Little tern

Little Tern *Sternula albifrons*

Climate Change Sensitivity:	HIGH	Ability to Manage:	MEDIUM
Non climatic threats:	HIGH	Vulnerability:	HIGH

Summary

The little tern has experienced a moderate population decline in recent years and has become concentrated into fewer, larger nesting colonies. Climate change may create opportunities for populations to increase in more northerly areas, although this is dependent on the availability of suitable sand and shingle habitat and food sources. However, it is not clear that their northern range is limited by climate, as there is plenty of apparently suitable habitat within their current range that is not used (probably because there is too much disturbance), and they already breed as far north as Orkney. Little terns nest in areas of sand and shingle close to the shoreline and are therefore vulnerable to dynamic coastal change and coastal squeeze. Consequently, they are likely to be affected by sea level rise and increased storminess leading to more frequent inundation of nest sites. Any loss of habitat which leads to higher concentration on existing sites is likely to exacerbate existing pressures from predation and disturbance.

Little terns are heavily dependent on conservation management, particularly predator control, visitor management, and habitat improvement. Management of existing colonies to increase resilience is likely to be the main approach to adaptation; there are also opportunities to create new areas of inter-tidal habitat to allow new colonies to develop.

Description

The little tern *Sternula albifrons* is one of Britain's rarest breeding seabirds and is the smallest tern nesting in the UK. Little terns winter in West Africa, and return to UK shores in April each year to breed. They are grey and white with a black cap and a distinctive white forehead and yellow, black-tipped beak.

Courtship displays involve chasing and calling in flight, nest scraping and presentation of fish from the male to the female. Nesting usually commences by the end of May, and one to three eggs are laid in a small scrape in sand or shingle. The eggs are incubated for three weeks. Hatching is usually from mid-June onwards. The chicks stay in the area of the nest scrape for the first 48 hours, after which they will move, possibly finding shelter from the sun or wind behind debris on the beach or small patches of vegetation. The chicks take up to three weeks to fledge. Both parents feed the chicks during this time, calling to locate them on the beach when they return from fishing nearby.

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Ecology and distribution

Little terns are found predominantly on low lying, soft coasts in southern and eastern England, with a concentration in East Anglia. There is a large colony in North Wales which is also a post-breeding staging post and there is a population in south Cumbria. In Scotland, the population is less well monitored but is well distributed over south and west Scotland, with just a few known colonies in North and East Scotland. The most northerly colony is on Orkney.

Little terns nest on open coastal sites, usually choosing flat or gently sloping sand or shingle beaches, shingle ridges, spits and islands. They choose sites which are close to the high tide line and which are subject to change through winter storms. Unlike the other tern species breeding in the UK, they do not forage far for their food, often just off-shore from the colony, where they catch predominantly small fish, and also shrimp and insects from the surface. The chicks are fed preferentially on small sand eels and clupeids (herring family). The availability of such prey close to the colony is an important factor for breeding success.

The UK population is estimated at 1,900 breeding pairs (last census), which represents 9.7% of the biogeographic population and 2.2% of the world population. However, current monitoring results and the 18% decline seen between 2000 and 2015 (Haynow *et al* 2017), now suggest a population of around 1,600 pairs.

