidence clearly confirms the progressive expansion of *Hippophae* scrub in the post myxomatosis period. Furthermore, in the early 20th Century, photographs of Spurn Point show a landscape dominated by dune grasses with less evidence of *Hippophae* scrub reinforcing the longer-term trend (Murby 1994). Comparison of the 1988 NVC survey (Radley & Woolven 1990) and the 2001 survey (Bullen Consultants 2001) indicates an ongoing increase in the coverage of *Hippophae* on the peninsula although exact comparison is difficult.

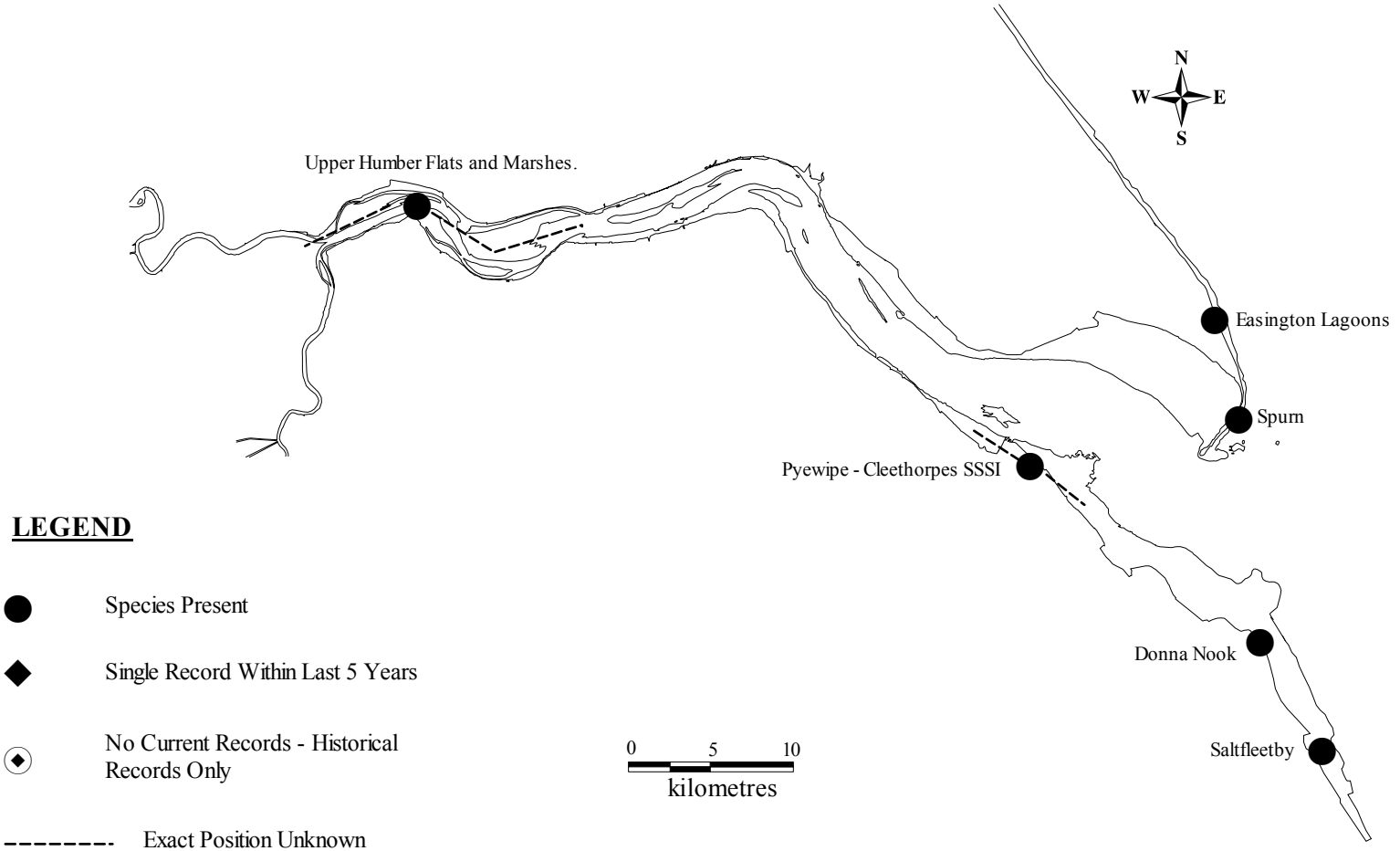
### Conservation status

Dunes with sea-buckthorn is a Habitats Directive Annex 1 habitat. It is one of 27 habitats which have a total national extent of less than 1,000ha and is considered rare in the UK (DEFRA 2001). The plant is nationally scarce as a native and only occurs naturally along the east coast from the Humber to the Thames. It provides habitat for breeding birds but is an aggressive coloniser of dune grassland thus requiring balanced management where dune herb communities may suffer (UK Biodiversity Steering Group 1999).

The British literature on management of sea-buckthorn has been, and largely remains, dominated by the perception of this plant as an aggressive, very invasive species which is more a conservation problem than an asset. This British opinion of the species as a pest is not found on the continent and recent changes of British views regarding the ecological value of scrub might, in time, allow some revision of the perceived threat of this species (Dargie 2002b).

Saltfleetby-Theddlethorpe dunes is the only British example of a cSAC listing this dune scrub as an interest feature (Dargie 2002b).

## Population Distribution of Sea-buckthorn *Hippophae rhamnoides*.




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact Position Unknown

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## Greater water-parsnip *Sium latifolium*

**Key Sites:** Marginal wetlands and artificial ditches near the mouth and the head of the Humber e.g. Saltfleetby-Theddlethorpe dunes.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce and a Biodiversity priority species.
- Rare on the Humber Estuary.

### Description

Greater water-parsnip is a fenland species, surviving in ponds, dykes and alongside lakes and canals. It is a species of wet ditches and tall-herb fens and swamps. It grows in shallow, still or slow-moving water that is alkaline and rich in nitrogen, and is generally found on peat or alluvial soil. It is able to tolerate vigorous growth of other emergents such as the common reed *Phragmites australis* or reed-mace *Typha* spp. but is excluded by growth of carr. The greater water-parsnip is intolerant of extended periods of heavy grazing or frequent cutting. It thrives in ditches where water is kept open by occasional clearance with a bucket excavator or scythe (UK Biodiversity Steering Group 1998). This species is commonly associated with coastal levels and flood plains, sometimes with sea club-rush *Bolboschoenus maritimus,* but rarely in brackish waters (Stewart *et al* 1994).

### Distribution within the Humber

In 1986, the greater water-parsnip was listed at Saltfleetby-Theddlethorpe dunes (NCC 1988) and is still found to be present at this site (G. Weaver pers. comm. 2002). The species was noted as being confined to marginal wetlands and artificial ditches near the mouth and the head of the Humber (Gibbons 1975; Crackles 1990; Stewart *et al* 1994), and Preston *et al* (2002) have recorded the species on the North Lincolnshire coast between 1987 and 1999. Greater water-parsnip in the Humber is close to its current northern limit in Great Britain, with all records further north pre-dating 1970 (S. Leach pers. comm. 2002).

