Chapter 38. Seabirds

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1. Introduction

Seabirds are the most threatened bird group and their status has deteriorated faster over recent decades. Globally 28 per cent are threatened (5 per cent are in the highest category of Critically Endangered) and a further 10 per cent are Near Threatened. Of particular concern are those species whose small range or population is combined with decline (64 species). Pelagic species are disproportionately represented in comparison with coastal species; those listed under the Agreement on the Conservation of Albatross and Petrels[2] have fared worst of all.

Declines have been caused by ten primary pressures. At sea these include: incidental

2. Population trends or conservation status

2.1 Aggregated at global scale

Croxall et al. (2012) reviewed 346 seabird species and found that overall, seabirds are more threatened than other comparable groups of birds and their status has deteriorated faster over recent decades. In terms of the categories used in the International Union for the Conservation of Nature (IUCN) Red List, globally 97 species (28 per cent) are threatened, with17 species (5 per cent) in the highest category of Critically Endangered) and a further 10 per cent Near Threatened. Only four species, all storm petrels, are regarded as Data Deficient; three species are considered Extinct, and two other species are Possibly Extinct. Of the 132 threatened and Near Threatened seabird species 70 (53 per cent) qualify by virtue of their very small population and/or range. 66 species (50 per cent) qualify by virtue of having undergone ra4(e)gonDp4.1()-44.1(o)-1.9(p)6(u)-4(lat(e)(o)-2(n)-4(dp)6(e)-1(c)(l(in)-4(e)-1(.)3(O.)3 f)6l p)

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conservation status than non-seabirds and that they have deteriorated faster over this period. Pelagic species are more threatened and have deteriorated faster than coastal species, and this difference is particularly pronounced for the albatrosses and large petrels that are covered by the 2004 Agreement on the Conservation of Albatross and Petrels ([ACAP] BirdLife International, 2012).

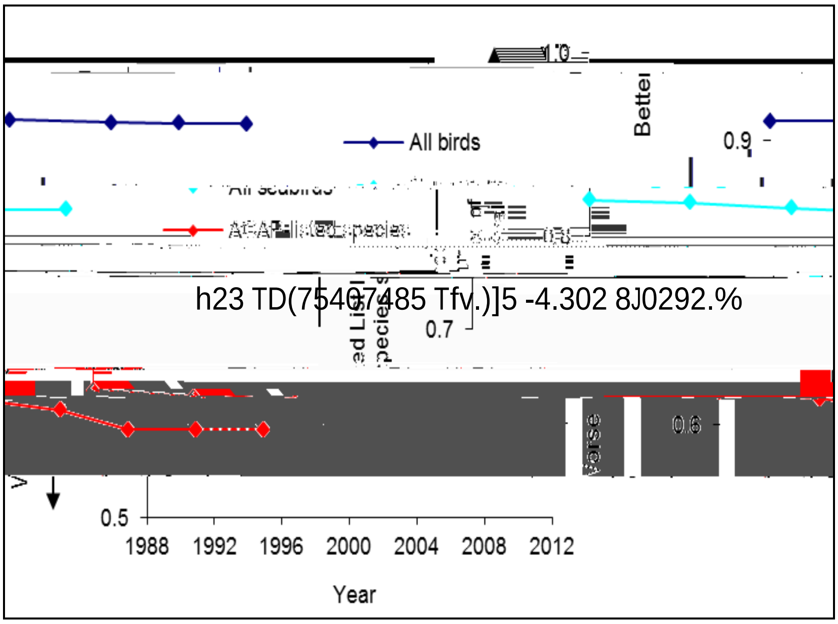

Figure 2. Red List Index of species survival for all bird species (n=9,853 non-Data Deficient species extant in 1988), all seabirds (n=339) and ACAP (Agreement on Conservation of Albatross and Petrels)-listed species (n=29). Values for the latter are projected to 2012 based on data from the 2012 IUCN Red List to be published later this year. RLI values relate to the proportion of species expected to remain extant in the near future without additional conservation action. An RLI value of 1.0 equates to all species being categorized as of Least Concern, and hence that none are expected to become extinct in the near future. An RLI value of zero indicates that all species have become Extinct. See Butchart et al 2004 for further explanation. Source: BirdLife International 2012.

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Reviewing the pattern taxonomically (Figure 3) reveals that, of the main families (which together account for 87 per cent of species), the most threatened are the albatrosses/petrels (Diomedeidae/Procellariiformes and penguins (Sphenisciformes).Together these (represent nearly one half (43 per cent) of all seabirds and contain many pelagic spesesonsevatonof om82(sird)-3.6(e)-1( )1(id)-44(e)-1( )1b peef1

