4.38 KINGSBRIDGE ESTUARY

LTC site code: BK
Centre grid: SX7441
JNCC estuarine review site: 147
Habitat zonation: 440 ha intertidal, 173 ha subtidal, 10 ha nontidal
Statutory status: Salcombe to Kingsbridge Estuary SSSI
Winter waterbird interest: N/A

SITE DESCRIPTION

The Kingsbridge Estuary, situated on the south Devon coast between Kingsbridge and Salcombe and emerging to the sea between Bolt Head and Prawle Point, is thought most likely to be a marine inlet worn away along lines of geological weakness. The upper reaches are largely mudflats at low tide but the lower reaches are rocky with sandy beaches. The site receives relatively little freshwater input and is therefore almost marine in nature. Only a very small amount of saltmarsh has been able to form, given the steep-sided valley edges. West Charleton Marsh, separated from the estuary by a sea-wall, is used by waterbirds at high tide. The estuary is predominately rural in character with little in the way of industry. The main conservation issues are concerned with disturbance from increased winter watersports, bait-digging and mass fishing events (G. Waterhouse pers. comm.).

COVERAGE AND INTERPRETATION

The Kingsbridge Estuary was counted for the scheme during the 1993–94 winter, all four months being covered. Figure 4.38.1 shows the positions of the 22 sections counted for the survey.

The Kingsbridge Estuary is not designated an SPA but the area covered for the LTCs overlaps almost perfectly with the Salcombe to Kingsbridge Estuary SSSI (Figure 4.38.2).

The site is relatively isolated from the Avon Estuary to the west and the Dart to the east by intervening rocky shorelines, to which some birds

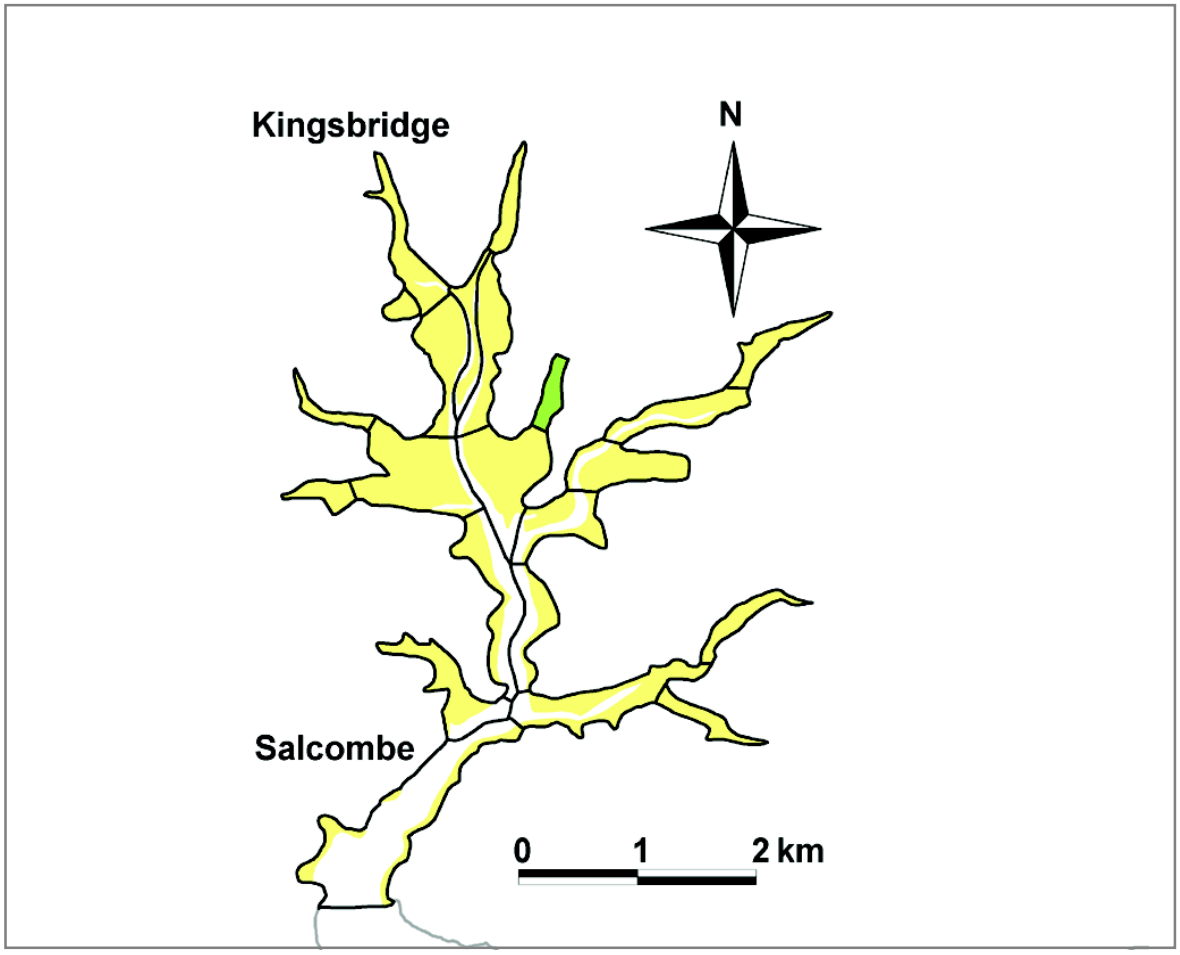

Figure 4.38.1: **LTC sections at the Kingsbridge Estuary, winter 1993–94**

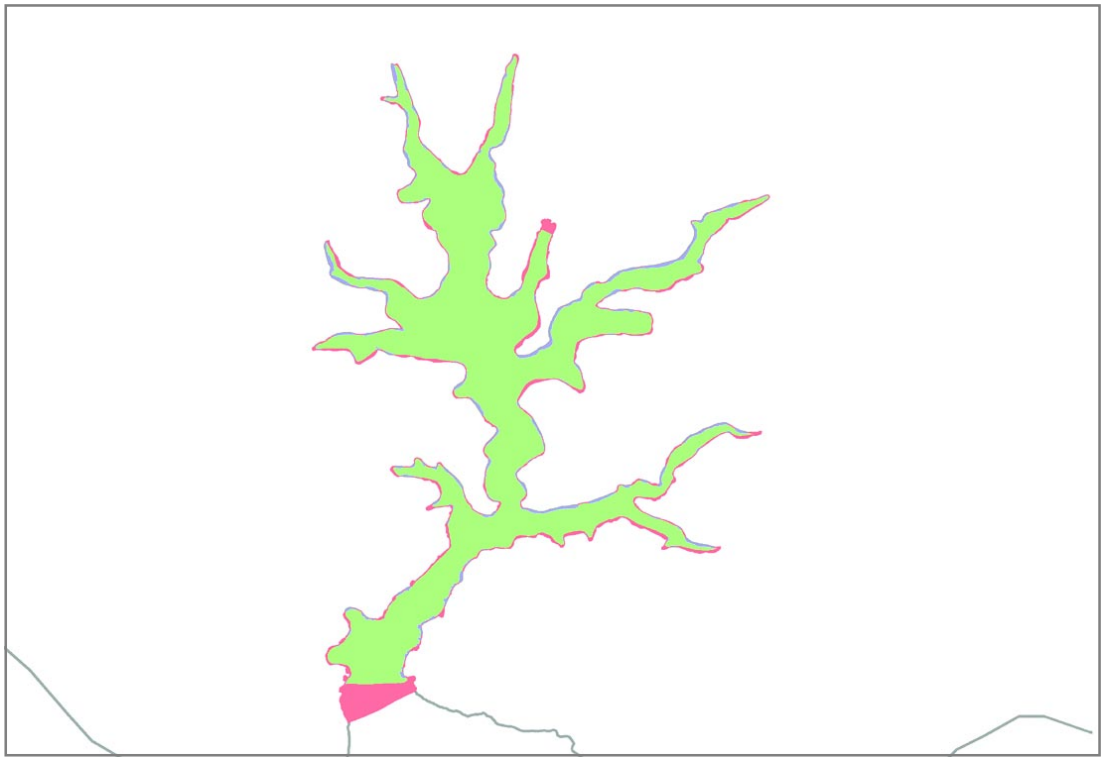

Figure 4.38.2: LTC and SSSI boundaries, with overlap, at the Kingsbridge Estuary

may disperse from the estuary itself. On high spring tides, Dunlin and Grey Plovers fly east via Frogmore Creek to roost on the shingle ridge at Slapton Ley. Wigeon and Teal often move across to the South Huish and South Milton Marshes in rough weather or when there is disturbance (G. Waterhouse pers. comm.).