### Historical changes and trends

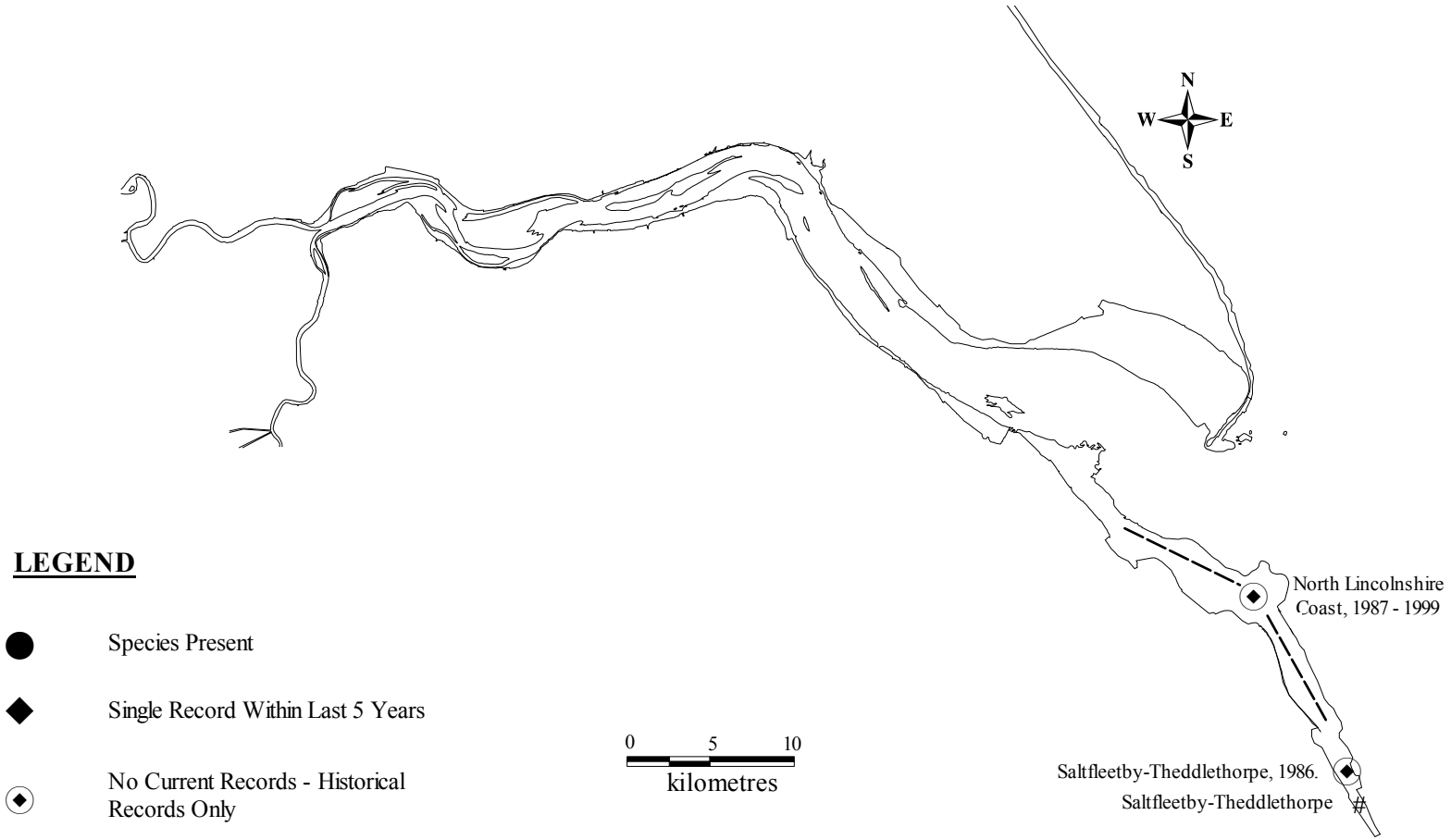
In the past, greater water-parsnip was a more common species of primarily freshwater habitats at the head of the estuary and the Lincolnshire coastal marshlands. It is a characteristic species of the area that has undergone catastrophic decline in the past 200 years due to drainage, embankment and water management (Stewart *et al* 1994).

### Conservation status

Greater water-parsnip is classified as Nationally Scarce and a Biodiversity priority species (Stewart *et al* 1994; UK Biodiversity Steering Group 1998).

Although *Sium latifolium* is now rare on the Humber wetlands, the Humber is one of a limited number of places in the country where action could be taken to improve the survival of this species. The potential restoration of freshwater habitats associated with the estuary would improve the overall structure, diversity and coherence of the system in parallel with the primary conservation objective of conserving the existing estuarine habitats and species, including *Sium*. Potential restoration sites should be close to, but not within the core site.

**Population Distribution of the Greater Water-parsnip *Sium latifolium*.**




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact Position Unknown

**References**

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## Slender hare's-ear *Bupleurum tenuissimum*

**Key Sites:** North bank outer estuary, North Lincolnshire coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce and declining.

### Description

Slender hare's-ear is an annual flowering umbellifer of dry, usually brackish, grasslands on seawalls, drained grazing marsh and, less frequently the upper parts of saltmarshes. It typically occurs in short turf with bare ground and can be abundant in disturbed and trampled areas (Stewart *et al* 1994; Clapham *et al* 1981). It flowers from July to September with small yellow flowers (Blamey *et al* 1987).

### Distribution within the Humber

This species has declined dramatically but occurs sporadically in a given place, producing good populations one year and then none the next. There is currently one remaining extant site on the north bank of the estuary, on a ditch bank (grid reference known). In 2000 this was prolific but in 2002 absent. All other sites recorded by Crackles (1990) have failed to yield populations in the period 1996 to 2001 and no new sites have been recorded (P. Cook pers. comm. 2002). Long established stations at Saltend and Paull have been lost to coastal defence works, with recent works to the east of Paull probably eradicating another known site (P. Cook pers. comm. 2002).

This species was recorded on the South Bank of the Humber in the mid 1990's (G. Weaver pers. comm. 2002).

### Historical changes and trends

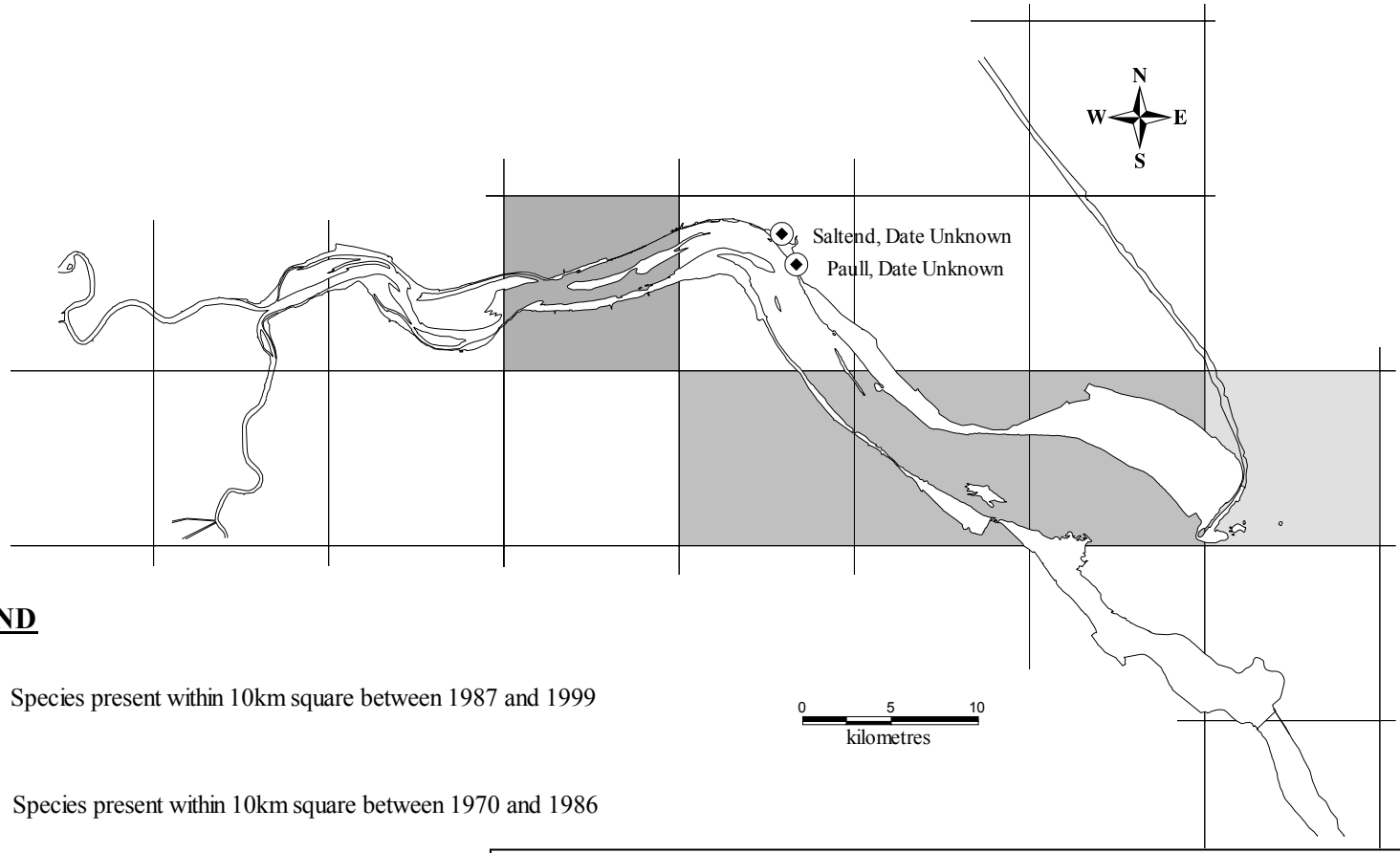
Slender hare's-ear was first found at Paull Holme in 1900 and at Saltend in 1901. Petch (1905) stated that it could be found between Saltend and Welwick, and it also persisted near Hedon Haven and Paull Holme (Naturalist 1939).

