LINDISFARNE

Site description

Lindisfarne forms one of the largest intertidal areas in northeast England. This site, as one of only two barrier beach systems within the UK, has an unusual structure. The majority of the site is sandy, although there are increasing amounts of silt in parts of Budle Bay and Fenham Flats. Several freshwater creeks traverse the flats at low tide. Saltmarsh exists between Goswick and Fenham, especially around the causeway to Holy Island, and along the southwestern shore of Budle Bay. Extensive sand dunes occur on several parts of the site, with dune slacks, dune heath and dune pasture also represented. The eastern shoreline of Holy Island is mainly rocky, with a few patches of shingle. There is a small harbour on Holy Island but no other industry is present. Recreational activities are generally water-based and occur mainly in Budle Bay, though beach recreation is widespread over the entire area, as are walking and birdwatching. Some grazing and hand-gathering of mussels occurs, as does wildfowling, but this is strictly licensed. Wildlife conservation is in force, with the area protected by SPA and Ramsar status, and in 1997 a waterbird refuge was set up on the southern Fenham Flats.

General bird distribution 2004/05

Area covered 2,965 ha; **Mean total birds** 28,094; **Mean bird density** 9.5 birds per ha. One count was made in December 2004, as part of the continuing Northumberland Atlas project (hence the 1 km grid squares used as count sections). Most of Lindisfarne supports some birds at low tide, but the most important areas of the site tend to be the intertidal areas between Beal Point and Ross Point (incorporating Fenham Flats and extending offshore to Holy Island), and Budle Bay. Three species of goose are held in internationally important numbers, and most favoured the Ross Point area, with additional Pink-footed Geese at Budle Bay. These species may occur on surrounding farmland as well as on more estuarine habitat, as may Whooper Swan and Wigeon, which favoured similar grid squares. Pintail were scattered off Fenham Flats, whilst Eider were recorded on subtidal areas, mostly south of Holy Island. Many wader species were widely and fairly densely distributed (Curlew, Redshank), whilst the Fenham Flats and Budle Bay areas were especially notable for dense concentrations of Grey and Golden Plover and Dunlin. Bar-tailed Godwits were largely restricted to the south of Holy Island, an area also featuring Sanderling, which were also recorded at Goswick.

Comparative bird distribution

Two species found in nationally important numbers at Lindisfarne are considered, Shelduck and Knot, comparing the current winter to 2000/01. It should be noted that as counts on both surveys were made in any one month, the prospect of anomalous within-site movements affecting the distributions cannot be ruled out. However, mean Shelduck density across the site was greater in the later of the winters, rising from 0.35 to 0.50 birds per ha. Distribution of the species in the two winters was broadly similar, though more Shelduck were recorded on Fenham Flats in 2004/05 than 2000/01. Sector densities were also higher in the second winter, and some of the intertidal habitat south of Holy Island showed evidence of new feeding flocks.

In 2000/01, internationally important numbers of Knot were present at Lindisfarne, but by 2004/05 Core Counts recorded only nationally important numbers. This is reflected by an average site density, which more than halved between the two counts, from 1.33 to 0.62 birds per ha. At Budle Bay, density of Knot increased in 2004/05. However, elsewhere (Beal Point, Holy Island, Ross Point), sector densities were much lower in the later winter. No Alerts have been issued for the species at Lindisfarne, so it seems possible that this pattern of decline may be a temporary phenomenon; likewise, distributional changes may reflect within-site movements for the winter rather than any large-scale changes in site use.