WATERBIRD DISTRIBUTION

Low tide distribution maps from the winter of 1993–94 are presented for total birds and total birds weighted by 1% threshold value (Figure 4.38.3).

The total birds map shows a relatively even overall bird density over much of the site, with higher densities at Blanksmill Creek and Park Bay. The weighted totals map is not strikingly different, but does place a subtly greater emphasis on some areas such as Collapit Creek and Frogmore Creek. Amongst the individual species, Curlews and Redshanks were the most evenly spread, followed by Shelducks of which few occurred on the narrow outer sections. Brent Geese were most common in the middle of the site, with this region also holding the highest densities of Dunlin. Wigeon densities were highest at the heads of three creeks, especially Blanksmill in the west.

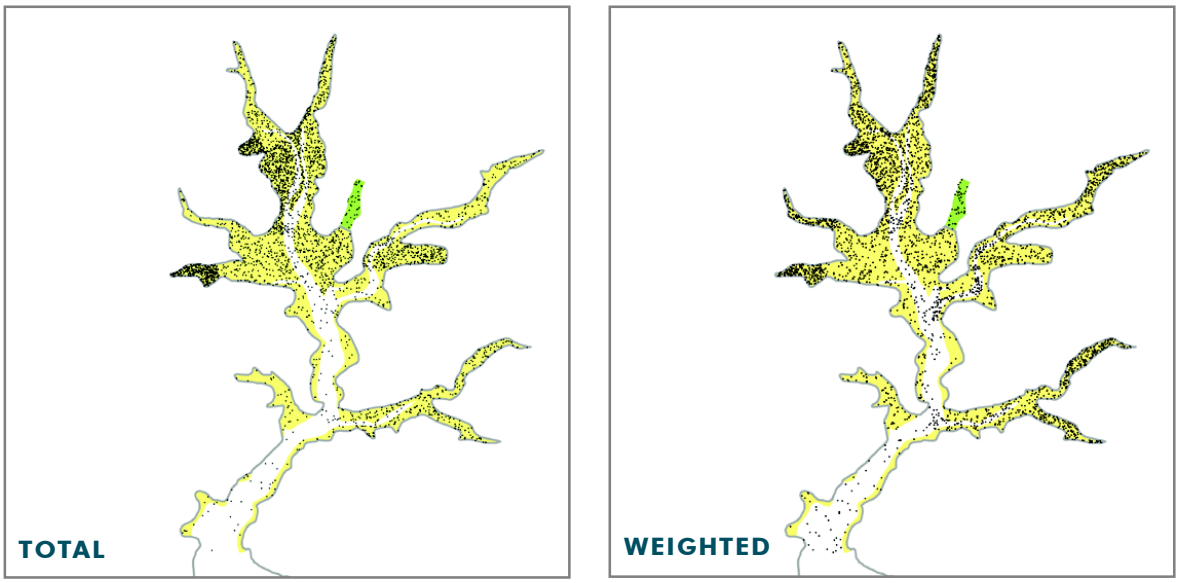

Figure 4.38.3: Low tide waterbird distributions recorded at the Kingsbridge Estuary, winter 1993–94

4.39 TAMAR COMPLEX

LTC site code:	CK
Centre grid:	SX4356
JNCC estuarine review site:	151
Habitat zonation:	439 ha intertidal, 476 ha subtidal, 115 ha nontidal
Statutory status:	Tamar Estuaries Complex SPA (UK9010141)
Winter waterbird interest:	Little Egret, Avocet, Black-tailed Godwit

SITE DESCRIPTION

The Tamar Complex is the name given to the group of river estuaries (with the exception of the Plym) which reach the sea through Plymouth Sound. The estuaries are the drowned river valleys of the Tamar, Lynher and Tavy, which collectively drain a large area of Devon and Cornwall. The wide area of intertidal flats to the south of Torpoint known as St. John's Lake is also included in the site. The east shore of the lower parts of the complex is adjacent to the city of Plymouth, which has extensive dockyards and naval bases. Apart from the towns of Torpoint and Saltash, most of the west side of the estuary, as well as the upper estuary, is rural in nature. Areas of saltmarsh occur throughout even to the upstream reaches, and stretches of rocky shore also occur unusually far inland. Apart from the Plymouth area, most potential pressures on estuarine waterfowl are concerned with recreational disturbance and there are several proposals for new marinas. Additionally, run-off from farmland around the site may be a concern, as may any future expansion of the naval base (G. Grant pers. comm.).

COVERAGE AND INTERPRETATION

Counts were made for the LTCs on the Tamar Complex during the four months of the 1997–98 winter. Only partial coverage was achieved, although many of the Core Counts at this site are actually also carried out at low tide. Figure 4.39.1 shows the positions of the 15 sections counted for the survey.

Figure 4.39.2 shows that a large proportion of the SPA remains to be covered by the LTCs to date, including St John's/Millbrook Lakes, much of the Lynher Estuary, Kingsmill Lake and the upper Tamar Estuary. Conversely, the western shore between Saltash and Torpoint, including the