Crackles (1990) reported that slender hare's-ear was found on the saltmarsh side of the River Humber bank, more rarely on the top or landward side of the bank, but is now rare. On the north bank of the estuary the species was always scarce and has recently been confined to a few locations between the middle and mouth of the estuary at Paull Holme, Saltend and Welwick (Crackles 1990). There is just one pre 1970 record on the south bank of the estuary (Stewart *et al* 1994) and the species was listed on the North Lincolnshire coast SSSI in 1986 (English Nature 1995).

### Conservation status

Nationally Scarce and declining. The Humber populations form the northern-most distribution in Great Britain (S. Leach pers. comm. 2002).

## Population Distribution of Slender Hare's Ear *Bupeurum tenuissimum*




**LEGEND**

Species present within 10km square between 1987 and 1999

Species present within 10km square between 1970 and 1986

No Current Records - Historical Records Only

Adapted from: PRESTON, C.D., PEARMAN, D.A. & DINES, T.D., 2002. *New Atlas of the British and Irish Flora*. Oxford, Oxford University Press.

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## Red-tipped cudweed *Filago lutescens*

**Key Sites:** Recorded at Spurn.

**Summary Status:**

- Wildlife and Countryside Act: Schedule 8.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: RDB2 (vulnerable).
- Locally Rare.
- UK Biodiversity Action Plan priority species.

### Description

Red-tipped cudweed is a species of light, open soil generally on extensively managed arable land or other disturbed ground including field edges, tracks and sandy commons (UK Biodiversity Steering Group 1998).

### Distribution within the Humber

It was first recorded at Spurn in 1978 (Crackles 1990) and listed in the SSSI citation of 1985. However, there are no present known locations for this species in the Humber Estuary (P. Cook pers. comm. 2002).

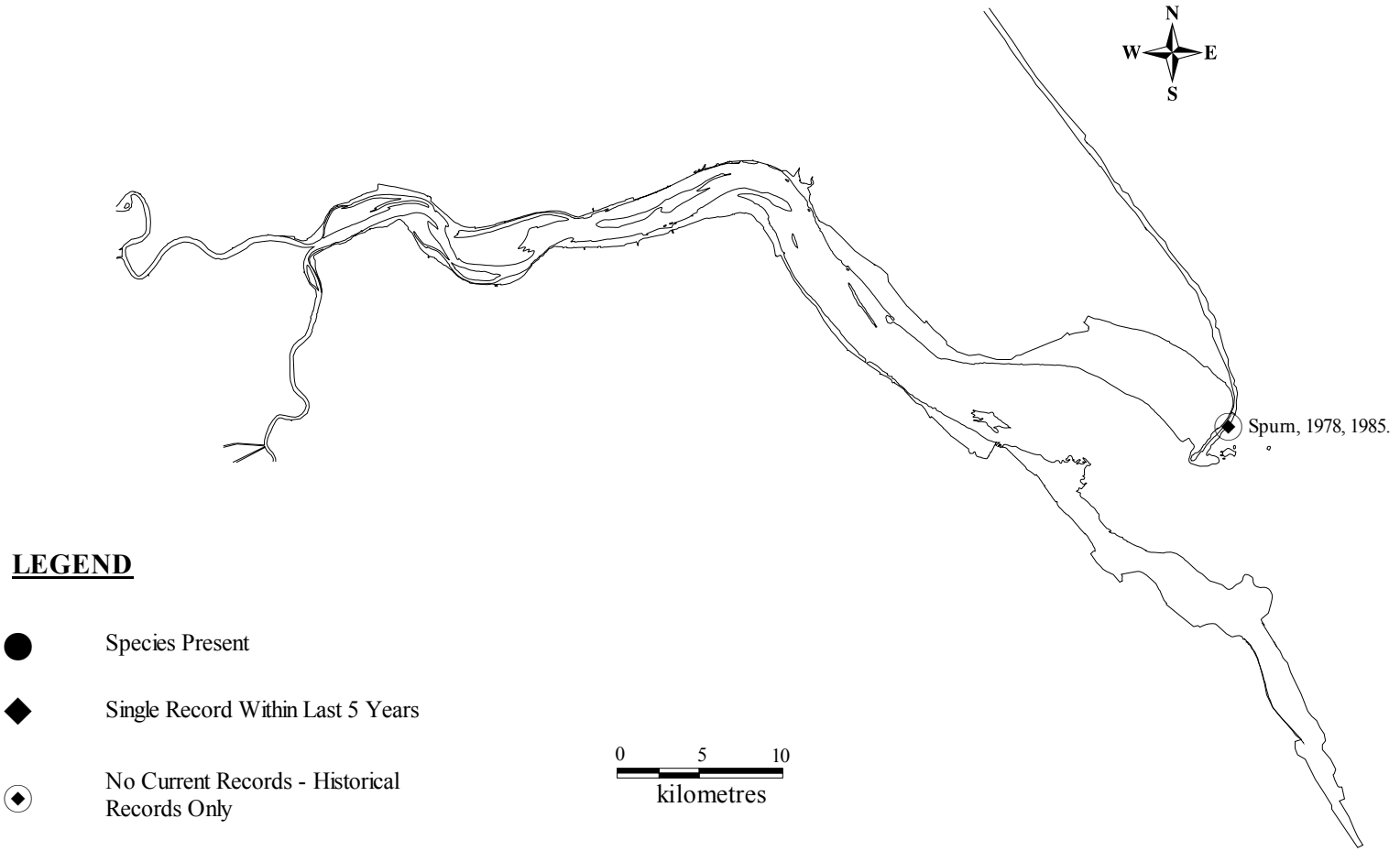
### Historical changes and trends

Although once recorded as far north as Yorkshire, the UK range of red-tipped cudweed has always centred on the south-east of England. It has suffered a severe decline over the last 50 years, from 212 sites pre-1930 to just 16 sites today. Its remaining sites are in Hampshire, Surrey, Sussex, Essex, Cambridgeshire and Suffolk, with the largest populations in Surrey. Red-tipped cudweed remains relatively widespread in continental Europe, particularly in central Europe, but appears to be declining throughout its range (UK Biodiversity Steering Group 1998).

### Conservation status

Red-tipped cudweed is a Red Data Book Species protected under Schedule 8 of the Wildlife and Countryside Act, 1981. There are no known extant plants north of the Wash (Preston *et al* 2002).

**Population Distribution of Red-tipped Cudweed *Filago lutescens*.**



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## Spiral tasselweed *Ruppia cirrhosa* (syn. *Ruppia spiralis*)

**Key Sites:** Easington Lagoons, The Grues.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce and declining.
- Localised distribution on the Humber.

### Description

Spiral tasselweed *Ruppia cirrhosa* is an aquatic perennial species which occurs in coastal lakes, tidal inlets, creeks and brackish ditches. It usually grows in deeper water than the more widespread beaked tasselweed *Ruppia maritima* and tolerates more saline conditions, occasionally growing with eelgrass *Zostera* (Preston *et al* 2002). *Ruppia* beds may be populated by fish such as the three-spined stickleback *Gasterosteus aculeatus* and the sea stickleback *Spinachia spinachia* which are less common on filamentous algal-dominated sediments. Seaweeds such as *Chaetomorpha* spp., *Enteromorpha* spp., and *Chorda filum* are also often present. However, there is very little information known concerning the ecology of *Ruppia* sp. beds in the United Kingdom (Connor *et al* 1997).

### Distribution within the Humber

This species has been recorded on both the north and south bank of the outer estuary and previously at Saltend (Crackles 1990). On the north bank, its present distribution is reported to be limited to the Easington Lagoons Site of Special Scientific Interest and in a pond on land managed by the Yorkshire Wildlife Trust at Easington (East Riding of Yorkshire Council 2002) where all the lagoons contain good populations in shallower sections (Bullen Consultants 2001).

During saline lagoon surveys in 2001 this species was recorded from a number of sites on the north Lincolnshire coast (North Somercotes, Skidbrooke and North Cotes), although there is some doubt as to the presence of this species at these sites (G. Weaver pers. comm. 2002). On the south bank of the Humber, *Ruppia sp*. were noted in the borrow pits located along the estuarine side of the sea wall at The Grues in 1988 (NCC 1988).