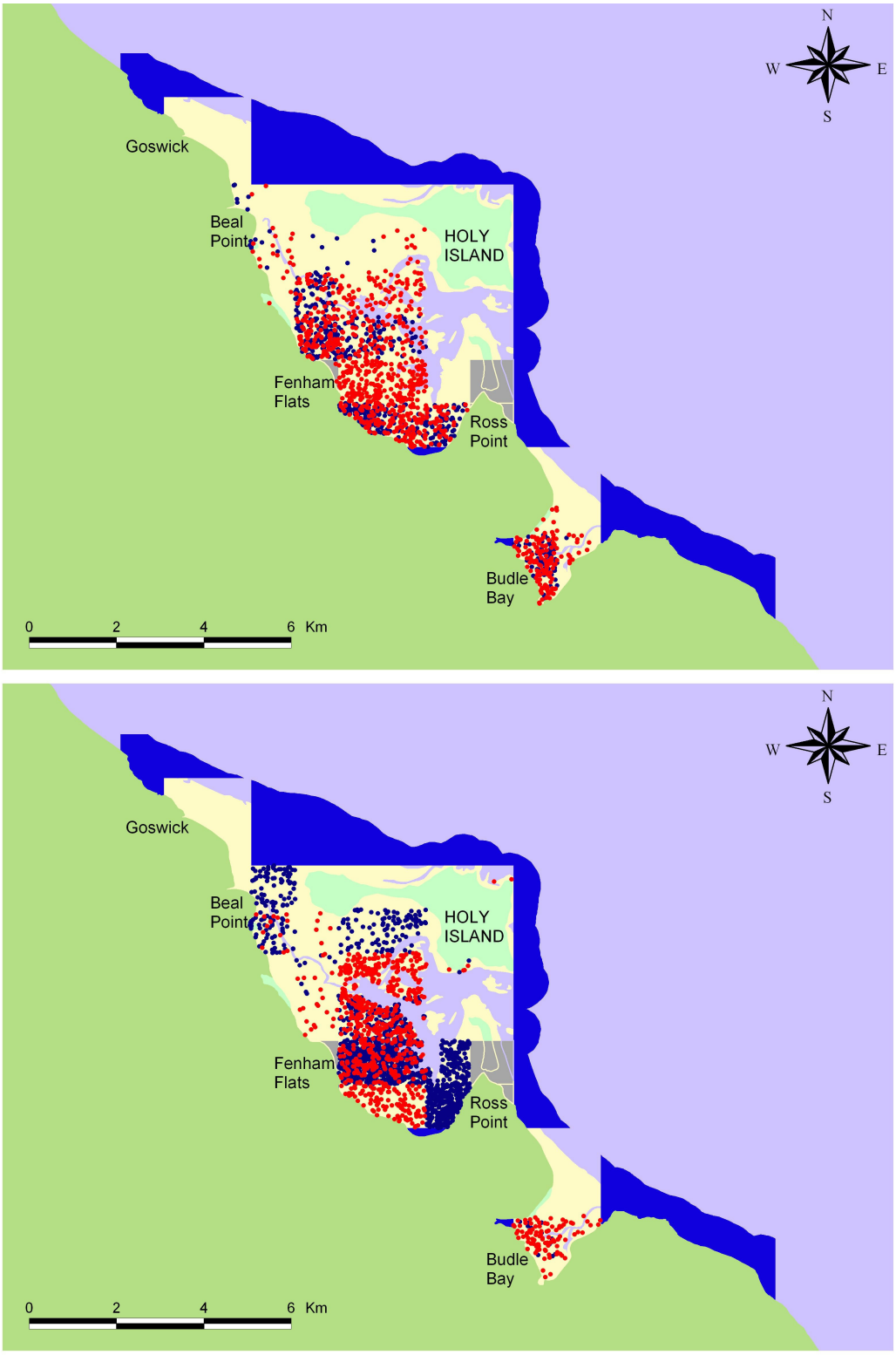

Figure 66. Low Tide distribution of Shelduck (above) and Knot (below) for the winters of 2000/01 (blue dots) and 2004/05 (red); 1 dot = 2 birds. Yellow = intertidal; pale blue = subtidal; pale green = nontidal. Grey area not covered in later winter; dark blue areas never covered.