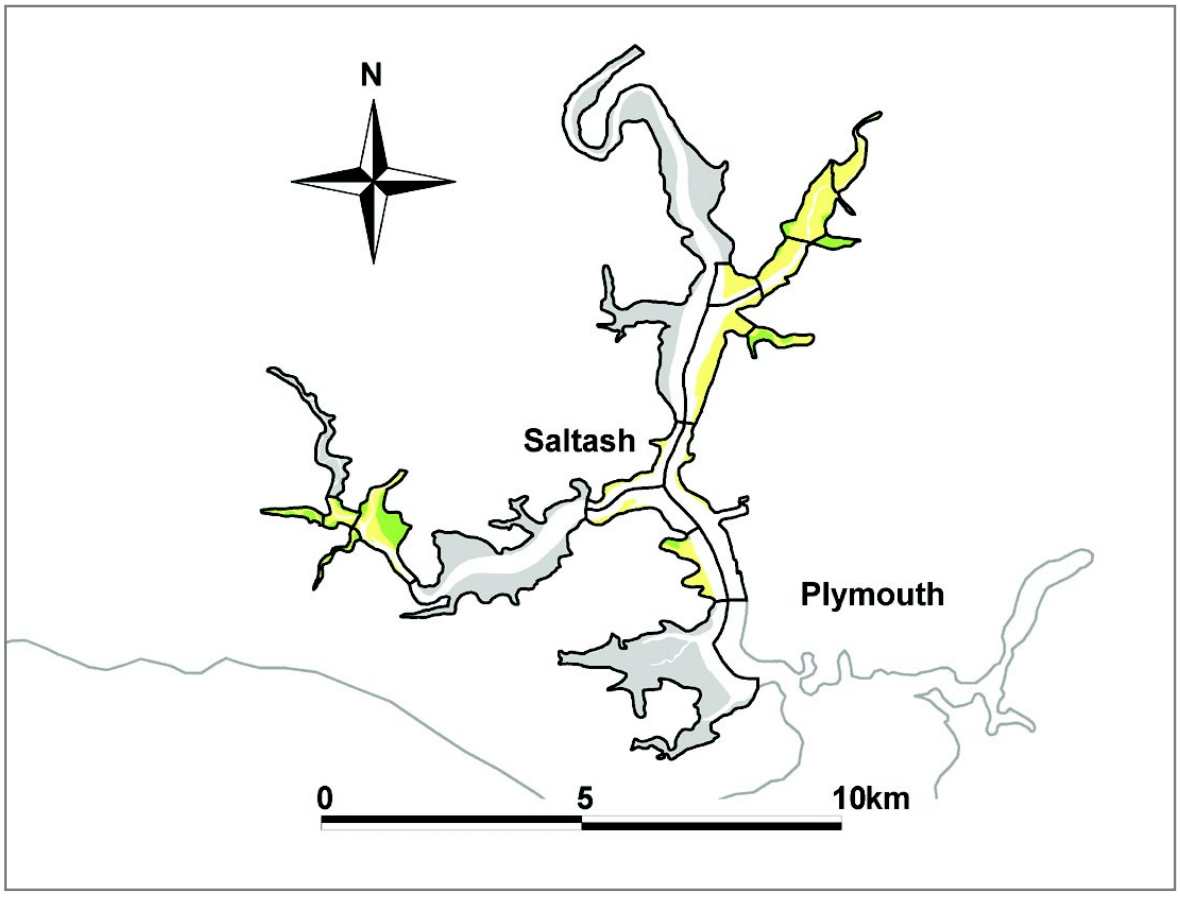

Figure 4.39.1: LTC sections at the Tamar Complex, winter 1997–98

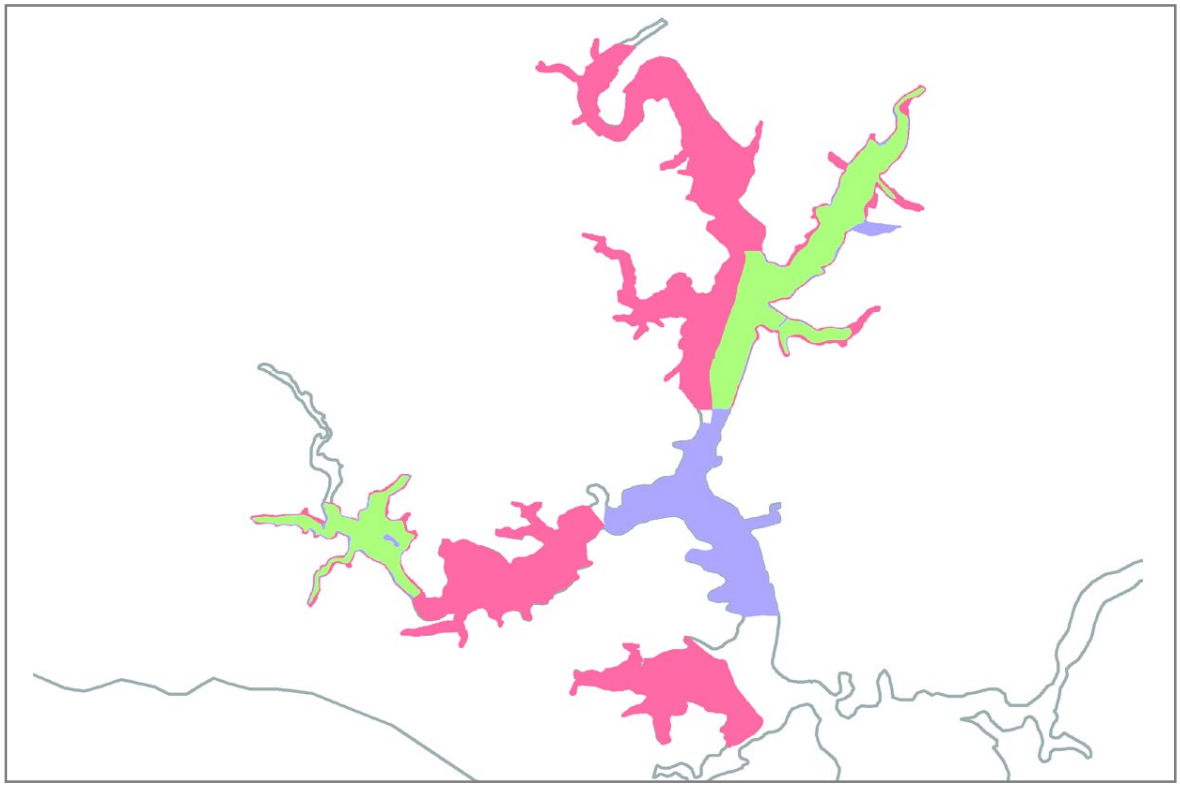

Figure 4.39.2: LTC and SPA boundaries, with overlap, at the Tamar Complex.

mouth of the Lynher, were counted but do not form part of the SPA. These discrepancies should be taken into account when considering bird usage of the SPA.

Although the wintering bird populations of the Tamar Complex are relatively self-contained, frequent interchange is likely with the small estuary of the Plym, which shares the outlet of Plymouth Sound into the English Channel. Some interchange of birds is also likely with the non-estuarine habitat within the Sound and along adjacent stretches of rocky shore (perhaps even to the Yealm Estuary). Lapwings and Golden Plovers will make use of surrounding terrestrial habitat as well as the estuary.

WATERBIRD DISTRIBUTION

Low tide distribution maps from the winter of 1997–98 are presented for all three of the species of principal interest listed above. Additional maps of total birds and total birds weighted by 1% threshold value are also presented (Figure 4.39.3).

The distribution maps are difficult to interpret given the partial coverage obtained. The totals map draws attention to Tamerton Lake and the upper Lynher around Erth Island, whilst the weighted total map also emphasises the east shore of the Tamar. The latter area, as can be seen from the species maps, held the highest sectional densities (of those covered) for both Avocets and Black-tailed Godwits. Little Egrets were widespread in small numbers. Amongst other species, Golden Plovers were highly concentrated at St Germans on the Lynher. Curlews and Redshanks were both widespread, with the latter species most concentrated at Tamerton Lake and on the Lynher.

Figure 4.39.3: **Low tide waterbird distributions recorded at the Tamar Complex, winter 1997–98**

4.40 FOWEY ESTUARY

LTC site code:	DF
Centre grid:	SX1255
JNCC estuarine review site:	153
Habitat zonation:	103 ha intertidal, 44 ha subtidal, 0 ha nontidal
Statutory status:	N/A
Winter waterbird interest:	N/A

SITE DESCRIPTION

The Fowey is a small estuary in south-east Cornwall and, like the Fal, has a steep-sided profile. Towards the mouth of the estuary, around the town of Fowey, the shores are rocky but a little further upstream the estuary widens somewhat. This results in a reasonable expanse of mud with a few small patches of saltmarsh. Although the town of Fowey itself is an important port and popular for recreational boating, the intertidal area appears to be relatively free from disturbance, although bait-diggers were noted throughout the course of the LTCs.

COVERAGE AND INTERPRETATION

The Fowey Estuary was covered during the winter of 1995–96, counts taking place during all four months. However, only two count sections could be surveyed, as depicted in Figure 4.40.1.

The Fowey Estuary is not covered by any SPA or SSSI. Future LTCs of the site should endeavour, if possible, to extend the coverage to the remainder of the intertidal habitat and to split the existing count sections further to allow greater definition.

The Fowey Estuary is an isolated site, with daily interchange between here and the next nearest estuaries (Fal Complex to the west, Looe Estuary to the east) unlikely. However, dispersal of birds from the estuary to nearby non-estuarine rocky shores may occur.