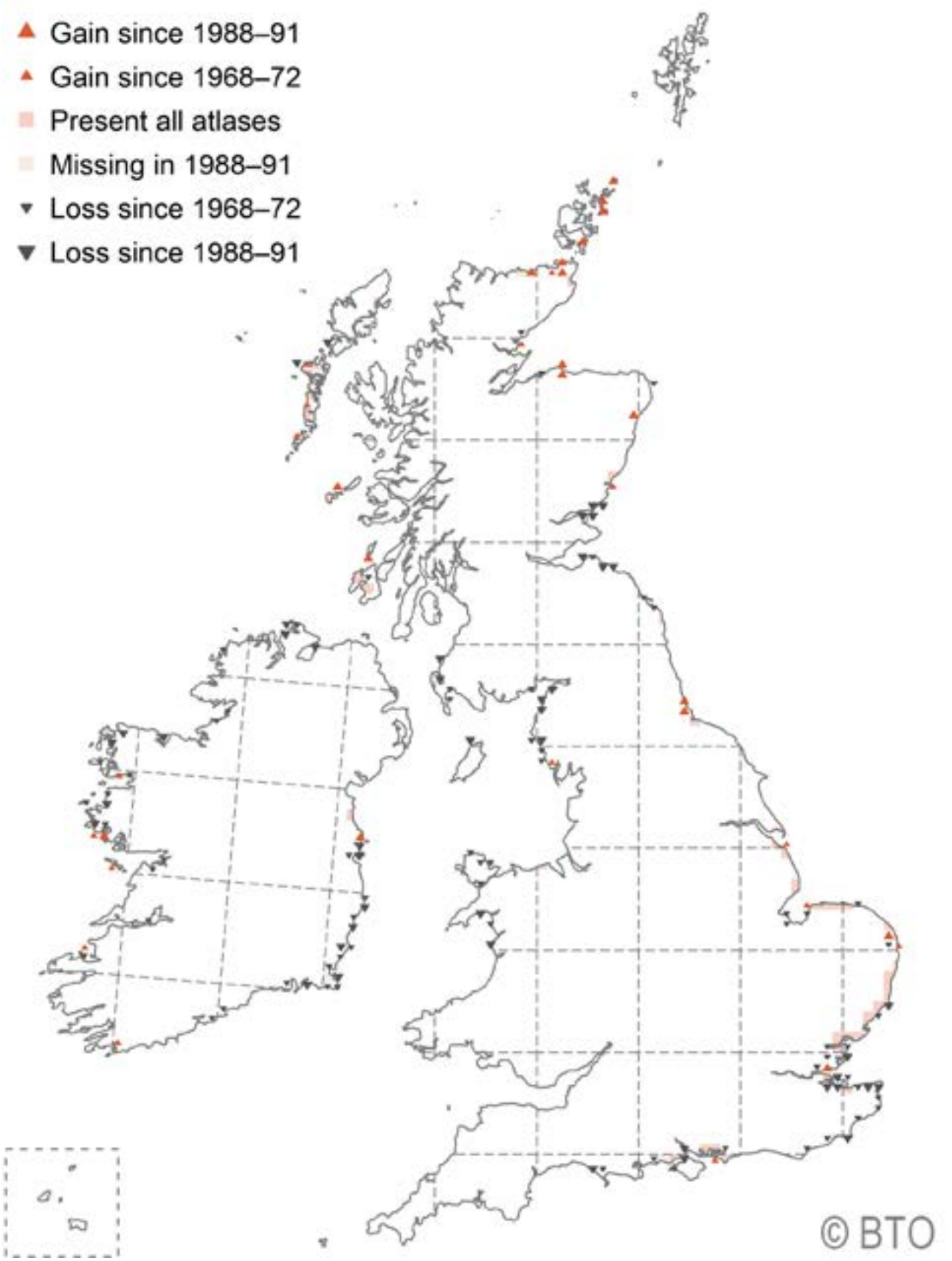
The little tern's UK conservation status has been assessed as Amber in Birds of Conservation Concern 4, for moderate long-term breeding range decline and breeding localisation. At a European level, it has experienced continued moderate decline and is listed as a category 3 Species of European Conservation Concern (SPEC 3).