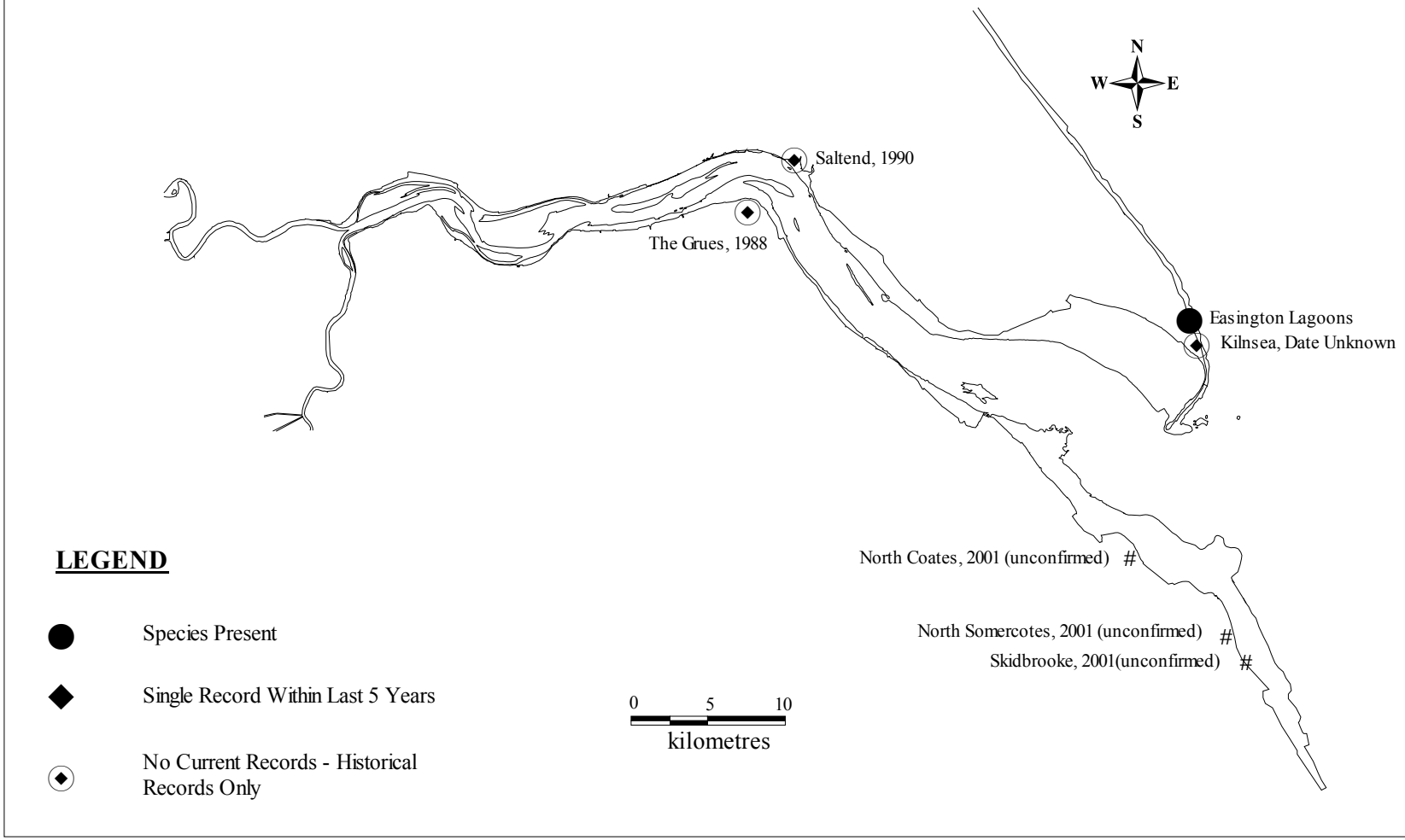
### Historical changes and trends

Spiral tasselweed is a rare native species of brackish dykes, pools and ponds and is nearing extinction in the East Riding of Yorkshire due to habitat loss. It has been recorded from only a few locations in the East Riding, including historical records at Saltend, Kilnsea and Kilnsea Beacon Lane Pond (East Riding of Yorkshire Council 2002).

### Conservation status

Spiral tasselweed is considered to be nationally scarce and declining. The Humber populations form the northern-most distribution of this species on the east coast of Great Britain (Stewart *et al* 1994; Preston *et al* 2002).

## Population Distribution of Spiral Tasselweed *Ruppia cirrhosa.*



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## Dwarf eelgrass *Zostera noltei*

**Key Sites:** Intermittent recordings at Spurn Bight, North Lincolnshire coast, Pyewipe to Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.
- The UK Biodiversity Action Plan includes a Habitat Action Plan for seagrass beds including *Zostera noltei*.

### Description

Dwarf eelgrass is a grass-like flowering plant with narrow ribbon shaped leaves. Leaves shoot from a creeping rhizome which binds the sediment. The leaves and rhizomes contain air spaces that aid buoyancy and keep the leaves upright when immersed (Tyler-Walters 2001).

Dwarf eelgrass is the smallest and hardiest of the three *Zostera* species (*Z. marina, Z. angustifolia* & *Z. noltei*) and occurs highest on the shore, typically on hummocks that are free-draining at low tide. It grows in scattered clumps, dense beds or meadows on intertidal mud or detritus rich fine sand in the intertidal zone where it may be abundant between mean high water neaps and mean low water neaps, often forming a dense belt. The upper and lower limits of its distribution shift downshore with decreasing salinity. Although it is rarely found below the low water mark in brackish waters (e.g. lagoons), it may become permanently submerged (Tyler-Walters 2001). It prefers a sheltered to extremely sheltered location, on muddy fine sand to sandy mud.

### Distribution within the Humber

*Zostera noltei* was found in the Old Den region of Spurn Bight opposite the narrow-neck where it formed extensive beds. By 1976 these beds had extended further north to almost opposite the Warren Cottage (Pashby 1977; Crackles 1990). The species was again reported to grow extensively at Spurn Bight in 1985 when it provided a winter-feeding area for brent geese and wigeon (NCC 1985). It was also recorded in the 1986 survey of the North Lincolnshire coast and the 1987 survey of the Pyewipe to Cleethorpes coastline. There are also old (pre 1987) records for *Z. angustifolia* and *Z. marina* (both nationally scarce species) on the Humber (S. Leach, pers. comm. 2002). Undefined *Zostera* spp. have been reported intermittently at Spurn Bight over the past 10 years, but a search of possible areas in October 2002 failed to record any (M Coverdale pers. comm. 2002). In general, there has been little research or monitoring of this species and although there are many casual references to its existence at Spurn, it has been reported that there are now no large populations of dwarf eelgrass within Lincolnshire (Smith 1996).

### Seasonality

Growth of seagrass is usually limited by light and affected by temperature, however, dwarf eelgrass is more tolerant of high light intensities. New leaves appear in spring and eelgrass meadows develop over intertidal flats in summer, due to vegetative growth. In the intertidal zone, the combination of grazing and wave action causes leaves to be lost over winter, and the plant reduced to its rhizomes within the sediment (Tyler-Walters 2001).

### Historical changes and trends

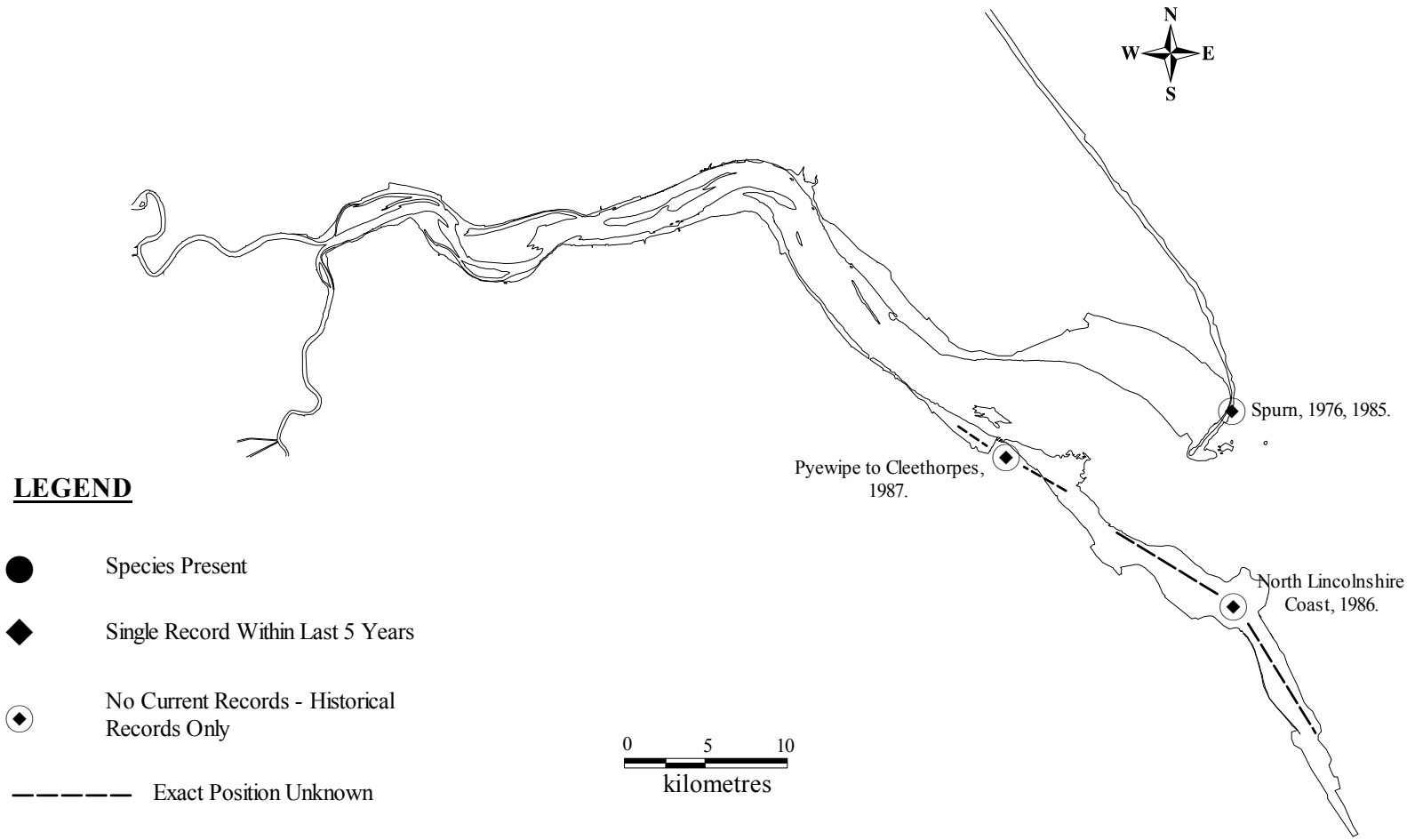
All three species of eelgrass were once abundant and widespread around the British coasts, but serious declines have occurred, in particular, as a consequence of a severe outbreak of 'wasting disease' in the early 1930's. Recovery has been slow and patchy with all three *Zostera* species now being considered Nationally Scarce in the UK (Davison & Hughes 1998; Stewart *et al* 1994).