WATERBIRD DISTRIBUTION

Low tide distribution maps from the winter of 1995–96 are presented for total birds and total birds weighted by 1% threshold value (Figure 4.40.2). Given that only two sections were surveyed, the amount of distributional information available is limited. The totals maps suggest that the northern section was slightly more densely occupied than the southern one. The northern section held the higher densities of Shelducks, Lapwings and Curlews, whilst the southern held most of the Mute Swans. Mallard and Redshank were evenly distributed.

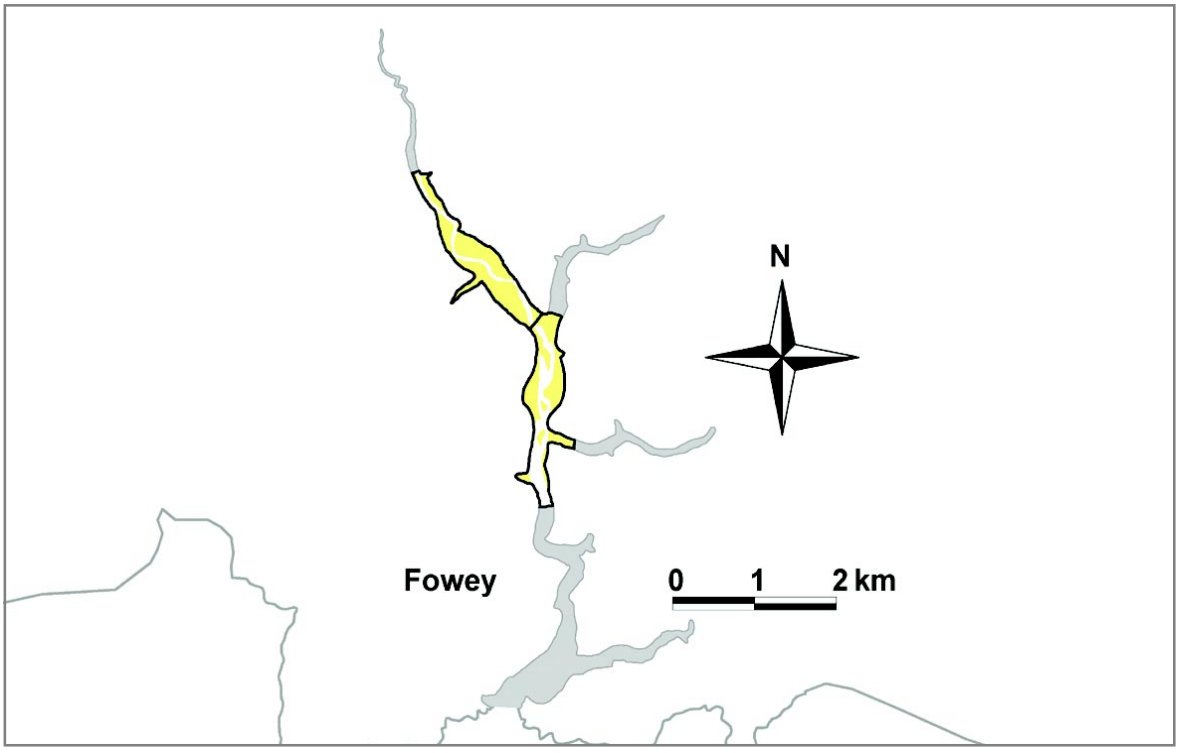

Figure 4.40.1: **LTC sections at the Fowey Estuary, winter 1995–96**

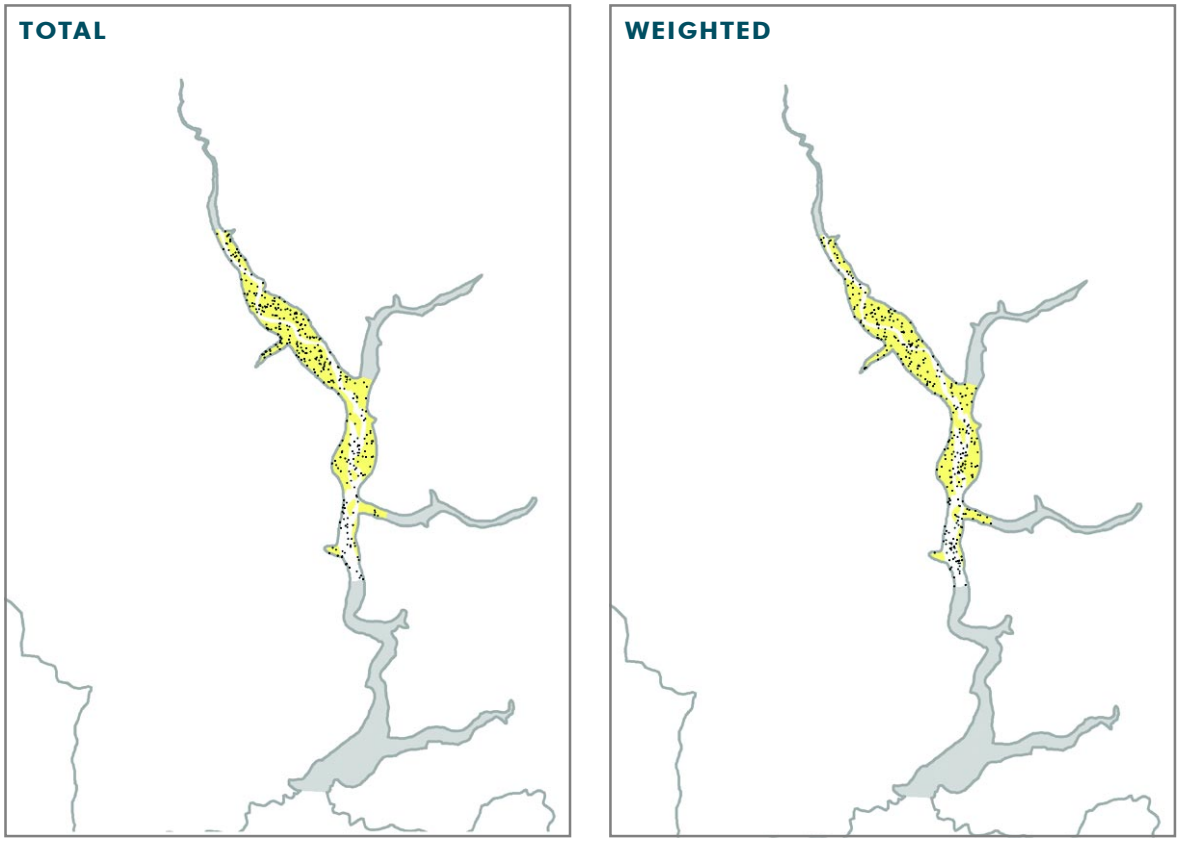

Figure 4.40.2: **Low tide waterbird distributions recorded at the Fowey Estuary, winter 1995–96**

4.41 FAL COMPLEX

LTC site code:	CF
Centre grid:	SW8334
JNCC estuarine review site:	154
Habitat zonation:	347 ha intertidal, 28 ha subtidal, 0 ha nontidal
Statutory status:	Malpas Estuary SSSI, Upper Fal Estuary & Woods SSSI, Lower Fal & Helford Intertidal SSSI
Winter waterbird interest:	Black-tailed Godwit

SITE DESCRIPTION

Although the Fal Estuary is treated as a single site, it is really a complex of a number of smaller estuaries which flow into the broad channel known as Carrick Roads. In common with most of the estuaries in the south-west of England, the whole complex can be defined as a ria, or drowned river valley. As such, the estuary shores are mostly steep-sided. The relatively small areas of intertidal substrate are found within the narrower stretches of the smaller estuarine units. Most of these areas are very muddy, with only small areas of saltmarsh. The Fal is heavily used for sailing, although this is mainly within Carrick Roads. Other human pressures on the estuary include pollution (from tin extraction upstream), dredging and fish processing.