Table: Little tern population data

Historic Census data	Operation Seafarer (1969-70)	Seabird Colony Register (1985-88)	Seabird 2000 (1998-2002)
UK population estimate (Apparently Occupied Nests)	1,589	2,517	1,927
Change since previous census	n/a	+58%	-23%

Minimum Pairs / AONs / AIAs (reported colonies in the UK)	2013	2014	2015	2016	2017
Rare Breeding Birds Panel	1,553	1,521	1417		
Annual Little Tern Newsletter			1,296	1,302	1,404

Historic changes in the distribution of the little tern
(reproduced with permission of the BTO, from Balmer *et al* 2013)



Confidence in climate change impacts[29]

Distribution change: HIGH CONFIDENCE Mechanism: MEDIUM CONFIDENCE

This section considers the potential impacts of climate change on the UK summer breeding populations of little terns. There is little knowledge about the current threats and levels of mortality in the wintering grounds of West Africa.

The little tern is regarded as having a moderate opportunity for expansion, with populations in the northern parts of its range likely to increase in abundance (Pearce-Higgins *et al* 2015).

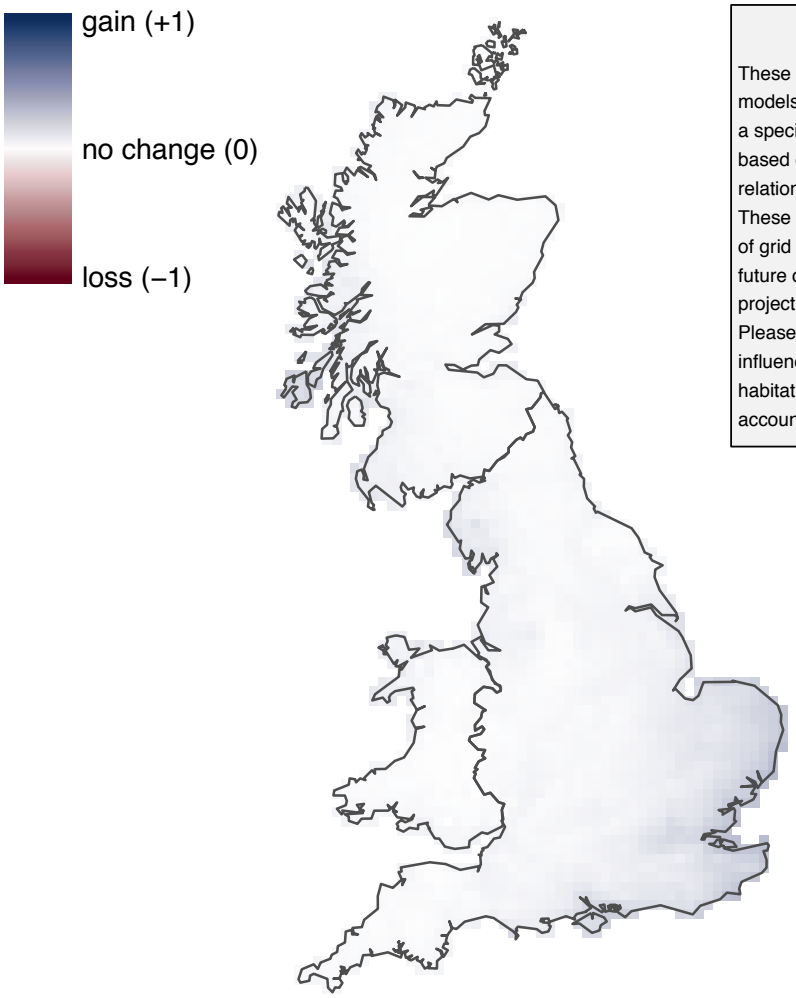
Climate envelope modelling suggests that Britain's climate will become more suitable for a range of southerly distributed seabirds, including the little tern, but this assumes no climate-induced effects on sand eels and other prey species. Although little terns may become more abundant in the north of their range, with climate change food availability could limit any potential expansion. Little terns could be affected by the impact of rising sea temperatures on populations of sand eels and clupeid fish. Unlike other tern species, they habitually feed very close to their nesting sites during chick rearing. The ability to mitigate this is likely to be limited to creating and restoring sites where prey availability is sustained.