The extent of seagrass beds may change as a result of natural factors such as storms, and freshwater inputs. Grazing by wildfowl, increases in sea level and sea temperature, the introduction of invasive species such as *Spartina anglica*, physical disturbance such as trampling and marine pollution may also have impacts. However, it is difficult to account for the decline of the species in the Moray Firth and Firth of Forth by pollution when the populations around the Thames estuary appear to be doing reasonable well (Davidson & Hughes 1998; Stewart *et al* 1994).

### Conservation status

The UK Biodiversity Action Plan includes a Habitat Action Plan for seagrass beds including *Zostera noltei* (UK Biodiversity Steering Group 1999). It is a Nationally Scarce plant (Stewart *et al* 1994) and is a natural component of the local estuarine flora that has suffered serious decline.

## Population Distribution of Dwarf Eelgrass *Zostera noltei.*



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## Chestnut flat sedge *Blysmus rufus*

**Key Sites:** Pyewipe and Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Of considerable phytogeographical interest on the Humber.
- Locally uncommon.

### Description

A rhizomatous perennial herb, found in sandy or gravelly, wet runnels and depressions in saltmarshes, and in brackish ditches and dune-slacks. This short sedge flowers from July to September and is a widespread and locally abundant species of tidal saltmarshes from North Lincolnshire northwards (Clapham *et al* 1981; Perring & Walters 1962; Rose 1989).

### Distribution within the Humber

There are records for the occurrence of this species between Grimsby and Skegness from 1882 onwards (Gibbons 1975). Chestnut flat sedge was noted on the 1987 SSSI citation at the Pyewipe and Cleethorpes coast in its most southerly location on the east coast (NCC 1988). There is also a small population of about 200 plants at Saltfleetby-Theddlethorpe Dunes (G. Weaver pers. comm. 2002). There is a possibility that it was introduced from the Cleethorpes population in the 1960's, but there is a Victorian record for Saltfleet.

Seeds from this species were discovered on an archaeological dig in Hull, however, so far this species is unrecorded on the north bank of the Humber (P Cook pers. comm. 2002).

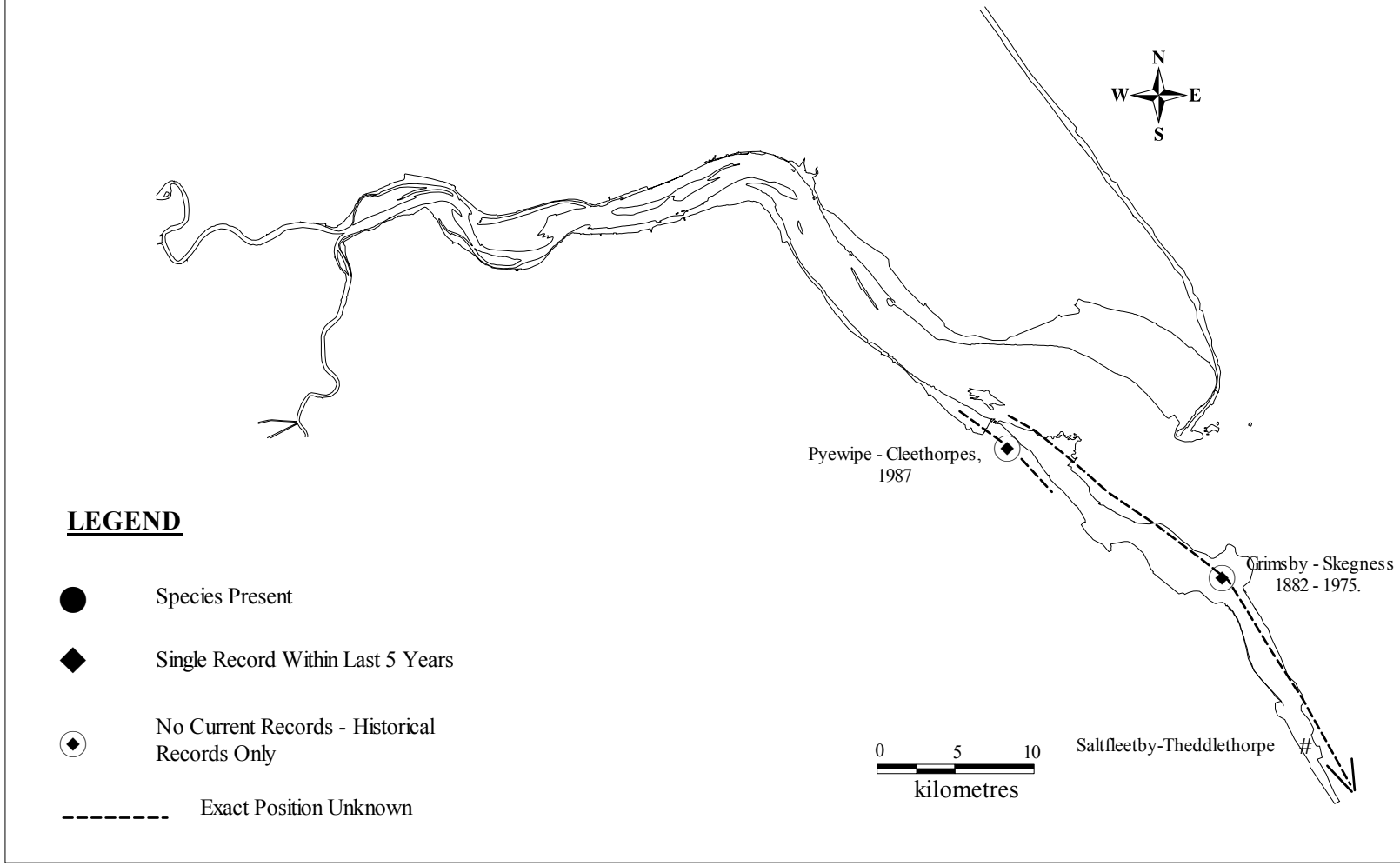
### Historical changes and trends

The species has decreased since the 19th Century as a result of agricultural improvements in Lincolnshire (Gibbons 1975) and is possibly vulnerable to climate change.

### Conservation status

This is not a Nationally Scarce plant but it is locally uncommon, and at the southern most limit of its UK range on the east coast. With its long natural history in the area, it is considered to be of considerable phytogeographical interest on the Humber (S. Leach pers. comm. 2002).

## Population Distribution of the Chestnut Flat Sedge *Blysmus rufus*.




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only
- Exact Position Unknown

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## Divided sedge *Carex divisa*

**Key Sites:** Saltfleetby-Theddlethorpe dunes, North Ferriby Ings and Spurn.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.

### Description

A perennial rhizomatous herb of brackish ditches, dune-slacks and damp grasslands near the sea, which is only moderately tolerant of salt and therefore absent from saltmarshes. This species is characteristic of lightly grazed depressions in coastal pastures and marshes (Stewart *et al* 1994; Preston *et al* 2002).