COVERAGE AND INTERPRETATION

The Fal Complex was counted for the scheme during the 1995–96 winter, all four counts being carried out. Figure 4.41.1 shows the positions of the 13 sections counted for the survey.

The Fal Complex is not designated as part of an SPA but the area covered by the LTCs does overlap with three SSSIs, although not precisely (Figure 4.41.2). The Malpas Estuary SSSI is largely covered by three count sections along the Truro River and Calenick Creek. The much more extensive Upper Fal Estuary & Woods SSSI (which is contiguous with the Malpas Estuary SSSI) is only partially covered by the three count sections along the Tresillian River and the single section at Ruan Lanihorne. Downstream, the Lower Fal & Helford Intertidal SSSI overlaps with two sections at

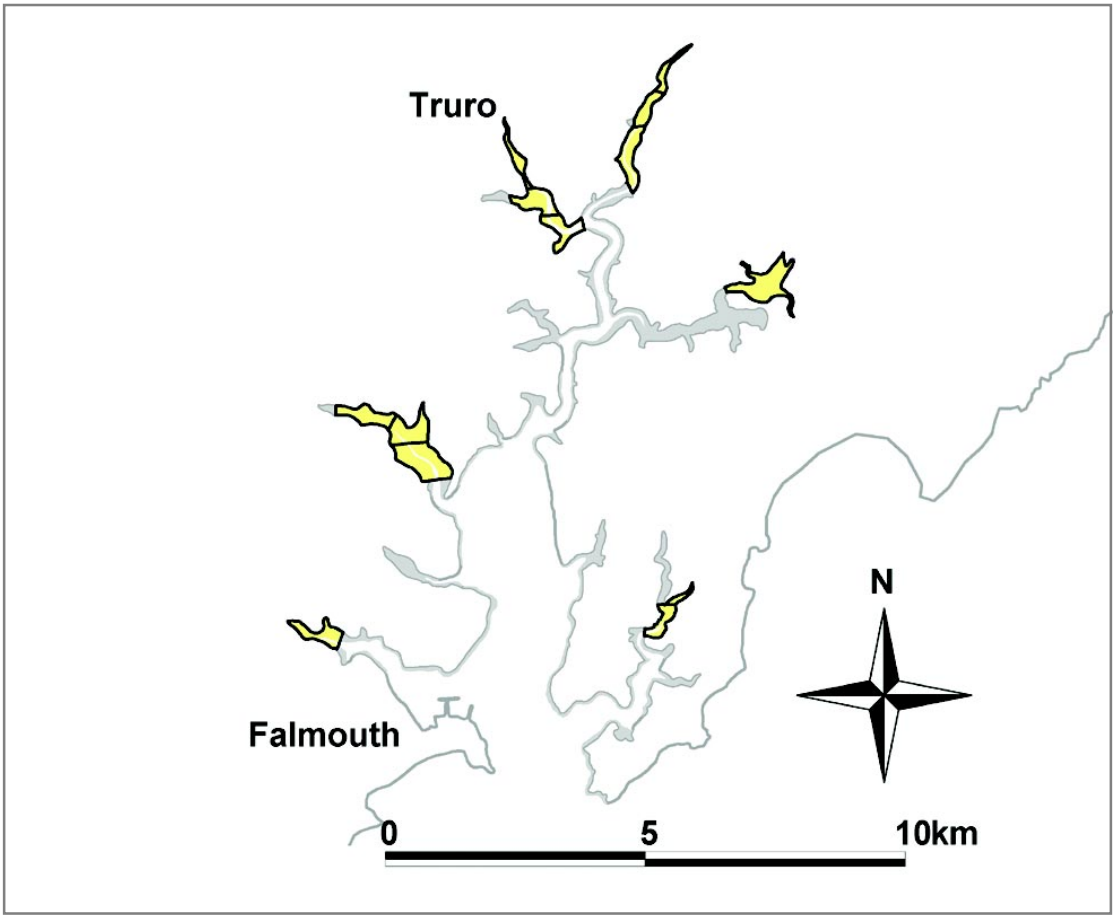

Figure 4.41.1: LTC sections at the Fal Complex, winter 1995–96

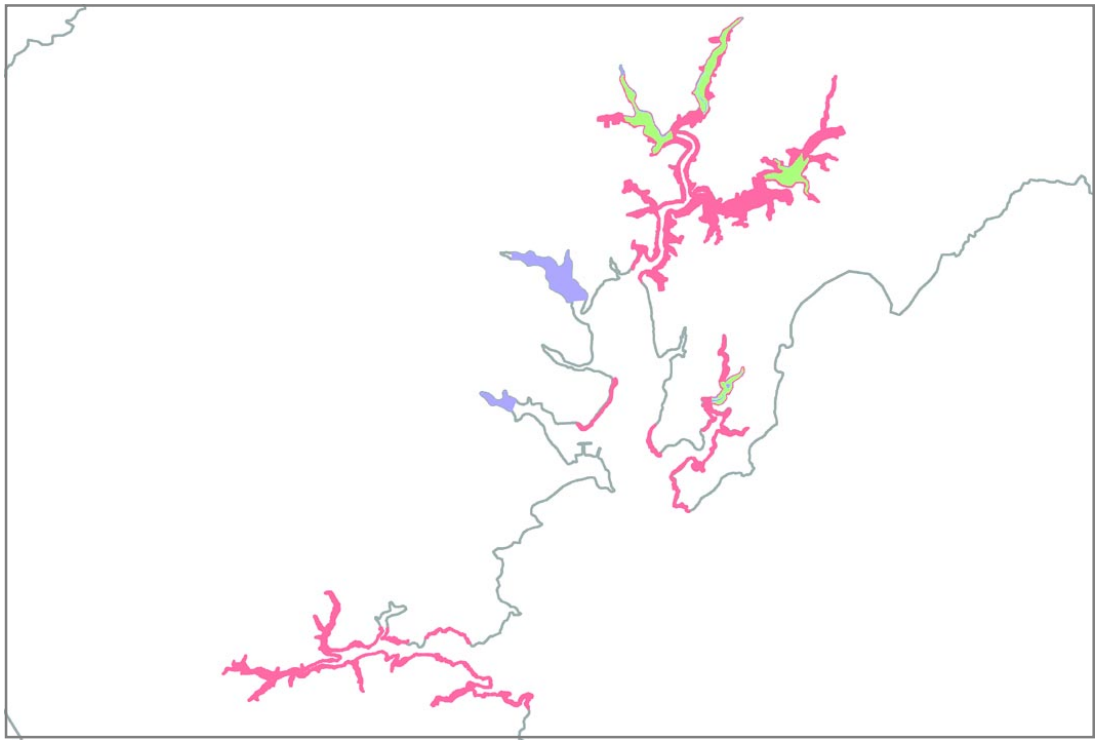

Figure 4.41.2: LTC and SSSI boundaries, with overlap, at the Fal Complex

Percuil River and Polingey Creek, but the majority of this SSSI was not surveyed (indeed this SSSI was not designated for its waterbird interest).

Movements of birds between the Fal Complex and other sites are not thought to occur on a daily basis, even to the relatively nearby Helford River (G. Conway pers. comm.). Some species may, however, disperse from the estuary to feed on nearby non-estuarine rocky shores.

WATERBIRD DISTRIBUTION

The low tide distribution map from the winter of 1995–96 is presented for Black-tailed Godwit, the species of principal interest listed above. Additional maps of total birds and total birds weighted by 1% threshold value are also presented (Figure 4.41.3).

The totals map shows that overall bird densities were highest at Ruan Lanihorne and on the Truro river, whilst the weighted totals map also draws attention to the Tresillian river. The Truro river was the key area for Black-tailed Godwit with few elsewhere. Amongst the other species recorded, Shelduck were mostly found on the Truro and Tresillian rivers. Golden Plover were confined to the Ruan Lanihorne area. Curlew and Redshank were found throughout all parts of the complex but few Dunlin occurred at Tresillian river and Percuil.