MEDWAY ESTUARY

Site description

The Medway Estuary, on the North Kent coast, is formed by the river outflow upon which stand Rochester, Chatham and Gillingham, opening into a series of mudflats, brackish saltmarsh and subtidal islands. It is central to a local network of estuarine sites, also encompassing the Thames and Swale. The area is heavily urbanised and industrialised, not only along the south bank but also at the mouth: the Isle of Grain and Sheerness face each other on opposite sides of the river channel. The extent of intertidal and saltmarsh habitat is protected under SPA designation, though is considered in unfavourable declining condition, largely because of coastal erosion of saltmarsh. *Spartina* growth may also be an issue, whilst land claim for development is a persistent threat. Watersports, wildfowling and shipping activity are potentially disturbing factors.

General bird distribution 2004/05

Area covered 2,552 ha; Mean total birds 20,017; Mean bird density 7.8 birds per ha.

Barksore Marshes and the area of intertidal to the east called Bedlam's Bottom were important areas for a variety of waterbirds. The majority of Pintail and Avocet were located here, as were a large proportion of Dark-bellied Brent Geese, Wigeon and Knot. Moving eastward, count units around Chetney Marshes supported high densities of Brent Geese and Wigeon, with most Bar-tailed Godwit and Teal distributed at the north of the marsh area. The one sector counted in the west of the estuary at Gillingham was notable for a pocket of high Black-tailed Godwit aggregation, whereas Stoke Saltings to the west of the Isle of Grain also supported this species, as well as Knot. Five wader species were widely distributed across the estuary, Lapwing and Dunlin at high density, Oystercatcher, Curlew and Redshank more thinly spread.

Comparative bird distribution

A number of species have undergone declining numbers on the Medway, leading to a series of WeBS Alerts (Maclean *et al.* 2005). Here, the distributions of Shelduck and Ringed Plover (both with High Alerts over ten years) are examined for the latest winter, 2004/05, and the winter of 1996/97 when the last WeBS Low Tide Count was performed.

Coverage in 2004/05 was less comprehensive than in 1996/97, and thus no comparisons can be drawn between relative densities on the count sectors west of Ham Green. Otterham Creek in particular supported high densities of Shelduck in the earlier winter and so any consideration of changes across the site will relate to only part of the site. Of the sectors counted in both winters, major declines in average winter numbers were recorded at Ham Green and the low-lying marshy islands off shore to the east (Burntwick Island, Greenborough and Slayhills Marshes). At Ham Green, average numbers dropped from above 500 to 68, whilst densities on the adjacent sectors including the aforementioned islands halved. Other decreases in average numbers were seen at the north east of Stoke Saltings, Bedlam's Bottom (east of Barksore Marshes) and at Deadman's Island to the east of Chetney Marshes; at this location, Shelduck were virtually absent where previously an average 164 birds used the area over the winter. Owing to non-coverage of the adjacent sector to the east, it is not possible to rule out localised relocation of feeding flocks. This is a similar problem at Gillingham, where densities were also reduced in the later of the survey winters. Although some survey areas exhibited increased density of Shelduck (especially the Chetney Marshes area, with a six-fold increase in average density to the north), overall site density of the species was lower in 2004/05. It is difficult to know whether the distributional changes seen are reflective of the decline in Shelduck numbers known to have occurred, or whether there has been relocation of feeding birds to unsurveyed parts of the site.

Some patterns of change for Ringed Plover resemble those for Shelduck. Count sectors containing Deadman's Island, Burntwick Island, Greenborough and Slayhills Marshes showed total decline of the species such that none were recorded in these areas in 2004/05. This pattern also applied to the mouth of the estuary, along the south shore of the Isle of Grain. Between Ham Green and Chetney Marshes, overall density of Ringed Plover remained similar, with decreases at the latter and Bedlam's Bottom counterbalanced by

increases at the former. At Stoke Saltings, declines in density from small average numbers were recorded. Overall mean site density was half the value in 1996/97 for the species, and whilst it may be possible that Ringed Plover have redistributed to count sectors not covered in 2004/05, other evidence suggests that the species may have moved to neighbouring estuaries such as the Swale and Thames, at least at roost (Banks *et al.* 2005).