### Distribution within the Humber

The divided sedge was recorded at the freshwater marsh and dune slacks at Saltfleetby-Theddlethorpe dunes in 1986 (NCC 1988). Gibbons (1975) and Gibbons & Weston (1985) list other historical Lincolnshire occurrences.

*Carex divisa* occurs in quantity on North Ferriby Ings. It also occurs sporadically in brackish grassland behind the Humber defence bank with recent records for Spurn, south east of Warren Cottage (P. Cook pers. obs. 1998) and on the grassland to the north of Easington Lagoon (P. Cook pers. obs. 1995 & 1996), however, this habitat has since been destroyed.

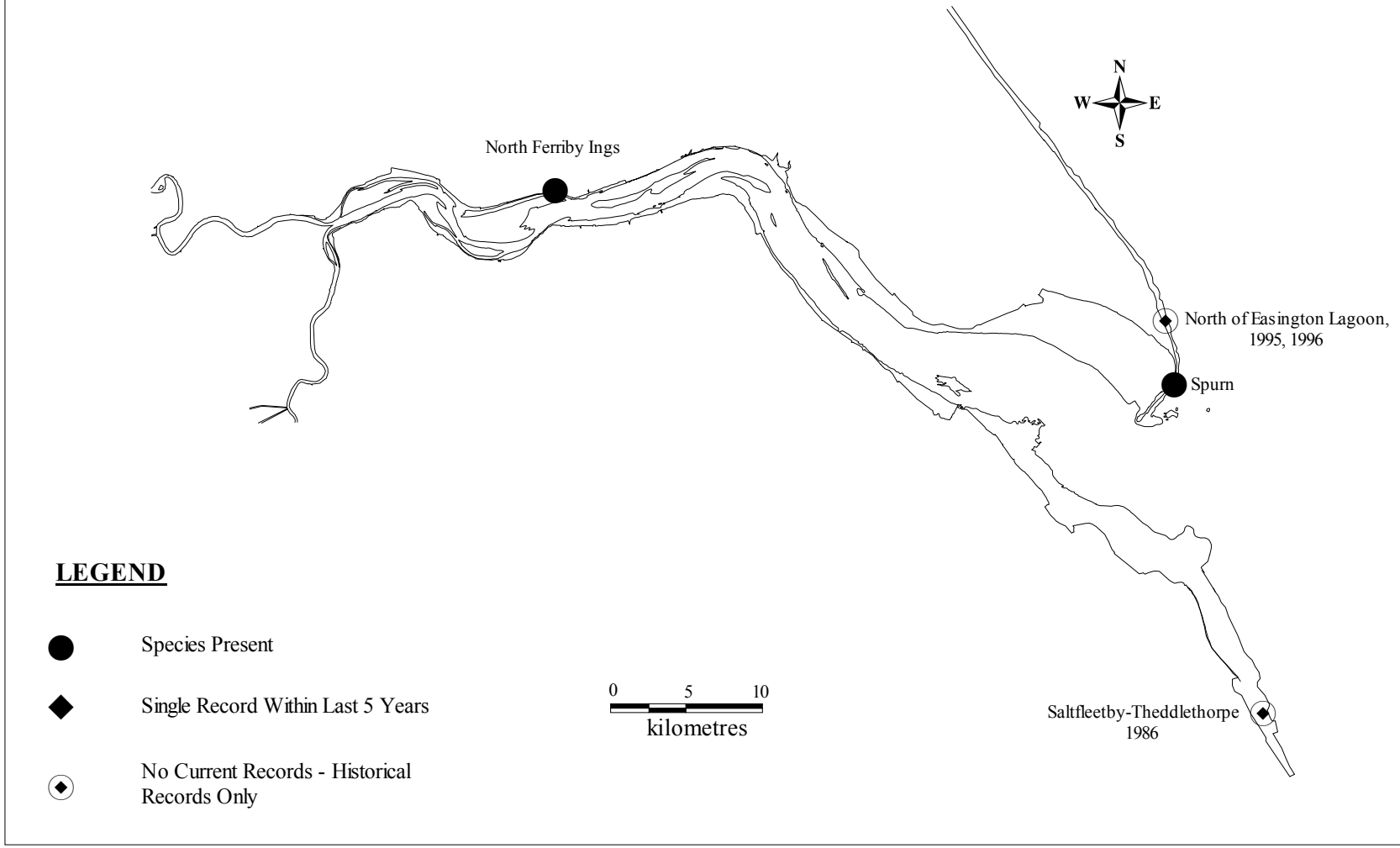
### Historical changes and trends

The divided sedge is found to be declining within most of its British range as a result of ploughing and local drainage, especially on the outer estuary (Preston *et al* 2002).

### Conservation status

This species is Nationally Scarce and characteristic of the area, with conservation interest due to its considerable national decline and affiliation with estuarine habitats. A decline in this species has been most marked towards the western and northern limits of its range (i.e. in south-west England and eastern England north of the Wash), with the Humber being at the northern limit of its distribution (S. Leach pers. comm. 2002).

## Population Distribution of Divided Sedge *Carex divisa.*




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only

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## Bulbous meadow-grass *Poa bulbosa*

**Key Sites:** Cleethorpes to Mablethorpe - lying between Grainthorpe Haven to Saltfleet Haven, Pyewipe and Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.

### Description

The bulbous meadow-grass is a perennial dwarf grass of infertile sandy soils and shingle, and may also be found on bare chalk and limestone, flowering from March to May. It is a Nationally Scarce coastal species at the northern edge of its range and is generally distributed southeast of a line between the Severn estuary and the Wash (Preston *et al* 2002).

### Distribution within the Humber

Bulbous meadow-grass was first recorded in 1987 on the mature sand dunes at the southern end of the Cleethorpes to Pyewipe site (NCC 1988). In 2001, it was recorded again during a NVC survey of the Humber Estuary to the west of the Tropical Butterfly Garden in Cleethorpes in an area of remnant sand dune. The majority of this area supports a species diverse sward of MG1 grassland, species present include false oat grass *Arrhenatherum elatius,* lady's bedstraw *Galium verum,* yellow oat grass *Trisetum flavescens,* lesser meadow rue *Thalictrum minus* and perennial rye-grass *Lolium perenne* (Bullen Consultants 2001). So far the species has not been recorded on the north bank of the estuary. Exhaustive searches for it in appropriate locations in the period 1990-2001 proved negative (P. Cook pers. comm. 2002).