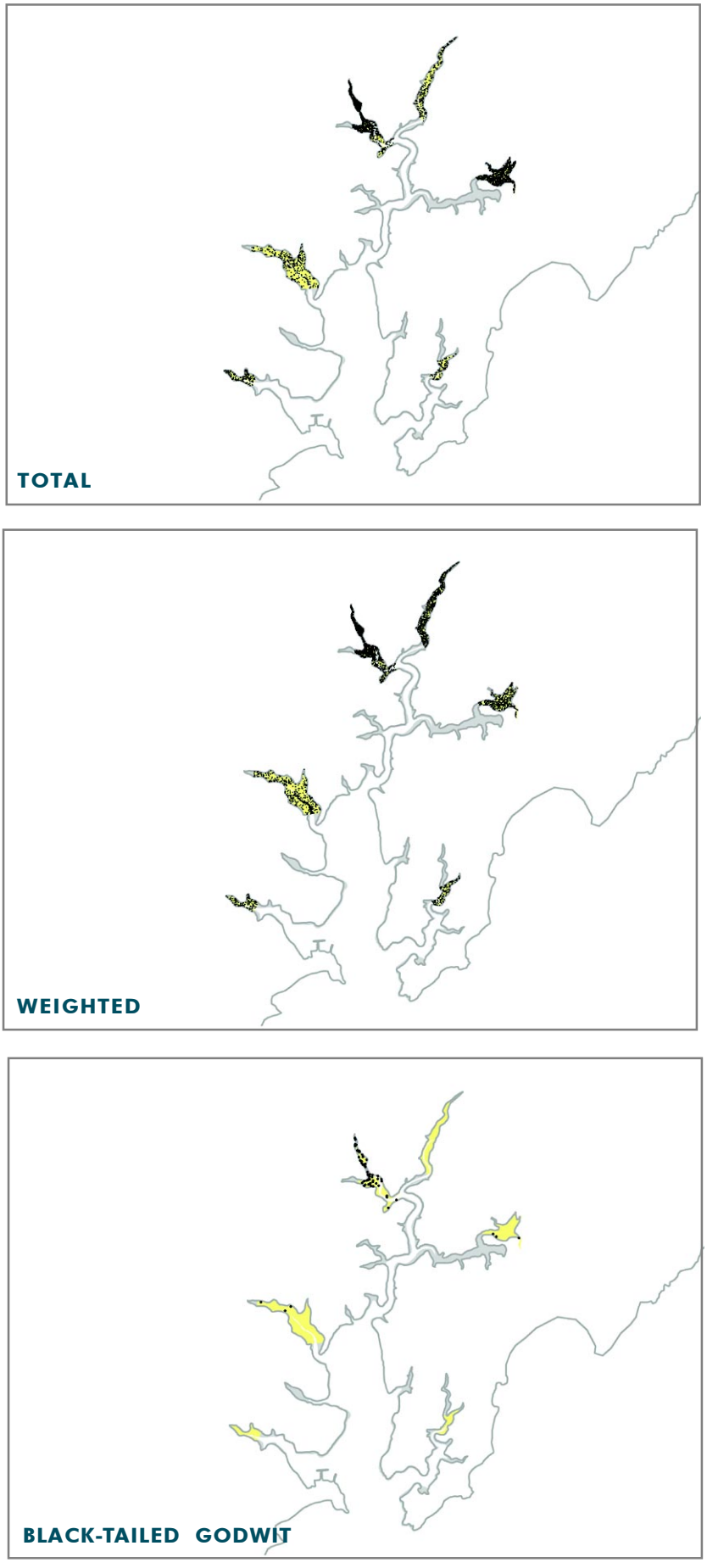

Figure 4.41.3: **Low tide waterbird distributions recorded at the Fal Complex, winter 1995–96**

4.42 HAYLE ESTUARY

LTC site code: DH
Centre grid: SW5538
JNCC estuarine review site: 1
Habitat zonation: 99 ha intertidal, 19 ha subtidal, 6 ha nontidal
Statutory status: Hayle Estuary & Carrack Gladden SSSI
Winter waterbird interest: N/A

SITE DESCRIPTION

The Hayle Estuary is the most south-westerly estuary in the UK and, whilst small, provides important habitat in a part of the country dominated by non-estuarine coastlines. The relatively narrow mouth of the estuary opens into the wide expanse of St Ives Bay which has extensive stretches of wide, sandy beaches (not covered by this survey) backed by an important system of dunes or 'towans'. The estuary itself is muddier, with some areas of saltmarsh, particularly at the head of Copperhouse Creek and in the south-western corner. Much of the estuary is adjacent to the small town of Hayle and the villages of Phillack, Copperhouse and Lelant. The area is popular with tourists in the summer months, although winter is much quieter. Redevelopment of the existing harbour and quays to regenerate commercial port operations and tourism facilities has recently been proposed, which could increase disturbance to parts of the estuary. A new area of marsh (Ryan's Field) has been created by the RSPB at the southern end of the estuary. Another interesting habitat is provided by the enclosed Carnsew Pool (J. Wright pers. comm.).

COVERAGE AND INTERPRETATION

The Hayle Estuary was counted for the scheme in the 1998–99 winter, counts being submitted for all four months.

Figure 4.42.1 shows the positions of the eight sections counted for the survey. The Hayle Estuary is not part of any SPA but the LTC area does overlap the Hayle Estuary & Carrack Gladden SSSI. Figure 4.42.2 shows that the SSSI covers a greater area, extending out into the main part of the outer sands along St Ives Bay (although not the whole of these sands, which extend for miles between St Ives and Godrevy Point). The SSSI also covers Ryan's Field and the saltmarsh near Lelant station. Conversely, the LTCs covered an area of the main channel between the Hayle and Copperhouse Creek which was excluded from the SPA.

The Hayle constitutes the only estuarine habitat in this part of Cornwall and daily movements between here and other sites seem highly unlikely. However, it is feasible that birds may disperse into St Ives Bay. Additionally, Curlews and Golden Plovers also feed locally in surrounding fields (J. Wright pers. comm.).