Little terns are vulnerable to natural processes of coastal change as they nest on open sand and shingle close to the high tide. The risk of habitat loss will be exacerbated by sea level rise which, together with more frequent storm events, could mean that nesting sites become more vulnerable to inundation. This can mitigated in the longer-term by creating or restoring sites that are more sustainable, either within the coastal zone or immediately landward of current sea defences.

Little terns are also vulnerable to non-climatic threats, especially predation, human disturbance, and competition from other species (Ratcliffe, Pickerel & Brindley 2000). While these can often be managed by restricting visitor access, fencing, and direct predator control, their impact could be exacerbated if climate change results in habitat squeeze with little tern colonies occurring in areas where these conflicts are more likely to arise.

29 An assessment of the strength of evidence that distributions are changing and the mechanisms causing change are understood. Refer to Part B, section 5 of the species section introduction for more information.

Projected change in potential distribution of little tern in the UK with a temperature rise of 2°C (Pearce-Higgins *et al* 2015).



Climate suitability

These maps are created using statistical models which describe the probability that a species will be found in a 10 km grid square, based on its current distribution and its relationship to a number of climatic variables. These can be used to model the suitability of grid squares for a species under possible future climates when climate change projections are taken into account.
Please note that other variables that influence species distributions, such as habitat and land–use change, are not accounted for in the modelling process.

Confidence of change

This species was not included as part of Natural England's Research Report NECR175 assessing the risks & opportunities for species in England as a result of climate change, so no assessment of confidence has been made for this species

Current climate scenario

Climate suitability

Low (2°C change) climate scenario

Created by:	University of York	Created for:	Natural England	Created on:	August 17 2016

Further information on these projections can be found in the introduction to the species section (Part A, Section 3 and Part B Section 5). Note that this is a guide to where a species may be able to survive, it does not capture other issues such as habitat availability and fragmentation – see text above for further details. Contains public sector information licensed under the Open Government Licence v3.0. Please also see acknowledgement and copyright at the beginning of this manual.

Please read this case study alongside the relevant habitat sheets.

Adaptation options

Little terns have benefitted from management for a number of decades and are deemed a conservation dependent species that has experienced a moderate decline and a concentration into fewer, larger colonies. Management generally involves colony protection and habitat creation.

Loss of sites and population decline would have been greater without this continued intervention, especially around southern and eastern coastlines. Increased input in the form of wardens and temporary fencing has improved nesting activity and breeding success, and increased public awareness has reduced recreational disturbance.

There are still management issues with regard to increased recreational pressure and predation 'honey-pot' effects, as the effect of coastal change, disturbance and other pressures has led to the development of fewer but larger colonies.

Future management options include increasing the rate at which inter-tidal habitat is re-created, particularly brackish wetlands and saline lagoons containing islands, assuming that they might take to such islands more than they have done in the past. Consideration should be given to re-charging areas of eroding and over-topped inter-tidal habitat, the loss of which for breeding habitat is exacerbated by climate change factors, using dredging material e.g. at Horsey Island, Essex (Allcorn 2003), and including nesting islands within managed realignment and regulated tidal exchange projects, such as at Wallasea and Medmerry.

As little terns have such specific breeding habitat requirements (sand or shingle beaches or islands free from human disturbance and mammalian and seabird predation), opportunities for range expansion may be limited. Consequently, reducing levels of human disturbance and predation pressure on existing sites is likely to be critical.

Relevant Countryside Stewardship options

FG7: Anti-predator combination fencing.

FG8: Anti-predator temporary electric fencing.

CT2: Creation of coastal sand dunes and vegetated shingle on arable land and improved grassland.

CT4: Creation of inter-tidal and saline habitat on arable land.

CT5: Creation of inter-tidal habitat and saline habitat by non-intervention.

FM2: Major preparatory works for Priority Habitats (creation and restoration) and Priority Species.

Case Study

Little Tern Recovery Project

A five year partnership project supported by the EU LIFE+ Nature fund which included actions to enhance management and restore/create habitat.

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