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the Red Sea and Gulf of Aden Environment[11] (Jeddah Convention) (lists not yet provided by contracting parties), the Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region[12] (Abidjan Convention) (considering adding a species list), and the Convention for the Protection and Development of the Marine Environment in the Wider Carit level rise is clearly an important driver of change that is increasingly affecting seabirds in many ways, albeit mainly in the medium to long term (i.e., at time frames mostly outside those of relevance to IUCN Red List criteria). The relative importance of threats is largely similar when only those of high impact are considered, although key fisheries where the pressure has been managed (Anderson et al., 2011). Several papers have reviewed seabird bycatch rates in both demersal (bottom) and pelagic (upper water column) longline fisheries in various regions (e.g., Brothers, 1991; Dunn and Steel, 2001; BirdLife International, 2007; Steven et al., 2007; Bugoni et al., 2008; Rivera et al., 2008; Waugh et al., 2008; Kirby et al., 2009, Waugh et al., 2012), and two assessments have been made on a global scale (Nel and Taylor, 2003; Anderson et al., 2011). The fleets identified as having the highest levels of seabird bycatch include the Spanish hake fleet in the Gran Sol area, the Japanese pelagic tuna fleet in the North Pacific, the Namibian hake fleet and the Nordic demersal fleets (Anderson et al., 2011). The impacts of illegal, unreported, and unregulated fishing (IUU) on seabirds have been estimated in the thousands of individuals each year south of 30° S but are inherently difficult to assess here and elsewhere (Anderson et al., 2011).

Since 1992 a global moratorium has been imposed on the use of all large-scale pelagic drift-net fishing on the high seas, including enclosed and semi-enclosed seas (General Assembly resolution 46/215). Gillnet fisheries (both set and drift nets) are, however, still permitted to operate within a State’s Exclusive Economic Zone (EEZ). Although many data gaps remain, hampering assessment, a review of existing data shows that gillnets are responsible for the incidental capture of large numbers of birds, sharks and marine mammals (e.g., Northridge, 1991; Hall, 1998; Tasker et al., 2000; Johnson et al., î ì ì ñ V Z } P v v D l Ç U et al., 2013). Amongst birds, the pursuit-

Climate change and severe weather driven by habitat shifts and alterations, storms and flooding, and temperature extremes are already affecting some seabird species. Species' sensitivity and adaptive capacity depend on a suite of taxon-specific biological and ecological traits; as well as the degree to which they are exposed to

Seabirds play a key role in nutrient cycling via the shaping of the plant community in their terrestrial and coastal breeding habitat. Seabirds transport allochthonous

However, unregulated harvesting is a substantial problem in the entire Arctic region (2 million adults and countless eggs of several species of Alcidae are taken each year (Merkel, 2008)), the Tuamotus and the Marquesas (egg collection), Peru (Waved Albatross and Humboldt Penguin), Madagascar (egg collection), Jamaica (egg collection (Haynes, 1987)) and Indonesia.

For centuries fishers have used seabirds as a visual guide to locate fishing areas. They remain important for artisanal operations (such as in Hawaii, Comoros, Madagascar and Tanzania), which search for flocks of seabirds in order to find fish. Without seabirds, these livelihoods (e.g., catching small skipjack and juvenile yellow-fin tuna) could disappear or be substantially adversely affected.

Viewing seabirds is an increasingly popular pastime for many tourists; many spectacular breeding colonies are accessible to visitors and revenues generated contribute substantially to local economies (Steven et al., 2013). For example, in Australia, the Phillip Island Little Penguin colony receives half a million visitors a year, spending 35 million Australian dollars (Marsden Jacob Associates, 2008). A single African Penguin colony in South Africa generates United States dollars 2 million/yr in tourist revenue (Lewis et al., 2012). In New Zealand, nature-based tourism relying primarily on the Yellow-eyed Penguin returned 100 million dollars annually to the Dunedin economy, hence a single breeding pair could be worth 60,000 dollars/yr (Tisdell, 2008). The Royal Society for the Protection of Birds (RSPB) estimated that four of its seabird reserves in the UK (one each in England, Northern Ireland, Scotland and Wales) together generated around 1.5million dollars/yr for the local economies (RSPB 2010). Tourism in the Galapagos is thought to generate over 62 million dollars each year; seabirds are a prime reason for visiting. Pelagic trips to view seabirds at sea have also become popular, particularly in Europe, North America and the Southern Ocean. The value of these trips has not been quantified to any degree, but is likely to be significant; for example, 80,000 dollars was spent on a single pelagic trip off South Africa (Turpie and Ryan, 1999).

5. Conservation responses and factors for sustainability

Data on seabird distribution, abundance, behaviour and pressures can be used to inform the design of effective management regimes (Lascelles et al 2012). Management decisions can be guided by: (1) where the key areas are, (2) when these areas are used, (3) what variables explain seabird presence in a given area, (4) the threat status of species in a given area, (5) what pressures may be adversely affecting the species, associated habitats and processes, (6) what management actions are needed to address these threats, and (7) how any management intervention can best be monitor(

distant feeding and aggregation sites), consider temporal and spatial variations, and have adequate regulation to minimise effects of any pressures. Where national, regional and global networks of Marine Protected Areas (MPAs) are being developed, inclusion of key sites in those networks would contribute substantially to the necessary site protection; (b) removal or control of invasive, and especially predatory, alien species from areas used for seabird breeding, feeding and/or aggregation, as part of habitat and species recovery initiatives; and (c) reduction of bycatch to levels that do not pose a threat of species decline. For many uncommon species or species of low productivity, this likely can only be achieved when bycatch is reduced to near zero. Other, more generic actions, such as education and awareness-raising and accompanying stakeholder involvement, are also high

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