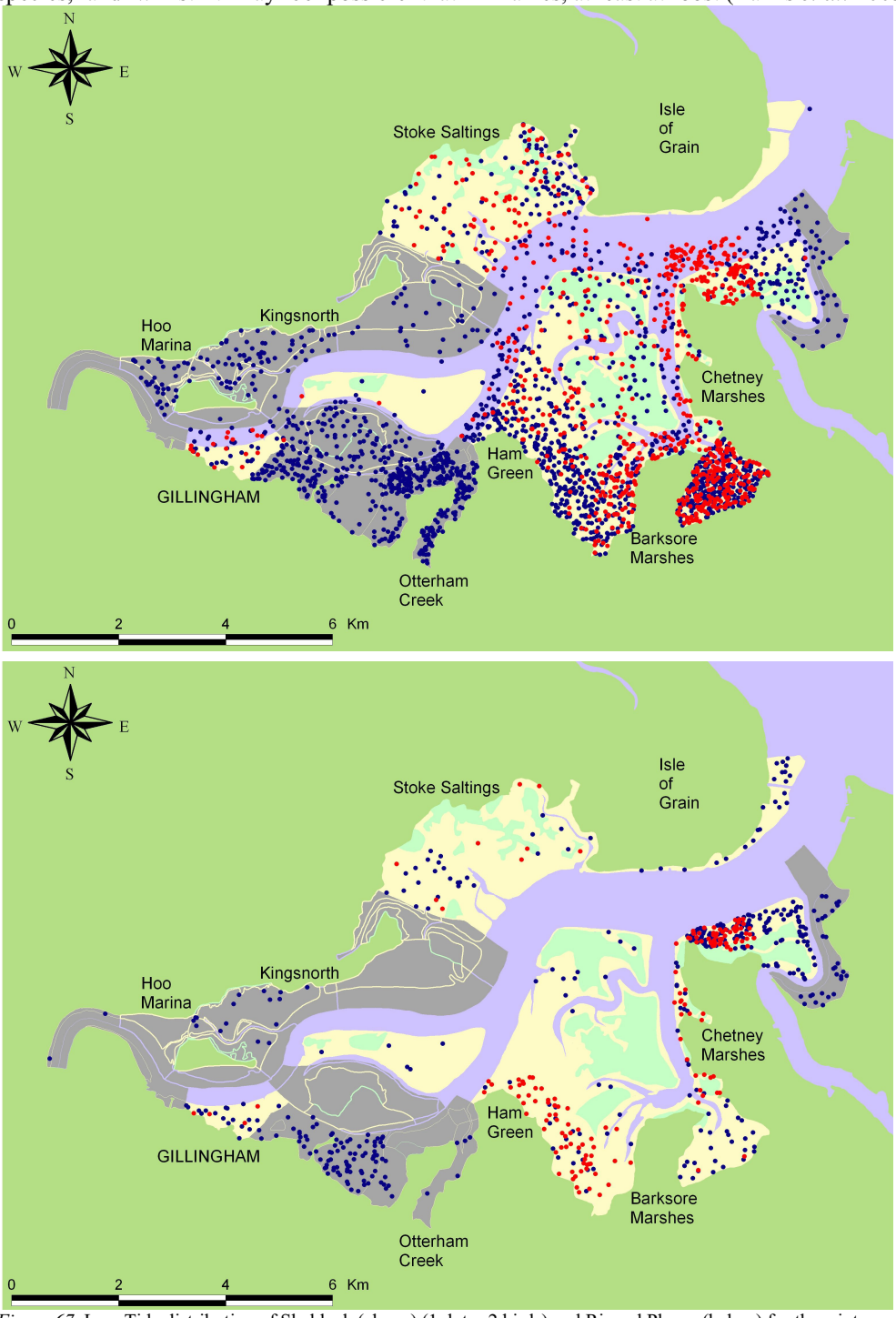

Figure 67. Low Tide distribution of Shelduck (above) (1 dot = 2 birds) and Ringed Plover (below) for the winters of 1996/97 (blue dots) and 2004/05 (red). Yellow = intertidal; pale blue = subtidal pale green = nontidal. Grey area not counted in later winter.