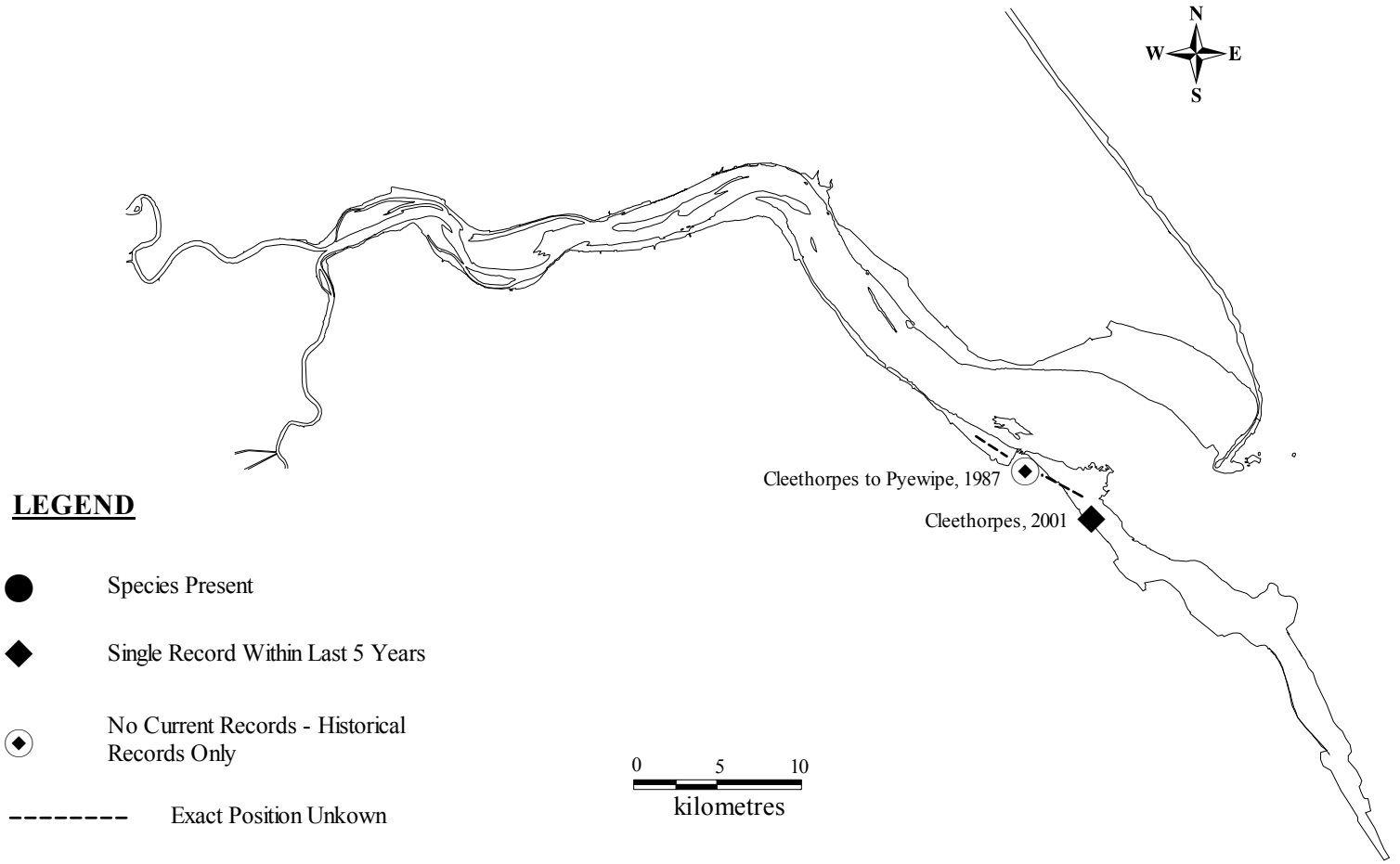
### Historical changes and trends

The national distribution of *Poa bulbosa* is apparently stable (Stewart *et al* 1994).

### Conservation status

Bulbous meadow-grass is considered to be Nationally Scarce (Preston *et al* 2002). The Humber populations form the northern-most distribution in Great Britain (S. Leach pers. comm. 2002).

## Population Distribution of Bulbous Meadow-grass *Poa bulbosa.*



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## Dense silky-bent *Apera interrupta*

**Key Sites:** Pyewipe and Cleethorpes coast.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Localised on the Humber.
- Nationally Scarce.

### Description

Dense silky-bent is a nationally scarce grass of arable land that is also localised on road and rail verges, and excavation sites. It is considered by some authorities to be an introduced alien species, first recorded in the wild in Britain in 1848 (Preston *et al* 2002). If native, then it is only found on light soils of eastern England (Easy 1992; Stace 1991; Kent 1992).

### Distribution within the Humber

Dense silky-bent was present, and regarded as native at Cleethorpes by Hubbard (Gibbons & Weston 1984). However, this species has no natural affiliation with coastal or estuarine habitats (Stewart *et al* 1994; Preston *et al* 2002). It has been recorded further north in the East Riding of Yorkshire but not close to the estuary or its immediate surrounds (P. Cook pers. comm. 2002).

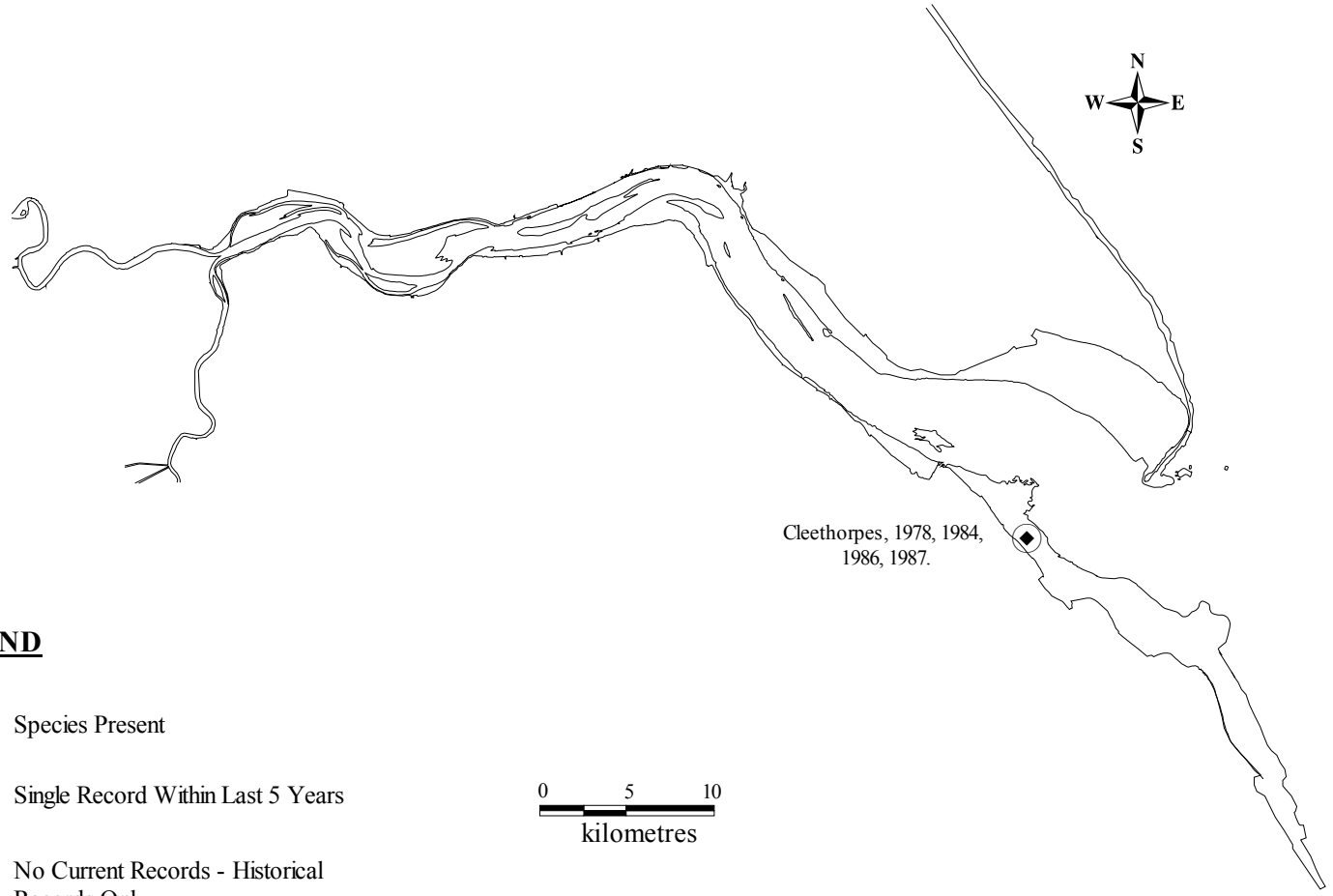
### Historical changes and trends

In Lincolnshire, the species was recorded on the dunes at Skegness in 1942 (Gibbons 1975) and Cleethorpes in 1978 where it was reported to cover an extensive area (Gibbons & Weston 1984). Dense silky-bent was also recorded at the southern end of the Cleethorpes site during site visits in 1986 and 1987 (NCC 1986 & 1988).

### Conservation status

This species has no particular affiliation with estuarine habitats and is regarded as Nationally Scarce, however, is found locally on the Humber Estuary.

**Population Distribution of Dense Silky-Bent *Apera interrupta*.**




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only

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## Small cord-grass *Spartina maritima*

**Key Sites:** No confirmed records.

**Summary Status:**

- Wildlife and Countryside Act: not listed.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- Nationally Scarce.

### Description

Small cord-grass *Spartina maritima* is a characteristic native grass of upper saltmarsh in the south-east of England, from the Wash to the Solent, occasionally as a pioneer on bare mud, often patchy and scattered in UK but forming taller swards in the centre of its range from Spain southwards (Marchant & Goodman 1969; Stewart *et al* 1994). Small cord-grass flowers from July to September.

### Distribution within the Humber

In 1986, the small cord-grass was recorded by Tye at the Saltfleetby-Theddlethorpe dunes (NCC 1988) beyond its previously known northern limit in Britain, however, this is believed to be an error. No other references could be found for this species north of the Wash (Preston *et al* 2002) and therefore the consensus is that it does not occur at present (G. Weaver pers. comm. 2002).