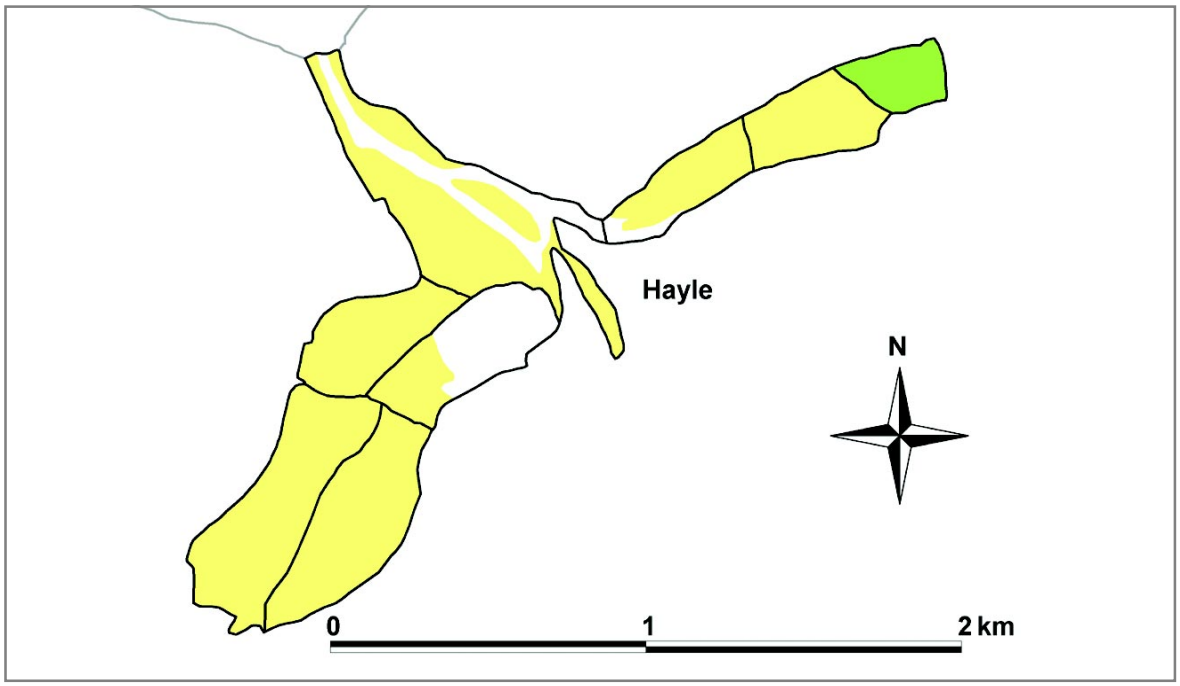

Figure 4.42.1: **LTC sections at the Hayle Estuary, winter 1998–99**

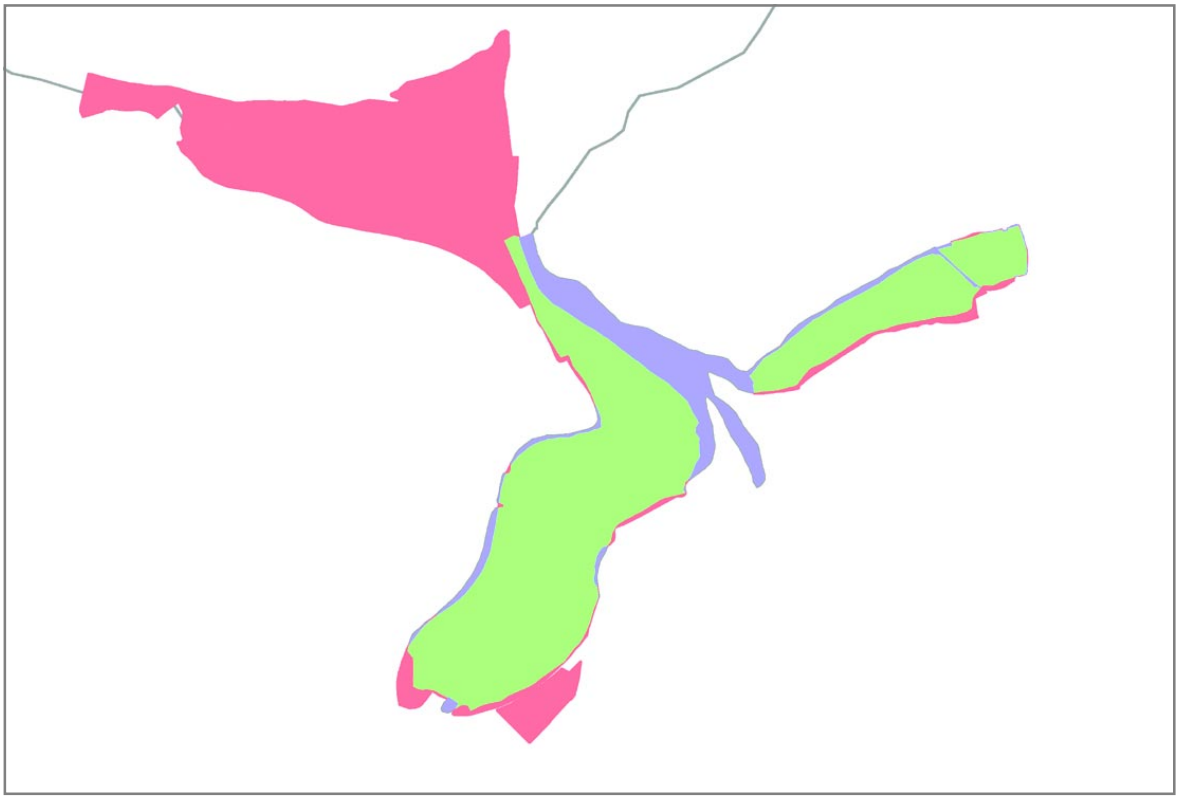

Figure 4.42.2: **LTC and SSSI boundaries, with overlap, at the Hayle Estuary**

WATERBIRD DISTRIBUTION

Low tide distribution maps from the winter of 1998–99 are presented for total birds and total birds weighted by 1% threshold value (Figure 4.42.3).

The totals map shows the highest densities occurring along the east side of the main Hayle Estuary, next to Carnsew Pool and at the eastern end of Copperhouse Creek, the latter area also being emphasised by the weighted totals map. The overall occurrence pattern was driven by different species for each 'hot-spot'. The top of Copperhouse Creek was mostly occupied by Golden Plover. Dunlin occurred at high density by Carnsew Pool and the south-east part of the Hayle held the highest densities of both Wigeon and Teal, the former being more widespread elsewhere than the latter. Amongst the other species recorded, most Ringed Plovers occurred on the outer parts of the site and Curlews were more common on the inner parts of each 'arm' of the estuary.

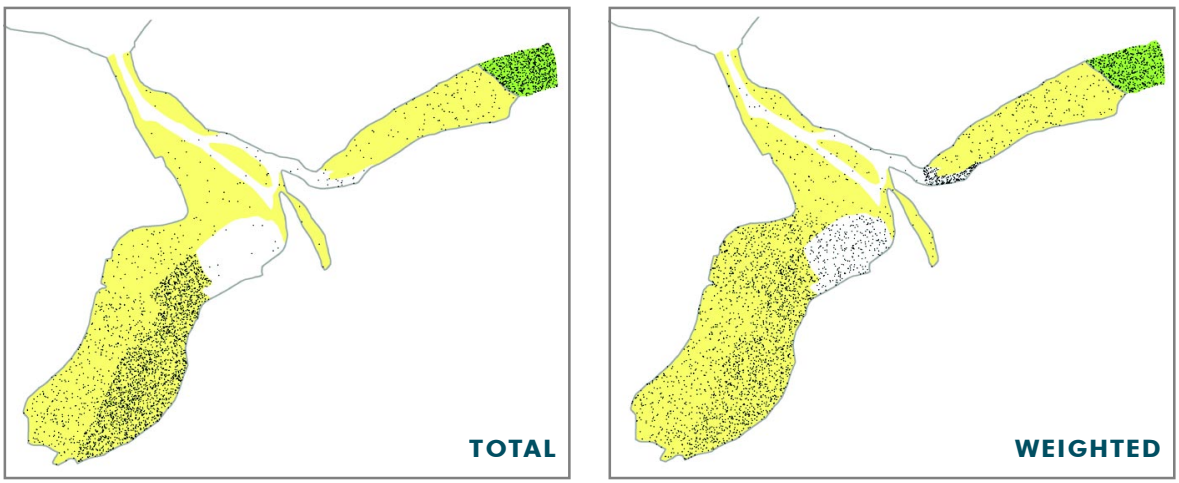

Figure 4.42.3: **Low tide waterbird distributions recorded at the Hayle Estuary, winter 1998–99**

4.43 CAMEL ESTUARY

LTC site code: CC
Centre grid: SW9375
JNCC estuarine review site: 3
Habitat zonation: 482 ha intertidal, 150 ha subtidal, 42 ha nontidal
Statutory status: Rock Dunes SSSI, Amble Marshes SSSI
Winter waterbird interest: N/A

SITE DESCRIPTION

Although a relatively small estuary, the Camel is the largest inlet on the north Cornish coast and is relatively isolated from other estuaries along a long stretch of rocky shore. The site is mostly sandy in character although muddier upstream, with small areas of saltmarsh in the upper reaches also. Human disturbance is most concentrated around the towns of Wadebridge and Padstow, although a popular tourist nature trail runs along the entire south shore of the estuary.