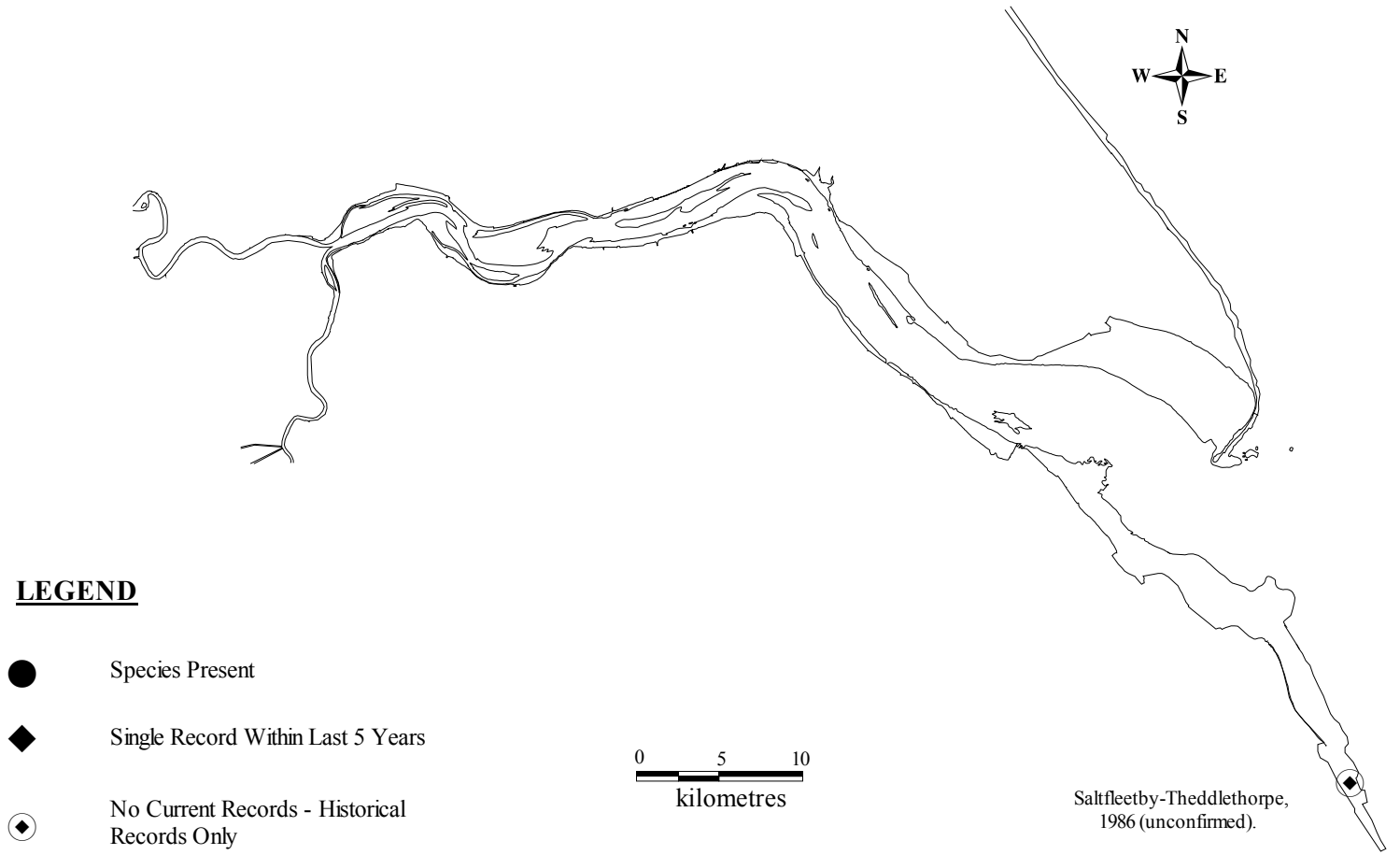
### Historical changes and trends

Small cord-grass has declined in range on the south coast (where it was once found in Devon) and in extent elsewhere in England for a variety of reasons, including land-claim, erosion and successional changes (Raybould *et al* 1991; Stewart *et al* 1994).

### Conservation status

This species is considered to be Nationally Scarce (Stewart *et al* 1994; Preston *et al* 2002).

## Population Distribution of Small Cord-grass *Spartina maritima.*



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## Monkey orchid *Orchis simia*

**Key Sites:** Formerly found at Spurn.

**Summary Status:**

- Wildlife and Countryside Act: Schedule 8.
- Habitats Directive: not listed.
- Berne Convention: not listed.
- Red Data Book: not listed.
- No longer present on the Humber.

### Description

The monkey orchid is a rare orchid of base-rich grasslands, found in bushes and on field boundaries in southern England (Wiggington 1999). Although the monkey orchid is widespread in Europe, through central France and around the Mediterranean, in the UK, it has a highly restricted range in southeast England, confined to Kent & Oxfordshire (Preston *et al* 2002).

### Distribution within the Humber

A few plants occurred on Spurn in 1974, well outside of the previously known range of the species, probably as a casual, and was perpetuated by manual pollination until its extinction in 1982 (P. Cook pers. comm. 2002; Murby 1994).

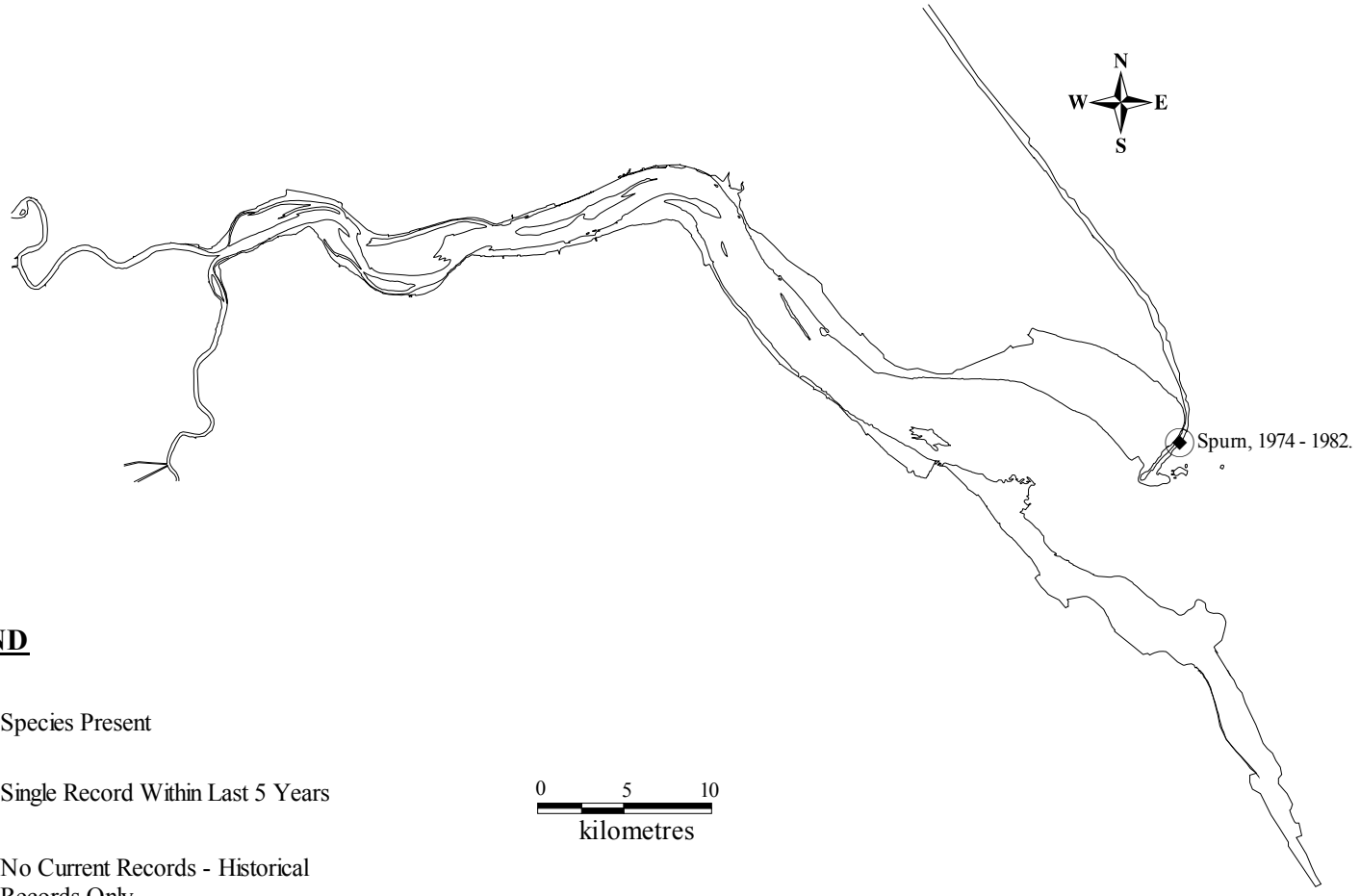
### Historical changes and trends

See above.

### Conservation status

The species is nationally very rare and vulnerable (Wiggington 1999) and is listed under Schedule 8 of the Wildlife and Countryside Act 1981. However, it is not characteristic of, or believed to be native to the Humber area (Preston *et al* 2002; Wiggington 1999).

**Population Distribution of Monkey Orchid *Orchis simia.***




**LEGEND**

- Species Present
- Single Record Within Last 5 Years
- No Current Records - Historical Records Only

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