COVERAGE AND INTERPRETATION

The Camel Estuary was covered during the 1992–93 winter, with counts being made in December and February. Figure 4.43.1 shows the positions of the 60 sections (many relatively small) counted for the survey.

Figure 4.43.2 shows the site in relation to two adjacent biological SSSIs; Rock Dunes near the mouth of the estuary and Amble Marshes upstream. The latter is nontidal and overlaps the Walmsley Bird Sanctuary. Rock Dunes includes no birds on its citation. In addition, there is a geological SSSI (Harbour Cove) on the western shore of the estuary near the mouth. The Camel Estuary itself is proposed for SSSI status but has not received such status to date (M. Lawson pers. comm.).

Movements of birds between the Camel and other estuaries are unlikely to occur on a day-to-day basis due to the isolation of the site. However, birds will use some adjacent non-estuarine habitats, notably Amble Marshes. The large flocks of Lapwings and Golden Plovers roosting at the site also disperse inland to feed.

WATERBIRD DISTRIBUTION

Low tide distribution maps from the winter of 1992–93 are presented for total birds and total birds weighted by 1% threshold value (Figure 4.43.3).

The maps show that by far the highest bird densities occurred in the east of the estuary, although the weighted total map gives somewhat greater emphasis to some of the areas of intertidal habitat downstream. The high overall bird densities are almost entirely driven by Lapwings and Golden Plovers, both of which can occur in very high numbers on this relatively small site; during the December 1992 LTC over 20,000 birds were present on the estuary, of which over 75% was made up of these two key species. Such flocks can be rather transient, however, with far fewer present in February 1993. With the exception of these species, the site was relatively sparsely occupied, with Dunlin and Ringed Plovers at Town Bar and a short stretch of the south shore further upstream. Redshanks reached their highest densities at Little Petherick Creek and other areas

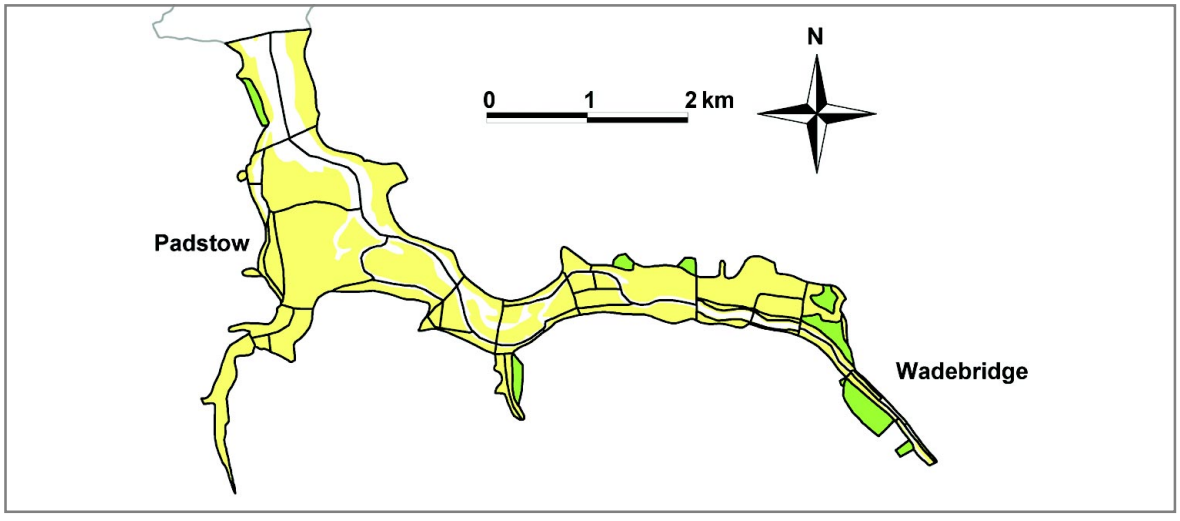

Figure 4.43.1: **LTC sections at the Camel Estuary, winter 1992–93**

south of the main river channel, but Curlews were typically more widespread. It should be noted that although Amble Marshes SSSI includes White-fronted Goose within its citation, regular wintering by a flock here ceased after 1973 (Cornish Bird Report 1997) with only irregular records since.

Figure 4.43.2: **LTC and SSSI boundaries, with overlap, at the Camel Estuary**

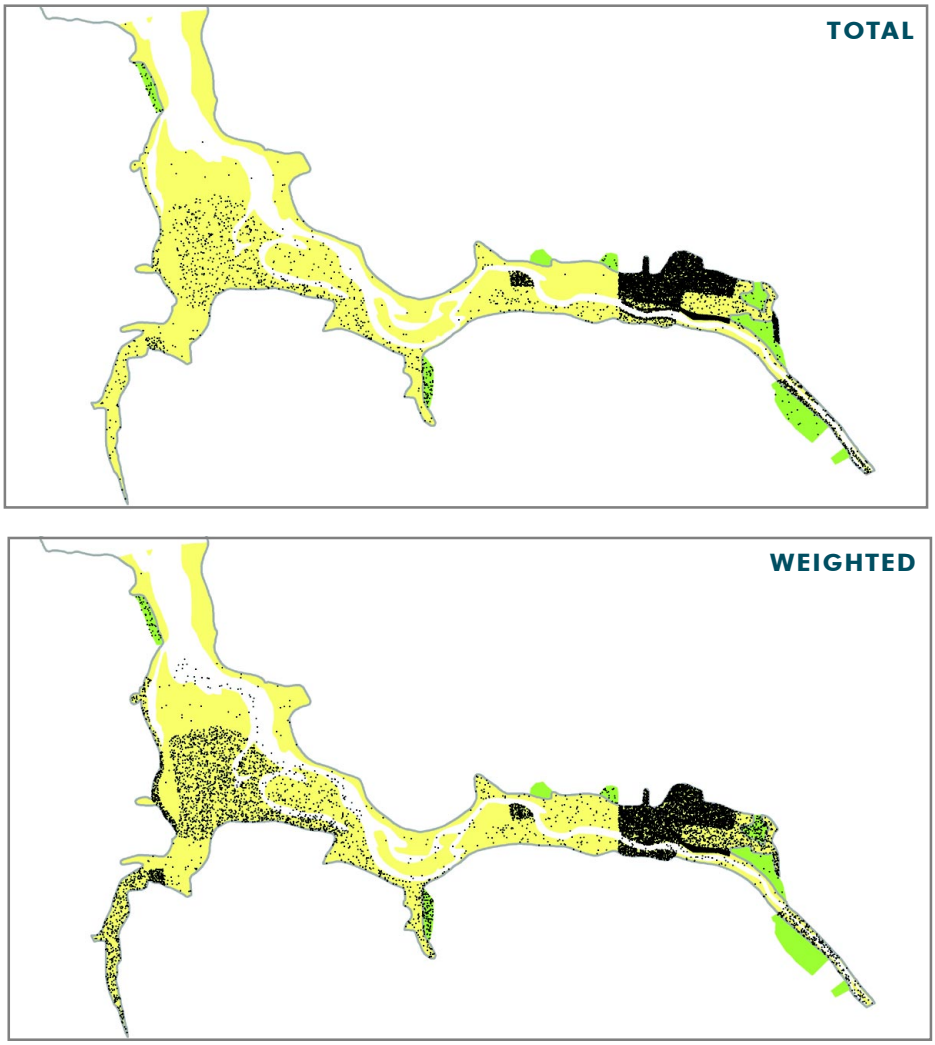

Figure 4.43.3: **Low tide waterbird distributions recorded at the Camel Estuary, winter 1992–93**